Research & Creative Activity Day

Abstract Booklet

April 4, 2025

Office of Research and Sponsored Programs

Table of Contents

We are excited to showcase our annual Research and Creative Activity Day at West Chester University where we highlight the innovative and impactful research being conducted by our outstanding faculty and students. This year we have a great number of presenters, with nearly 100 faculty and student researchers sharing through poster presentations, oral presentations, our interdisciplinary faculty panel, and new to this year, the faculty/student research connection event. Please take the opportunity to spend the day with us in Sykes as we celebrate the dedication and hard work of our researchers.

Sincerely,

Dr. Cheryl Neale-McFall
Associate Provost for Research and Creative Activity
West Chester University

Because West Chester University seeks to be a leader in local, regional, and global sustainability efforts, the Office of Research and Sponsored programs has collaborated with the Office of Sustainability to create a special designation for those Research and Creative Activity Day projects that perpetuate the health and welfare of people, economies, and the environment. Thus, all abstracts identified with *the Brandywine B* reveal the many ways that West Chester University faculty and students are helping to design, implement, evaluate, and improve a variety of environmental, social, and economic sustainability activities.

The Office of Research and Sponsored Programs sponsors an annual Summer Undergraduate Research Institute (SURI) where undergraduate scholars hone critical and analytic thinking skills to prepare for graduate-level studies or careers. SURI scholars work full time under the direct supervision of a faculty mentor for 5 weeks to complete a research project or creative activity. All abstracts identified with the SURI logo reflect SURI projects completed in Summer 2024.

The Committee for Excellence in Learning and Teaching (CELT) is one of the subcommittees under TLAC that helps faculty identify engaging and innovative ways to improve their teaching practices resulting in improved student learning. Each year CELT has an open call for projects that support cutting edge practices to encourage the implementation of new and innovative projects that would not be possible without this financial support.

The purpose of the SRCA is to recognize outstanding graduate and undergraduate students who have completed original research or creative projects in collaboration with a faculty mentor. SRCA awards are presented to students who have conducted independent work that is original and substantive, given the standards and objectives of their field. Below, you will see the SRCA logo next to the outstanding student projects that were awarded this year.

Student Undergraduate Research Foundation (SURF) is a research and creative activities opportunity for undergraduate students to collaborate with faculty mentors during the Spring semester to promote critical thinking and prepare students for a greater understanding of research and creative activity methods and outcomes. Selected students are provided with a stipend to collaborate alongside their faculty mentor for an opportunity to gain valuable hands-on learning outside of the classroom.

Pause, Recharge, Perform: The role of brain breaks in elementary education.
A case study of student engagement and performance.
Presenter: Subarna Basu
Presenter Department: EdD
Faculty Mentor: Crystal Loose
Faculty Mentor Department: Early and Middle Grades Education

This case study research will explore the effects of classroom-based brain breaks integrated into the class routine, and the impact on the student focus and engagement in lessons. The participants in this study will include one second-grade class teacher and 21 second-grade students at a public elementary school in Southwest Pennsylvania. Students will be observed to determine the focus and engagement with their lessons after each brain break activity, including in-class five-minute physical exercise breaks or mindfulness brain breaks. The physical activity brain breaks will be streamed through YouTube and the mindfulness breaks will be activities like listening to soft music and coloring, watching sand art videos, etc. The researcher will take running notes of each student's participation during brain breaks and their engagement in lessons after the breaks. The teacher and the students will be surveyed at the end of the data collection period. A Pearson correlation test along with a thematic analysis of the observation and survey data with Dedoose will be conducted to analyze the correlation between the variables: brain breaks and student concentration in lessons after the breaks. The results will help the researcher to understand whether brain breaks have a positive impact on focus and engagement for students, the students' and the teacher's perception towards brain breaks, whether the teacher will continue to use brain breaks in the classroom, and if the findings will help elementary school educators and parents understand the benefits of brain breaks on attention and concentration in students.

The Impact of Leadership Curriculum on High School Students' Self-Efficacy:
A Mixed Methods Case Study
Presenter: Shannon Brown
Presenter Department: Ed Leadership
Faculty Mentor: Merry Staulters
Faculty Mentor Department: Ed Leadership

This mixed methods case study, utilizing an explanatory sequential design grounded in Albert Bandura's Self-Efficacy Theory, examines the relationship between high school students' participation in a youth leadership curriculum and their perceived level of self-efficacy as well as researching what characteristics of a youth leadership curriculum students report are most important for strengthening their self-efficacy. Quantitatively, an online Qualtrics questionnaire was used to collect data from students currently in high school who were enrolled in a one-semester leadership course in their junior or senior year. Qualitatively, semi-structured interviews were conducted via recorded audio with a small sample of students who completed the questionnaire. A sample of student assignments from the leadership course were also analyzed to obtain more comprehensive information about the students' perceptions of their self-efficacy as it related to the youth leadership curriculum. Convenience non-probabilistic sampling included twenty-two students for the questionnaire (quantitative), six

students for interviews (qualitative), and eighteen assignments for analysis (qualitative). The Schwarzer & Jerusalem General Self-Efficacy (GSE) Rating Scale (1995), was used to measure students' perceived self-efficacy as well as inferential statistics from the questionnaire data. Six open-ended interview questions were asked to all participants interviewed in a thirty-minute session to gain detailed perspectives on the impact of the leadership curriculum. A two-cycle coding strategy, utilizing a priori coding in round one, was used to analyze student assignments and a multi-phase coding cycle was used for interviews to look for patterns relevant to self-efficacy and the proposed youth leadership development framework.

Attending with Morality, Noticing for Equity
Presenter: Brett Criswell
Presenter Department: Secondary Education & Health & Physical Education

Despite the politicization of the notion of equity, those of us working with/within school systems recognize the importance of helping future teachers understand how to promote equity within their pedagogical practices. Video-based examinations of practice represent a pathway to achieving that goal. An NSF-funded project involving a collaboration across six universities is exploring how to best promote an equity stance in education through such video task experiences. Drawing on Weil and Murdock's notion of the morality of attention, and our own work in the area of noticing for equity, this multi-institutional team has developed tools for supporting pre-service teachers in shifting towards such a stance. In this research presentation, the tools and strategies we have developed will be shared, along with data and findings from our first year of the three-year project. The work of our team has clear implications in education associated with promoting equity, but also in relation to teacher retention, as will be discussed. Further, the notion of noticing / professional vision has implications beyond the field of education, as every professional community operates off the application of shared understandings in order to do the work of that community.

Black Parents Managing and Supporting the Academic Success of Their Children in Affluent Predominantly White School Districts
Presenter: Janeane Davis
Presenter Department: College of Education and Social Work
Faculty Mentor: Orkideh Mohajeri
Faculty Mentor Department: College of Education and Social Work

Using an endarkened narrative inquiry method, the author examined the narratives of Black parents about the experiences of their children on their academic journeys while attending school in an affluent, predominantly white school district as well as the stories of how those Black parents manage and support the academic success of their children in that school district. Data collection strategies included parent interviews and focus groups. The researcher's analysis explored the narratives of Black parents in their efforts to manage and support their children on their academic journeys. The researcher evaluated tools, techniques, and strategies parents of Black children identified as useful in their efforts to help their children succeed in school.

