NACTA

NORTH AMERICAN COLLEGES
AND TEACHERS OF AGRICULTURE

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2024 NACTA Conference Abstracts

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NORTH AMERICAN COLLEGES
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Oral Presentation Abstracts

Oral Presentation
Curriculum Development/Design

Honoring Excellence: Enhancing an Undergraduate Honors Thesis Experience for Students and Faculty

Madison Dyment
University of Florida

This study explores the perspectives of students and faculty members within the [Blinded Institution] Department of [Blinded] regarding its undergraduate honors thesis program. The purpose of this qualitative study was to leverage these key perspectives for the betterment of the undergraduate honors thesis experience for both students and faculty alike. Using qualitative interviews with both stakeholder groups for data collection, we discovered valuable insights and opportunities for the experience's enhancement. One overarching theme from the interviews was the mutual desire among both groups to foster stronger relationships amid participants. Stakeholders expressed a desire for a more collaborative and supportive environment, emphasizing the importance of interpersonal connections. Another finding was the need for increased clarity throughout the honors thesis process. Both groups reported ambiguity regarding expectations and requirements. Enhancing communication and providing comprehensive guidelines emerged as essential areas for improvement. Participants believed that a structured framework, including clear milestones and checkpoints, would streamline the thesis experience for students and alleviate the burden on faculty members, addressing concerns about the time commitment required. These expressed time concerns highlighted a need for more sustainable ways to engage faculty in advising roles. Finally, the study emphasized the need for increased and targeted promotion of the undergraduate honors thesis experience. Both students and faculty expressed a belief in the program's merits but indicated that many eligible students remained unaware of its existence or benefits. In conclusion, this study's insights from students and faculty underscore the importance of fostering relationships, enhancing clarity, providing guidance and structure, and improving the promotion of the undergraduate honors thesis program at the [Blinded Institution] [Blinded Department]. Implementing these recommendations, as is happening at the [Blinded Institution], can enrich and boost the accessibility of the honors thesis, and can similarly impact programs in other colleges or institutions.

Oral Presentation
Curriculum Development/Design

The Impacts of Cooperative Learning Paired with Case Study Teaching Method on Students' Critical Thinking Ability Regarding Issues in Agricultural and Life Sciences at the Collegiate Level

Heather Young
University of Florida

This presentation will provide an overview of the study conducted for my dissertation. I will discuss the objectives of the course utilized and how cooperative group learning and explicit critical thinking instruction were incorporated. I will briefly explain the QUEEN Model and go into more detail with the findings of this study, and my recommendations for future practice.

This study aimed to determine the impacts of cooperative learning paired with the case study teaching method on students' critical thinking abilities and depth of ability. Specifically, this study examined the effects of cooperative group learning on students' critical thinking abilities and depth of ability, as assessed by the QUEEN Model for Assessing Critical Thinking and its five critical thinking behavioral constructs, guided reflection statements, and concept maps. Data were collected over two semesters from an undergraduate course in which 42 students participated. This study utilized descriptive statistics and paired-samples t-tests to describe students' critical thinking ability. Hedges' g was used to determine effect size.

Quantitatively, of the five constructs, Evaluation was the only statistically significant ($p = .025$) construct for critical thinking ability between groups. Qualitatively, the treatment group identified more concepts in their concept maps overall and a greater depth in Evaluation, while the comparison group displayed more depth in Understanding and Explanation with more relationships and connections identified in their maps.

Overall, cooperative learning was shown to impact ability and depth of ability in the Evaluation construct by having the highest mean, being statistically significant, showing the greatest depth of ability, and displaying a large effect size within the treatment group. Evaluation was the only statistically significant behavior with a medium effect size between the treatment and comparison groups. Understanding and Explanation showed the greatest depth of ability among the comparison group.

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Oral Presentation
Faculty Support/Development/Mentoring

Advancing Allyship in Colleges of Agriculture

Kameron Rhinehart
Texas Tech University

While most scholars agree that allyship is an integral practice, there is a wide variation of ideas as to who allies are and what behaviors make one an ally. Using a broad definition, allies are individuals who support a group or community of people (i.e., LGBTQ+, first-generation students, international students) and can assist them with access to resources and information. Being an ally is a lifelong process of learning and building relationships with underserved or marginalized individuals that impact inclusion and equity.

A focus has been placed on ensuring faculty are prepared to be inclusive of diverse individuals (Tindell et al., 2016). Through a nationwide survey, faculty and staff within colleges of agriculture (COA) were asked to define allyship and to discuss how they serve as an ally, the type of resources needed in trainings and workshops, and as a means to better understand the experiences of working with students across marginalized communities.

This session will focus on the creation of a definition of allyship based on the descriptions and behaviors reported by COA staff and faculty as derived from descriptive words and phrases. The data will also provide information on how individuals can serve as allies. Training on allyship showed to be a deficit in many departments, while colleges were reported to provide more related workshops for personnel. Participants were also asked to share difficulties they have experienced when working with marginalized students across agriculture.

While COA programs have an increased awareness of the need for diversity and inclusion (Elliot-Engel et al., 2020), there is still work to advance these efforts within colleges of agriculture across the country. Through this session, participants will learn how allyship emerges as practice and begin to understand the work and resources available to support and assist students (and colleagues) in the future.

Oral Presentation
Technology in the Classroom

Teaching to Explore Human versus Artificial Intelligence-Generated Science Communication

Jessica Czipulis
University of Florida

Artificial intelligence (AI) has the potential to make a significant impact on agricultural and natural resources (ANR) communication. AI tools to enhance writing, graphic design, audio, and video are available at a reasonable cost. The objectives of this presentation are to 1) explore how to prepare upcoming professionals to utilize AI tools to support ANR communication to positively impact audiences and 2) examine how AI tools could impact ANR communication messages and programs. To investigate these objectives, we studied AI impacts within the context of a project-based learning graduate ANR communication course focused on instructional and communication technologies in fall 2023. Our team of an ANR communication faculty member and seven graduate students collaborated with plant scientists to develop a Streaming Science electronic field trip (EFT) titled Streaming Strawberries for middle and high school students and a 4-H virtual club funded by a USDA-NIFA grant. For phase one of the research, we deliberately did NOT use AI and maintained a design document to track our human creation and decision-making. At the end of the semester, during phase two, we re-created our project artifacts including the EFT title, learning objectives, branding guide, Teacher's Guide, scientist biographies, script, website, registration form, and more with the assistance of generative AI tools such as ChatGPT, Bing Dall-E 3, Adobe Illustrator AI, Canva Magic Tools, Wix AI, and Fetchy. We will present, compare, and contrast the two phases of materials in this session. Results indicated the AI visual tools somewhat leaned toward stereotypical science symbols such as mathematical calculations and ChatGPT's scripting support was somewhat surface-level and included superficial details about the scientists' research. However, we overall found the AI tools beneficial as they helped generate creative title ideas and increased productivity for basic tasks such as identifying learning standards and outlining a document's design.

Oral Presentation
Student Support/Development/Advising

Connecting Social Cognitive Career Theory to Animal Science Students' Career Decision Making

Amy Leman
University of Illinois

Lent's (1994) Social Cognitive Career Theory (SCCT) models the impact of socio-cognitive variables, such as person inputs (race/ethnicity, gender, geographical location) and contextual affordances on individual career interest, goals, and actions. Undergraduate students enrolled in introductory animal science courses come from diverse backgrounds that can impact their learning experience and eventual career decisions. Because of their individual diversity, it is expected that these students will be diverse in terms of their socio-cognitive variables. Utilizing the principals of SCCT, the effect of an introductory animal science course on student career choices and desire to pursue an animal science related career was investigated. The relationship between person inputs in animal science majors and who they contact for career advice was also determined. Respondents answered a series of survey questions using the QualtricsTM platform regarding their experiences upon completion of the course. Survey responses indicated the impact of introductory animal science courses on career goals of students before versus after completion of the course. Qualitative responses were coded based upon themes and analyzed in QualtricsTM. Students reported that the course experience increased their ability to picture themselves in multiple types of jobs. Qualitative responses indicated that the course solidified students' career decisions and helped to expand their knowledge of animal science careers. Course experience also increased ($P<0.05$) students' desires to work with large animals compared with prior to the course. In addition, participants from production agriculture backgrounds were more likely to know someone in their chosen career field than their urban/suburban counterparts, potentially increasing a student's confidence in pursuing this career field. This study may help other introductory animal science courses to provide relevant educational experiences that will assist students in narrowing down career goals, and exposing them to career types in animal science that they may not have otherwise had knowledge of.

Oral Presentation
Student Support/Development/Advising

Professional Mentoring: Exploring the Lived Experiences of Doctoral Students Through a One-Year Mentored-Teaching Program

Kate Fletcher
University of Florida

In 2016, [department] at the [university] created a one-year program to provide doctoral students with a positive and supportive mentorship experience to grow and develop the professional skills and attitudes necessary to be successful college/university educators. This program has three primary objectives:(a) provide students with the essential skills to teach independently at the college/university level, (b) create a safe and supportive learning environment for doctoral students, and (c) enhance the employability of doctoral students for academic positions. Each doctoral student is paired with a faculty mentor as they transition from graduate teaching assistants to co-instructors, eventually teaching a course independently. This presentation aims to introduce the findings of a qualitative investigation that focuses on the experiences of participants who completed the program.An interpretative phenomenological analysis (IPA) was conducted on participants' lived experiences (Creswell & Creswell, 2018). The study presents an in-depth qualitative analysis of mentee's learning experiences in achieving the objectives targeted in this mentored-teaching program(Eisner, 1991). The interviews revealed how participants (n=10) grew from these experiences and realized student learning outcomes because of the program (Dexter, 1970; Marshall & Rossman, 1989). Nine overarching themes were identified and complemented by eight sub-themes. These themes encompass perceived benefits related to real-world experience and peer support. Confidence, scaffolding to release, graduate student teaching awards, transferable skills, and credits offer a better understanding of the achievement of the student outcomes. Additionally, the feedback provided by mentees was valuable in understanding best practices like availability, immediacy, protecting time, and planning. Likewise, challenges regarding mentors and time are discussed to understand how to obtain transferable skills and succeed in this professional mentoring program. Therefore, the presentation's objectives are to discuss the nine overarching themes and eight sub-themes, identify the best mentoring practices for doctoral students, and expose the challenges they face.

Oral Presentation
Curriculum Development/Design

Do Students Experience Transformative Learning in an Agricultural Leadership Multicultural Education Course?

Cari Cearley
Oklahoma State University

Today's agricultural workforce must develop its diversity consciousness to thrive in an ever evolving and increasingly more culturally diverse society. This study's purpose was to explore the transformative learning experience of students completing an agricultural leadership undergraduate diversity course at a land-grant university located in the Great Plains. A qualitative research design assessed the level of transformative learning experienced by students. Phenomenological methodology (Moustakas, 1994) offered deeper insight into the essence of students' lived experiences while qualitative theoretical coding analysis allowed investigation into the degree of transformative learning that transpired throughout the course. Quantitative measures included Chi-squared analysis, with the Phi correlation coefficient indicating effect size of categorical variable associations. Undergirding this study was Mezirow's transformative learning theory (1991, 2000), which posits that the development of new worldviews occurs by lensing prior learning and experiences through newly acquired knowledge. Students' responses from reflective essays assigned at the course's beginning and end were interpreted using Boyer et al.'s (2006) theoretical coding rubric, which revealed their motivations to succeed in a multicultural workforce. Students recognized the importance of diversity consciousness, perceiving that embracing differences produces fresh perspectives which in turn enhance collaboration. An association between gender and the stages of transformative learning was identified, suggesting gender may affect student engagement with, and progression through, the stages of transformative learning. The course was treated as a phenomenon, and, therefore, investigated via students' lived experiences with multicultural and diversity consciousness concepts. Our results could inform the design of multicultural and diversity consciousness programming in higher education to effectively guide students through cognitive dissonance experienced while traversing the various phases of transformative learning. Future research should continue to explore the transformative learning process to improve student diversity consciousness outcomes, especially as such

Oral Presentation
Global Education

Enhancing Cultural Competency in Undergraduate Students through Collaborative Online International Learning

Sushil Paudyal
Texas A&M University

Cultural competency is a valuable skill for undergraduate students who aspire to work in the global agriculture industry. However, traditional methods of developing cultural competency, such as study abroad and foreign trips, are often limited by resources, time and logistics. Collaborative Online International Learning (COIL) is an alternative pedagogical approach that connects students and faculty from different countries to learn from each other through online platforms. In this presentation, we report the findings from a pilot COIL project conducted at Texas A&M Animal Science in collaboration with a partner institution in Nepal. The project was implemented in three semesters (fall 2022, spring 2023 and fall 2023) as part of ANSC 429 Dairy Production Management course. A total of 100 students (56 from the US and 44 from Nepal) participated in the project, which involved completing a team project on a socio-economic problem in the agriculture sector. The students met monthly online to discuss the problem and potential solutions from their respective perspectives. We collected pre-post surveys and student reflections to evaluate the impact of the project. Students rating on the understanding of global dairy system improved from 4 to 9, international agriculture system from 5 to 7.8, Understanding of places outside of USA from 7.9 to 8.8 and understanding of people outside of USA from 7.59 to 8.6 on a 10-point scale. Students indicated that overall cultural competency increased in students from 6.5 to 8.3 on a 10-point scale. A thematic analysis of the student reflections revealed four major themes: small holder agriculture knowledge, international agriculture, teamwork, and knowledge sharing. Based on these findings, we conclude that COIL is an effective and innovative way of enhancing cultural competency in undergraduate students.

Oral Presentation
Global Education

Low-Resource Environment Agricultural Instruction: A Photovoice Study of Nepalese Educators

Daniel Foster
The Pennsylvania State University

This study describes educator perceptions of Nepalese science learning environments and the educational resources with a focus on agriculture as an educational context. Nepalese agricultural and education sectors are frequently characterized by challenges including a lack of resources. We used the photovoice research method with Nepalese science educators to describe individual educator perceptions surrounding their learning environments and educational resources. We visited ten different schools conducting interviews with thirteen educators from government, private, and public trust schools. The rationale by participants for submitted photographs was collected through individual interviews. Photos and transcripts of identified educational resources were analyzed with the Theory of Asset-Based Community Development categorizing submissions into five primary categories of assets: individuals, institutions, associations, connections, and place-based assets. Data highlights potential assets that can be used to solve challenges in low-resource environments for Nepalese science education. Findings indicate the category of individuals and institutions as the primary assets present in the Nepalese science education system and help describe the diverse educational resources shaping Nepalese science education learning environments. While individuals and institutions emerged as the primary asset categories contributing to the Nepalese science education sector, connections, associations, and place-based assets all contribute to the total picture of science education delivery. When equipped with proper access to physical facilities and training, educators find value in delivering applied learning experiences in agricultural contexts that are closely tied to local communities. The participants made clear their desire for increased access to pedagogical and content-specific training, leading to increased teacher self-efficacy when delivering high-impact learning experiences. Recommendations include exploration of policy and practice for increased utilization of agriculturally related assets to achieve science education outcomes. This study suggests advantages to utilizing agricultural contexts in science education to achieve educational goals in low-resource environments.

Oral Presentation
Discipline-Specific Teaching/Classroom

Agricultural Educator Outcome Expectancy Beliefs Toward STEM: Where Can We Make a Difference?

Rachel Hendrix
West Virginia University

STEM (science, technology, engineering, and mathematics) content is a vital part of agricultural education in the 21st Century. Unfortunately, many secondary agricultural educators report low levels of efficacy towards these subjects, resulting in shallow coverage of STEM topics, a decreased ability to encourage struggling or diverse learners, the implementation of fewer active learning strategies, and an inability to interest students in the material or in related careers. In order to better identify where STEM teaching can be improved, and the role of the educator in the process, this study explored the STEM outcome expectancy efficacy of agricultural educators in two southern states. Participants completed an online version of the Outcome Expectancy Efficacy T-STEM instrument developed by the Friday Institute at North Carolina State University. Outcome expectancy efficacy involves a teacher's belief in their ability to influence student achievement, learning, and interest in a given subject despite outside factors. Results of the study found respondents possessed generally high levels of outcome expectancy efficacy toward all STEM subjects, with slightly higher levels for science and mathematics. Respondents felt most powerful regarding their ability to improve student learning in STEM by providing extra time and effort, and by identifying and implementing alternate learning approaches where necessary. Despite believing good teaching could overcome a student's inadequate background in STEM, respondents felt student learning was not completely correlated with teacher classroom performance. This, tied with a lower willingness to accept responsibility for negative learning outcomes, indicates respondents believed students' personal ability and persistence were foundational factors underlying STEM mastery. Teachers believed they had power to influence all student learning, but that it was most effective when working with students displaying reciprocal

Oral Presentation
Global Education

Effect of an Animal Science Study Abroad Program and Student Demographics on Student Perceived and Physiological Stress

Drew Lugar
Illinois State University

Students' studying abroad face a variety of challenges both before they are abroad, as well as while they are there. The present study is a replication of a previous study conducted by the authors which took place in December of 2022. The present study was in a 10-day Animal Science based study abroad program that took place in the Yucatan state of Mexico in January 2024. The study aimed to determine the amount of stress caused by short-term study abroad programs on the participants, and if demographic and experience levels affected these stress levels. This was completed through the collection of physiological stress data measured using a stress index from participant heart rate variability (HRV), psychological stress data measured via Perceived Stress Surveys (PSS), and demographic data from surveys. Stress data was collected four times in the semester leading to the abroad program, and daily while abroad with all measurements taking place prior to 10:00 in the morning. Preliminary analysis of data shows that participants had higher physiological stress abroad, than they did prior to leaving ($P=0.02$). However, in terms of physiological stress, they were more stressed prior to leaving than while abroad ($P<0.01$). Ethnicity also played a role in participant PSS where Caucasian participants had higher PSS than non-Caucasian participants ($P<0.01$). The results from this study are similar to the original study, where ethnicity and period showed the same effect on perceived stress. However, the previous study found no effects on physiological stress, which could be due to the consistency of the daily timing of measurements in the present study. The present study also has a larger, more diverse participant population. It is important to consider continuing studies like these to ensure the best experience for future participants.

Oral Presentation
Technology in the Classroom

CTE Educators Opinions on VR

OP McChubbins
Mississippi State University

Technology integration in education has transformed teaching methods, providing students with enhanced interactive learning experiences. Emerging technologies, such as cloud computing, mobile technology, massive open online courses (MOOCs), games and gamification, augmented reality, and virtual reality (VR), provide educators with resources to improve their teaching methods. Virtual Reality (VR) offers students unique opportunities to gain hands-on experience with content through various programs and scenarios. This study used a modified VR Technology in School-Based Agricultural Education Settings questionnaire to explore teachers' perceptions of VR in Career and Technical Education (CTE) settings. CTE teachers hold a positive view of VR in the classroom, envisioning it as a valuable tool for acquiring new skills, fostering a STEM focus, and enhancing overall learning. Teachers believe students would enjoy VR's immersive experiences and felt that administrators would support its incorporation into their CTE programs. Understanding teachers' perceptions of virtual reality technology is crucial for ensuring its effective use in education. This study addresses a notable gap in the literature and provides insights to guide the implementation of VR in classrooms, promoting more engaging and enriching student learning experiences.

Oral Presentation
Discipline-Specific Teaching/Classroom

Cultivating Teacher Identity: Exploring Influence of a Graduate Course on Teaching and Learning in Agriculture

Daniel Foster
The Pennsylvania State University

The pathway from student to teacher can be challenging, particularly for graduate students with limited or no previous experience or professional development opportunity in becoming an educator. This study explores the influence of a graduate level course on teaching and learning in agricultural sciences on the development of teacher identity in aspirational future faculty members from multiple agricultural disciplines. This elective course with a participating cohort of 19 students from multiple disciplines with diverse lived and education experiences provides a unique lens to explore the intersection of content knowledge, pedagogical strategies, and the development of an authentic teaching identity. Through a multipoint data collection process integrated into class instruction including surveys, identity mini-lessons, and identity exploration tasks, this study aimed to describe the ways graduate students perceive and develop their teaching identities. The goal of the study was not to shape graduate student identities in a predetermined manner, but rather to encourage students to engage in a profound reflection on their identity as educators. This approach enabled learners to explore aspects of their teaching identity that may have remained undiscovered, fortify areas in need of development, and further cultivate their existing strengths. The key dimensions explored include self-image, motivation, digital, cultural, and emotional identity. Results indicated shifts in graduate students' teaching identities, indicating that the course not only encouraged innovation and reflective thinking, but also nurtured community engagement and continued professional development in teaching. Beyond the context of this cohort of learners, the findings contribute insights to the broader discourse on how discipline-specific courses shape teaching identities in graduate education. Insights gained from this study serve as catalysts to initiate the creation of courses in disciplines where they are currently lacking, while simultaneously contributing to refining the effectiveness of existing discipline-related teaching courses, ultimately elevating the quality of future educators.