Evaluating opportunities and challenges for reducing basic needs insecurity through the WCU Benefits Hub
Presenter: Daniel Engelbrecht
Presenter Department: Health
Faculty Mentor: Dr Erin Knight
Faculty Mentor Department: Health

Poverty and unmet needs among students negatively impact academic success. Research demonstrates that 23% of undergraduates and 12% of graduate students experience food insecurity. Further, 8% of undergraduates and 5% of graduate students struggle with homelessness. This results in over 4 million students in the U.S. who do not know where their next meal will come from, and approximately 1.5 million students who do not have a stable place to sleep. These basic need insecurities – defined as inconsistent access to food, shelter, clothing, utilities, childcare, and both physical and financial security– disproportionately affect students with disabilities, students from racial or ethnic minorities, LGBTQ2IA+ students, and parenting students. Applying for public assistance is notoriously difficult, and many eligible individuals are not enrolled due to barriers related to lack of knowledge, complicated application processes, and stigma. These challenges may be even more pronounced for college students. The U.S. Government Accountability Office (2018) found that more than half of college students eligible for SNAP do not participate. West Chester University is among 18% of postsecondary institutions that facilitate student enrollment in public assistance programs. The Benefits Hub, established by the Center for Civic Engagement and Social Impact at WCU in 2022, connects students experiencing basic needs insecurity with public assistance programs. However, little is known about how students perceive and access public assistance programs, and the role support provided through programs such as the Benefits Hub has on student success and wellbeing. We aim to fill this gap through in-depth key informant interviews.

Bacterial Diversity In Leaf-Cutter Ant Species: Host-Microbe Interactions and Environmental Effects
Presenter: Alexandra Gianaris
Presenter Department: Biology
Faculty Mentor: Manuela Ramalho
Faculty Mentor Department: Biology

Historically, studies have sought to identify host-specific factors in host-microbe interactions as a means of understanding evolutionary success. The genus Atta, comprising leaf-cutter ants, is a mutualistic species native to the southern Neotropics. It hosts a remarkably diverse range of bacterial communities, t the specific host factors that influence host-microbe interactions remain poorly understood. Using high-throughput amplicon sequencing of the 16S rRNA genes of the whole worker, we showed significant difference between the bacterial communities among 4 dominant Atta species: A. sexdens, A. levigata, A. capiguara, and A. bisphaerica. We also discovered significant differences in bacterial communities from laboratory conditions, pesticide treatment, and the fungal garden symbiont. Surprisingly, bacterial communities of Atta spp. kept in the laboratory were not significantly different from pesticide treated Atta spp., laying the groundwork for potential refinement of standard research methods. We showed that this multifarious bacterial community diversity is common to the Atta genus and is paramount in non-host specificity.

What Socio/Economic Factors Can Explain the 2024 Presidential Election Results: A Chester County Case Study
Presenter: Guido Giuntini
Presenter Department: Economics and Finance

Using voting registration, voting results and socio-economic data for Chester County, PA at the Municipal level, I use descriptive statistics and regression analysis to try to understand voting patterns of different voting blocks for the 2024 Presidential Election. Total cast votes increased in 2024 compared to 2020, with the Republican candidate receiving over 8,700 more votes in 2024 than 2020 for a net gain of almost 7,000 votes over the Democratic candidate. This contributed to the different outcome in 2024 as compared to 2020 at the state level, and ultimately at the national level.

Comparing Methods for Finding Roots of Polynomials
Presenter: Joseph Halovanic
Presenter Department: Mathematics
Faculty Mentor: Chuan Li
Faculty Mentor Department: Mathematics

Finding the roots of a polynomial has been a mathematical problem of interest for hundreds of years in human history. For polynomials with degrees less than or equal to four, algebraic formulas, such as the quadratic formula, exist for finding the exact roots of polynomials. However, those algebraic formulas are usually in complicated forms, which naturally raises a question - Can such formulas deliver accurate roots when programmed and executed in a modern computer? To address this question, standard algebraic formulas, their variations, and a pair of popular root-finding numerical methods were programmed in Python. Experiments were performed to compare their accuracy in solving polynomials with various coefficients and degrees. Based on our experiments, conclusions and suggestions on how to use these formulas and methods for more reliable results will be provided.

Literacy Teachers' Self-Efficacy and Instructional Choice within a Structured Literacy Approach
Presenter: Brianna Horst
Presenter Department: Doctorate of Education
Faculty Mentor: Heather Schugar
Faculty Mentor Department: Educational Leadership & Higher Education Administration

In the United States over the last two centuries, differing viewpoints on how to teach reading have been the focus of public and scientific debate. Now in the mid 2020s, the most recent reading model, Structured Literacy, has become a focus in education policy, pre-service teacher education programs, in-service teacher professional development, and reading curricular resources. While Structured Literacy can be a strong foundation for early literacy development, it does not yet capture literacy in a holistic and comprehensive way. This mixed-method explanatory sequential design examined teachers' reported stance on Structured Literacy, their instructional practices, and their self-efficacy towards literacy instruction. Participants of this study included 30 survey participants and 5 interview participants. Albert Bandura's Self-Efficacy Theory (1978, 1997) was the lens to

analyze both phases of data. Phase I consisted of a 24 question survey to provide background on their understanding of Structured Literacy through their individual and district lens. Phase II consisted of a case study where participants were interviewed about their literacy instructional practices and resources and they also provided a Structured Literacy artifact for analysis. Data was transcribed and coded using in vivo coding (Saldaña, 2013) and constant comparative analysis (Glaser & Strauss, 1967) to allow for the emergence of themes to better understand each teacher's SL stance, literacy instructional practices, and literacy self-efficacy. The findings concluded that teachers: (a) were hungry for Structured Literacy professional development and resources, (b) utilized explicit, systematic instruction of a comprehensive set of literacy skills, and (c) implemented a holistic approach, placing student needs at the forefront of instructional decision-making. This study highlighted the voices of teachers who are currently implementing a Structured Literacy-based approach, valuing teachers as instructional experts. Practitioners in this study demonstrated they understand the realities of classroom instruction and what students need to thrive; paving the way to student success through holistic and comprehensive literacy instruction.

Impact of Rising Temperatures on the Bacterial Communities of Aphaenogaster Ants
Presenter: Lily Kelleher
Presenter Department: Biology
Faculty Mentor: Manuela Ramalho
Faculty Mentor Department: Biology

Ants (Formicidae) are considered vital keystone species to many ecosystems as they provide basic ecosystem services such as: seed dispersal, soil bioturbation, decomposition and pest control. Additionally, ants form complex symbiotic relationships with plants, fungi and bacteria. Studying the interaction between ants and their bacteria is important because of the crucial role that microbes play in the overall health of the ants. Aphaenogaster, a native North American ant genus, is an important seed dispersing ant to grassland and forest ecosystems. The bacterial communities associated with Aphaenogaster have just recently been uncovered and much is still unknown about how environmental factors influence their bacteria communities. Previous studies have shown that Aphaenogaster are very temperature sensitive and will die in warm temperatures. This study aims to determine the taxonomic composition and abundance of the Aphaenogaster bacterial community when subjected to warming temperatures. For this study, ants from several colonies were collected from the Gordon Natural Area in West Chester, Pennsylvania, USA. Samples were subjected to a control temperature (22°C) or an experimental temperature (32°C). After experimentation DNA was then extracted from the ants in all stages of development and the 16S rRNA gene was amplified and sequenced following the NGS amplicon approach. The findings from this study will reveal important information that will allow us to predict the survival of these ants in the future.