Oral Presentation
Community-Based Learning/Extension

Electronic Field Trips: Toward Improving Food Literacy and Opportunities Beyond the Classrooms

Sherifat Alabi
The Ohio State University

The lack of or limited exposure to agriculture among young children has contributed to the lack of basic knowledge of the origins of the food they eat. Field trips, therefore, offer learners of all ages access to direct experiential learning opportunities. Electronic field trips (EFTs) are a viable solution, particularly in accessibility and cost-effectiveness. This presentation's objectives are to 1) share our model for EFTs and 2) report on our EFTs series' impact. Collaborating with community partners, we created a cohesive EFTs series on the tomato food system with well-defined learning objectives to enhance the food literacy of elementary learners. The teachers were equipped with lesson plans that matched the state learning standards, including demonstration kits for effective classroom facilitation. Also, a clear designation of roles, responsibilities, and expectations among partners was communicated and understood. More than 1600 students participated in the live EFTs series, and the series' recordings have garnered 274 YouTube views to date. Teachers reported high engagement and interest among students during the EFTs series. They also referenced improved learning outcomes assessed through students' pre- and post- activities. One teacher said, "I was amazed to see the difference in drawings." In addition, teachers reported students' remarkable curiosity and involvement during the cooking demonstration, including their intentions to practice the activity at home. One teacher said, "they were confused at first if we were making "˜real salsa' and why it didn't come in a jar." Others emphasized EFTs' role in bridging educational disparities among resource-limited schools and learners of diverse backgrounds. A teacher said, "some of our student population rarely get to experience this." In a generation where the comfort of processed and ready-made food is commonplace, creating opportunities for children to explore the food system can stimulate a more informed and connected younger generation to agriculture.

Oral Presentation
Inclusive Pedagogy/Andragogy

Echoes of Resilience: Wisdom from the LGBTQ+ Community to LGBTQ+ Students Studying Agriculture

Craig Edwards
Oklahoma State University

Negative perceptions of queerness permeate many U.S. classrooms, affecting LGBTQ+ youth and creating hostile learning environments often characterized by anti-LGBTQ+ language and victimization. A lack of LGBTQ+ representation has led many LGBTQ+ students to feel they do not belong in the agriculture, food, and natural resources (AFNR) industry. Research has identified that positive interactions with peers and the LGBTQ+ community in inclusive environments positively impact the well-being of LGBTQ+ individuals. Further, more focus should be placed on preparing teachers to better serve their LGBTQ+ students and to create School-Based Agricultural Education (SBAE) programs inclusive of all students. We conducted nine semi-structured interviews as part of a more extensive mixed-methods investigation to help understand the nuanced experiences of LGBTQ+ youth in SBAE and ascertain valuable advice for LGBTQ+ students studying agriculture. A qualitative analysis identified patterns and themes disclosing the advice of former SBAE students who are LGBTQ+. Open and axial coding revealed five themes: (a) the positives, (b) the struggles are societal, (c) find your support system and safe space, (d) representation is key, and (e) be you. Our findings underscored the complexity of LGBTQ+ individuals' journeys in SBAE. Despite the challenges, the findings highlight positive experiences and the commitment of some teachers toward inclusivity. Results emphasized the importance of preparation of LGBTQ+ individuals for larger societal challenges and the crucial role of support systems and safe spaces, especially where they learn. Participants stressed the need for continued efforts to enhance inclusivity while encouraging LGBTQ+ students to embrace their identities and pursue their passions for the AFNR industry. Future research should investigate what teachers of agriculture can do to make LGBTQ+ students feel safe and included. Additional research should also investigate each component of SBAE and the overall AFNR workforce pipeline to identify where inclusivity improvement is needed most.

Oral Presentation
Curriculum Development/Design

How Do Faculty in Colleges of Agriculture Teach Leadership in their Courses?

Lauren Lewis Cline
Oklahoma State University

Reports by the Association of Public and Land-grant Universities (APLU) and studies conducted with Food, Agriculture, Natural Resources, and Human Sciences (FANH) faculty have identified employability skills important for agricultural and natural resources graduates. Many skills mentioned are also identified as leadership skills, such as identifying and solving problems, decision making, communication, conflict resolution, and navigating change. This study identified the needs of FANH faculty for integrating employability and/or leadership skill development in undergraduate courses serving FANH students. Participants were faculty members representing all college of agriculture (COA) departments at three land-grant institutions. Semi-structured interviews were conducted with 18 FANH faculty to understand their perceptions and needs related to teaching leadership skills in their curricula. Qualitative data were coded using in-vivo and pattern coding to establish themes. The five themes that emerged were: (a) we need help teaching communication skills; (b) we think a college-wide course should teach it; (c) we know student need it, but we can't teach it; (d) we aren't all willing to do this; and, (e) we don't know how to assess it. FANH faculty recognized the need to develop student leadership skills but differed significantly on who responsibility it was to ensure this occurred during a student's academic career and how to assess it. Recommendations are for COAs to explore a college-wide required course for students focused on leadership skill development. Professional development for FANH faculty in assessing leadership-related learning objectives is also recommended. Understanding the needs of FANH faculty regarding the integration of leadership skill development will aid agricultural leadership educators in developing undergraduate level curricula to address employability skill gaps among FANH graduates.

Oral Presentation
Discipline-Specific Teaching/Classroom

A Different Perspective on Team-Based Learning in a Production Agriculture Course

Kalynn Baldock
Eastern New Mexico University

Team Based learning is used to apply concepts, make students think critically, problem solve, and learn how to work with others in a real-world setting. Students are able to obtain an understanding through their own efforts. Production management courses are designed to prepare students for problem-solving with in production agriculture. Many production agriculture daily problems are solved by a team of professionals. The purpose of this study was to determine if a modified team-based learning approach would be an effective strategy for teaching Advanced Dairy Production course. This course is a 16-week undergraduate course for juniors and seniors. At the beginning of this course students were randomly divided into groups of four. As a modification each student was assigned specific role within dairy management. Roles were owner, manager, veterinarian, and nutritionist. Topics were presented to the teams as problems faced when managing dairy farms. These problems required students to work as a group, with each member looking at the problem from the perspective of their role. Students had to determine how their assigned roles would approach the issue on a dairy. At the end of the semester, students were interviewed regarding their thoughts of team-based learning. Students were also emailed a Qualtrics survey with eight Likert-type questions to determine their perceptions of the effectiveness of this approach. Overall students perceived this as an effective method for learning about dairy production. Students liked how they were able to talk to others and solve the problems together. Some groups felt they worked together more effectively than others. Some students found this approach difficult due to the information not being explicitly given to them. Additionally, some groups felt that not all the members put forth adequate effort. Further studies need to be conducted to determine the effects this method has on student learning.

Oral Presentation
Faculty Support/Development/Mentoring

Peer and Cross-Institutional Support for Enhancing Employability Skills

Mallory White
Virginia Western Community College

According to data published by the Association of Public and Land-grant Universities (APLU), a significant disconnect exists between students' perceived workplace skills and their employers' perceptions of the students' skills. Based on this, Virginia Tech's Agricultural, Leadership, and Community Education faculty have partnered with the Virginia Community College System (VCCS) under the Agriculture Workforce Training for Collaborative Leadership (AWT4CL) project, and this session will highlight insights gained from the partnership. Under the five-year USDA-NIFA grant, which began in 2020, agriculture faculty at three community colleges within the VCCS have been incorporating teaching strategies and activities that bridge workforce and academic skills. With guidance from supporting faculty at Virginia Tech, the VCCS agriculture faculty have created and implemented Plan-Do-Study-Act (PDSA) activities addressing eleven employability skills identified by the APLU study. Students work in teams through problem-based activities addressing such skills as effective listening, communicating accurately and concisely, asking effective questions, workplace conflict resolution, and building professional relationships. Students are also able to earn digital badges in each of the eleven employability skills using the Open Badges platform, that may be downloaded and used on the students' LinkedIn profiles, Indeed, and other digital portfolios. Through consistent use of PDSA strategies and learning badges, faculty have been able to track and improve retention in their agriculture programs. As a result of this partnership, the participating faculty have created a sustainable, state-wide VCCS Agriculture Peer Group to continue sharing strategies that advance workforce skills in agricultural courses. Participating faculty have been encouraged by the positive results based on student feedback and translation of workforce skills into subsequent courses. In the remaining year of this partnership between the VCCS and Virginia Tech, participants will develop long-term objectives to maintain and strengthen these new partnerships, producing graduates with both strong academic and durable workplace skills.

Oral Presentation
Community-Based Learning/Extension

Exploring the Rural Landscape: A Systematic Analysis of Literature on Rural Students' Academic and Community Experiences

Jason Headrick
Texas Tech University

Rural communities face a unique set of experiences in comparison to their urban counterparts. For rural youth, these experiences are just as important. Ties to education and community create a foundation for how they view rural America. This content analysis reviews existing literature on education, out-migration, civic engagement, community vitality, and belongingness for students in rural areas. Through this analysis, researchers aimed to better understand the landscape of rural education and community experiences through an application-based approach. The objectives of this presentation are to inform the audience on the status of rural students' academic and community experiences and provide direction for future research in this area. Using Elsevier, MDPI, Springer, Wiley Online Library, and Taylor & Francis databases, the research team reviewed and analyzed 28 articles. These articles were published no later than 2012 to provide relevant, timely information. Analysis reveals that rural communities face higher out-migration, fewer educational opportunities, aging populations, and higher poverty rates that contribute to a sense of belongingness. Establishing community programs founded on civic-based education can promote civic engagement, but more research is needed to understand how to create sustained engagement. When it comes to youth, they tend to be attracted more towards symbolic factors in the community as compared to material factors. Nevertheless, there is a gap in the literature that shows the specific role of youth and how to establish a sense of belongingness. Through this content analysis, we can better recognize and validate the lived experiences of youth in rural America. Researchers in this area should continue to promote and advocate for the resiliency of these communities through practical, application-oriented studies.

Oral Presentation
Student Support/Development/Advising

An Inside Look: Graduate Student Sense of Belonging in Professional Organizations

Kameron Rhinehart
Texas Tech University

Professional membership organizations have been a part of the agricultural education profession for more than a century (Connors, 2021). These organizations have expanded over time to include faculty, staff, undergraduate and graduate student members. This study aimed to investigate graduate students' sense of belonging in organizations associated with the agricultural communication, education, and leadership (ACEL) discipline. Researchers utilized qualitative research methods to conduct one-on-one, semi-structured interviews with graduate students belonging to six organizations. Organizations include the American Association for Agricultural Education (AAAE), North American Colleges and Teachers of Agriculture Organization (NACTA), Association for Communication Excellence (ACE), National Agricultural Communications Symposium (NACS), Association of Leadership Educators (ALE), and the Association of International Agricultural and Extension Education (AIAEE). Interviews were conducted over Zoom, and data was analyzed through a three-stage coding process (Stake, 1994). Researchers completed the coding process and combined codes to develop the emerging themes. Data was validated through rich descriptions and audit trails. Emerging themes highlight the graduate student perspective: 1.) Impactful Professional Organizations Membership; 2.) Student Recognition Needs; 3.) Underrepresented Voices; 4.) Membership After the Conference. This study is consistent with previous literature showcasing the benefits of graduate membership in professional organizations, yet there are areas of improvement to enhance graduate student experiences. Outside of the annual conferences, there are minimal opportunities for graduate students to be involved. We recommend involving graduate students in decision-making processes, establishing a graduate student representative on governing boards, and creating specific cohorts to facilitate interaction and networking among graduate student members. Additionally, future research should investigate faculty members' sense of belonging in organizations. Future research and modifications to current practice can advance professional organizations and increase to positively impact graduate students' sense of belonging as dues-paying members of these organizations.

Oral Presentation
Student Support/Development/Advising

Evaluating the Professional and Personal Impact of an Associate of Applied Science Degree at a Land-Grant Institution

Karl Jicha
North Carolina State University

The impact of a post-secondary education can manifest itself in a graduate's professional and personal spheres and affect financial standing, career trajectory, interpersonal skills, and the propensity for community engagement. An attempt to measure the comprehensive impact of a degree was made by the Agricultural Institute (AGI), an Associates of Applied Science Program at North Carolina State University. This presentation will highlight efforts to quantify the long-term personal and professional impacts of a degree in this specialized associate's degree program. The theoretical framework for this study was based on Mezirow's (1975) Transformative Learning Theory and Becker's (1964) Human Capital Theory. An exploratory sequential research design was utilized where a series of focus groups were conducted to aid in the development of a survey that was sent out to program alumni. This qualitative descriptive study consisted of 31 questions that were predominantly open-ended and Likert scale in nature investigating the personal and professional impacts of their AGI degree. Data were collected from 237 alumni who graduated between 1962-2022. Researchers found alumni developed a range of long-term personal and professional connections, practical knowledge and technical skills, the ability to network, an enhanced sense of confidence and self-reliance, and exposure to new career opportunities. Alumni also indicated they were better prepared for their first job, they had broader career options, and felt strong commitments to civic organization because of their education and experiences. The majority (over 80%) of alumni stayed in North Carolina and have continued their involvement in the state's agricultural industry largely due to the impact of their degree. The findings of this study provide invaluable information for key stakeholders, potential students, and peer institutions on the overall value of a degree.

Oral Presentation
Student Support/Development/Advising

Effects of Family Support and Working on the Academic Performance of College Students in Agriculture

Danhong Chen
Sam Houston State University

Over the last decade, college tuition has experienced an average annual increase of over ten percent. Students often resort to multiple funding sources such as family contributions, work income, scholarships, and other financial aid to meet the escalating costs of higher education. This study aimed to investigate the roles of family financial support and taking a job in shaping the academic success of college students. A sample of 206 students in the School of Agricultural Sciences at a four-year college reported their FAFSA results and job status on their scholarship applications for the 2024-2025 academic year. Approximately 53% of the students made work commitments while pursuing their college degrees, with approximately 29% working less than or equal to 20 hours and nearly 24% exceeding 20 hours per week. Two sample t-test results did not show significant differences in estimated family contribution (EFC) in the previous year and overall GPA between students with jobs and those without. The ANOVA results unveiled significant differences in overall GPA among students with varying weekly work hours (0, 1-20, and more than 20 hours) ($p<0.05$) but no significant difference in EFC across various levels of working hours. Multiple regression results further indicated that students who worked between 1 and 20 hours per week achieved higher GPAs than their non-working counterparts ($p<0.01$). However, working more than 20 hours per week and EFCs were not significantly associated with GPAs. With mixed findings in the past, family financial support emerged as a non-significant contributing factor to academic success in this study. Consistent with prior research, part-time employment was found to alleviate students' financial burden and improve their practical knowledge and motivation for academic achievement. However, as an excessive commitment, working more than 20 hours per week might adversely impact classroom engagement, thereby not contributing to academic success.

Oral Presentation
Global Education

Discovering Short-Term Study Abroad Opportunities and their Impact on Workforce and Personal Development

Javonne Mullins
Wilmington College

Today's agriculture students are tomorrow's future workforce. Employees today must welcome and understand the interrelationship of globalization (Zuo et al., 2019). Zuo et al. (2019) emphasizes future agriculturalists must be adaptable to change, whether domestic or abroad. Higher education should prepare students to become globally competent citizens (Kuh, 2008; National Research Council, 2009; Stearns, 2009; Stoner et al., 2014). Many college and university travel abroad programs' primary goals include student growth in cultural experience and global citizenship (Hoeflinger, 2012; Stoner et al., 2014).

The purpose of this qualitative study was to determine specific components of global competency identified by undergraduate students following short-term travel to Kenya. Hunter's (2004) concept of global competence(GC) and social cognitive theory(SCT) (Bandura, 2002) were used to guide this study. GC is a multi-dimensional notion that requires knowledge, skills, attitudes and values to be applied to global situations. GC has been the focus of previous short-term abroad studies and demonstrated that short-term programs can impact a student's ability to develop new knowledge and skills (Schenker, 2019). SCT considers social influence within interactions among an environment or behavior. SCT is complementary for explaining personal adaptation and development in diverse cultural settings such as those experienced by students on travel abroad (Bandura, 2002).

Eleven students utilized reflective journaling prior to, during and following their trip. Entries were reviewed by researchers, identifying common themes related to The Global Competence Model (Hunter, 2004). Emerging themes indicate internal components of open-mindedness, self-awareness, and risk taking. External factors included global awareness, intercultural capability, and collaboration across cultures. Themes echo both theoretical frameworks and show the development of new attitudes, skills, and personal adaptation. They also elucidate the impact of journaling to promote personal development. Short-term study abroad opportunities impact student development and may create stronger global citizens.

Oral Presentation
Discipline-Specific Teaching/Classroom

A Systems Approach in the Teaching of Agricultural Genetics: Effect on Knowledge and Attitude of Undergraduate Students Related to Agricultural Technologies

Sara Velardi
Binghamton University

The field of agricultural biotechnology continually evolves as innovative techniques are deployed to create new varieties of food organisms. These genetic modification technologies are directed to change traits in animals, plants and microbes which address consumer interest, environmental challenges, and farmer concerns in a range of food systems. The general consensus from the scientific community has been that foods produced through genetic engineering are safe to eat. In contrast, public perceptions of its safety have been mixed with some skepticism towards information related to the technology. Consumer surveys on gene editing have found low to fair understanding and overall ambivalence towards the technology. There is nuance when it comes to the relationship between consumer knowledge of and attitudes towards biotechnology. A complexity of factors might affect acceptance of gene editing that is potentially unique to other techniques such as transgenesis. This research investigates teaching effects on knowledge and attitudes towards different genetic modifications in agriculture of undergraduate students in three different courses across three universities in the U.S. and Canada. We developed and implemented an agricultural genetics lesson with a systems-approach in understanding the complexity of choosing and employing different agricultural techniques in farming. In the lesson we first described three agricultural technologies (cross breeding, transgenesis, gene editing) and how these different modifications interact with farmers' decisions weighing social, economic, and environmental factors. Second, we asked students to conduct media analysis of different news coverage related to the technologies. Third, a pre- and post-survey were administered to undergraduate students to assess the lesson's effect on knowledge and attitude towards these different technologies. Finally, we analyzed and compared survey responses. This study contributes to the literature surrounding knowledge of and attitudes towards biotechnology and evaluates how undergraduate agricultural lessons impact knowledge and attitudes concerning new agricultural technologies.

Oral Presentation
Faculty Support/Development/Mentoring

Will They Come? Encouraging Participation in a Global Agriculture Professional Development Event through Strategic Framing of Recruitment Messages

Megan Pietruszewski Norman
Pennsylvania State University

Encouraging people to attend professional development events can be a challenge, especially when events are held online and are targeting audiences across multiple time zones. In this study, we apply gain and loss framing to recruitment messages to encourage participation in an online community dedicated to global agricultural educator empowerment to better understand what message designs may encourage participation by attending to features of the message design itself. Nearly 1200 members of an online community of practice representing educators from diverse contexts, disciplines and geographic locations were invited to complete an online survey, which randomly assigned them to view either a gain or loss framed email message about a real, upcoming community event. Both messages included the same content about the upcoming event but used different words to promote the event. Applying prospect theory to communication, loss frame messages emphasized what participants would miss out on if they did not attend. Conversely, the gain frame highlighted the benefits of attending the event. In line with calls from other gain and loss frame communication studies to study moderators and mediating variables, we measured if previous involvement in the organization affected participants' intentions to attend the event and attitude toward the event. We asked about participants' efficacy perceptions and stress levels resulting from viewing the message to see if efficacy and stress affected intentions to attend and attitudes toward the event. Measures were adapted from previous studies for improved reliability. Finally, we observed actual event participation to see if the type of invitation influenced event attendance. Results of this experiment shed light on what communication strategies encourage people to attend professional development opportunities by focusing on how the event invitations are composed and processed by community members. Applications of findings can be applied to formal, informal, and non-formal agricultural education programming.

Oral Presentation
Discipline-Specific Teaching/Classroom

Predicting Classroom Comfort Among Freshmen Agriculture Students

Christopher Estepp
University of Arkansas

Student engagement is a necessary component of academic success, and student motivation affects the extent to which students engage in the classroom. Classroom comfort, how comfortable students feel interacting with peers and faculty, is one important motivational influence in determining student engagement. Accordingly, certain factors lowering students' classroom comfort can result in decreased student engagement. The purpose of this study was to determine if selected personal, peer, and faculty characteristics predicted classroom comfort for freshmen agriculture students (n = 321) in a land grant university. Data were collected in fall 2023 using a survey instrument administered in a required freshman orientation course. The instrument used multi-item summated scales to assess classroom comfort, intrinsic and extrinsic academic motivation, perceived college value, peer support, in-class peer interaction, faculty support, faculty empathy, and help-seeking behaviors using a 1 (strongly negative) to 5 (strongly positive) Likert scale. Coefficient alpha construct reliabilities ranged from .75 to .93. Construct means ranged from 3.17 (SD = 1.01) for in-class peer interaction to 4.42 (SD = 0.60) for perceived college value. Classroom comfort had a mean of 3.48 (SD = 0.97), indicating students were somewhat comfortable engaging in classroom activities. The results of multiple regression analysis indicated that a linear combination of peer support, faculty support, intrinsic motivation, help-seeking behaviors, and perceived college value explained 48.9% of the variance in classroom comfort, with all variables being statistically significant ($p < .01$). To demonstrate support, faculty can create welcoming classroom environments, be approachable, and build rapport with freshmen students.