The Impact of Case Management Instruction on Pre-Service Special Education Teachers Through the Lens of a Current Student Teacher
Presenter: Daniel Kenney
Presenter Department: Special Education
Faculty Mentor: Colleen Commisso
Faculty Mentor Department: Special Education

This semester I am working with the Student Undergraduate Research Foundation to conduct a research study on the impact of caseload management assignments on pre-service teachers. I will work with SURF for 50 hours analyzing data, disseminating results, and completing my CITI Training. The caseload management assignments are created to put pre-service teachers in real-life situations of a special education teacher. The students participating in the study belong to a 15-week course or a 5-week condensed version of the course. Pre-service teachers are required to manage paperwork due dates, scheduling of students and support staff in the classroom, data collection, and more as part of the Caseload Management assignments. A pre- and post-survey was and will be given to the students in these classes to see how the assignments impacted their learning and preparedness to be a Special Education Teacher. There was a total of 33 participants who consented to be in the study. The data will then be analyzed to see the growth of students in both the 15-week program and the 5-week program. As a current student teacher these assignments are essential for student teachers to learn as I see and use the skills I learned from these assignments in my day-to-day life in the classroom with my students.

Proposing a study to further research on Ethnic-Racial Socialization interventions for undocumented adolescents
Presenters: Trokon Macauley, Romance Albarqawi
Presenters Departments: Psychology, Psychology
Faculty Mentor: Stevie Grassetti
Faculty Mentor Department: Psychology

Current research suggests that Ethnic-Racial Socialization is protective in supporting the identity construction and psychological resilience of adolescents of color that have been exposed to ethnic and/or racial targeting. Given this, these interventions may also provide critical coping skills for undocumented adolescents navigating the unique stress associated with their legal status. The purpose of this study is to design and test the effectiveness of a text-based ERS intervention, tailored to the unique needs of the undocumented adolescent population, which aims to strengthen ethnic-racial identity, tolerance of uncertainty, and psychological coping against racial bias or stress related to undocumented legal status. The study will utilize a randomized control trial approach and will enlist undocumented adolescents ages 14-18. Participants will be randomly selected to receive either daily culturally adaptive text-based ERS messages or to a control group receiving standard mental health psychoeducation also via text messages, over a six-week period. Assessments will be administered pre - post intervention to track ethnic-racial identity, coping, and psychological well-being using validated measures including the Multi-group Ethnic Identity Measure, Beck Depression Inventory, and Intolerance of Uncertainty Scale. Researchers hypothesize that the test group will undergo statistically significant improvements in ethnic racial identity as well as coping when compared to the control group. Researchers also expect that these improvements will result in enhanced psychological outcomes and better long-term well-being.

Biochar's influence on water chemistry and microbial community composition in Acid Mine Drain Environmental.
Presenter: Cody Macias
Presenter Department: Earth and Space Sciences
Faculty Mentor: Elliott Arnold
Faculty Mentor Department: Earth and Space Sciences

My research investigates the efficacy of novel bioremediation methods using biochar derived from spent coffee grounds via fast and slow pyrolysis to mitigate heavy metal contamination in acid mine drainage (AMD) systems in Shamokin Creek, Pennsylvania. The study focuses on the impact of biochar on microbial communities, particularly sulfate-reducing bacteria (SRB) and iron-reducing bacteria, which play a critical role in neutralizing AMD through metabolic processes. A double-barrel retort system will be constructed to produce biochar, which will be applied to AMD-affected areas using elongated mesh nets. Water and soil samples will be collected to analyze heavy metal concentrations (e.g., Cd, Pb, Cu, Zn) using XRF spectroscopy and microbial activity via BART tests and 16S rRNA gene sequencing. The porous structure of biochar facilitates heavy metal removal through mechanisms such as precipitation, complexation, ion exchange, and sorption. Scanning electron microscopy (SEM) will visualize biochar-metal interactions. The outcomes aim to demonstrate the cost-effectiveness and reliability of biochar as a sustainable solution for AMD remediation, particularly in remote areas lacking full-scale treatment facilities. This research has significant implications for restoring aquatic ecosystems and improving water quality in regions impacted by abandoned mining activities.

Parallel Computing on Solving Pennes Bioheat Equation
Presenter: Johnathan Makar
Presenter Department: Mathematics
Faculty Mentor: Chuan Li
Faculty Mentor Department: Mathematics

In 1948, Pennes proposed a Bioheat model to simulate thermal energy propagation in human tissues after measuring the radial temperature distribution in the forearm of nine subjects. This model has received much attention in the literature and has been widely adopted for studying heat transfer in perfused tissue since then. However, solving Pennes Bioheat equation can be computationally expensive for large-size problems in two- and three-dimensions. To counteract this, cutting-edge parallel computing via the Message Passing Interface (MPI) technique was utilized in this work to parallelize numerical calculations for solving Pennes Bioheat equation. Moreover, future work using Pennes Bioheat equation to model Magnetic Fluid Hyperthermia treatment for curing human cancers and tumors will be mentioned.

Stakeholder Perspectives on the Academic Mentoring Program
Presenter: Raina Martin
Presenter Department: Graduate Social Work
Faculty Mentor: Kerrie Ocasio
Faculty Mentor Department: Gradate Social Work

NCAA Division II collegiate student-athletes are a non-traditional and at-risk group of college students with unique and complex barriers to academic achievement. The Academic Mentoring Program (AMP) at West Chester University (WCU) provides support to student-athletes that are new to WCU or that are struggling academically. The program has evolved over the years and coaches and teams vary in terms of how they use the program. This qualitative study seeks to understand the needs of WCU student-athletes, understand variation in usage of AMP, and identify opportunities for improvements within the current systems-environment of WCU. Semi-structured interviews will be conducted with current and recent stakeholders of AMP (i.e., referring

coaches, student-athletes, and mentors). This is a convenience sample of 15 coaches and 8 mentors, all of whom will be asked to participate. There are 192 eligible student-athletes, of which 20 will be interviewed using a stratified random sampling frame based on key characteristics. Interviews will be audio recorded, transcribed, and provided back to the interviewees for member checking. Analysis will be conducted using Dedoose using an iterative deductive and inductive process informed by the research questions and memoing process. Two coders will conduct the coding and establish reliability using a sample of the interviews. Preliminary data will explore the research question, "what do WCU's student-athletes feel that they need to do well in college?" Themes and subthemes will be shared and variation explored related to type of sport, academic preparation, first generation status and other sub-group characteristics.