Oral Presentation
Discipline-Specific Teaching/Classroom

Problems Experienced by Diploma-Level Agricultural Instructors in Nepal: A Case of Madan Pokhara Polytechnic Institute, Palpa

Emily Buck
The Ohio State University

High school (diploma-level) agricultural education makes up a notable proportion of the Nepalese vocational education system. Issues of educational quality in the system remains a topic of dialogue in terms of policy as well as at the institutional level for a long time. Debates and discussions on the ways to ensuring quality education continues to progress. A potential way of quality enhancement is through addressing the problems faced by the instructors resulting in higher satisfaction among them, and in turn, fostering better performance. This research employed a qualitative case study approach aiming to explore the problems experienced by diploma-level agricultural instructors of Nepal, and their suggestions to solve those problems. Semi-structured interviews were conducted with 10 agricultural (plant science and animal science) instructors of Madan Pokhara polytechnic institute, a constituent college of Council for Technical Education and Vocational Training (CTEVT), Nepal. Besides audio recording the interview, real-time observation was also done noting their facial expressions, gestures, and inflection on particular words. The findings show that lack of encouragement, relationship with the administration, limited openings of permanent job offerings, public transportation channels, and student absence were the major problems for the instructors. The instructors also emphasized issues of work-life balance, instructional skills, community relation, school image, declining students, and priority of the profession. For addressing the problems they were facing, instructors suggested provisions of appropriate encouragements, trainings on instructional development and information and communication technologies, and relationship building initiatives with administrative officials, fellow instructors, and the community. Motivations and career counseling among students were also suggested by the instructors. The implications of problems and solutions identified in the study is specific to the researched institution. However, it may act as the foundation or reference to conduct further studies covering more participants, allowing to generalize to a broader area and context.

Oral Presentation
Discipline-Specific Teaching/Classroom

Building Agricultural Literacy: Introductory General Education Courses in the College of Agricultural Sciences

Kevin Curry
Pennsylvania State University

Agriculture has plentiful examples of how misconceptions or plain ignorance can have real-world impacts on how people perceive the industry. The purpose of the study was to measure the degree to which students increased their agricultural literacy after completing an introductory general education course in the College of Agricultural Science at [university]. An introductory animal science course and introductory issues in agriculture course at [university] taught by different faculty members were chosen to examine their impact on improving agricultural literacy. Students (n = 63) were assessed pre and post completion of their respective courses on an instrument measuring their perceptions of agricultural issues and their approach towards voting on agricultural policy. A paired samples t-test revealed a significant gain from 3.05 to 3.75 (5-point likert scale) on the knowledge of agricultural issues scale between the start and end of the course ($t = 9.33$, $p = <.001$, $d = 1.05$). Seven of the eight individual items on the scale (eg. Small-scale, locally-produced food is healthier and safer than food produced from large-scale farms) had significant positive differences in perceptions between pre and post assessment. No differences were observed pre to post on the agricultural policy construct ($t = .34$, $p = .73$). Results indicate that both courses measured in the fall of 2023 made positive, significant impacts on the agricultural literacy of students, particularly regarding misconceptions in agriculture. Future research is needed to unpack the degree to which those gains in knowledge on agriculture issues ultimately impact consumer decision and behavior on said issues. Discussion to include the design elements common to both courses that contributed most to gains in agricultural issue perceptions.

Oral Presentation
Discipline-Specific Teaching/Classroom

Improving Students' Affect and Skill Toward Agricultural Photography Through Interactive Learning Experiences

Rachel Hendrix
West Virginia University

Americans are increasingly separated from agriculture, making it essential to represent the industry accurately and effectively to the public. Quality photography taken by individuals knowledgeable of agriculture is one strategy for fulfilling this mission. Yet despite possessing powerful smartphone cameras, many young agriculturists are unaware of the fundamental photography techniques required to produce powerful, representative images. This qualitative study explored the development of students' photography affect and skills through an interactive learning experience in an agricultural communications class. Participants first completed a lecture portion of the class covering essential photography techniques. Then they worked in teams to photograph and analyze scenes employing techniques covered in the lecture. Following analysis, students reflected through writing on their photography experience and on how their new skills can better represent the agricultural industry to the public.

Results show participants' affect for photography increased throughout unit. Many expressed surprise at the skill and intent necessary for quality photography, and stated they gained greater respect for photographers. Others felt studying photo composition made them more aware of the surroundings they often ignored and helped them see things in a new way. Some students felt their interest in photography had grown as a result of the unit, and several were impressed by the photographic capabilities of their smartphone cameras. A few who already enjoyed photography were excited to test new techniques, especially regarding lighting and subject arrangement. With portraiture, participants noted the importance of the relationship between photographer and subject. Most notably, participants felt they gained a better appreciation for photography as a communicational and educational tool, and for how photographs can connect viewers to and shape impressions of situations and ideas they have never personally experienced.

Oral Presentation
Student Support/Development/Advising

Agricultural Communication Students' Perceptions and Experiences of Academic Advising

Daniel Ayisi Nyarko
Iowa State Unversity

Academic advising has recently become a subject of discourse in higher education institutions, as many are striving to boost student enrollment and improve retention rates. However, research has paid little attention to students' perspectives on advisors' performance and its influence on their academic success. The purpose of this study was to explore undergraduate students' perspectives of academic advising. Mixed methods techniques were adopted. A four-year data was collected from undergraduate students who received advising services from faculty and staff between 2020 and 2023 using a questionnaire and a checklist. Descriptive statistics were used to analyze the quantitative data, while a thematic approach was used to analyze the qualitative data. The results revealed that students perceive staff and senior faculty to be knowledgeable about university support systems and very friendly and supportive in guiding them in course selections. In contrast, junior faculty were found to have limited knowledge of available courses, requirements for undergraduates' graduation, and available opportunities in the university for students. The findings also revealed a gap in staff and faculty knowledge about career paths and life goal advising for students. Most of the students indicated that staff and faculty were not able to help them clarify their career and life goals. The findings indicate a strong need for training on students' career guidance for staff and faculty to enable them to support students' academic and life success. This study adds to knowledge on the growing body of literature on the importance of academic advising on students' career and academic success.

Oral Presentation
Technology in the Classroom

Integrating Artificial Intelligence and Technology-Enhanced Pedagogies in an Undergraduate Communications Course

Michael Mashtare
Pennsylvania State University

Higher-education is undergoing a transformative shift as educators explore the use of innovative technologies to enhance traditional pedagogical approaches. Here we explore the integration of Artificial Intelligence (AI) (e.g., ChatGPT) and technology-enhanced methodologies in an undergraduate technical communications course for agricultural sciences and biological engineering students taught in fall 2023. In this course, students used AI to draft and edit resumes, cover letters, responses to in-class prompts, and sections of a technical research report. Students were tasked with other technology-driven components, including video presentations and Zoom mock-interviews. End-of-semester anonymous surveys used a 6-point Likert scale and open-ended questions to assess student perceptions on the effectiveness of these approaches. Numerical values (0 - 5) were assigned to the Likert scale responses (e.g., strongly disagree = 0, strongly agree = 5) and mean responses (MR) reported to show strength of response. Mean responses >2.5 suggest agreement, while < 2.5 suggest disagreement. Of those responding (n = 27, 96.4%), 70% never used AI, 50% never participated in a mock interview, and 26% never created a pre-recorded video prior to the course. Asked about their experience with AI, students reported it was useful in drafting documents (89% agree, MR = 3.74), editing documents (93% agree, MR = 4.11) and resumes (89% agree, MR = 3.69), improving their cover letter (96% agree, MR = 4.11), and said to continue teaching it in the course (96%, MR = 4.15). Students found the mock interviews helpful in preparing for the career fair (96%, MR = 3.92) and in their job search (96%, MR = 4.04). Only a slight majority of the students preferred pre-recorded presentations (54%, MR = 2.73), however students acknowledged the utility (81.5%, MR = 3.42). These results underscore the perceived utility of AI integration and technology-enhanced pedagogies in an undergraduate communications course.

Oral Presentation
Curriculum Development/Design

Breaking Grounds and Barriers: Successes and Challenges in Delivering an Innovative Interinstitutional Capstone Course

Michael Mashtare
Pennsylvania State University

An interinstitutional capstone course at two land grant institutions for interdisciplinary environmental science-related majors was initiated in spring 2022. This course, run synchronously at both institutions, enabled students to collaborate and network with students outside of their home institution. Local community-focused service-learning projects (SLPs) provided students with hands-on, practical application of their foundational knowledge. Interinstitutional special topics (IST) presentations and discussions at both institutions (connected via Zoom) allowed students to delve into controversial issues within the realm of environmental science. End-of-semester anonymous surveys using a 7-point Likert scale and open-ended questions were used to assess student perceptions on course effectiveness. Means for Likert scale responses (MR) were calculated on a scale of zero (strongly disagree) to six (strongly agree) with MR >3 suggesting agreement and MR <3 suggesting disagreement. Responding students (n=36, 75%), aggregated across 2022 and 2023, reported that they enjoyed their SLP (89%, MR=5.11) and working in their groups (94%, MR=5.19); felt it created a sense of community (77%, MR=4.74); gained new skills/knowledge (97.2%, MR=5.22); were proud of their deliverable (97.2%, MR=5.22); felt their project would have continuing impact (86.2%, MR=4.69); and would continue to work on future SLPs because of the experience (88.9%, MR=4.92). Student responses regarding ISTs were similar, with students reporting they enjoyed their IST (91.7%, MR=5.06); gained new skills/knowledge (77.8%, MR=4.42); enjoyed working across institutions (66.7%, MR=3.97); improved networking skills (66.7%, MR=3.97); and were proud of their deliverable (91.7%, MR=4.92). Overall, students said the course environment was supportive (97.2%, MR=5.53) and fostered community (91.7%, MR=5.39). They enjoyed the interinstitutional component (69.4%, MR=3.89), felt it added value (66.7%, MR=4.17), and found the virtual workshop effective (100%, MR=5.39). Students also felt they were able to meet the course learning objectives (88-100%). The presentation will discuss these results, challenges, and lessons learned.

Oral Presentation
Community-Based Learning/Extension

Developing an Agricultural Registered Apprenticeship Program: A Case Study from NC

Angel Cruz
North Carolina State University

Despite the increasing diversity in the US population, 95% of all principal farm operators are white. Moreover, the average age of principal farm operators was at 57.5 years in 2017. With this reality, agricultural educators, extension personnel, and agricultural businesses are looking for innovative strategies to recruit and effectively train the next generation of diverse farm operators. On-farm apprenticeships in the U.S. are an increasingly popular method of training future farmers. Registered apprenticeships are an emerging trend in workforce development with rapidly increasing popularity among non-traditional trade occupations such as healthcare and information technology, but are still relatively new in agriculture. Registered apprenticeship programs have been shown to help recruit and develop a diverse and highly skilled workforce, increase productivity, allow employers to participate in training, and increase job retention. At the Center for Environmental Farming Systems (CEFS), we developed North Carolina's first two registered agricultural apprenticeship programs. This study includes data from our pilot program and our first two cohorts of apprentices. This study evaluated competency gains of apprentices in the program, as well as evaluated applicant demographic and background data. Apprentices complete a skills assessment at the beginning, mid-point, and end of the apprenticeship to track their competency progression, as well as a baseline survey that collects demographic information as well as information on apprentices' military service, farming goals, and agricultural background. During the first two pilot cohorts we have seen over 100 total applications with more than 40 applications from military veterans with 13 veterans joining the apprenticeship program. Findings demonstrate that registered agricultural apprenticeships are a viable pathway for recruiting and effectively training veteran and minority beginning farmers.

Oral Presentation
Student Support/Development/Advising

First to Second Year Retention in a College of Agriculture: Who Leaves and Who Stays?

Christopher Estepp
University of Arkansas

Undergraduate student retention has been a persistent issue across institutions of higher education including colleges of agriculture. This is detrimental to the agricultural industry as projections predict a shortage of qualified agricultural graduates. During the fall 2022 semester, of the first-time freshmen students at [University] who entered the college of agriculture, 85.6% returned to the university as sophomores. However, 13.2% of these returning students transferred to majors outside of the college of agriculture, representing a loss of both enrollment and human capital for the agricultural industry. Thus, the purpose of this study was to determine if significant ($p < .05$) differences existed on selected variables between students returning as college of agriculture majors (stayers; $n = 170$) and students returning to [University] as majors in other academic colleges (leavers; $n = 26$). Initial data were collected using an in-class survey ($n = 229$) during the fall 2022 semester; enrollment data for fall 2023 were provided by the registrar's office. There were no significant differences between stayers and leavers for student club membership, attendance at the college of agriculture welcome event, on-campus residence, or first-generation college student status. However, stayers and leavers differed significantly on major (agriculture vs. human environmental sciences (HESC)) and sense of belonging in the college. HESC majors were significantly ($p < .001$) more likely to be leavers as compared to agriculture majors, with an odds ratio of 4.60, 95% CI [1.79, 11.87]. Leavers ($M = 4.08$, $SD = 0.82$) had a significantly ($p = .05$) lower sense of belonging in the college as compared to stayers ($M = 4.36$, $SD = 0.62$). Retention efforts should focus on engaging students to help develop a better sense of belonging in the college of agriculture, while further research should determine why HESC majors are more likely to leave the college.

Oral Presentation
Student Support/Development/Advising

Student Success in NIFA Fellowships

Erika Kraus
USDA-NIFA

This presentation will give an overview of the NIFA National Needs Fellowship (NNF) Program and the NIFA AFRI Predoctoral Fellowship program and the respective requests for applications (RFA); consider case studies of projects in these programs to understand student success, as well as overall project success including mentorship, innovativeness, and institutional support. The presentation includes the perspective of a distinguished professor from Florida International University (FIU) and a national program leader from the National Institute of Food and Agriculture. Our objective is to explore the following question: "Why is any given institution or individual compelling for graduate training opportunities in food and agricultural sciences for students who will increase the diversity, equity, and inclusiveness of the workforce?" The workshop will rely on qualitative and quantitative data about the competitive grant programs, and case study-like experiences. With this data, we plan to showcase the diversity of successful awards in these competitive grant programs, and the real-lived experiences from the perspective of FIU to make the proposals into reality. We plan to convey perspectives on how institutions and individuals interested in higher education can make NIFA's competitive programs work in their context. We'll also highlight professional paths of some students who are former fellows from the grants. Our presentation fits within the NACTA theme of student support/development/advising, as well as global education.

Oral Presentation
Discipline-Specific Teaching/Classroom

Gallery Walks are a Useful Tool to Promote Engagement in an Introductory Animal Science Course

Jackie Wahrmund
University of Kentucky

Faculty sometimes find it difficult to develop new ways to present course material while also promoting classroom engagement, particularly when students are not comfortable speaking in front of others. Gallery walks are teaching tools that promote active engagement by asking students to physically move around the room and respond to prompts at different stops or stations. An internet search yields many resources about using this technique in K-12 classrooms; however, applications for undergraduate courses are difficult to find. The Animal Science 101 course at the University of Kentucky is offered to a large number of students each semester. Students attend large-enrollment (n>100) lectures twice per week and small-group labs (n<24) once per week. The animal nutrition chapter in ASC 101 tends to be the most challenging, and occurs at an earlier time in the semester when students are still getting to know one another. A gallery walk activity was developed to promote engagement among students in a non-intimidating way during their lab time. Groups of 3 -4 students anonymously responded to 3 prompts at each of the 6 stations in the room. Each station represented a different class of nutrient (water, monosaccharide, disaccharide, polysaccharide, lipid, protein). Prompts included "When I think of (blank) I think of...", 2) "A fact we know about (blank)" and 3) "A question we still have about (blank)." Students were asked to not duplicate comments already left by their classmates. After each group had visited each station the instructors presented all of the responses to share both the known facts and answer the new questions. This method generated many positive conversations about the course material, both among peers and instructors. Students reported that it helped them understand how nutrients are classified in a new, fun, and engaging way.

Oral Presentation
Discipline-Specific Teaching/Classroom

Comparison of Students' Performance in Online and Face-to-Face Courses

Shyam Nair
Sam Houston State University

Demand for online and hybrid classes has increased significantly in the post COVID-19 era. Online courses provide students with the convenience of self-paced learning, reduce commuting time, and allow those who get easily distracted in a classroom to engage in learning without such distractions. Although modern technology and tools allow online classes to be more engaging, students miss out on real-time interactions with instructors and peers. Additionally, the self-paced nature of online courses is harder on procrastinators. This study compared student performance in the same course with the same instructor during eight semesters as both face-to-face and online courses, analyzing learning differences between the two delivery methods. The dataset consisted of average homework scores, exam scores, scores for a student-created video, final course average, and letter grade for 120 face-to-face and 40 online students from an undergraduate introductory agribusiness marketing class at [UNIVERSITY]. We assessed the differences within each categories using Student's t-tests. The results showed that average homework scores of students in the face-to-face classes were 8.78 points higher than scores from online classes ($p<0.01$). Average exam scores for face-to-face students were 7.13 points higher ($p=0.01$). Scores for a student created video were also significantly higher ($p<0.01$) in face-to-face classes compared to online classes by 10.72 points. Because of the higher performance in all categories, the average final grade for face-to-face classes was 9.16 points (essentially a full letter grade) higher than online classes ($p<0.01$). We make several normative recommendations based on this outcome. Course instructors should include instruction on time management in the initial online course modules. Additionally, previous research has linked late initial course engagement with lower final grades. Instructors should attempt to identify and pay special attention to students who are not self-starters, as indicated by delayed engagement with the first modules of the online course.

Oral Presentation
Student Support/Development/Advising

Igniting a Passion for Agriculture Through Pre-Collegiate Experiences

Shyam Nair
Sam Houston State University

There is a great need to develop skilled agricultural professionals and policymakers to address the unprecedented challenges faced by US agriculture. [UNIVERSITY] holds a yearly event for high school juniors and seniors to familiarize them with college life and to increase their agricultural knowledge and interest. In 2023, the event consisted of seminars in Agribusiness (team-building and trade game), Agricultural Communications (interview and Ag advocacy activities), Agricultural Engineering Technology (CNC Plasma Cutting and CAD/CAM software design), Animal Science (palpating a cannulated cow, evaluating equine semen, and wildlife archery), and Plant and Soil Sciences (fertilizer technology and plant propagation techniques). Each seminar was 65 minutes long and each student was prompted to register for two seminars. The event started with a welcome session describing the admissions requirements, scholarship opportunities, and the first-year experience followed by two seminars of their choosing. At the end of the event, participants completed a survey instrument with questions regarding their classification, gender, race, and pre-post opinions on their agricultural knowledge, familiarity with the school of agricultural sciences, and interest to pursue a baccalaureate degree in agriculture (n=47). Paired t-tests were used to assess the effectiveness of the event and Multiple Linear Regression was used to analyze the impact of classification, race, and gender on effectiveness. The paired t-tests showed significantly increased familiarity with the School of Agricultural Sciences ($p<0.001$) and increased agricultural knowledge ($p<0.001$) for the participants. The interest in pursuing agricultural degree increased significantly ($p<0.001$) from 2.5 to 3.8 on a 5-point Likert-type scale (5=highly interested). The increase in interest to study agriculture was higher for white students compared to others ($p<0.01$). Exposing high school students to the college environment and engaging them in hands-on activities can familiarize them with the department and encourage them to pursue agriculture at the post-secondary academic level.