Reading Between the Lines: Uncovering Market Regimes with Hidden Markov Models.
Presenter: Jacob Martin
Presenter Department: Mathematics
Faculty Mentor: Chuan Li
Faculty Mentor Department: Mathematics

Financial markets appear chaotic at first glance, yet beneath the visible fluctuations lie hidden regimes that drive market behavior. Hidden Markov Models offer an elegant mathematical framework to detect these invisible states, allowing us to model how markets transition between bull runs, bear runs, and other various regimes. This presentation will demonstrate how these powerful models can embrace and transform seemingly random financial data into actionable insights, potentially improving investment decisions and risk management strategies.

A Philosophical Analysis of Arthur C. Clarke and Stephen Baxter's The Light of Other Days: An Examination of the Correlation Between Truth, Power, and Autonomy
Presenter: Geoffrey Martin
Presenter Department: Philosophy
Faculty Mentor: Sarah Hyson
Faculty Mentor Department: English

The Light of Other Days proposes a not-so-distant future where innovation produces a machine which can create nanoscopic wormholes connecting positions across space. Initially the mechanism is only simple enough to perceive gamma waves, but over time as it's further developed, light photons are able to pass through. This technology allows the parent company, OurWorld, to functionally have a camera to see anywhere in the world, which they employ to spy on rivals, political powers, and personal intrigues. The narrative trades perspectives between Hiram Patterson, aristocratic CEO of OurWorld, Bobby Patterson, Hiram's son, Kate Manzoni, a journalist credited for breaking the discovery of a world ending asteroid hurtling towards earth, and David Curzon, a religious scientist whose genius leads to the subsequent advancements and applications of the "WormCam". These cardinal viewpoints supply the reader with a plethora of attitudes and reactions throughout the development of this technology; the businessman, individual, media, and scientific. Eventually, the WormCam evolves to function with a time delay, allowing the viewer to peer through not only space, but time. As the political tensions surrounding the technology continue to rise, the WormCam is commercialized and

incorporated into human society. The Light of Other Days explores our relation to truth, privacy, and surveillance. It explores the questions of What if you could know the truth?; What if you were never alone?; and What if you could always know what those in power were doing, and the truth of what they've done?

Novel infection by Mucor hiemalis kills Caenorhabditis hosts through intestinal perforation
Presenter: Jay Ni
Presenter Department: Biology
Faculty Mentor: Jessica Sowa
Faculty Mentor Department: Biology

The nematode Caenorhabditis elegans is a eukaryotic multicellular organism that has emerged as a popular model system to study cell biology and host-pathogen interactions. Presently, C. elegans is studied as a natural host of intracellular pathogens N. parisii and Orsay Virus along with other extracellular bacterial and fungal pathogens. C. elegans research is limited by the number of naturally occurring pathogens to the organism. Through a sampling project to identify new pathogens of C. elegans, we identified the fungus Mucor hiemalis as a potential pathogen of Caenorhabditis species. We observed the fungus in the intestinal lumen of wild-caught Caenorhabditis briggsae and co-culturing the wild-caught species with intracellular pathogen response reporter C. elegans confirmed the potential infection by M. hiemalis. This study characterizes the fungal infection of M. hiemalis in Caenorhabditis nematodes. We investigated food preference of C. elegans to investigate if nematodes show preference toward fungal spores or laboratory bacterium OP50. Fluorescence microscopy with fungal staining revealed the life cycle of M. hiemalis within multiple Caenorhabditis species at varying growth stages. We observed the killing of nematodes by M. hiemalis and determined its host range through a series of lifespan assays. Lastly, we observed for common C. elegans immunity transcriptional responses and found that M. hiemalis does not induce the Intracellular Pathogen Response and other pathogen specific responses seen with previously studied bacterial and fungal pathogens. Characterization of this fungus in Caenorhabditis nematodes will provide new insights into the biology of pathogenic fungi and their hosts' immune systems.

Teaching with baby brain: Exploring the Experiences of Professors After Parental Leave
Presenter: Meg Panichelli
Presenter Department: Undergraduate Social Work

In the United States, university professors who choose to take parental leave are likely to return to the classroom between 2 weeks to 1 year (or more) depending on rank, accrued sick leave, or allotted time for parental leave. Returning to the classroom to teach often requires one to fraction parts of themselves—teacher, co-parent, single parent, partner, and beyond (Lai & Thorpe, 2025). This partitioning of identities requires a certain kind of skill and disassociation that adds more labor to an already precarious experience. This conversation will focus on a research project guided by the question, "what are the experiences of professors returning to the university classroom after taking parental leave?" While similar studies have been published based on research in the UK, I have only found one qualitative study that explores the experiences of mothers and fathers returning to a [research-intensive] position at the university after parental leave (Xiromeriti, 2020).

Considering this study, I will conduct 10-15 qualitative interviews with parents who have returned to their role at a teaching-focused university after taking some form of parental leave. The project is in its formation stage and with this conversation, I seek feedback, insight, and input regarding any component of the project and more specifically to develop the qualitative instruments to be used in the study.

Autistic Student Accessibility to Study Abroad
Presenter: Emily Rooney
Presenter Department: Educational Policy and Leadership
Faculty Mentor: Heather Schugar
Faculty Mentor Department: Educational Policy and Leadership

This research explores the accessibility of study abroad programs for college students with Autism Spectrum Disorder (ASD). It aimed to fill a significant gap in the current international education landscape. Despite considerable progress towards inclusive study abroad for underrepresented groups, individuals with disabilities face limited opportunities due to perceptions of what students "can or cannot do" while studying abroad. This research used a mixed-methods design to gather qualitative data from students who participated in sensory friendly study abroad programs. The narratives provide valuable insights to the lived experiences of neurodiverse students, which international educators can use to enhance program accessibility and student support.

"I'm Doing Good for Her": Stories Examining the Employment Experiences of Undergraduate Students with Pell-Eligibility

Presenter: Jennifer Ruggiero-Patel
Presenter Department: Doctorate of Education in Policy Planning and Administration
Faculty Mentor: Heather Schugar
Faculty Mentor Department: Ed.D. Policy Planning and Administration

Students of low socioeconomic status are a growing student demographic in higher education, in part because of historical advances providing more access to this population. To afford their education, as well as necessities, students of low socioeconomic status often need to work while earning their degree. Higher education institutions are often not structured to support students of low socioeconomic status. The purpose of this qualitative, narrative inquiry was to examine the stories of employed undergraduate students of low socioeconomic status, while also studying their motivation for working while in college. The researcher collected data for this study through one demographics questionnaire, writing sample, and semi-structured interview for each participant. The study included eight employed undergraduate students who self-identified as Pell-Eligible. The researcher used Vincent Tinto's (1987) Theory of Student Departure and Edward Deci and Richard Ryan's (2000) Self Determination Theory as the theoretical framework to guide the interpretation of the results. The study found the major factors influencing the employment experience of students of low socioeconomic status were: financial stress, schedule, mental health, student involvement, and supervision. The major factors influencing student motivation to work were: finances, planning for the future, altruism, self-image, and position modality. Results from this research may provide higher education practitioners insight into the student employment experience for students of low socioeconomic status, so they can better support

students who work. Additionally, the research provides reasons for motivation which higher education professionals can use to help retain students in their roles.

Post Traumatic Growth In Student Veterans Study
Presenter: Jeremy Ruspantine
Presenter Department: Social Work
Faculty Mentor: Brie Radis
Faculty Mentor Department: Social Work

This study investigates the concept of Post-Traumatic Growth (PTG) among student veterans, focusing on how creative expression can serve as a tool for healing and career development after military service. As a combat veteran of the Iraq War and a current social work student, I have experienced firsthand the challenges of transitioning to civilian life, including coping with post-traumatic stress (PTS). However, my journey has also revealed the transformative potential of PTG—leveraging adversity to foster resilience, personal growth, and renewed purpose. The research employs a peer-led group model, conducted over Zoom, where student veterans engage in discussions, storytelling, and creative activities to explore their experiences of trauma and growth. Through guided reflection and artistic expression—such as writing, poetry, and visual storytelling—participants will articulate their journeys and uncover strengths gained through adversity. The study is supervised by Dr. Brie Radis and aims to provide a supportive environment for veterans to connect, process emotions, and recognize their post-traumatic growth. The expected outcomes include increased self-awareness, enhanced coping strategies, and a deeper understanding of PTG as a mechanism for positive transformation. The study's implications extend beyond individual healing, offering insights into how universities and veteran support programs can integrate PTG frameworks into their services. By demonstrating that trauma can be a catalyst for growth, this research seeks to empower veterans in their academic and professional pursuits while fostering a community of resilience and mutual support.

A Level Playing Field: Examining Inequities in Marching Band Music Education
Presenter: Casey Russoman
Presenter Department: Music Education and Therapy
Faculty Mentor: Lauren Ryals
Faculty Mentor Department: Music Education and Therapy

Music education has the power to shape leaders, teach life lessons, and transform lives. "A Level Playing Field: Examining Inequities in Marching Band Music Education" is a research study that investigates the socioeconomic factors influencing the success of high school marching band programs. This project will explore how these factors impact students' personal growth, their perceptions of future success, and their access to equitable educational opportunities. The primary goal of this research is to develop a deeper understanding of how to make high-quality marching band experiences accessible to underprivileged students. To achieve this, both qualitative and quantitative data will be collected through surveys and interviews with participants from West Chester University of Pennsylvania. Participants will play a vital role in advancing educational equity and promoting more inclusive music education practices. This study addresses key areas of music administration

and advocacy, emphasizes social justice, and aims to empower a new generation of culturally and socially conscious learners. By highlighting the systemic barriers that limit access to music education, this research underscores the critical need to provide all students—regardless of socioeconomic status—with opportunities for cognitive development, social-emotional growth, lifelong skills, and a sense of identity. Through this work, we aim to foster a future where the transformative benefits of marching band education are available to every student, not just those from privileged backgrounds.

The Implementation of Faculty-Facilitated Mindfulness-Based Interventions to Prevent or Mitigate Burnout in Undergraduate Nursing Students
Presenters: Lauren Stoltzfus, Beth Brady, Christina Von Colln-Appling, Adrienne Wharry
Presenters Departments: Nursing (Additional presenters: Michelle Kensey, Nursing; Adam Hudson, Undergraduate Nursing Student; Jenny Weiss, Undergraduate Nursing Student)

This project evaluates the effectiveness of faculty-facilitated mindfulness-based interventions in preventing or mitigating burnout among undergraduate nursing students. Burnout is a pervasive issue that affects many professions, leading to physical illness, emotional distress, and impaired interpersonal relationships (Maslach & Jackson, 1982). In nursing, the risk is heightened due to the demanding nature of academic coursework, exposure to human suffering, and the responsibility for others' health (Burner & Spadaro, 2023). This study utilized the Maslach Burnout Inventory (MBI), a valid and reliable tool, to assess burnout levels in nursing students before and after participation in a series of at least 8 faculty-led mindfulness-based sessions throughout an academic year. Students completed the MBI survey to evaluate their burnout levels, and a qualitative survey was also administered pre- and post-intervention to gather insights on their experiences. Mindfulness-based practices, such as meditation, body scans, journaling, and conscious breathing, were integrated to equip students with self-care techniques to enhance resilience and academic success. The introduction of mindfulness in nursing education has shown promising results in enhancing coping mechanisms and resilience, and this study aims to further explore its potential to reduce burnout and foster well-being in future nurses (Burner & Spadaro, 2023; Rava & Hotez, 2021; Hilcove et al., 2021). Although ongoing, this study's preliminary findings suggest that mindfulness interventions could have a lasting, positive impact on nursing students' ability to manage stress and prevent burnout as they transition from education to practice.

Exploring the Impact of Music-Based Interventions on Behavioral and Physiological Responses in Individuals with Premenstrual Syndrome
Presenter: Eun Sil Suh
Presenter Department: Music Education and Music Therapy

Premenstrual symptoms (PMS) affect over 75% of individuals, significantly disrupting physical, emotional, and mental well-being (Belluz, 2015). Music therapy has emerged as a promising, non-invasive approach to managing PMS symptoms, offering both physiological and psychological benefits. This presentation explores the effectiveness of various music interventions and their implications for innovation in the field. Music can alleviate physical discomfort, reduce muscle tension, and address the emotional dysregulation commonly associated with PMS. Singing and vocalization facilitate emotional expression while stimulating serotonin and dopamine production, promoting improved mood and overall well-being (Holden & Holden, 2013).

Additionally, listening to preferred music activates the brain's pleasure and reward centers, providing a powerful tool for emotional regulation (Arjmand et al., 2017). Music-making, songwriting, and improvisation support emotional expression and regulation (Li, 2022; Wenquin, 2022). This study examines the impact of three music therapy interventions—music listening, live music with singing, and live percussive instrumental playing with preferred music—on 20 college students experiencing PMS. Research participants were randomly assigned to one of the three groups. Physiological measures, including EEG, EMG, respiratory rate, heart rate, and skin conductance, were collected to evaluate changes in muscle tension and emotional regulation. Psychological measures, such as anxiety levels and pain perception, were also assessed. This study's findings demonstrate music therapy's effectiveness in alleviating PMS symptoms. This presentation will highlight these results, emphasizing the potential of music therapy to enhance the quality of life for individuals experiencing PMS and discussing the broader implications for clinical practice and future research.

Cultivating a Culture of CARE - A Qualitative Study of WCUPA Community Members' Experiences with CARE Services
Presenter: Alisa Takala
Presenter Department: Graduate Social Work
Faculty Mentor: Kerrie Ocasio
Faculty Mentor Department: Graduate Social Work

This qualitative research study seeks to understand the experiences of West Chester University (WCUPA) students who have utilized Campus Assessment Response and Education (CARE) Team services and the experiences of faculty and staff who have referred students to the university's CARE Team. Specifically, it asks the following three questions: 1) What are the experiences of students and referrers who utilize CARE Team services at WCUPA? 2) What gaps exist on WCUPA's campus that limit CARE Team services provided to students in distress? 3) How do CARE Team referrers perceive the training, referral process, and coordination provided by the CARE Team? Those who choose to participate will meet with the investigators for an interview. Their responses will be recorded, and all transcriptions will be coded inductively to categorize the participants' feedback. Upon coding transcriptions, the team will identify themes that arose, and the data will be organized into categories. The investigators aim to use their research findings to address gaps in the CARE referral process and contribute to conversations regarding best practices in the realm of college behavioral intervention teams. This presentation will present the initial results found via inductive coding as well as introduce potential next steps the CARE Team may take to address the equity and access gaps the thematic coding reveals.