Oral Presentation
Student Support/Development/Advising

HERO in Undergraduates Students: A Comparative Study of Two Agricultural Colleges' PsyCap

Joshue Lewis
Texas Tech University

Psychological Capital [PsyCap] is a model with four pillars (hope, self-efficacy, resilience, optimism, or HOPE) (Lin, 2020). PsyCap reveals how resources drive student motivation, well-being, and success (Guerrero-Alcedo et al., 2022). It plays a crucial role in student success but remains underexplored in agricultural colleges. Comparing PsyCap in agricultural undergraduate students can reveal unique challenges and opportunities, ultimately influencing their academic performance and mental health. In a multiple case study, researchers explored and compared the insights of PsyCap HERO constructs among undergraduate students from agricultural colleges at two Hispanic Serving Institutions (HSIs): a doctoral university (D-HSI) and a master's university (M-HSI). Twenty students from diverse backgrounds were interviewed to understand their hope, self-efficacy, resilience, and optimism. Through in-depth analysis, key themes and patterns in PsyCap emerged and were compared between the universities. The study followed strict qualitative standards to ensure accuracy and minimize bias, offering valuable insights into PsyCap variations among undergraduate students. The data unveiled key themes shaping PsyCap in undergraduates across the two universities. Hope revolved around personal aspirations, family support, and career goals. However, D-HSI students mentioned overcoming challenges and societal stigma. Self-efficacy focused on personal growth, time management, and, for D-HSI, personal commitments and adjustments. Resilience emphasized social support and self-care, with D-HSI adding organization and M-HSI highlighting tackling challenges. Optimism, shared by all, centered on personal connections. D-HSI explored academic and personal benefits, along with a supportive community, while M-HSI focused on a sense of belonging and a positive college experience. PsyCap factors vary among agriscience students across universities. Tailored interventions addressing goal-setting, social networks, time management, and challenges can enhance academic performance, well-being, and engagement in agriculture. These interventions can ensure support aligns with the specific needs of students. Future research should employ quantitative methods to explore independent variables impacting PsyCap for comprehensive understanding.

Oral Presentation
Curriculum Development/Design

Ungrading: An Alternative Approach to Encourage Student Learning

Kellie Claflin
The Ohio State University

Grades allow instructors to communicate about student learning and provide a benchmark for students to understand their progress. However, traditional grading can misrepresent learning through averaging scores and diminish student learning and motivation. The concept of ungrading was employed in a graduate-level course in the fall of 2023 to encourage learning and minimize the concerns of traditional grading. Ungrading can be implemented in several ways, but foundationally, it eliminates number or letter grades on individual assignments, instead emphasizing feedback. In this course, the instructor provided feedback, and students completed written self-assessments of their learning at the mid- and end-points of the term, followed by an in-person meeting with the instructor. The students proposed a final letter grade based on their assessment of their learning and effort. As an instructor, the ungrading approach eliminated grading stress and made it more meaningful to emphasize feedback and learning. Additionally, it was rewarding to observe student progress through the self-assessment meetings and the application of feedback. When providing feedback and assessing the final course grade, balancing mastery of material with effort and timeliness remained challenging. Student feedback on ungrading was overwhelmingly positive. Most students mentioned a stress-free learning environment and ownership of their learning. Students tied many of these insights to the self-assessment meetings and reflection. Negative reactions addressed class prioritization. The students underscored this class received a lower priority if there were hard deadlines in other courses or because of traditional grading practices. We recommend future ungraded classes foster a space for dynamic discussions and encourage participation for all students to promote learning objectives and accountability. While the ungrading approach may not be the best fit for all classes, it can successfully promote skill mastery and lessen student and instructor stress while emphasizing learning.

Oral Presentation
Curriculum Development/Design

Using Simulate Activities in Teacher Preparation Programs

Farish Mulkey
Abraham Baldwin Agricultural College

Due to the volume of material taught in teacher preparation programs, it can be challenging for students to be engaged to gain the most knowledge from the courses. Activities that closely simulate the upcoming roles of teachers help the preservice teachers better understand the course material presented and the expectations of their future workload. By using these activities in preservice teacher programs, the students receive hands-on experience. In two of the senior cohort classes, Agriculture Practicum and Early Clinical Experience in Ag Education, students follow a model where they receive experience from going into classrooms, team-teaching, completing 10 “pick 10” events outside of class time, and facilitating events for current middle and high school level agriculture students. Following the simulations that the students complete, they must reflect on what they have learned, along with ways to use the knowledge they have gained from the simulation in their future classroom. One simulated activity the students did was developing and coordinating a Youth Ag Challenge for over 800 students. This simulated teaching style has proven to be effective as the graduating students are more prepared as first-year teachers for how to handle the different varieties and levels of tasks that they will be facing during their time in and out of the classroom than those of programs with little or no simulated teaching style. The education field employs 95% of the students from the 2023 cohort (n=43). “Research documents a positive connection between teachers’ subject matter knowledge and their performance in the classroom; it has been established that teachers with advanced preparation (in addition to typical coursework and fieldwork experiences) in teaching methods and strategies have a greater chance of successful longevity in the classroom (Landon-Hays et al., 2020).

Oral Presentation
Technology in the Classroom

Flip the Script: Utilizing an Online Peer Evaluation Method with Flipgrid

Lacey Roberts-Hill
New Mexico State University

Peer feedback supports the learning process by providing an intermediate performance check, accompanied by feedback on strengths, weaknesses, and tips for improvement. In the classroom, peer feedback helps students become more self-aware and exposes them to different ways of approaching tasks. The evaluators gain knowledge by examining different examples or methods, and internalizing criteria and standards. To encourage deep reflection with peer feedback, we used the interactive platform, Flipgrid, as a resource for group evaluations. Flipgrid is an online educational platform designed as a social media space, where students can post videos and engage in discussion in response to set topics. Students in an agricultural communications photography course (N = 25) at [University] used Flipgrid as an assessment tool to provide peer critiques to designated photos. Our objectives included: 1) evaluating students' understanding of photo composition elements; 2) promoting discussion through positive and constructive attributes for photos; and 3) facilitating interactive and personalized learning using technology in photography. Students were tasked with assessing the quality of photos from classmates and using peer feedback techniques to suggest areas of improvement. Students were able to create video discussions while incorporating peers' images and other tools to help aid in their critique. Students described their experience using Flipgrid as "engaging", and "unique", and stated the platform provided many opportunities for individual exploration and support. Flipgrid creates a collaborative environment through the form of social media, and students said it was a fun alternative to traditional discussion. When implementing Flipgrid activities, we encourage ample instruction and practice time before asking students to complete videos review on their own. This will help build confidence and reinforce high quality peer feedback. We also recommend utilizing Flipgrid to reinforce connections between in person course content and online spaces where students can express content through diversified discussion.

Oral Presentation
Discipline-Specific Teaching/Classroom

A Creative Challenge: Utilizing AI to Promote Creativity in Photography

Lacey Roberts-Hill
New Mexico State University

Artificial intelligence (AI) has begun to rapidly transform the educational environment and professional industries alike. Artists, such as photographers, are facing the decision of ignoring and remaining indifferent to this new trend or embracing the tool. In classrooms, students are finding themselves to be more motivated and engaged when AI is implemented into the coursework. To challenge and motivate students, we utilized AI to provide a photo prompt for students in an introductory photography course at New Mexico State University. In class, students were instructed to individually ask an AI generator such as ChatGPT, to generate a depiction of an image. Once the image was generated, the students were then instructed to go and take a photograph resembling the AI generated image. of student-generated prompts included, "Capture the essence of fleeting moments in everyday life, find beauty in the mundane, and let the simplicity of a single moment." Students were given approximately two weeks to take one image based on the prompt. Our objectives targeted previously learned course-based skills, challenged their creativity, and built on conversations about the ethics of using AI. Students remarked the activity challenged their intentions behind their photo and pushed them out of their comfort zone. The students stated their favorite part of the activity was "being in control of my prompt, and "seeing what AI could come up with." Utilizing AI in the classroom allows students to challenge their creativity and encourages educators to embrace the tool. We recommend allowing students complete control over their prompt and to allow for an abundant amount of time for the photos to be taken. Future research should be conducted to evaluate if students can determine original versus AI-generated images to further develop visual literacy.

Oral Presentation
Curriculum Development/Design

Introducing Humor into the Classroom

Cheryl Wachenheim
North Dakota State University

This presentation will introduce a variety of means to bring humor into the classroom. We will discuss the benefits of humor, forms of humor, and how to mitigate the risks associated with introducing humor into the classroom. The literature supports that happy students are more open to learning, and that, well applied, introducing humor can contribute to a positive social and emotional learning environment. Demonstrated benefits include fostering learning, improving understanding, increasing retention, motivating students, increasing attendance and student interest, reducing anxiety, facilitating connections, diffusing conflict, and building trust. We will discuss a variety of techniques for introducing humor such as short riddles and jokes, videos, stories, personal experiences, pictures, memes, and improvisational discussion, and discuss the importance of relating the humor to the student experience. We will discuss associated risks of introducing humor and how those risks can be mitigated. For example, an important consideration for many is that it certain humor would potentially be perceived as inappropriate. This can be mitigated by trying out your intended statements with several people who can help you identify if you missed something that might offend. Other risks are associated with students not quickly relating to the humor or that they simply don't recognize it. For example, it turns out the riddle "why can't you hear a pterodactyl go to the bathroom?" is not funny to those who do not know how to spell it. Another common occurrence is referencing examples that students may not be familiar with (e.g., songs or movies from a prior era). In summary, the intent is to introduce humor by example (that is, we intend this presentation to be fun for participants), and set everyone up for success.

Oral Presentation
Global Education

“I Can’t Just Leave for Two Weeks!”: Portraits of Rural Community College Students’ Decisions to (Not) Study Abroad

Isabel Whitehead-Adams
University of Arkansas

Study abroad experiences are suggested to provide students with practical experience navigating new cultures, settings, and aid in personal and professional growth. However, access to programs is not equitable across various student demographics, particularly those in rural areas. Rural students face additional barriers to higher education which increase the likelihood that they pursue studies at a community college. The purpose of this study was to examine perceived barriers to studying abroad among rural community college students. Participants included students currently enrolled in classes at the [Community College] campus, who had attended informational sessions about a fully funded international program through the University of [State]. Despite the international program opportunity being fully funded, this group of students opted not to participate. With cost being a commonly reported barrier to studying abroad, the students’ decisions to not participate prompted interest in exploring their decision-making processes. Portraiture methodology was used during two rounds of virtual focus groups (n=7) to elicit the participants’ experiences and thought processes. Portraiture methodology allows researchers to develop vignettes or ”˜portraits’ depicting the ”˜typical’ participant experience. Four portraits were created based on participants’ experiences that illustrated themes of home, work, relationships, and distrust in the location, titled ”˜The Necessary Homebody’, ”˜The Committed Worker’, ”˜The Betrothed’, and the ”˜Exclusively-Domestic Traveler.’ Participants reported struggling with the thought of leaving their family and home for multiple weeks, reconciling their interests with the reality of their work obligations, prioritizing staying near loved ones, and worrying about their safety in another country. The researchers recommend that future studies look into the impacts of trip duration, the locations offered, the introduction of peers who have successfully traveled abroad, and the framing of the information presented in the campus visits on rural community college students’ willingness to travel abroad.

Oral Presentation
Faculty Support/Development/Mentoring

Instructional Use of Generative Artificial Intelligence

Cheryl Wachenheim
North Dakota State University

Widespread availability of artificial intelligence tools such as Chat GPT, Co-Pilot, and Dell E-2, and artificial intelligence tutors such as Khanmigo provide opportunities and introduce threats to our traditional instructional models. Our premise is that we should cautiously embrace the use of generative AI tools because they will be available and continue to improve in functionality for the remainder of our careers and for the rest of our students' lives. There has been considerable attention towards how to incorporate AI into student work, as well as how to mitigate inappropriate use of AI by students. This presentation will rather focus on how instructors can use AI to increase efficiency, build better instructional products, and make their classrooms more engaging. For example, we can quickly develop the first draft of a personalized letter of recommendation for a student by uploading the job, internship, or scholarship description and the student's resume and instructing Chat GPT to write a letter of recommendation. The draft can be refined iteratively by asking that the letter be rewritten with a focus on student experiences, academic accolades, or the fit of student experiences with the job in question, for example. Another example is using the AI product Co-Pilot to build strong and interesting PowerPoint presentations from text. Many other examples will be introduced to participants. Notably, the presentation will purposely not focus on discussion regarding whether particular uses of AI tools are appropriate or not. Should be great!

Oral Presentation
Technology in the Classroom

Utilization of ChatGPT to Promote Active Learning and Material Retention in a Lecture-Based Animal Science Course

Erin Alava
University of Findlay

The objectives were to determine if incorporation of AI (ChatGPT) could promote active learning and improve material retention in a traditionally formatted in person lecture-based Animal Science course. Two sections of Principles of Animal Nutrition were utilized, with one being assigned the ChatGPT assignment (n=33) in lieu of a standard lecture during class and the other remained as the control (n=23; lecture only). The ChatGPT group was provided access to a recorded lecture online after the assignment activity. A base line evaluation was conducted for each section immediately prior to the start of class. A post evaluation was conducted at the beginning of the subsequent class. In addition, a survey was deployed to the ChatGPT class to evaluate student perception. Student performance from the base line evaluation to the post evaluation improved for both treatments for each question, except for one question in which the control group numerically declined from base line to post evaluation. Students in the ChatGPT group agreed or strongly agreed that comprehension and learning was improved (16/29, 55%); engagement with the course material was improved (19/29, 66%); and the ChatGPT assignment improves ability to utilize course material outside of the classroom (13/28, 46%). Alternatively, students disagreed or strongly disagreed (10/29; 34%) that this activity is preferred compared to lecturing; and (14/29, 48%) would not recommend adopting this activity as a permanent replacement for standard lecture. In summary, either standard lecture or the ChatGPT assignment improved retention, and student perception concurs that comprehension, learning, and engagement are improved; however, preference for this activity in place of lecture was low.

Oral Presentation
Discipline-Specific Teaching/Classroom

Use of Ungraded, Practice Assessments Can Enhance Academic Performance but How Do We Get Students to Use These Resources Appropriately?

Renee McFee
University of Nebraska-Lincoln

Retrieval practice promotes learning retention and practice quiz usage has been positively correlated with exam grades in our veterinary physiology course. Unfortunately, not all students were using this resource. Previously, students completed weekly quizzes online and were given multiple attempts on each. Practice quizzes were created using the same question banks as graded quizzes. These practice assessments were made available after students had completed the graded quizzes so students could use them to study for exams. To increase student usage of practice quizzes, we began administering the weekly, graded quizzes during class and students were only given a single attempt. However, students were now given access to practice quizzes beforehand. Following these changes, 89% of students completed all practice quizzes. In contrast, only 42% of students completed more than one practice quiz during the previous year. Students completed an average of 3.7 attempts per practice quiz and 84% perceived practice quizzes to be sufficiently or extremely helpful to their learning. The number of practice quiz attempts was moderately correlated ($r = 0.38$) with quiz grades but not exam grades. Our evaluation also revealed that 25% of students only completed practice quizzes within the 24-hour window immediately preceding the weekly quizzes and many attempts were submitted during scheduled class periods for other courses. Regardless, no correlations were identified between the timing of practice quiz completion and course grades. Despite the inclusion of several quiz questions on exams, very few students completed practice quiz attempts after taking the graded quizzes. Students in this study primarily used practice quizzes for massed practice rather than spaced practice, and to prepare for quizzes but not exams. Since distributed practice is associated with better learning outcomes, the use of practice assessments to cram before quizzes rather than to intermittently self-test likely limited possible academic gains.

Oral Presentation
Technology in the Classroom

Chatbots in the Classroom: A Study on AI-Assisted Learning in a Digital Mapping Course

Hartwig Hochmair
University of Florida

The recent surge in Generative AI, notably AI-powered chatbots, has sparked considerable interest in academic circles. This study delves into student evaluations of chatbot capabilities and limitations within an interdisciplinary graduate course titled "Digital Mapping" at UF, attracting students from diverse fields including natural resources, forestry, entomology and geomatics. The course, which covers theoretical and practical elements of digital spatial data mapping and analysis, introduced 22 graduate students to leading chatbots, i.e., ChatGPT, Bard, Claude-2, and Copilot. Instructed to apply these chatbots to five spatial tasks pertinent to the course, students were to assess each chatbot response on a 0-10 scale, highlighting any issues encountered. The tasks formulated by students primarily focused on map projections (19.8%), programming (16.5%), geo-computations (14.9%), and geographic literacy (14.9%). ChatGPT-3.5 emerged as the most favored tool (47.5% of tasks), with Bard following closely (36.1%). More than half of the students (54.5%) preferred using a single chatbot for all tasks, whereas only one student used four chatbots. Image-related tasks showed significant engagement (ChatGPT-4: 40%, Bard: 29%, Copilot: 43%). A Kruskal-Wallis Test indicated no significant difference in response quality across chatbots (Chi-square = 5.03, df = 4, p = 0.283), but it did reveal variations across task categories (Chi-square = 22.048, df = 8, p = 0.0048), with land cover analysis from aerial images receiving the highest scores. The study pinpointed various shortcomings in chatbot responses, including insufficient response detail (23.6%), stalled computations and analysis processes (18.1%), or incorrect computation results (13.9%). These insights suggest that integrating chatbot technology into natural science curricula could enhance educational outcomes and critical thinking skills, encouraging students to experiment with various chatbots, particularly for image analysis tasks, thereby broadening the scope of achievable assignments.

Oral Presentation
Global Education

Global Citizenship: Change in Undergraduates from a High Impact Experience

Mia Sullivan
The Pennsylvania State University

Global citizenship is critical to developing a globally ready 21st-century workforce in food, fiber, and natural resources. Global citizenship comprises three dimensions: social responsibility, global competency, and global civic engagement. Social responsibility is the perceived level of interdependence and social concern to others, society, and the environment. Global competence in people is a nonjudgemental behavior of being open to people and cultures different from their own. Global civic engagement is interaction with civic organizations to engage in global change. Combined, the three dimensions of global citizenship consist of 3 indicators. Educators, along with their knowledge, skills, and dispositions, are key players to developing global citizenship in students. Twenty-nine pre-service agricultural teacher candidates across two years in two cohorts from two different agricultural teacher education institutions from different parts of the US were presented the opportunity to participate in a high impact experience through a program lasting a full academic year. The program included two courses, a group domestic study away to the World Food Prize Borlaug Dialogues, and small group teams sent to teach global food security to secondary students in agricultural education programs located in communities across the US. We utilized an accepted Global Citizenship Scale modified for the agricultural context and collected data in a pre-post format. Both cohorts of pre-service agricultural teacher candidates increased their global citizenship overall and across all three domains from pre to post assessment after completing the program. Recommendations include continuing domestic global learning opportunities for teachers to gain necessary global knowledge and skills as well as further research on differences in gains in global citizenship achieved from domestic experiences to international experiences. Additionally, future scholarship is recommended one exploring accessibility to high-impact learning experiences to advance global citizenship.

Oral Presentation
Student Support/Development/Advising

Beyond Books: Shaping Pedagogical Prowess in Future Academics

Hannah Shear
Oklahoma State University

Preparing the next generation of agricultural educators, policy influencers, researchers, and extension personnel is an ongoing and important task for graduate programs. Graduate programs focus on preparing students for research and rely heavily on coursework instruction. There however is minimal emphasis on preparing graduate students for their roles after their degree in either university teaching or extension. This research aimed to assess current graduate students in their perceived preparedness for a role in extension or teaching in higher education. This study utilized a survey sent to department heads within the field of agricultural economics to share with their current graduate students. A total of 194 surveys were collected from the participating universities, containing both quantitative and qualitative questions. Of the responses received, data was cleaned and analyzed using qualitative coding and statistical analysis. Participants responded that teaching was an opportunity provided during their program. However, while teaching was an opportunity, when describing their role, the majority of respondents said grading and holding office hours was their teaching experience. Respondents replied that they did not have a teaching mentor or have someone review their teaching evaluations with them. As graduate programs prepare the next generation of agricultural educators and extension personnel, a focus on the importance of preparing teaching and extension education is imperative. This study offers insight into the preparation and perception of preparedness of graduate students in teaching and extension. It also allows for a qualitative analysis of graduate programs to understand the intricacies of coursework, mentorship, and career preparation.

Oral Presentation
Faculty Support/Development/Mentoring

Insights Into Instruction: Unveiling Strengths Through Students' Eyes

Jessica Benson
Mississippi State University

Throughout their academic journey, students have the opportunity to learn from a multitude of diverse individuals, with teaching faculty and graduate teaching assistants (GTAs) being among the most common sources of learning. Educators play a significant role in impacting student learning, motivation, character development, and career readiness. Higher education places a clear emphasis on effective teaching, recognizing it as a cornerstone for student success. The purpose of this study is to explore undergraduate students' perspectives of teaching practices and characteristics of faculty compared to GTAs. Thirty-nine undergraduate students enrolled in agricultural leadership, education, and communication courses participated in the study (N=39). Participants reported having as few as one (n=2) and as many as 12 (n=1) courses with a GTA. Participants were asked to associate several characteristics and teaching practices to either faculty or GTAs. Participants ranked faculty as being more experienced (n=39), wise (n=37), intimidating (n=32), strict (n=31), confident (n =30), timely (n=30) and challenging (n=30). Whereas GTAs were seen as more personable (n=30), relatable (n=28), unprepared (n=28), tech savvy (n=28), open-minded (n=27), and approachable (n=27). Participants had mixed perspectives when it came to compassion, empathy, and enthusiasm of faculty and GTAs. Participants expressed appreciation for the understanding nature and communication streamlining abilities of GTAs, but recommended they be more prepared and confident in their teaching approach. While faculty members were valued for their knowledge and resourcefulness, improving approachability was recommended. Participants found faculty teaching more satisfying than faculty experiences, whereas for GTAs, overall experiences were more satisfying than their teaching. This study provides insight on students' perspectives, preferences, and expectations regarding the instructional approaches utilized by both faculty and GTAs. It offers a glimpse into what aspects of teaching styles students value, thereby guiding potential improvements in our role as educators.