Self-Identity and Second Language Acquisition: The Journey toward Second Language Proficiency
Presenter: Thomas Tedrow
Presenter Department: Education Leadership and Higher Education Administration
Faculty Mentor: Heather Schugar
Faculty Mentor Department: Education Leadership and Higher Education Administration

Acquiring a new language constitutes a myriad of benefits and challenges that propel the language learner forward toward second language proficiency. While most research in the field of second language acquisition

(SLA) is based upon the seminal works of Steven Krashen and Noam Chomsky, a new branch of SLA research has recently emerged as it relates to self-identity and motivation. Consequently, this research presentation draws upon the foundational works by the late Zoltán Dörnyei, whose theoretical framework in second language identity and motivation (Dörnyei, 2009) states that second language acquisition intersects with the learner's self-identity via three variables:(1) The Ideal Self, (2) The Ought-to L2 self, and (3) The L2 Learning Experience. Although current research in the field of SLA self-identity focuses on motivational goals which propel a learner toward greater proficiency in one's target language, a gap exists in the research that explains at which second language proficiency level a language learner begins to personally identify with the target language and culture(s) being studied. As a result, the goal of this research project is to use Dörnyei's theoretical framework in second language (L2) self-identity and motivation to explore when learners begin to identify with their target language in the journey toward the second language proficiency. Keywords: second language acquisition, L2 self-identity, language proficiency, motivation, target language.

Sleep Health of Music Therapy Undergraduate Students
Presenter: Elizabeth Weaver
Presenter Department: Music Education and Music Therapy
Faculty Mentor: Angela Guerriero
Faculty Mentor Department: Music Education and Music Therapy

It is recommended that adults ages 18-60 receive 7 or more hours of sleep each night for optimal health and well-being (National Institute of Health, 2019). Silverman and Muralidharan (2023) found that inadequate sleep has consequences on music therapy undergraduate students' health and well-being. The explanatory mixed methods research design included a survey (n=67) and optional semi-structured interview (n=6) of music therapy undergraduate students from American Music Therapy Association (AMTA) approved music therapy programs. The study aimed to expand upon this prior research, identifying the self-described sleep health of undergraduate music therapy students and how it impacts their well-being. This research contributes information about the sleep habits of undergraduate music therapy majors nationally, which could impact music therapy programs and promote conversations about the well-being of healthcare professionals at the collegiate level. Results indicate that the average amount of sleep students receive on weeknights is inadequate, with 53.58% of students averaging 0-6 hours of sleep a night. Additionally, time spent in classes exceeds time spent on self-care or exercise, with 70.31% of respondents reporting they were spending 13 or more hours in class a week, and 71.88% of participants spend 0-3 hours a week exercising and 65.15% are spending 0-3 hours a week on hobbies/self-care. Some limitations of the study include that 89.96% of participants self-described as women, and no men completed the study. Also, 89.39% of participants self-described as white. While limitations, the demographics are representative of the field of music therapy based upon the 2021 AMTA Workforce Analysis.

The role of the Formulary Technician: A recipe for success, from the Bachelor's degree to a Supervised Practice Program.
Presenter: Amy Altomare
Presenter Department: Nutrition
Faculty Mentor: Dara Dirhan
Faculty Mentor Department: Nutrition

With the requirement of a master's degree to become a registered dietitian nutritionist (RDN), some students after completing undergraduate studies take time off to save money for graduate studies or pursue a fifth year of a distance education graduate program, before entering supervised practice (SP). Both options present an opportunity for students to experience "real learning" and make connections through a job that is applicable to their future trajectories. There are a handful of applicable jobs with transferable nutrition skills, recommended for SP pursuing dietetics students These jobs include, dietary aide, nutrition and dietetics technician registered (NDTR), foodservice worker, and WIC nutritionist. A lesser known, clinically applicable job for students to consider is that of the Formulary Technician (FT). One cross-sectional study assessed self-efficacy among dietetic students, enrolled in 4 types of programs: coordinated undergraduate, coordinated graduate, dietetic internship, and the Future Education Model Graduate Program. Outcomes demonstrated that first-year graduate students had the lowest scores, and that self-efficacy was in higher in students after completing SP (Heitman & Taylor, 2021). Research suggests that students benefit from "real learning" experiences, which are opportunities where students are placed in a setting and see first-hand the work of a RDN (Morgan, 2019).

Using Dislocation Simulators to Teach Joint Reduction Techniques in Athletic Training
Presenters: Daniel Baer, Jason Kopec, Patrick Heagey
Presenters Departments: Sports Medicine, Sports Medicine, Physician Associate Education

Simulation is frequently used in healthcare to teach students hands-on clinical skills before applying techniques with real patients. Orthopedic conditions involving displaced joints are difficult to simulate with traditional means; therefore, training with joint dislocation simulation models may help students learn joint reduction techniques in a safe, controlled environment, to prepare for clinical practice. This prospective cohort study assessed the effectiveness of using shoulder and finger dislocation simulators to educate graduate Athletic Training students ($n = 49$) on appropriate joint reduction techniques. After a traditional lesson on dislocations and joint reduction, participants completed a pre-simulation survey to rate perceived confidence/competence in reducing finger and shoulder dislocations. After the traditional lesson, participants completed simulation training, including demonstration and practice with simulation models. Following training, participants completed skills evaluation to assess actual competence, and a post-simulation survey to assess model fidelity, convenience, and perceived confidence/competence in reducing dislocations. Participants demonstrated significant increases in confidence/competence in reducing both finger ($p < 0.001$) and shoulder ($p < 0.001$) dislocations. On average, students took 1.05 attempts (± 0.22) and 3.42 seconds (± 1.83 seconds) to successfully reduce a finger dislocation, while successful shoulder reduction took 1.07 attempts (± 0.33) and 8.33 seconds (± 7.06 seconds). 100% of participants agreed that the finger model was easy to use, while 98% agreed that the

shoulder model was easy to use. These findings demonstrate an effective and practical technique for training students in healthcare fields to successfully reduce acute joint dislocations of the finger and shoulder.