Oral Presentation
Global Education

Science Across Borders: A Virtual Exchange Project to Make International Experiences More Accessible to Students

Anthony Auletta
University of Florida

International learning experiences, such as studying abroad and global service learning, can be immensely impactful for students. However, it can be challenging to provide similarly meaningful international opportunities for students who don't have the funding or flexibility to travel abroad. To address this need and help make high-impact global experiences accessible to all students, I have developed a semester-long virtual exchange project (Science Across Borders), which is embedded in a course-based undergraduate research experience (CURE) that I teach at the University of Florida. Through this project, students connect virtually with entomology researchers from around the world to learn more about the global extent (and importance) of insect research and the process of collaborating across international borders. Students then use these interviews to reflect on benefits, challenges, and opportunities in global research. To date, this project has connected a total of 187 students with 47 researchers from 29 countries across 6 continents. I will present quantitative and qualitative data that we've collected on the outcomes of this project, showing that it allows students to experience many of the same benefits of a study abroad program without leaving their home campus. Specific gains from the project include an increased understanding of other countries and cultures, enhanced cross-cultural communication skills, practice in active listening, self-awareness, and reflection, and more. Based on student feedback, this project has also inspired students to consider internationally-focused careers in the future and helped foster a better appreciation for science as a global enterprise. I will also share my approach to designing, implementing, and assessing the project, as well as provide resources for educators who are interested in incorporating virtual exchange into their own courses.

Oral Presentation
Curriculum Development/Design

Cultivating Change: Plowing Through Traditional Agribusiness Management Education

Chelsea Arnold
West Texas A&M University

Junior and senior level agribusiness courses are often strongly focused on the preparing of students for entrance to their future careers. This project presents an explanation of the restructuring of the course Advanced Agribusiness Management, a senior level course. It was restructured from the conventional pedagogical methodologies to embrace an innovative approach centered around experiential learning and building a classroom community of peers. Historically, this class and its lectures with PowerPoint slides, quizzes, and exams were the foundation of the course with one end-of-the semester group project; while students still succeeded in this format, a new approach was introduced.

In this restructured course, every class meeting was based on interactive activities, small and large group discussions, casual debates, and mini case studies to engage students and allow them to connect to the material both on a personal and professional level. The shift in focus was a deliberate move to bridge the gap between theoretical knowledge and practical application, aligning the learning process with the complexities and intricacies of the agribusiness industry. The absence of traditional PowerPoint lectures, quizzes, and exams allowed for a more fluid and dynamic learning environment. Daily, students were actively involved in applying advanced concepts to authentic agribusiness challenges. Allowing students to focus on their collaborative and problem-solving skills, preparing them for the demands of careers in agribusiness sector.

This project will showcase the innovative instructional strategies employed, illustrating how each class session became a forum for hands-on learning experiences and include commentary from previous students that participated in the class and are now in their career fields. Attendees will gain insights into the benefits of this learning approach, including increased student motivation, improved retention of knowledge, and enhanced readiness for real-world agribusiness scenarios.

Oral Presentation
Faculty Support/Development/Mentoring

Lessons Learned in Developing a Discipline-Specific Faculty Learning Community

Monica VanKlompenberg
University of Maryland, College Park

Many Animal Science faculty members receive limited training in curriculum development and student-centered teaching pedagogies during their graduate training. Yet, they are expected to develop and teach undergraduate courses that receive positive student evaluations for their career progression. Studies have shown that student-centered teaching practices increase student learning, retention, motivation, and skill development. These approaches can improve the potential for success in the classroom for students from marginalized identities and first-generation students. However, faculty can be hesitant to try new approaches for various reasons. The presenter aims to highlight the lessons learned in developing a department-based Faculty learning community focused on teaching practices to enhance student learning outcomes in one department. The Animal Science Faculty Learning Community was established at a Land Grant Institution in the 2023-2024 academic year. Members of the community included both professional-track instructional faculty and tenure-track faculty. Participation in the group was voluntary for all participants. The presenter will discuss the approaches taken during the year, modifications made, and future ideas related to establishing and maintaining the community within the department. The group varied their approaches during the year, including activities such as reading and discussing journal articles, informal discussions based on current classroom scenarios, and member-led tutorials on different teaching approaches. The presenter also plans to highlight some of the success stories of participants in the group. Lastly, the presenter will share ideas about how to start your own discipline-based faculty learning community.

Oral Presentation
Curriculum Development/Design

Developing Cross-Disciplinary Competency through Collaborative Research

Mary Brakke
University of Minnesota

Once the domain of individual researchers, science is now primarily a team enterprise. Small and large teams of researchers from multiple and often disparate disciplines are the drivers of knowledge and innovation. Teams that seek to address complex, real-world issues frequently involve collaboration among researchers from different disciplines as well as partnerships with stakeholders in diverse sectors of society. As part of a NIFA-funded Coordinated Agricultural Project focused on developing pennycress as a novel cash cover crop with economic and ecosystem benefits, we designed a 10-week internship program to prepare students for collaborative, cross-disciplinary research. Project collaborators included researchers at four different universities and one private enterprise in the Midwest. Students completed research projects with one of the following project research teams: plant genetics and breeding, ecosystem services, agronomy, supply chain management, or education/outreach. In addition to completing discipline-specific research projects, students attended talks given by researchers on other teams and regularly interacted with students working with other research teams. We used a mixed methods approach to assess program impacts. Pre- and post-internship surveys provided a subjective assessment of students' research competency and confidence in conducting research. Student interviews were conducted 6 months after students completed the internship program. Recorded interviews were analyzed for emergent themes related to research competency, recognition of disciplinary approaches to research, interdisciplinary collaboration, and skills and abilities important to collaboration. Students reported gains in more than a dozen different research-related activities in which they participated. Student responses suggest that novice researchers gain some awareness and appreciation of differences in research approaches among disciplines as well as skills and abilities important for collaborative, cross-disciplinary research.

Poster Presentation Abstracts

Poster Presentation
Discipline-Specific Teaching/Classroom

Dog Days of Teaching Finance: Student Perspectives of Canine in the Classroom Learning

Joey Mehlhorn
University of Tennessee Martin

Many students struggle with academic anxiety. Previous research documents the calming influence of animals, and some universities utilize therapy dogs for student mental health care. Over six hundred business students are surveyed to quantify student perceptions of animal interactions in the classroom. Students are surveyed over eleven semesters in three different upper-level finance courses and divided into two matched samples based on academic characteristics. One group interacts with an Australian Shepherd prior to exams, and one group does not. Interactions include treat-based training, brushing, and observation based on student choice. Student perceptions of animal interaction are surveyed in the classroom pre-and-post exam and interaction. Over 75% of students find value in animal interactions. Students note value as reduced anxiety, increased confidence, reduced stress, and increased enjoyment of class material. Over 90% of students in the interaction group feel animal interaction increases exam performance and increases comfort with material. Student perception of classroom animal engagement may differ among student subgroups. When student responses are separated by GPA, 99% of students with a GPA below 3.00 feel animal interaction improves exam grade, compared to only 65% of students with a GPA of 3.00 or above. This 34-percentage point difference is significant at the 1% level. Students with a GPA below 3.00 indicate higher levels of exam stress and grade anxiety than students with a GPA of 3.00 or higher (using a self-reported scale of one to ten), highlighting that animal interaction is more beneficial to students with lower grades and higher levels of anxiety. Similar evidence is found by grade year; a larger number of sophomore and junior students (94%) find the interactions beneficial to overall performance compared to senior students (69%). Results show the importance of addressing student stress management and using creative solutions, like therapy dogs, to improve student performance.

Poster Presentation
Community-Based Learning/Extension

An Agricultural Study Tour Increases Middle School Social Studies Teachers' Agricultural Knowledge and Instructional Practices

Joseph Donaldson
North Carolina State University

The Studies of Occupations, Culture, and Innovations toward Agricultural Literacy (SOCIAL) initiative is a collaboration of faculty from two colleges of agriculture. The SOCIAL goal is to support middle school teachers in becoming better-informed food and agricultural advocates who will foster student career interests across agriculture and the allied sciences. Middle school is a particularly important time for youth to explore careers, build self-awareness of occupational interests, and set academic and career goals. SOCIAL provides professional development for South Carolina's eighth grade social studies teachers to integrate agriculture into the history curriculum. As a part of this initiative, 13 teachers engaged in a SOCIAL Studies Academy "" a statewide tour of the Clemson Research Education Center (REC) System highlighting agricultural faculty, history, modern technologies, and career opportunities. After the tour, participants were surveyed using a retrospective post-then-pre assessment of knowledge, instructional practices, and personal practices in the food and agricultural sciences. More than 70% of teachers reported gaining knowledge in precision agriculture, integrated pest management, turf production, and agricultural research. Regarding instructional practices, all teachers reported their intentions to provide agricultural resources to students and encourage students to consider agricultural careers. Notably, none of the teachers reported these practices prior to the tour. To a lesser extent, teachers reported that the tour prompted them to adopt personal practices such as shopping for locally grown food and producing their own food. The overall findings demonstrate that the tour was an effective method for increasing awareness of agricultural career opportunities among the teachers, and the REC System is an important continuing education tool. Key recommendations from the teachers for future professional development were to: (a) provide more extensive marketing to attract additional teachers to the program, and (b) engage science and agricultural teachers in building local support for agricultural career exploration.

Poster Presentation
Inclusive Pedagogy/Andragogy

A Forestry Camp for Young Adults with Special Needs: Reflections and Lessons Learned

Carolyn Copenheaver
Virginia Tech

In June 2023, a forestry camp intended to provide campers with job skills and increase their knowledge about forests was held for campers with special needs. What made the camp especially unique was that counselors also had special needs. The objective of this study was to examine the experiences of the camp directors and camp counselors. The camp was preceded by eight months of planning by the camp directors and a four-day training for the camp counselors to prepare them to help teach campers about forestry. The five-day forestry camp included tree identification, meeting and learning about different animals, working with plants and freshwater macroinvertebrates, visits with practicing forestry professionals, and field trips to a greenhouse, deer research facility, horticultural research facility, and Christmas tree farm. Camp counselors participated in a post-campus focus group and the camp directors reflected on the experience by journaling in response to several question prompts. The camp counselors reported that they gained confidence in their ability to be flexible with last-minute changes in the planned agenda and highly valued the experience of working as a member of a team to accomplish a large, complex task. The camp directors reported a high level of personal satisfaction with working on a team with individuals with special needs and found that the counselors were skilled at gently guiding the campers towards a successful camp experience, e.g., “She [the camp counselor] was far braver than I was at directly confronting and correcting poor behavior.” Considering the age levels of campers with special needs was found to be important when providing outdoor learning experiences with maximum impact. Overall, the forestry camp was an outstanding opportunity for a diverse team to create a successful educational experience for campers and counselors with special needs.

Poster Presentation
Curriculum Development/Design

From Sidecar to Foundation: A DEI Curriculum to Ground Exploration of the Environmental Conservation Field

Nina Morales
University of Florida

The UC Santa Cruz Doris Duke Conservation Scholars Program (DDCSP) is an immersive undergraduate field program designed to address the underrepresentation of people of color in environmental conservation. This project, funded by an APLU Innovative Teaching Award, created an innovative set of educational modules for use during the program's orientation that examined current and historical factors influencing the interaction of marginalized communities such as indigenous and communities of color with the natural environment, including natural resource management decision-making structures and develop skills for these students to have thoughtful discourse with peers and colleagues about these topics. The intent was to integrate diversity, equity, and inclusion (DEI) concepts into the fabric of the DDCSP rather than presenting it as a separate content area. Overall, we found that scholars responded very positively to the program and showed strong interest in using their position as DDC scholars and their life experiences to address DEI issues to impact and improve the conservation field.

Poster Presentation
Student Support/Development/Advising

First-Generation College Student Academic Experiences During COVID-19 Transitions

Aaron Giorgi
West Virginia University

Research has laid the case that First-Generation college students (FGCS) experiences in college are different than continuing-generation (CGCS) peers. Pre-college entrance variables, college engagement variables, and college success and outcome variables all favor CGCS leading to defining FGCS as an at-risk population within colleges. Research has documented FGCS deal with identity diffusion as they enter college. FGCS also lack familial cultural capital that would prepare them to navigate the complex college experience. Consequently, FGCS typically do not build positive support networks or seek appropriate help when needed to successfully navigate collegiate academic situations. Due to the COVID-19 pandemic, colleges implemented safety policies that moved delivery of instruction and services to remote, and digital methods. Many students returned home during this time. For FGCS this typically meant re-entering a world they left when moving to college. A year later, these same colleges reopened in person campus activities. The purpose of this qualitative study is to explore how FGCS variables of student identities, college engagement strategies, and abilities to leverage support networks changed in response to colleges transitioning to various delivery methods in response to the COVID-19 pandemic. One-hour interviews using a pre-designed, semi-structured interview protocol were conducted with students at West Virginia University in the Davis College of Agriculture, Natural Resources and Design. Population was defined as FGCS who were enrolled for at least one semester prior to COVID-19 policy enactment to ensure they could speak to the multiple transitions into, and out of, on-campus learning. Researchers concluded the following: (1) participants developed unique strategies to leverage non-traditional supports; and (2) FGCS espoused an identity tied to practical collegiate outcomes. Continued exploration of post-COVID experiences of new undergraduate FGCS who experienced at-home learning during high school is warranted to develop and leverage campus support systems.

Poster Presentation
Community-Based Learning/Extension

Contract Grading: Does it Produce Equitable Learning Outcomes?

Logan Britton
Kansas State University

Student engagement has been an important priority of instructors and shown to enhance student learning. In other academic disciplines, such as English, psychology and management, contract grading has been used as an avenue for student assessment. With contract grading, students agree to a set of activities or requirements for their grading criteria. This assessment technique has been shown to focus more on learning and less on the outcome. In a senior-level agricultural finance course at a land-grant university, around 40 students across two semesters were assigned a case study assignment to further develop their critical thinking skills. This assignment required students evaluate an investment decision by analyzing the financial, management and marketing aspects of the same agribusiness with a group of their peers. A portion of the students' grade for the case study assignment were allocated to their level of engagement in accomplishing the case study. Student groups were randomly assigned to either peer-grading or contract grading for this engagement score. Students were given pre- and post-test surveys to assess knowledge gained from the case study as well as gauge perceptions of their learning experience. Using analysis of variance methods, the data are analyzed among treatment groups. Initial results show that students in contract grading groups enjoyed the experience more as well as performed better on their post-test assessments. Further analysis will examine the difference in overall score on the case study, individual contribution to the assignment, perception of teammates' contributions, and fairness of engagement assessment methods.

Poster Presentation
Student Support/Development/Advising

Influence of Pandemic and Academic Major on Undergraduate Agricultural Internship Selection

Karen Bennett-Wimbush
Ohio State University Agricultural Technical Institute

Internships provide valuable learning and career opportunities to undergraduate students. Selection of an industry internship is influenced by many factors including compensation, perceived value and location. Our objectives were to evaluate the influence academic major, internship location (travel distance from home address to internship site = DIST), and COVID-19 pandemic had on internship selection by undergraduate agriculture students. Data from 2016-2013 were collected from internship agreement forms (n = 400) and recorded in Excel. Data included: period (categorized by PreP = 2016-2019, P = 2020-2021 and PostP = 2022-2023), major, degree (Associate of Applied Science vs. Associate of Science), type of internship, student's hometown, and internship location. Shortest driving distance in miles and time from students' home addresses to their internship was determined using Google Maps. Differences in DIST between main effects (major, period) and interactions were evaluated with Tukey-Kramer test (ANOVA, SAS). Differences in frequency of out-of-state (OSI) comparing PreP vs. PostP was evaluated by generalized linear model (GenMod). DIST was different between majors ($P < 0.0001$) but not between periods or degree. Turfgrass and equine majors participated in internships further from their homes ($P < 0.05$) compared to Greenhouse, Crop, Business, Power Equipment and Landscape majors. LS mean differences in DIST for PreP, P and PostP were 34.1, 39.4 and 34.5 miles respectively. OSI were different between majors ($P < 0.001$) and ranged from 7.5% (Business) to 34.0% (Equine). Overall there were no differences in the frequency of OSI (PreP = 15.1% vs. PostP = 21.3%), however, when evaluated by major, frequency of OSI was higher ($P < 0.01$) PostP compared to PreP for beef (12.2 vs. 50%) and equine (31.4 vs. 36.4%) majors. Students' majors appeared to have the greatest influence over internship locations while lifting pandemic restrictions may have increased adventure seeking in some students.

Poster Presentation
Community-Based Learning/Extension

Influences of Participation in Sustainable Fashion Workshop on Secondary Student's Knowledge and College Going Intentions

Aaron Giorgi
West Virginia University

Production of apparel for Fast Fashion enterprises has been documented as a resource intensive and environmentally unfriendly industry. To increase pressure to change practices, many counter movements developing sustainable production practices have emerged. Fashion programs associated with colleges of agriculture are beginning to explore and research sustainability driven production methods through agriculturally centered lens. While positive efforts have been made to re-shore domestic Textile and Apparel Industry (TAI) jobs in the United States, the return has been slow. Dissemination of practices into the workforce for utilization, coupled with increasing recruitment efforts targeting youth to become the next industry leaders will be key for the sustainability movement to retain efficacy. We sought to explore the impacts of a traditional extension workshop model for dissemination on knowledge change and influences on academic plans of high school students related to fashion and textile industry careers. Study was guided by Azjen's Theory of Planned Behavior, whereas influencing knowledge and intentions can have downstream effect on outcome behaviors. Participants (n = 13) were high school aged children who were attending a state level, agricultural youth organization competition who self-selected to participate in a sustainable dyes workshop. Participants in the workshop were surveyed asking them to describe their level of knowledge change and influence on potential future career decisions related to participation in the workshop. Participants reported the workshop strongly increased their level of knowledge about sustainability practices in TAI ($\mu = 4.31$) and relationship of TAI to agriculture ($\mu = 4.23$). Participants reported neutral feelings about influence on likelihood to pursue a career ($\mu = 3.38$), major ($\mu = 3.38$) or courses ($\mu = 3.69$) in TAI. It was concluded a stand-alone workshop model can only influence knowledge about practices. Further work should be done to influence changes in the practices and workforce recruitment efforts.

Poster Presentation
Student-Support/Development/Advising

Using Mentors to Support Undergraduate Student Career Development

Joey Mehlhorn
University of Tennessee Martin

An interdisciplinary capstone course was developed in Fall 2020 to increase preparation for agribusiness and finance students entering their respective professions. Agribusiness and College of Business faculty joined to create and teach a course that seeks to develop professional skills among students to increase confidence in their emotional intelligence and networking skills as they prepare to enter the workforce. In the Fall 2023 semester, instructors added a mentoring component for students in their desired career field. Based on student's career goals, mentors were solicited and paired with students based on faculty knowledge of the mentor and student's aspirations. This was a discussion process between faculty and student to try to find the best fit. Students (n=22) were surveyed at the end of the semester to determine the mentoring program's effectiveness and to make improvements for future classes. Using a rating scale of extremely satisfied (5) to extremely dissatisfied (1), students rated the overall experience with the mentor positively with an average of 4.05. Students responded to a series of open-ended questions related to expected goals of the mentorship process; expectations that were not met; most important thing they learned from mentor; and ways for faculty to improve the experience. The open-ended questions provided meaningful feedback for improvement. Specifically, most students preferred having the mentor selected by faculty based on their career goals and resume. Students also suggested more mentor reflections, minimum required meeting times with mentors, and possibly have mentors come to class as speakers. Overall, faculty plan to make modifications and continue the mentoring program for future classes.

Poster Presentation
Curriculum Development/Design

Innovative Pedagogy in Agri-food Systems: Cultivating Knowledge, Skills, and Attitudes through a Hybrid, Flipped-Classroom Approach

Jonathan Watson
University of Florida, Department of Agricultural and Biological Engineering

This study introduces a transformative pedagogical approach in AOM4060/6061: Agri-food Systems Innovation, a dual-listed, partially flipped, hybrid course recognized as a UF+QM Exemplary Course. This course is designed to nurture comprehensive student learning outcomes in the agri-food systems domain, anchored in an interdisciplinary, reverse-chain perspective of the food system. It interweaves principles from business, technology, food safety, management, and food policy, providing a holistic grasp of the dynamic agri-food landscape. Central to the course are real-world case studies, enabling students to apply theoretical knowledge to practical contexts. Live polling encourages active participation, nurturing critical thinking skills and serves as formative assessments. The Food Product Concept Development Project, a distinctive group assignment, leverages creativity (and an available 3D printer to materialize innovative food products), underscoring the tangible impacts of innovation within the agri-food sector. To bolster this project, students engage in weekly activities meticulously designed to deepen their understanding of course materials and their direct relevance to their product concepts. This mixed methods study incorporates a retrospective pre and post questionnaire to comprehensively assess changes in students' knowledge, skills, and attitudes towards agri-food systems innovation. Quantitative data quantifies shifts in these domains, while open-ended questions provide qualitative insights into participants' perspectives and experiences. Initial findings indicate that this pedagogical approach not only deepens comprehension of the intricate food system dynamics but also equips students with practical tools to drive innovation in the agri-food industry. This research contributes significantly to the discourse on instructional effectiveness and innovative teaching methodologies in agri-food systems education. The results hold valuable implications for educators and stakeholders seeking to enhance students' educational experiences and future career trajectories in this vital field.

Poster Presentation
Discipline-Specific Teaching/Classroom

Use of an AgSTEM Issues Café to Provide Experiential Learning Around Skills for Honest Collaborative Dialogue, Stimulation of Creative Thinking and Ag Issue Knowledge Acquisition

Don Mulvaney
Auburn University

Despite positive evidences, animal agricultural production (AG) is challenged by a gap of understanding between non-AG and AG-segments of society widened by messaging about negative impacts on environment, animal wellness and health perspectives of meat. While coursework and lab experience strengthen workforce ready hard-skills plus factual and applicable knowledge, many students lack skills and abilities to effectively communicate their knowledge. An 'AgSTEM Issue Topic World Café' was designed to proactively encourage / facilitate knowledge acquisition along with engagement experience focusing on conversations about key topics of concern within contemporary animal-agriculture. Students were sent a QR code to a Qualtrics survey to register and be anonymously surveyed on knowledge of production practices and statistics in the animal industries. The event began 45-minute training by guest speaker from the Center for Beef Advocacy at NCBA. Key points included conversation skills and tips, and agricultural advocacy principles. Students then chose one of eight tables to start the first round of discussion. Each table had an ANSC grad student or a staff member facilitating table discussion. Topics included scenarios around horse slaughter, protein alternatives, animal welfare, and human diet/health nutrition. After about 15 min., students dispersed and rotated to a different table. Upon completion of a second round of discussion, a speaker from each table shared with the entire group their topic, the conversation that could stem from the scenarios listed, and useable talking points to share insightful and evidence-based information. Testimonials of students attending the event and a post-event survey provided a Likert scale and open-ended questions to enable sharing of opinions on their experience. Ninety-four per cent of respondents stated that 'they learned something`, 'improved perceptions' and that they thought 'the ideas and topics presented were interesting and applicable'. The model will be utilized in future experiential learning programming.

Poster Presentation
Discipline-Specific Teaching/Classroom

Evaluating Student Stress in an Animal Science Course With Unsupervised Livestock Experience

Drew Lugar
Illinois State University

Animal Science demographics are shifting from students that come with an abundance of experience, to students that do not have any prior animal experience. It is important to note the present student demographics, could be impacting student mental health. In a semester long Parturition Management course, students attend overnight, unsupervised shifts during the birthing process of sheep, cattle, and pigs. Throughout the course, physiological measurements via heart rate variability (HRV) and psychological stress data via Perceived Stress Surveys (PSS) were collected, along with student demographic and background data. Both units of stress data were compared back to baseline measurements taken on campus during the daytime to quantify the stress caused by the class. Heart rate variability did not differ in this study ($P>0.15$) in all of the demographic variables measured. The data analysis showed that students had the highest level of change in PSS (cPSS) in lamb watch, the first species of the class ($P<0.01$). Students that had expert level experience had the greatest cPSS among all other levels ($P<0.01$). They also showed that, ethnicity, academic sequence, and hometown population played a role in how high cPSS was. These findings may be due to self-reporting of their prior animal experience, which may have resulted in bias towards their true experience level. It is possible that this study needs to be completed in the introductory level course that has students' first collegiate interaction with animals, to capture their initial college stress levels associated with animals. However, the physiological stress results showed no significant differences among the demographic categories, or the species measured. This is likely due to the timing of the course taking place overnight because it is suggested that heart rate variability measurements are most accurate when taken in the morning.

Poster Presentation
Discipline-Specific Teaching/Classroom

Urban Agriculture: Trends in Course Enrollment 2021-2024

Bob Williams
Texas A&M University-Commerce

Urban Agriculture is a required, junior level course for the major in Sustainable Agriculture and Food Systems that was approved in 2020. The course is offered each spring semester in an online, asynchronous format. It is open to any major as an elective course. This presentation will focus on the overall enrollment trends regarding total enrollment, as well as enrollment by major for the years 2021, 2022, 2023, and 2024. Data analyzed for this presentation included enrollment and student majors as reported on the detailed class roster for each year. Nominal data consist of majors represented in the course each year including Agricultural Sciences, Agribusiness, Agricultural Leadership, Education, and Communication (combined), Animal and Equine Sciences (combined), Ornamental Horticulture, Sustainable Agriculture and Food Systems, and majors Outside of the College of Agriculture. Enrollment by major will be presented in frequency and percentage of total enrollment by year. The frequency of Sustainable Agriculture and Food Systems majors increased during 2022, remained the same in 2023, and increased slightly in 2024. The frequency of Agricultural Sciences majors declined each year. Majors (combined) outside of the College of Agriculture varied by year but represented more than 10% of the total enrollment, annually. Agribusiness majors represented 11% in the 2021 but made up 57% in 2024. Clearly, students are interested in the topic with total enrollment in the course growing annually. While required for a relatively new major, students in that major alone could not provide sufficient credit hour production to justify offering the course every year. However, the popularity of the course, as an elective is growing. This leaves us with an objective for further investigation, to determine if it is the popularity of content or course delivery format that makes it an attractive elective for non-majors.

Poster Presentation
Discipline-Specific Teaching/Classroom

Perceptions of Anaerobic Digestion Lecture and Laboratory Exercises by Horticultural, Renewable Energy, and Environmental Health Students

Liangcheng Yang
Illinois State University

Anaerobic digestion (AD) is the decomposition of animal, crop, and food waste by microorganisms in sealed vessels or digesters which capture produced biogas as a renewable energy source while recycling nutrients. AD information was incorporated into lecture and laboratory components of Environmental Health Practices, Fruit & Vegetable Production, Organic Crop Production, and Renewable Energy and Agriculture courses at Illinois State University with the objective of enhancing instruction of sustainable waste and energy management. After IRB approval (IRB-2022-58) students completed a pre-learning survey prior to instruction. Students also rated their attitudes and perceptions of waste management, the environment, and climate change. After completing the pre-learning survey, students participated in AD lecture and laboratory exercises with hands-on activities. Students completed a post-learning survey measuring the same metrics. Fifty-nine students in five courses completed the surveys from Spring 2022 to Fall 2023. Student demographics were 81.4% male/16.6% female and 75% white or Caucasian/25% African American, Hispanic, or Asian. Pre-survey knowledge of bioenergy was 1.66 on a scale of 0=no knowledge to 4=excellent knowledge. Pre-survey knowledge of AD including feedstocks used, operation, applications, and products produced were all less than 0.9 on the same scale. Post-survey knowledge of bioenergy (2.67; $P \leq 0.001$), AD (2.83; $P \leq 0.001$), feedstocks (2.85; $P \leq 0.001$), operation (2.76; $P \leq 0.001$), applications (2.76; $P \leq 0.001$), and products (3.01; $P \leq 0.001$) all increased. Student concern about climate change remained unchanged from pre- to post-learning (3.27 and 3.31, respectively; $P=0.453$) on a scale of 0=not concerned to 4=extremely concerned. Students also identified the importance of hands-on learning both pre-learning (3.51) and post-learning (3.74) and this remained unchanged ($P=0.072$). Student participants increased their knowledge of AD after instruction, placing a high value on hands-on learning. Anaerobic digestion may be a valuable addition to horticulture and agriculture curricula as sustainable waste and energy management increases in importance in specialty crop production.

Poster Presentation
Curriculum Development/Design

Exploration of College Students Self-Regulated Learning Experience Using Interactive Notebooks in an Introductory Plant Science Course

Jeneen Fields
Purdue University

A self -regulated learning (SRL) experience is an approach whereby students take control of their learning by incorporating motivation, action, and metacognition into their learning process. Self-regulated learning is considered one of the most effective ways to learn and an influential factor in college student success. However, studies on self-regulated learning have been limited within university settings. We used data collected from students in an undergraduate introductory plant science course to explore student experiences when using interactive notebooks and their description of the role interactive notebooks play in informing their self-regulated learning. Data was collected through semi-structured interviews. Using cognitive constructivism theory, the study revealed that interactive notebooks can be used to inform students self-regulated learning practices through learning material review, search for more information related to the learning materials, and in discovery of their most effective learning styles preferences. The findings highlight that students benefit from interactive notebooks through individual reflection on the learning materials. Given the continuum of information on student processing capabilities, there should be additional exploration of learning strategies needed to accommodate a wide range of student needs and preferences.

Poster Presentation
Curriculum Development/Design

Implementing Agricultural Literacy in Pennsylvania Elementary and Middle Schools: Perceptions of Principals

Kevin Curry
The Pennsylvania State University

From the beginning of the Industrial Revolution, the U.S. has witnessed a dramatic shift in individuals engaged in production agriculture. Subsequently, citizens have moved from rural to more urban areas. Consequently, our population has become detached from its food and fiber systems, exacerbating an employment gap in the agricultural workforce. Exposing youth to agricultural literacy in elementary and middle schools could lead to an interest in agricultural careers, mitigating an impending employment shortage. The purpose of this study was to (1) ascertain principals' perceptions of agriculture and implementing agricultural literacy in their schools, (2) identify principals' perceived barriers to implementing agricultural literacy, and (3) determine the likelihood that principals would advocate for the implementation of agricultural literacy. This quantitative study yielded 283 responses from public school principals of grades K-8 in Pennsylvania, with results indicating that (1) principals hold positive perceptions of agriculture, (2) principals believe that agriculture can be implemented in their schools, (3) principals are likely to advocate for the adoption of agricultural literacy in their schools, and (4) principals' top perceived barriers to implementing agricultural literacy are lack of training, increased accountability through standardized testing, lack of time for teachers to learn about agricultural literacy, and lack of funding, respectively. With these results, state staff can leverage principals' positive perceptions of agriculture and the likelihood of advocating for its adoption by approaching schools to offer agricultural literacy implementation support. Widespread adoption of agricultural literacy in public elementary and middle schools could help lead to more interest among youth to pursue agricultural-related careers.

Poster Presentation
Technology in the Classroom

Cultivating Knowledge: Assessing the Impact of Virtual Reality Greenhouse Tours on Perceptions and Learning Outcomes in Agricultural and Natural Resource Communication Classes

Gabriel Spandau
University of Florida

As agricultural researchers at land-grant universities study unique crops increasing in popularity, science communication courses should also prepare students to explore the crops alongside scientists. Hemp, hemp products, and professional development events focused on careers in hemp have gained attention in recent years (Kim & Mark, 2023; Rampold et al., 2021; Colclasure et al., 2023). Similarly, kratom is gaining attention as reports of people using and growing this medicinal plant in the U.S. are on the rise (Covvey et al., 2020). One way for science communication educators to introduce students to the spaces where scientists research these commodities is through virtual reality (VR). VR can immerse users in a vicarious world and introduce them to content and a setting they may not have otherwise visited (Chițu et al., 2023; Makransky & Mayer, 2022; Zhao et al., 2023). Three universities across the U.S. are collaborating to explore the educational value and to understand student perceptions of VR regarding agricultural and natural resource educational areas when implemented in undergraduate college classrooms through [Masked Project Name], funded by the USDA. We created a tour of the [Masked Research Center's] hemp and kratom greenhouses at [Masked University Name] and tested these as a case study in two agricultural and natural resources communication courses (n = 30). We used a post-retrospective survey with Likert scale items, bipolar sentiment items, and open-end qualitative questions about learning to examine research objectives of VR tour impacts on: 1) awareness of hemp and kratom research at a land-grant university, 2) perceptions of hemp / kratom, and 3) content knowledge gain. The presentation will include an overview of this project, showing the tour, a description of how it was made with a lesson plan, survey results, and recommendations for future perception research and VR tour usage.

Poster Presentation
Curriculum Development/Design

Examining the Impact of Creative Writing Assignments in the Agricultural Classroom

Anthony Delmond
University of Tennessee Martin

Writing is an invaluable teaching tool, allowing students to incorporate, fortify, and apply the knowledge they gain in the classroom to real-world situations. Unlike their contemporaries in the humanities, agriculture students tend to be wary of writing assignments, often preferring fact-based multiple-choice or true/false assessments; however, writing remains a crucial component of professional communication in agricultural businesses. Recognizing the dual importance of writing as a learning tool and as a professional-development necessity, and others have developed the novel approach to incorporate creative writing into the science classroom. Following their lead, I have developed a semester-long, scaffolded creative-writing alternative to the conventional paper in a lower-division agricultural business course. To determine the efficacy of the assignment and its impacts on student learning and information retention, I ran two treatments in separate semesters. In the first treatment, students randomly received one of two prompts ”“ a traditional research paper or an open-ended creative writing assignment. In the second treatment, students were given a choice. For both treatments and both prompts, there were multiple benchmarks to keep students on track. Preliminary results have been encouraging. Controlling for several key demographics and other variables, the group with the creative writing prompt in the first treatment did not perform statistically differently on the final exam than the group assigned to the conventional paper. Results for the second treatment are forthcoming. Initial student reaction to the project was tepid, but upon completion, student surveys indicated openness to this approach, as long as students had the option to select their treatment. The long-term objective is to encourage student engagement and facilitate deeper learning through the employment of more flexible methods and allowing students to take a more active role in their learning experience.

Poster Presentation
Community-Based Learning/Extension

ASPIRE-ing Diverse Undergraduates to Pursue a Career Path in Agriculture

Angel Cruz
North Carolina State University

Climate change, food insecurity, and environmental degradation are complex challenges that require innovative and interdisciplinary approaches to research and education. In addition to attracting and training more students to agricultural careers, there is a need for targeted recruitment of under-represented groups. To meet the demand for skilled professionals and increase minority participation in the agricultural workforce, NC State University developed the Agroecology Scholars Program In Research and Extension Internship (ASPIRE). The goal of this research was to evaluate the learning and the potential impact on long-term plans of the participants. The research consisted of descriptive surveys conducted with 36 students who completed the program. We used one group pre-test and post-test design to collect program outcome data. Survey instruments consisted of 5-point Likert scales to document participants' perceived knowledge about careers available in agriculture and knowledge gains. We included participants' intended career choice changes, skill and knowledge changes, their level of satisfaction with the training, what they like the most, their suggestions to improve the program, most significant learning outcome, and one thing they plan to apply in their degree program at the post-test. More than 60% of participants were from underrepresented minority groups. Comparison of pre and post-tests confirmed that all participants increased knowledge and skills. Looking at potential practice changes, 73% of interns said they plan to seek future internships or other professional development opportunities to expand their agricultural knowledge and experience, whereas only 19% reported that they were already planning on this. Additionally, 54% of interns reported that as a result of the program they intend to pursue a career in agriculture. By engaging these diverse undergraduates in hands-on, cutting-edge agriculture and food systems research while providing structured professional development and mentorship, we have increased both student interest and capacity to pursue careers in agriculture.

Poster Presentation
Discipline-Specific Teaching/Classroom

Examining Animal Welfare During Student-Animal Interactions in a Post-Secondary Animal Sciences Curriculum Through Animal Behavior and Emotional States

Faith Oster
The Ohio State University

Animals are often used as educational resources in post-secondary educational settings across the United States, especially in animal science curricula. Yet, little is known about the impact of student-animal interactions (SAI) on the animals used as educational resources, specifically regarding the effect on their emotional states. Thus, this study aimed to evaluate the emotional states of the animals used as educational resources through measurements of behavioral responses observed during SAI. The two hypotheses tested were (1) the animals will exhibit negative emotional states when the interaction has a higher level of invasiveness and/or positive emotional states to non-invasive interactions, and (2) the animals will exhibit negative emotional states during nonfamiliar student interactions and positive emotional states during familiar student interactions. This study was conducted at The Ohio State University during Autumn semester of 2022. Animal species (n = 6) used as educational resources in animal sciences courses exhibited a higher frequency of negative emotional states the higher the level of invasiveness and positive emotional states during non-invasive interactions ($p < 0.05$). Moreover, animals exhibited a higher frequency of negative emotional states during nonfamiliar student interactions and invasive activities and a higher frequency of positive emotional states during familiar student interactions or less invasive activities ($p < 0.05$). In conclusion, animals exhibited more negative emotional states when the interaction was invasive and non-familiar students were present versus exhibiting higher levels of positive emotional states when the interaction was non-invasive and familiar students were present. Thus, indicating the welfare of the animals used during these courses could be enhanced by minimizing the number of invasive interactions, increasing the quantity of non-invasive interactions, and familiarizing the animals with the students. Overall, these findings indicate that the nature of the SAI influences an animal's behavioral responses.

Poster Presentation
Student Support/Development/Advising

Self-Efficacy of First-Year Students in an Animal Science Experiential Learning Program

Elizabeth Karcher
Purdue University

Experiential learning programs provide students with hands-on learning opportunities that promote professional skills, self-efficacy to complete tasks, and build confidence. In 2023, we introduced the REACH (Research, Engagement, Activity, Culture, Hen) Scholar program in animal sciences and selected five, first-year undergraduate students of diverse backgrounds. The goal of the REACH program is to develop leadership, professional, and intercultural skills within a poultry science context. Program highlights include peer-mentoring, extracurricular off-campus activities, and personal and academic support. The objective of this study is to determine the impact of the REACH program on the self-efficacy of the participants during their first semester at a Midwestern land-grant institution. Participant self-reported self-efficacy was assessed at the beginning and end of the Fall 2023 semester using the New General Self-Efficacy scale that was administered online via Qualtrics. This survey included eight questions on a 5-point Likert-scale ranging from strongly disagree to strongly agree. Although we did not observe significant differences in self-efficacy between the start and end of the semester, participants reported strongly positive overall feelings of self-efficacy. All students agreed that they could achieve most of the goals that they set for themselves, that they can successfully overcome challenges, and that they can perform well even when things are tough. Preliminary results provide insight into the impact a mentorship program like REACH can have on supporting participant self-efficacy. Future plans include continuing to engage students in this experiential learning program and continued evaluation of self-efficacy throughout their college career.

Poster Presentation
Discipline-Specific Teaching/Classroom

Grain Marketing Simulation Improves Students' Knowledge and Confidence

Maria Boerngen
Illinois State University

The objective of this pilot study is to assess students' perceptions of an online grain marketing simulation, and to measure gains in marketing knowledge and confidence from completing the simulation. Students enrolled in a senior/graduate-level futures and options course at Illinois State University complete a 36-day challenge in which they each manage a hypothetical 2500-acre corn and soybean operation through an entire simulated crop year from pre-plant to harvest, utilizing the online AgYield Simulator. AgYield generates reports including weather forecasts, planting progress and crop conditions, and other routine USDA bulletins, together with fluctuating crop prices and yield estimates, modeling the dynamic environment in which real farmers operate. Participants assimilate and apply this information to market their expected crop utilizing the grain marketing strategies that are the foundation of the course. Questionnaires were administered at the beginning of the project addressing students' prior experiences with class simulations, their level of comfort with online learning, and their real-world farming and grain marketing experience. The majority of participants did not grow up on a farm (78%), had no real-world grain marketing experience (78%), had completed one or two prior class simulations (89%), and were somewhat comfortable with online learning (67%). Post-project questionnaires addressed students' perception of AgYield and its impact on their grain marketing knowledge and confidence. 100% of participants enjoyed the simulation project, and 100% reported increased confidence in their ability to make marketing decisions. 100% of participants agreed or strongly agreed that they were more knowledgeable about several types of cash market contracts and hedging with futures contracts, with 90% agreeing or strongly agreeing that they gained knowledge in hedging with options. These results suggest that this hands-on application contributes to students' professional growth and mastery of course content. AgYield will be retained in the class, and data collection is ongoing.