The Role of Self-Esteem and Perceived Stress in Shaping Student Behavior and Perceptions of the Disciplinary Process
Presenters: Emily Brown, Rose Gertzman, Ian Dargitz
Presenters Departments: Psychology, Psychology, Psychology
Faculty Mentor: Lia O'Brien
Faculty Mentor Department: Psychology

As part of a larger research study investigating the relation between stress, university belongingness, self-esteem, and disciplinary history, this study focuses on perceptions of the student conduct processes. It aims to begin to understand how these individual psychosocial factors interact and influence student well-being throughout the conduct process. Pearson correlation analyses were conducted to explore the strength and direction of these associations across 72 participants with a conduct record at West Chester University. A strong negative correlation was found between university belongingness (M = 71.6, SD = 9.77) and both self-esteem (M = 21.56, SD = 3.21) and perceived stress (M = 27.12, SD = 6.55), with higher feelings of belongingness associated with lower perceptions of stress and greater self-esteem. Additionally, self-esteem and perceived stress were positively correlated, suggesting that individuals with higher self-esteem reported lower levels of stress. A strong positive correlation was also found between self-esteem and perceived stress, suggesting that individuals with higher self-esteem reported lower stress levels. Perceptions of the conduct process (e.g., fairness, understanding, care, helpfulness, and likelihood to reoffend) were positively correlated with university belongingness but negatively correlated with both self-esteem and perceived stress. These findings suggest that those who feel more satisfied with the conduct process tend to report a greater sense of university belongingness, lower levels of stress, and higher self-esteem. Ultimately, this study highlights the importance of creating a supportive university environment to improve students' psychological well-being and their experiences within university processes.

A Multilevel Analysis of the Pennsylvania Kindergarten Entry Inventory: A Validation Study
Presenter: Benjamin Brumley
Presenter Department: Educational Foundations and Policy Studies

Kindergarten is the gateway to education and a point of great variability in children’s knowledge and skills. As a result, there is keen interest in kindergarten entry assessments (KEAs) to understand and address gaps in early skills. This study rigorously investigated the Commonwealth of Pennsylvania’s Kindergarten Entry Inventory (PA KEI). Multilevel factor analyses provided evidence for three factors–Emerging Academic Competencies, Learning Engagement Competencies, and Communication Competencies. Measurement invariance analyses indicated that these factors were invariant across gender, race/ethnicity, dual language learners, and special needs status. Support for concurrent convergent and divergent relations was found only for scores on the Emerging Academic and Learning Engagement Competencies factors. Analyses of classroom-level variance in PA KEI scores indicated that teacher education and experience predicted between-classroom differences suggesting that teacher characteristics may influence ratings of children’s skills. This study provides evidence to

support the use of scores on two factors of the PA KEI with all children to identify skill gaps and guide instruction to close them. Findings from this study can also be used to inform professional development on the PA KEI. Finally, this study provides a model for other investigations and efforts to improve teacher-report KEAs.

Detecting Deception: Measuring Malingering with a Novel Cognitive Tool
Presenter: Kimberly Bucklin
Presenter Department: Psychology
Faculty Mentor: Jodi McKibben
Faculty Mentor Department: Psychology

Malingering, the act of intentionally exaggerating symptoms for external gain, impedes valid assessment of psychological and physiological conditions in clinical, legal, and medical settings (APA, 2013, p. 360). Accurately differentiating between falsified and genuine symptomology is paramount to ensuring just outcomes in such cases, which is best achieved through examining effort (Faust, 2023). This replicated simulation study assessed the Memorization of Digits Tool (MODT), which distinguishes malingering from unfeigned attempts by measuring effort. The MODT is a forced-choice measure in which participants listen to digit sequences and select the correct answer from a varied number of options. West Chester University undergraduate students were recruited using convenience sampling in SONA for both studies (Study 1: N=44; Study 2: N=40) and divided into two groups: simulated malingerers (experimental), and truthful responders (controls). Mann-Whitney U Tests indicate malingerers obtained fewer correct responses on the MODT (Study 1: Mdn=9.00; Study 2: Mdn=10.00) than controls (Study 1: Mdn=25; Study 2: Mdn=21.00), [Study 1: z=5.69, p0.05). In conclusion, these results provide strong support that the MODT effectively differentiates between those feigning malingering and those asked to provide genuine effort.

The Effects of Prenatal Alcohol and Nicotine Exposure on Later-Life Drug-Seeking Behavior and Memory Performance
Presenter: Zoe Campanella
Presenter Department: Psychology
Faculty Mentor: Kristen Breit
Faculty Mentor Department: Psychology

Alcohol and nicotine are the two most commonly consumed licit substances among pregnant people. The potential consequences of prenatal exposure to each drug separately may include a variety of neurological and behavioral alterations, including an increased likelihood of developing a substance use disorder (SUD) and/or cognitive impairments later in life. Importantly, 30% of pregnant people who report consuming alcohol also report consuming nicotine, yet the potential consequences of combined prenatal exposure are largely unknown. Furthermore, 40% of pregnancies are unplanned, meaning that drug exposure most commonly occurs during the first trimester, yet research investigating early pregnancy exposure is sparse. Using a rat model, this study will examine whether co-exposure to alcohol and nicotine via electronic cigarettes during the first trimester increases drug-seeking behaviors and/or impairs memory performance more than individual exposures. Pregnant Sprague-Dawley rats will be exposed to alcohol, nicotine, the combination, or vehicle from gestational

days (GD) 5-11, mimicking the human first trimester. Following birth, offspring will be examined for nicotine-seeking behaviors using a self-administration vapor paradigm. Offspring will also be examined for memory performance using a novelty object recognition paradigm during adolescence and adulthood. Preliminary results suggest that combined exposure of alcohol and nicotine in utero may increase nicotine self-administration among offspring. Data are currently being analyzed for the novelty object recognition paradigm via manual video recordings. These data will provide valuable information for individuals affected by combined prenatal exposure to alcohol and nicotine regarding potential SUD vulnerability and behavioral impairments later in life.

Arts-Integrated Preschool: Are School Readiness Advantages Accentuated for Children Facing Severe Hardship?
Presenters: Isabella Capera, Ekaterini Nakos
Presenters Departments: Psychology, Psychology
Faculty Mentor: Eleanor Brown
Faculty Mentor Department: Psychology

The present study probed whether the impact of intensive arts integration on school readiness was augmented for children living in severe poverty versus those facing less severe economic hardship. A prior, published study out of our lab demonstrated a school readiness advantage associated with attendance at an arts-integrated versus more typical Head Start preschool. The present study builds on this prior work to explore whether the apparent advantages of arts-integrated preschool might be accentuated for children living in severe poverty. Participants were 265 children, ages 3 to 5 years, who attended a Head Start preschool. Of these, 197 attended an arts-integrated Head Start, where children received daily music, dance, and visual arts classes in addition to homeroom, and 68 attended a matched comparison program that did not include arts classes. According to federal poverty guidelines, all families faced economic hardship, with income-to-needs ratios less than 2x the poverty threshold. For the present study, we compared children living in severe poverty, or less than half the poverty threshold, to those facing less severe economic hardship. The Bracken Basic Concepts Scale, Third Edition- Receptive (BBCS-3:R) measured children's school readiness at the start and end of a year of preschool attendance. Planned analyses will use a block entry linear regression to examine the impact of arts-integrated preschool attendance on school readiness, as well as the interaction of severe economic hardship with arts-integrated preschool attendance. Implications concern the arts as a vehicle for equalizing educational opportunities for children facing severe hardship.