Poster Presentation
Technology in the Classroom

Online vs. In-Person Attendance in a Sophomore-Level Hybrid Course

Jose Lopez
Professor of Agribusiness, Texas A&M University-Commerce

Students' motivation for optional in-person attendance in a sophomore-level hybrid course was analyzed. The students had the option to meet in-person Tuesdays and Thursdays throughout the semester, except for exam weeks where students had to complete exams online. The instructor lectured on Tuesdays, and had students do exercises and team activities on Thursdays. Students had to take quizzes and participate in discussions online once week. Video recordings were provided for lectures, exercise solutions, team activities, and review questions. Regardless of online or in-person, students had access to the same content. At the end of the semester, a survey was conducted using Qualtrics XM Platform „¢ for the students who attended online, while a printed version of the survey was delivered to the students who attended in person throughout the semester. A total of 35 students enrolled in the course, 29 attended online, and 8 students attended in person throughout the semester. Of the 35 students invited to take the survey, 29 responded. About half were transfer students and the other half were non-transfer, with 9 freshmen, 10 sophomores, 8 juniors, and 2 seniors. The study examined whether student classification, residency, employment, previous online experiences, class schedule, and other demographic variables played a role in attending in-person or online. Descriptive statistics and Pearson correlation coefficients were used to analyze the results. The results indicated positive linear correlation between attending in person and transfer, classification, dependents, and age. Research indicates an increased demand for online courses post the COVID-19 pandemic. This study identified characteristics of students who prefer to attend in person when in-person attendance is optional and also found that the majority preferred to attend online. The study serves as a venue for discussing trends in online teaching as well as sharing experiences.

Poster Presentation
Discipline-Specific Teaching/Classroom

Engaging Students in Diagramming

Jeanette Mary Andrade
University of Florida

Background
Traditional modalities to assess a students' comprehension of complex systems may be through an oral presentation and/or a written report. To further expand students critical thinking skills, comprehension, and technological skills, other methods such as diagrams may be used in place of the traditional oral and written modalities. This presentation will review the use of diagramming in agricultural classes, different software options, benefits and trade-offs in assessing student learning.

Methods
During Fall 2023 in two undergraduate courses "" "Agrotourism and Food Systems" and "Introduction to Food Systems", assignments were provided to students (n=77 and n=14, respectively), in which they had to represent their concepts of the food system, results from a food environmental scan and infographics using a diagram approach. Students were provided a small prompt for the assignments with no restrictions on the type of system to use to produce these diagrams.

Results
Students predominately chose Canva for these assignments in addition to PowerPoint and Plectica. From grading and reflection of the faculty, benefits of using a diagram approach allowed for students to visualize the complexities of the food systems and food environments, they engaged more senses, enhanced the technological and communication skills, diversified the student learner, and provided a broader diversity of perspectives. The trade-offs of using this approach were cost, limited clarity of student work if no written modality was provided/ required, technical skills of students varied and may not have increased from start to end of the course, and evidence of critical thinking skills varied dependent on the assignment/prompt provided to the students.

Conclusions
A diagram approach may be beneficial in aiding students' development of technical and critical thinking skills when discussing complex information. This approach can be applied in a variety of contexts and is strengthened by considering the student learning outcomes.

Poster Presentation
Faculty Support/Development/Mentoring

What is the Well-Being of Faculty Undergraduate Advisors in a College of Agriculture?

Lauren Lewis Cline
Oklahoma State University

The COVID-19 pandemic inspired researchers to study the well-being of students and faculty at higher education institutions. Few studies, however, focused on well-being of faculty undergraduate advisors (FUAs). Well-being is cited as a root cause for an exodus of higher education professionals. These professionals, including FUAs, are important to student retention. In colleges of agriculture (COA), FUAs can provide a connection to the agriculture and natural resources industry that students from non-agriculture backgrounds may often lack; but little is known about their level of well-being regarding this component of their faculty role. This study aimed to determine the well-being of FUAs at [COLLEGE] utilizing the Positive Emotions, Engagement, Relationships, Meaning, and Accomplishments (PERMA) model. The levels of each PERMA construct were tested to identify differences in self-perceived well-being between the roles of faculty member and FUAs in [COLLEGE]. A statistically significant difference was found between faculty's self-perception of well-being as a faculty member and as a FUA (P: $t = 5.76$, $p < 0.001$; E: $t = 5.81$, $p < 0.001$; R: $t = 5.16$, $p < 0.001$; M: $t = 3.89$, $p < 0.001$; A: $t = 3.99$, $p < 0.001$). FUA well-being averaged between 2.19 and 2.91 on a scale of 1 to 5 (P= 2.45; E= 2.19; R= 2.90; M= 2.51; A= 2.62), indicating a low level of well-being related to the role. Could the low level of self-perceived well-being by faculty members regarding their role as a FUA impact their job satisfaction and retention? We recommend COAs consider the influence of FUA well-being upon student-advisor relationships, and consequently, student retention. We recommend COAs develop advising models that benefit faculty and students, such as dual or supplementary models, allowing faculty to maintain vital relationships with students while also maintaining well-being in their faculty roles.

Poster Presentation
Curriculum Development/Design

The Role of Research: A Delphi Study Seeking to Understand the Role Research Hours Should Play in Agricultural Social Science Graduate Programs

Caitlin Lunzmann
University of Florida

Graduate programs typically allocate credit hours to complete academic research. However, the hours required vary and how faculty and students define and use those hours may not be consistent. The purpose of this Delphi study was to identify how faculty and students use research credit in both master's and PhD programs in an agricultural social science graduate program. Round one of the Delphi (Fall 2023) began with an open-ended question survey sent to all faculty (N = 33) and students (n = 109): to gather data on how they define, use, and place value in research hours. Thirty-four students and 16 faculty responded to the first round. The qualitative analysis revealed major themes from students and faculty in defining research hours as time spent conducting thesis/dissertation work, individualized application of research for skill development, and time devoted to high-impact research. Similar themes emerged regarding research expectations including the use of hours for conducting various parts of research projects, weekly meetings between students and advisors, and that the student and advisor should set goals for the hours at the beginning of the semester. Participants described research outputs broadly as progress on thesis/dissertation projects or other research deliverables, and publishable submissions. Other major themes from open-ended comments revealed students and faculty thought research hours need more rules/structure/options, research hours are critical in degree programs, and faculty and student expectations were disconnected. The required number of hours participants thought should be included in an M.S. ranged from 0-18 with the most common response 9-12. For a PhD, required hours ranged from 0-60 with no collective agreement. Results from round one indicates a need for continued consensus building around research hours within social science agricultural programs with a strong need for improved expectations for these hours.

Poster Presentation
Faculty Support/Development/Mentoring

Rooted: Training Faculty to Deliver a Cross-Curricular Integrated Agricultural Humanities Minor at a Liberal Arts Institution

Thomas Paulsen
Morningside University

[University] recently received a $150,000 National Endowment for the Humanities (NEH) Humanities Connections Implementation Grant which funded a three-year project titled Rooted: Integrated Humanities and Agriculture to establish an Agricultural Humanities minor. Faculty from the disciplines of agriculture, religious studies, philosophy, English, writing, and rhetoric came together to develop the project centered on the interrelation of humanistic inquiry with agriculture and food studies, culminating in the new minor. [University] is located at the crossroads of three states, where supplying the nation with food has been woven into the rural fabric for generations. Faculty training to implement the new minor was completed during the summer of 2023 with a week-long collaboratively planned and implemented faculty training workshop. Rooted in experiential learning theory, agriculture and humanities professors co-led learning experiences related to humanities-based pedagogical approaches (storytelling, textural analysis, historical pedagogy, cross-matching language, interpersonal skills, and question-asking) through applied experiences within agriculture (field trips to a family cattle operation, precision-focused agriculture operation, pork processing plant, and various activities on campus agricultural facilities (greenhouse, outdoor classroom, garden, and farm). Post-training faculty reflections supported high levels of interest, learning, and opportunities to integrate new pedagogies and contexts into their current and newly developed courses supporting the new Agricultural Humanities minor. This presentation shares information about the 2025 faculty development conference to be held at [University] as well as the challenges overcome and successes achieved through the collaborative project development and faculty training phases of the new minor's initial integration into the [University] curriculum.

Poster Presentation
Inclusive Pedagogy/Andragogy

Cultivating Classroom Community; The Power of Nameplates, Team-Building Exercises, Icebreaker Trivia, and GroupMe

Michael Mashtare
Penn State University

This study explores the impact of several community building approaches in the classroom, including (1) nameplates (featuring preferred name, pronouns, and hobbies), (2) trivia-questions generated from student icebreaker responses to segment lectures, (3) team-building exercises (e.g., games, solving puzzles), and (4) a class GroupMe. The first 2 approaches were used in 3 undergraduate courses in fall 2023: Soil and Water Management, Land Application of Waste, and Technical Communications. The third approach was used in the communications course, while the last approach was used in the Soil and Water Management course. End-of-semester anonymous surveys using a 6-point Likert scale and open-ended questions were used to assess student perceptions on classroom community and instructor approachability. Means for Likert scale responses (MR) were calculated on a scale of zero (strongly disagree) to five (strongly agree) to approximate strength of response with MR >2.5 suggesting agreement and MR < 2.5 suggesting disagreement. Responses, where applicable, are aggregated and while some variability was observed, trends were similar across all 3 courses. Of those responding about the first 2 approaches (n=88, 89% across 3 classes), students reported that the name tags helped them learn the names and interests of their classmates (86.4%, MR=3.47) while fostering community and a more collaborative environment (84.1%, MR=3.49). Students felt that the icebreaker and related trivia helped them connect and learn more about their classmates (93.3%, MR=3.91) and kept them motivated and engaged during class (95.5%, MR=4.34). Where deployed, students reported the team-building exercises was effective in helping build community (n=24, 95.8%, MR=4.38). The class GroupMe was also seen as being effective in fostering peer connections (n=37, 83.8%, MR=3.49). By understanding the impact of these approaches, instructors can strengthen classroom connections and ultimately improve the overall educational experience for students in diverse academic settings.

Poster Presentation
Discipline-Specific Teaching/Classroom

Timing is Everything: Deciphering the Impact of Abstraction Order When Learning with Film

Laura Greenhaw
University of Florida

The integration of film as a pedagogical tool in classrooms has long been acknowledged for its ability to provide learners with a vicarious experience, facilitating a connection between film and real-life scenarios (Champoux, 2005; Williams & McClure, 2010). Our research explored agricultural leadership learners' satisfaction with learning through film and their intent to model teamwork and leadership behaviors portrayed in the film, The Imitation Game. A multiple case study design explored similarities and differences between two sections of a team leadership course. One section applied an inductive approach while the other applied a deductive approach. Learner satisfaction was assessed by seven items measured on a 5-point scale (1 = strongly disagree, 5 = strongly agree). Learners' perceptions of modeling behaviors from the film were assessed through two additional items on the 5-point scale and an open-ended question on the final exam. Learners in both sections indicated overall satisfaction with the analysis assignment. Learners reported the approach was helpful (Mdeductive = 4.86, Minductive = 4.71), enjoyable (Mdeductive = 4.58, Minductive = 4.71), and motivating (Mdeductive = 4.61, Minductive = 4.71). Interestingly, learners' perceptions of modeling behaviors from the film, by themselves and their peers, was varied. Nearly 64% of deductive learners reported that they modeled behaviors while only 28% of inductive learners reported the same. Alternatively, 53% of deductive learners indicated their peers had modeled behaviors from the film, while roughly 43% of inductive learners indicated the same. Moreover, inductive learners tended to highlight behaviors of specific characters they would model, while deductive learners tended to identify general behaviors they would model from specific scenes in the movie. We recommend educators consider integrating visual media such as film to help learners comprehend complex topics. Research should continue to investigate whether and how vicarious learning leads to modeling of behaviors.

Poster Presentation
Community-Based Learning/Extension

Youth Urban Sustainable Agriculture Farming Entrepreneurship Program: An Overview and Pilot Results from Urban Farming Youth Initiative Summer Camp

Kathryn Orvis
Purdue University

Urban agriculture initiatives developed for youth have the capacity to motivate learning, include minority groups, and allow participation in activities that foster self-growth, community engagement, and entrepreneurship. This pilot study builds on a partnership between a midwestern university and the Felege Hiywot Center's (FHC) successful youth urban farming program, now focusing on how that programing could contribute to developing life skills, sustainable agriculture knowledge, and entrepreneurial skills. A mixed methods approach was utilized, including pre/post surveys, student presentations, and observations. Participants were twenty-eight high school aged youth, of which 91% self-identified as African American. Main foci of the project were participants' life skills, entrepreneurial skills and mindset, sustainable agriculture content, and community collaborations. Key findings from the summer pilot post survey (n=23) indicate that 48% of participants could define sustainable agriculture, 55% understood its significance to their community, and 52% recognized the advantages of crop rotation. Sixty five percent of participants could identify the three sustainability pillars: economics, environment, and social. The program's influence on participants' future plans was notable, with 52% experiencing a change in their outlook. This impact is attributed to the collaborative efforts of volunteers, professionals, sponsors, and the structured nature of the FHC program, which also emphasizes the importance of individual backgrounds. The potential to impact and enhance life skills, foster self-awareness, improving family communication, and opening avenues for future education and career opportunities will allow for a broader development and expansion of this project. This pilot contributes to the broader discourse on youth programs in urban agriculture by highlighting the integrative approach of experiential learning, farm-based education, and student-centered learning within a youth development framework. While early in the project, this pilot shows promise in underlining the critical role of urban agriculture programs in shaping the lives and future prospects of minority youth.

Poster Presentation
Discipline-Specific Teaching/Classroom

Breeding Unicorns: Overcoming Math Anxiety in an Animal Genetics Course

Todd Winters
University of Tennessee Martin

Animal Genetics is historically considered one of the more difficult courses for students in the Animal, Wildlife, and Veterinary Science curricula. The mathematical and statistical concepts of genetics are key reasons for these difficulties. To help students understand the mathematical concepts of animal breeding and genetics in a more enjoyable manner, a series of five interconnected homework assignments emphasizing traits in the mythical animal, the unicorn, were developed. Concepts covered included: dominant & recessive traits, effects of outbreeding and inbreeding on gene and genotypic frequencies in a population, test-matings, using breeding value estimations, population statistical calculations and estimations, and hybrid vigor estimations. Because math is emphasized in the homework assignment, exams and quizzes emphasize non-mathematical concepts of genetics rather than mathematical ones. Three separate classes over three semesters, totaling 73 students were asked to reflect on their experience with the five homework assignments. Results were: 83% gave a positive answer (strongly agree/agree) that the homework assignments helped them understand mathematical concepts of animal breeding and genetics (ABG); 65% positively answered that the assignments made learning ABG more enjoyable; and 97% liked the fact that mathematical genetic concepts were emphasized on unicorn homework assignments rather than quizzes and exams. Only 7% of the students preferred to have more mathematical genetics problems on the quizzes and exams. In summary, a semester-long interconnected homework assignment can make Animal Genetics a more enjoyable class, while learning the important mathematical concepts of animal breeding and genetics.

Poster Presentation
Technology in the Classroom

Byte-Sized Learning: Agricultural Students in the Online Mix

Patricia Cordero-Irizarry
Mississippi State University

This study explores students' perceptions of their online learning readiness, with a focus on interactions with in-person and online course formats, gender, and student classification level. Utilizing the Online Learning Readiness Scale (OLRS), which consists of computer/internet self-efficacy, self-directed learning, learner control, motivation for learning, and online communication self-efficacy, the research aims to understand students' perceived preparedness for the evolving online learning environment. The study was conducted with 79 undergraduate students in an agricultural education, leadership, and communication course offered in both online and in-person formats, from Fall 2023 to Spring 2024. Self-directed learning emerged as a perceived strength, while learner control was identified as a potential area for improvement. Gender differences were observed, with females scoring higher in self-directed learning, motivation for learning, and online communication self-efficacy. Additionally, the interaction between student classification level and course format significantly impacted scores for self-directed learning and learner control. These findings suggest the importance of tailoring online courses to address learner control issues, recognizing gender-specific needs, and adapting courses based on student level and delivery format. These considerations will help educators foster a more inclusive, effective, and supportive online learning experience for all students.

Poster Presentation
Curriculum Development/Design

Food Security Education: A Descriptive Exploration of Teaching Practices and Perceptions

Laura Rice
University of Minnesota

With 12.8% of U.S. households experiencing food insecurity in 2022, there is a need to explore and understand how AFNR teachers impart crucial global food security knowledge to students. This study describes educator current perceptions of food security education in [State's] Agricultural, Food, and Natural Resources (AFNR) secondary programs. Two objectives guided the study including understanding teachers' perceptions and practices as well as identifying educator professional development needs. Data was collected through an online survey and focus groups. Seventy-nine [State] AFNR teachers completed the survey providing demographic information, confidence levels in teaching food security related topics, and current practices. Seven [State] AFNR teachers volunteered to participate in a focus group to provide insights on teacher experiences, challenges, and existing practices around food security education. We generated descriptive statistics and used thematic analysis to identify, organize, and highlight patterns in the data. Findings emphasize the multifaceted instructional approaches teachers take to integrating food security education, including diverse resources, and engaging in professional development opportunities. Four themes emerged from the thematic analysis of the focus group. These themes include 1) Maintaining student interest, 2) Food security in other AFNR pathways and disciplines, 3) Barriers and Needs, and 4) Instructor motivators. Findings indicate a need for an accessible repository of instructional resources related to food security education for teachers, online professional development modules to increase student knowledge and confidence in food security education and related topics. Recommendations include future initiatives such as a comprehensive instructional unit, seminars, and an observational study to enhance global food security education practices for evaluation of teaching practices and curricula. This study contributes insights to address the complex issue of food security education within the school system, laying the groundwork for a more informed and globally competent generation.

Poster Presentation
Curriculum Development/Design

Exploring Impact of Course Assessment Selection on Student Career Self-Efficacy in Soil Science

Zoelie Rivera Ocasio
Penn State University

The contemporary globalized world with diverse and dynamic professional trajectories requires that students within their formative education grow broad capabilities in their career path. Career path selection is driven by elements of self-efficacy, the extent to which students perceive themselves as capable of performing particular tasks. Integrating assessments that foster career self-efficacy in agricultural science topics is a strategy to enhance learning outcomes while closing the gap between student learning goals and student actual performance. This study's objective is to describe the influence of course assessment strategies on post-secondary student career self-efficacy by employing electronic pre- and post-surveys, conducting a student focus group, and examination of student course artifacts. The descriptive research focused on undergraduate students (n=12) enrolled in an upper-division university soil science course as part of their course of study in agriculture. Three assessment formats were evaluated in a Latin Square Design: (A)-traditional assessment format, (B)-simulating a conversation with an academic peer or a farmer, and (C)-acting as a decision-maker. Pre- and post-surveys revealed an overall increase in confidence. Students' ability to choose alternative career paths if unsatisfied with their initial choice had one of the greatest increases in confidence while confidence regarding making plans for their goals in the next 5 years was relatively unchanged. During a focus group session, students mentioned a preference for alternative assessments that allowed them to practice real world skills, such as speaking with farmers. Aligning assessment strategies with the practical skills required in jobs can contribute to enhancing student career self-efficacy in that career area. The findings of the study emphasized the positive impact of incorporating alternative assessment formats, such as simulating conversations and acting as decision-makers, on students' confidence levels. Further research is recommended to explore instructor efficacy and professional development needs in utilizing alternative assessment strategies.

Poster Presentation
Curriculum Development/Design

Do They Know What We Think They Know?

Joe Raczkowski
Ohio State University

Discipline specific information literacy is an essential skill for undergraduate students to learn tacit knowledge and create social connections with the discipline. To foster the development of these skills in undergraduate students, we created several online asynchronous modules guiding students through the process of selecting and evaluating references in science, a skill identified as underdeveloped by some senior level students. The modules are customized specifically for the entomology discipline and highlight our faculty and graduate students in an effort to break the barriers between undergraduate students and members of the department. To assess the effectiveness of one of these modules, we deployed it as part of the curriculum in two undergraduate classes aimed at non-majors (n=25, n=32). We used pre and post testing to evaluate student improvement in defining various sections of a scientific paper. In both classes, student ability to define a section of a paper improved for most sections. The Methods and References sections were most easily identified as suggested by the similar scores in pre and post tests. We also evaluated the ability of students to recognize excerpts from scientific papers as attributable to various sections of a scientific paper in the post test. The accuracy of these designations mirrored that of the definition accuracy, showing that students can apply their skills in real-world situations. Finally, the modules increased undergraduate knowledge of the OSU Entomology faculty. Pre test scores indicated a small percentage of students felt familiar with the research areas of Entomology faculty (20% and 29.7%) while post-test scores indicated improvement (87.5% and 65.7%).

Poster Presentation
Curriculum Development/Design

Careers and Curricular Topics That Interest Introductory Animal and Dairy Science Students

Eric Ronk
University of Wisconsin - Madison

Recent studies have illustrated continued transformation in the demographics and interests of undergraduates involved in Animal and Dairy Science courses (ADS). To describe student preferences in our program, we designed a survey on career intentions (as identified in the literature), as well as curriculum topics, and desired skills/abilities based on College- and Department-level strategic planning documents. Students rated their intentions to pursue career directions (1 “definitely will not” to 5 “definitely will”) and their interests in curriculum topics (1 “Not at all interested” to 10 “Extremely interested”) using anchored scales. In November 2023, students enrolled in ADS 101 Introduction to Animal Sciences at the University of Wisconsin”“Madison responded via an online survey (n = 125, response rate = 84.8%, of which 80% were freshmen). Students reported growing up in a suburban or urban community (73%) and indicated that their high school did not offer any agricultural courses (65%). Within three years of graduation, students reported that they were most likely to attend veterinary school, have job duties related to managing animals on farms, research, or other settings, or have job duties related to research and development. The least likely option was to work in the field of education (K-12 or higher education). Students indicated animal welfare, behavior, anatomy, and physiology as the most important curricular topics for their future careers. The lowest-ranked topics were agronomy and food systems. In addition, students reported the following skills/abilities most important for their future careers: skills for lifelong learning, applying knowledge to real-world problems, written and oral communication skills. Capturing student’s preferences and how they may change throughout their undergraduate studies may be important for curriculum design. This type of survey can help characterize student preferences and guide curriculum decisions at a department or university level.

Poster Presentation
Discipline-Specific Teaching/Classroom

Escape Rooms as Assessments in an Insect Pest Management Course

Ellen Klinger
The Ohio State University

Game based learning and assessment offers opportunities for students to engage in active and authentic learning and for real world evaluation of student skills. Escape rooms are one such game-based method, where students must make informed choices using various pieces of data to reach an intended goal. Escape rooms can help meet learning objectives and goals in classroom situations and can be used as assessments, active learning or peer interactive activities. An obvious real world parallel to the format of an escape room is that of insect pest management; can a grower make choices that allow them to escape costly economic insect damage in their system within a limited timeframe? In this poster, creation of an IPM escape room assessment used in an upper-level Insect Pest Management course is dissected to show how aligning the activity with course learning objectives and how creation of a robust scenario is key to activity effectiveness. In addition, using 2 years of experience, shortcomings of the escape room model are highlighted.

Poster Presentation
Discipline-Specific Teaching/Classroom

Are Two Better Than One? An Evaluation of Team Teaching in Teacher Preparation

Sallie McHug
Abraham Baldwin Agricultural College

Team teaching in a preservice teacher preparation program allows for multiple viewpoints and depth of knowledge through lived instructor experiences shared with preservice teacher-learners. Team teaching has been shown to improve both learning and teaching. From the student's perspective, team teaching allows for more active learning, contributing to greater student interest and engagement (Zadra, 1998). Team teaching is an ever-present trend in K-12 education as the disparity in the student-to-teacher ratio continues to rise across all levels (Winn & Messenbeimer-Young, 1995). Higher education and teacher preparation programs often do not model team teaching, though its effectiveness is supported in the literature (Winn & Messenbeimer-Young, 1995). The population for the study was 108 individuals team-taught through interactive and participant-observer models from the fall of 2019 through the fall of 2022. A survey was developed by the course instructors and two departmental students to measure the effectiveness of team teaching in two courses (Agriculture Practicum and Early Field Experience). Three other faculty members in the Agricultural Education department established the content validity of the survey instrument. Former and current students who completed the courses received the Qualtrics survey via email. The survey included demographic questions, questions about prior experience with team teaching, and their perceptions of the effectiveness of team teaching. The survey was open for two weeks. Sixty-two respondents completed the survey, resulting in a 57% response rate. The highest reported percentages were provided with multiple viewpoints (93.55%), satisfied with my learning experience in two classes (93.55%), and highlighted that no two teachers are the same (93.54%). Overall, the respondents had positive perceptions and indicated they received more insight from multiple perspectives on the same topic, and classes were more enjoyable due to variations in teaching styles.

Poster Presentation
Student Support/Development/Advising

Bridging Virtual and Physical Spaces: Online Graduate Students Mentoring On-Campus Undergraduates in Clemson's Foundations of Digital Media & Learning Course

K. Dale Layfield
Clemson University

The Pew Research Center notes that those in today's undergraduate age group had less work experience in their teens when compared to previous generations. To complicate matters, MENTOR, a national nonprofit that advocates mentoring, found that mentoring of Gen Z is declining. Therefore, providing this generation with mentoring opportunities that focus on workforce development is pivotal. This project aimed to investigate undergraduate mentoring through purposeful pairings with graduate students, as "Mentoring at its very core is a learning relationship." Specifically, two objectives guided this inquiry 1) describe the mentor-mentee relationship between online graduate students and on-campus undergraduate students and 2) identify student's perceptions of the mentoring process through the graduate/undergraduate class activities with anecdotal data. In Axelrod's "10 Steps to Successful Mentoring," the importance of understanding your partner was highlighted. Each student developed narrated bios that were used for purposeful pairing and shared to introduce the mentors and mentees. Two major projects in the course included an experimental salinity tolerance assessment project using hydroponic growing systems that resulted in a series of digital projects and a team grant writing project led by the graduate mentors. Axelrod stated that a mentor should "experiment with new approaches," and with the mentor's previous experiences, the work on the salinity experiments engaged the students to many new concepts using the hydroponic kits. Another aspect Axelrod discussed about successful mentors was in "determining the right type of questions to use." The grant writing team project gave the mentors an opportunity to use previous experiences that the mentees lacked to develop a grant proposal that used a variety of critical thinking skills. This presentation will aim to share the outcomes of the experience along with transferable recommendations for purposeful mentoring relationship to develop essential technical skills for the future workforce.

Poster Presentation
Student Support/Development/Advising

Everything Will Be Fine! Understanding the Role of Self-Efficacy in Agricultural Undergraduate Students' Academic Achievement

Joshue Lewis
Texas Tech University

Belief in one's ability to succeed is crucial for academic achievement. Undergraduates with strong self-efficacy approach education confidently, showing resilience and motivation (Shim & Pelaez, 2022). Understanding and fostering self-efficacy are essential for effective educational interventions, supporting students to reach their full potential and long-term success (Granberry et al., 2002). Self-efficacy theory influences undergraduates' academic achievement through mastery experiences, social persuasion, and emotional states. Higher self-efficacy correlates with motivation and effort, while low self-efficacy leads to disengagement. Understanding this relationship informs effective educational interventions, guiding research and practices to empower students. This study aimed to explore the role of self-efficacy in academic achievement of Undergraduate Agriculture Students [UAS] by addressing what motivated them, how they overcame overwhelming situations, and how they advised their colleagues to enhance self-efficacy. In an exploratory study using the Self-Efficacy Theory, 20 undergraduates at two agricultural Hispanic Serving Institutions (HSI) were interviewed about their academic experiences. A phenomenological approach and qualitative standards ensured in-depth insights. Rigor was maintained through purposive sampling, one-on-one interviews, and multiple data sources, enhancing credibility in the study. Participants' motivations for academic success included personal growth and career development, family expectations and support, and overcoming challenges. Strategies for navigating university challenges comprised adaptation and growth, organization and planning, coping mechanisms and self-care. Recommendations to fellow UAS for enhancing self-efficacy involved balance and perseverance, seeking support and assistance, and improving time management. Reflecting on their experiences, participants stressed the importance of personal and professional development, effective time management, and seeking support to overcome obstacles. This study on UAS self-efficacy provided insights into student motivations, strategies, and recommendations for targeted interventions and support systems. Implementing suggestions like promoting balance and effective time management can improve academic performance and overall well-being. Future research should identify and evaluate accessible support programs for practical guidance and improvement.

Poster Presentation
Curriculum Development/Design

The Influence of Quiz and Exam Crib Sheet Use on Horticultural Student Test Performance, Stress, Confidence, and Retention of Subject Matter Knowledge

Alex Stanton
Kansas State University

Understanding how students learn is critical to providing a well-rounded education and assessment through exams has been the best way to measure how much information a student has consumed, processed, and retained. In recent years, higher education has been forced to change due to innovations in technology, increasing costs, and a world pandemic. This has changed how students learn, how they retain information, and how they study for testing. While authorized cheat sheets (e.g. crib cards, note cards, condensed notecards, etc.) have been in the classroom for nearly 75 years, little recent research has been done on their efficacy, impacts on student test scores, or their self-reported stress levels (i.e., testing anxiety) in horticultural classrooms. Therefore, our objectives were to investigate how crib cards impacted student study habits, self-reported stress levels, and test scores when compared to non-crib card tests. For the Spring 2023 and Spring 2024 semesters, students in Basic Turfgrass Culture (HORT 515) at Kansas State University were allowed to use crib cards on four of their eight tests (i.e., quizzes or exams) throughout the semester. Over 88% of students in the Spring 2023 course reported that the crib cards were helpful in reinforcing/remembering material and crib cards helped them organize their thoughts before the test. When asked for feedback at the end of the semester, many students reported that the crib cards, “help[ed] motivate me to study” and assisted them in creating a, “ plan for what [they] didn’t know” before the tests and some reported that they found themselves rarely using the crib cards during the tests because of the extra preparation.

Poster Presentation
Student Support/Development/Advising

Students in Majors with a Pre-Veterinary Option and Correlating Attributes to Successful Entry of a DVM

Mellissa Crosswhite
Oklahoma State University

In the fall of 2022, 4.6% of undergraduate's students at Oklahoma State University were enrolled in a major that had a pre-veterinary option. The objective of this study was to examine the background demographic attributes of students enrolling one of six "˜Pre-Veterinary Medicine' focused degrees at Oklahoma State University (OSU) and successful enrollment in the OSU College of Veterinary Medicine (CVM). Data were collected on 4,661 students between the years of 2006 and 2022. Students were identified as having started OSU as a freshman or as a transfer student, however there were no significant ($P > 0.05$) interactions with entry type and so data were evaluated together. When high school rank was divided into quartiles, a greater proportion ($P < 0.0001$) of students in the highest-ranking quartile were enrolled into CVM. Only small differences ($P = 0.232$) were observed among class size groups for students enrolling in CVM. Higher school GPA had a beneficial effect ($P < 0.0001$) on enrolling in CVM and there was a substantial advantage for students with a GPA of 4.0 even over those with a GPA between 3.9 and 3.99. It is probable that some of those students had a higher than 4.0 high school GPA due to AP, IB and other types of courses, however, when transferred to the college level, were capped at the 4.0 scale. Overall, higher class rank, GPA and ACT score were all reasonable predictors of successful enrollment in the College of Veterinary Medicine at Oklahoma State University.

Poster Presentation
Discipline-Specific Teaching/Classroom

Engaging Elementary Students In a STEM-Based Poultry Online Curriculum

Brianna Wardwell
Purdue University

There is an increasing need to produce college graduates interested in agricultural sciences, yet there are minimal educational resources focused on agriculture for teachers to implement in the K-12 space. This study examines how participation in the Poultry and Animal Virus Education (PAVE) program impacted 4th and 5th grade students' individual interest, situational interest, and knowledge about poultry science. The PAVE program consists of five online modules that use interactive activities, notebooks, and a class activity, to explore animal health, biosecurity, immunology, vaccination protocols, and careers and opportunities in the poultry industry. Thirteen classes (nine teachers) across Indiana and Michigan participated in this study during the Spring 2023 semester with a total of 199 students enrolled in the program. The program is designed to be completed over the course of 6 days. Data was collected before the start of the program (100% response rate), after the completion of the online modules (46% response rate), and following the class project (25% response rate). Students completed surveys that measured individual and situational interest, agricultural literacy, and their content knowledge. Results indicated that students' poultry and animal health content knowledge improved after the online modules (6.59 vs. 9.13 out of 15 points; $P < 0.001$). Additionally, students demonstrated an increase in their agricultural literacy when comparing their scores before the program and after the online modules (10.81 vs. 12.87 out of 22 points; $P < 0.05$). Students reported a moderate individual interest in poultry science at the beginning and the end of the program and thought that while the activities were somewhat exciting and enjoyable, they required a lot of attention and thinking on their part. More research is needed to learn how to optimize STEM-based online agriculture educational experiences for elementary students to ensure that the activities are both interesting and impactful.

Poster Presentation
Technology in the Classroom

Show Me: Student Agency in Learning Evaluation of Immersion Experiences Utilizing Goosechase

Mia Sullivan
The Pennsylvania State University

When intentionally connected to purposefully planned high impact experiences for undergraduates studying food, fiber and natural resources, mobile educational technology can increase the return on investment for anchoring targeted learning outcomes. This study shares the perspectives of faculty from three institutions in utilizing an interactive scavenger hunt application based on learning outcomes for two cohorts of students across two immersion experiences in Fall 2023. Faculty utilized Goosechase to create a space for learners' autonomy and voice in documenting evidence of achieving learning outcomes as they engaged in the immersive learning experience, providing tangible, relevant evidence of their learning. Faculty will share strategies for integration across multiple contexts to harness different motivational theories to achieve different interpersonal skills to advance capacity for preparing to work as members of an interconnected, global workforce. The learning strategy was utilized in two immersion programs: 18 lower division undergraduates from six institutions at an international food security conference, and 24 upper division students from three institutions at a national professional meeting. Lessons learned included the framing of group or solo missions, utilizations of both intrinsic and extrinsic motivation structures, and maximizing connections to other external partners were critical. Recommendations for future implementation include testing the benefit of opening involvement to additional institutional partners and exploring an enhancement activity of challenging participants to design the missions for the next cohort of students to complete in the following year as a capstone reflection activity.

Poster Presentation
Faculty Support/Development/Mentoring

Low Stakes, Non-Graded Assessment Activity for Plant Identification Courses

Chad Miller
Colorado State University

Plant identification (ID) courses can be a challenging course for many students. In these courses, students are introduced to and expected to learn dozens of plants, including scientific and common names, along with cultural information. Students are introduced to numerous plant species in these courses, often through instructor-guided walks around campus during the lab sessions. A low stakes, non-graded assessment activity has been implemented at the beginning and the end of the ID courses, serving two primary objectives; 1) to acquaint students with specific quiz sheet and assessment expectations at the beginning of the semester and 2) to provide a record of their knowledge for self-reflection to compare their knowledge acquisition from the beginning to the end of the semester. The quizzes are digital presentations of fifteen common plants found in the landscape. The same presentation is used for both assessments. The quizzes are scored, but not used as part of the formal assessment of the course. Seven years of data for this activity have shown significant ($P = <0.001$) increase in student knowledge gain, over the course of the semester, with scores increasing from an average of 1.6 at the beginning of the semester to 9.7 at the end of the semester. This activity requires minimal input and effort, is well-received by students and provides them with documentation and affirmation of learning over the course of the semester.

Poster Presentation
Curriculum Development/Design

You are Hired! A Fun Approach to Engage Students Immersing Them in the Application of New Concepts

Monica Giusti
The Ohio State University

Will I ever use this? Students often ask themselves or each other this question. A major challenges teaching required classes is to keep students engaged, and to efficiently communicate how the concepts covered in class, lectures, labs, or discussions are actually relevant to the real world, and that the concepts covered in class have practical application in their professional future.

Over the years of teaching a course in Food Quality Assurance, we repeatedly stumbled on this question. Our goal was to increase student engagement and our hypothesis was that students would care if they could see how these concepts are applied in the food industry. With this goal in mind, we tested a new approach for our laboratory portion of the class: we tested the idea of "hiring" students in the class as Quality Control technicians for an imaginary food company that produces all sorts of products, from fruits and vegetables, candy, beverages, and more, depending on the topic to be covered in class.

Each laboratory activity is set up with a potential situation that the company could be facing: reception of products, evaluation of the competitor's products, evaluation of quality parameters of the company's production, analytical techniques and more, and evaluation of the variability of their production line.

As "recently hired employees" students engage in their new role, and in the tasks on hand, including the use of the company nametag, and following the safety and quality standard of the company. We recorded increased participation and engagement in lab activities, and understanding of the activities. Quality control shifted from repetitive practices to decision-making challenges with critical relevance to a company. Student interactions increased, promoting discussion and improving data interpretation.

Real life scenarios and immersion in work environment even when simulated increased engagement and improved the learning experience.

Poster Presentation
Student Support/Development/Advising

Navigating Long COVID: Embracing the New Normal in Higher Education

Jessica Benson
Mississippi State University

The COVID-19 pandemic has deeply impacted higher education, forcing swift adaptations amidst ongoing disruptions. It is widely acknowledged that students are persistently encountering challenges that stem from the trauma of the pandemic; mental health, critical thinking, and the demand for additional support remain constant concerns. Acknowledging persistent challenges, this study explores the pandemic's long-term effects and implications for class delivery, student engagement, student-faculty dynamics, relationships, and expectations. Twenty-nine undergraduate students enrolled in agricultural leadership, education, and communication courses participated in the study (N=29). The survey explored the impacts faced by students, revealing challenges in adapting to virtual instruction (n=21), adoption of new study habits (n=18), and a loss of social interactions (n=18). Notably, none reported facing housing insecurity (n=0). Students also experienced educational setbacks but increased technological skills and adaptability. Participants reported the use of ongoing instructional methods from the pandemic, including the continued use of remote learning platforms when professors (n=28) and students (n=18) are unable to meet face-to-face. Twenty-seven students said they continue to use digital collaboration platforms for group work and lockdown browsers due to the pandemic. Most participants (n=25) acknowledge ongoing benefits from instructional changes, citing the appeal of increased flexibility (n=7), class success (n=7), and variability of instruction (n=6). Participants expressed new expectations for faculty, emphasizing the need for easily accessible resources (n=10), clear remote learning expectations and standards (n=18), and prompt responses to email communication (n=5). In terms of expectations perceived from faculty, student familiarity with online resources (n=8), continuous access to class materials (n=8), and adherence to strict attendance, participation, and assignment completion policies (n=14) were reported. As we navigate the challenges of Long COVID and embrace the new normal in higher education, it is imperative for educators to balance innovation and tradition to foster an effective educational environment.

Poster Presentation
Discipline-Specific Teaching/Classroom

Employability Skills of University-Level Agricultural Engineering Technology Students: Are Students Ready for Success in the Agriculture Industry?

Art Wolfskill
Sam Houston State University

Industry, academia, and government recognize that there are gaps between science, technology, engineering, and mathematics (STEM) education and future required workplace skills in the 21st century. These skills refer to a broad set of knowledge, skills, work habits, and character traits that are vital to the success in the future of the world such as thinking, ways of working, literacy tools for working, and living in world. Unfortunately, multiple studies have reported that the overall business sector is generally dissatisfied with the job that higher education is doing in teaching these skills to recent graduates. Educators need to focus on teaching skills students that are needed and will help sustain businesses and grow the economy. The purpose of this study was to determine agriculture students' perceptions of their employability skills before entering the agriculture industry. The study was conducted during the Spring 2023 semester in a senior level course. All students in the course (n = 26) completed a self-evaluation of their employability skills at the beginning (pre) and conclusion (post) of the course. The instructor of the course also completed an evaluation of the students at the conclusion of the course. The evaluation contained 10 categories with a ranking of 1 to 10 with an overall rank of 0 to 100. The lowest ranked categories included (pre) Knowledge of Job - 5.21, (post) Accuracy, Speed of Work, and Work Habits - 6.81, and (instructor) Attendance - 6.73. The highest ranked categories included (pre) Attendance "" 8.88, (post) Cooperation "" 9.04, and (instructor) Cooperation "" 8.12. The average overall rankings of the evaluations are as follows, pre-evaluation: 76.3, post-evaluation: 81, instructor evaluation: 74.8. Overall students perceived a slight improvement in their employability skills throughout the course.

Poster Presentation
Discipline-Specific Teaching/Classroom

Scale of Production Differences in Farm Operators' Access to Resources and Information as an Agribusiness Teaching Tool

Jennifer Clark
University of Florida

America's farms and farmers are integral to the U.S. economy and form a primary component of agribusiness activities for the food and fiber supply chain (National Academies of Sciences, Engineering, and Medicine, 2019). Understandably, farm operation decisions are complex and value exists by extending knowledge (e.g., classroom and Extension) about how resource decisions interrelated among production, financial, and marketing considerations, differ as the size of the business grows (Fielke, et.al., 2020). Resource inputs are dependent upon systems-of-systems (SoS) networks (Rose, et.al., 2021; Li, et.al., 2020) and teaching these systems as a form of risk-planning education can help students understand the challenge of complex decisions. Using small-farm operator survey data as feedback to differentiate changing resource needs as the farm grows illustrates the concept of increasing scale of operations as a learning activity.

Data from Florida's 2008 Small Farm Survey were analyzed and mapped as a SoS network model illustrating signal differences among production, financial, and marketing factors as the farm operation grows in Gross Farm Income (GFI). Results from this research project find no divergent patterns in access to production resources across farms with gross farm income ranging from $0 - $250,000+ including land, water, machinery, and fixed assets. However, difficulty in obtaining operating supplies and fuel was present as GFI increased ($10,001-$25,000) and labor shortages were persistent among larger operations. Knowing where to get useful financing information was typical for very small and small operators ($0-$25,000) while insurance and collateral for farm loans were reported as farm operations expand. Marketing factors present learning opportunities for ways to sell that can add value to the traditional and non-traditional classroom experience in agribusiness decision making including management functions in agricultural education and agricultural operations disciplines focused on careers when information about economic decisions provides value to farm operators.

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