Older Korean American Adults' Willingness to Discuss ACP
Presenter: Juhi Cho
Presenter Department: Nursing
Faculty Mentor: Eunice Park-Clinton
Faculty Mentor Department: Nursing

Older adult Korean immigrants in the United States often miss the opportunity to engage in Advanced Care Planning (ACP) due to language barriers and cultural beliefs. A 4-week project, conducted in Korean during the summer of 2024 with 61 Korean-speaking older adults, found that 87% of participants expressed a desire to

share their end-of-life care wishes with either their surrogates or their primary care physicians. The findings underscore the need for language-concordant and culturally sensitive ACP education for this population.

Perceptions of violent crime
Presenter: Emily Close
Presenter Department: Criminal Justice
Faculty Mentor: Jaeyong Choi
Faculty Mentor Department: Criminal Justice

The purpose of this project is to enhance our understanding of how students at West Chester University perceive violent crime, with a specific focus on terrorism. Terrorism is often viewed in the U.S. as a persistent threat, influencing both public opinion and policy decisions. This study seeks to identify the key factors that lead individuals to label a crime as terrorism or classify someone as a terrorist, and to explore the variables that shape these perceptions. Building on existing criminological frameworks, this study uses a vignette-based approach to examine how students from the Business and Public Management building interpret a fictional news story about a shooting. Participants will answer questions about the suspect, with a focus on how factors such as the suspect's origin and possible affiliation with an extremist group affect perceptions of both the individual and the attack itself. The study aims to address a critical gap in the literature by examining how these perceptions of violent crime, particularly terrorism, can impact real-life decisions such as sentencing recommendations and policy implications. Additionally, this research contributes to the broader body of work on perceptions of terrorism and violent crime by assessing the factors that drive individuals to label certain events as acts of terrorism, and the role of social and cultural influences in shaping these decisions.

fANTastic Creatures: Connecting West Chester with the Hidden World of Ants
Presenter: Amanda Cohan
Presenter Department: Biology
Faculty Mentor: Manuela Ramalho
Faculty Mentor Department: Biology

Until now, there was no resource with substantial information and visuals to convey significant details on the ant diversity all around us in West Chester, PA. Ants play a valuable ecological role through seed distribution, aiding in nutrient cycling, and impacting soil health. This project aimed to create an accessible and understandable visual guide conveying West Chester ants' common and scientific names, identifying features, and other information about them. Myrmecologists, scientists who study ants, have years of training to identify ant taxonomy, without this experience the local community can face some challenges. Knowing what species are native is the first step towards conserving them and creating a positive perception of them. The ants were identified with a taxonomic key. Then, using the Ramalho Lab's microscope with an attached camera, photos of selected specimens from both the lab and WCU entomology collection, which is not publicly available, were taken. All designs were formatted targeting a non-scientific audience and resources are provided for those who want to learn more about these fANTastic creatures. The outcome of this project is a new science

communication apparatus that can be used for outreach events, by West Chester University students, and available for the public online.

Biomechanics of Sprinting Warm-Up Drills
Presenter: Gabrielle Curtis
Presenter Department: Sports Medicine
Faculty Mentor: Kenneth Clark
Faculty Mentor Department: Kinesiology

Rehabilitation and return to play techniques are topics examined by physical therapists, athletic trainers, exercise physiologists, and biomechanics specialists within the field of sports medicine. Research involving return-to-play plans for athletes has shown the critical nature of implementing sprint drills for athletes to regain proprioception skills, muscular stabilization, and kinesthetic mechanisms. Implementing the correct and effective drills is critical for recovery and return to play following soft tissue injuries. Establishing measures for sprint speed, ground contact, flight time, stride rate and length, and force are important for designing an effective return to play plan. Within the framework of the research plan, an analysis of the sprint technique and mechanics is important to understand how to improve speed development and decrease the risk of injuries.

The Impact of Menstrual-Related Benefits on Perceived Diversity Climate and Organizational Attractiveness
Presenters: Delaney Dwyer, Winter Elvin
Presenters Departments: Psychology, Psychology
Faculty Mentor: Megan Nolan
Faculty Mentor Department: Psychology

Drawing on signaling theory, we explain how the provision of menstrual-related benefits (menstrual leave or free menstrual products) increases organizational attractiveness by enhancing perceptions of the organization's diversity climate. Our results from an experimental vignette study with 200 adults support this prediction. Specifically, we found that participants perceive a stronger diversity climate in organizations that offer a typical work-life benefits package (e.g., paid parental leave, flextime, subsidized fitness programs) alongside menstrual leave or free menstrual products in their recruitment materials, compared to organizations offering only the typical work-life benefits package. As a result, organizations that highlight menstrual benefits in their recruitment materials are rated as more attractive to participants.

Chester County Pennsylvania; Quantifying toxic gas concentrations in residential communities near mushroom farming operations.
Presenters: Daniel Engelbrecht, Jess Hampton
Presenters Departments: Health, Health
Faculty Mentor: Lorenco Cena
Faculty Mentor Department: Health

Introduction Chester County, Pennsylvania is home to the largest region of mushroom farming in the United States which is credited with producing more than half of all fresh mushrooms in the US annually. Chester County mushroom farming operations include composting to produce the substrate that is needed for large scale farming in mushroom houses. Mushroom farms in Chester County are uniquely surrounded by residential regions with distances between substrate production facilities, composting piles, and homes being as little as 100 feet. Residents living near these facilities have lodged concerns for their health and safety due to extremely noxious odors and corrosion of outdoor metal equipment. The limited existing research has shown a higher prevalence of asthma and noted symptoms in resident populations in southeastern PA, though environmental sampling showed no concerns. Additional research is warranted to further evaluate the degradation of ambient air quality and plausibility of exposure to toxic gases in residential areas. Objective Quantify concentrations of fugitive emissions of hydrogen sulfide, methane, and ammonia from suspected point-sources in the mushroom farming operations. Methodology Three area monitors were placed on residential properties within 100-600 feet of suspected point sources associated with mushroom farms. Sampling occurred for 1 year and recorded concentrations of H2S, NH3, and CH4 in the ambient environment. Conclusions The environmental sampling data demonstrates elevated and irregular H2S concentrations on residential properties. These readings were found in exceedance of state regulations. Further studies are needed to evaluate the health impact of chronic exposures in this context.

Effect of Rare-Earth (RE) atom doping on ultra-small gold clusters: REAun (RE: La – Lu; n = 1 – 5)
Presenter: Angel Flowers
Presenter Department: Physics and Engineering
Faculty Mentor: Anil Kandalam
Faculty Mentor Department: Physics and Engineering

Pure and doped ultra-small gold (Aun) clusters have been the subject of numerous studies due to their novel structural, electronic, and catalytic properties. However, a comprehensive analysis of rare-earth (RE) atom-doped Aun clusters, with their potential applications in linear and nonlinear photonics, is limited. Here, we present our recent results from a density functional theory (DFT) study focusing on the geometries, electronic, and magnetic properties of REAun (RE = La – Lu; n = 1 - 5) clusters. Our calculations predict that the RE atom stabilizes the Aun cluster by maximizing the RE-Au bonds. While the REAun (n = 1 – 4) clusters prefer planar geometries, a close competition between planar and non-planar structures was seen at n = 5. In most REAu5 clusters, non-planar structure is energetically favored, while a distinct preference for the planarity is predicted for REAu5 (RE = Eu, Tb, Tm, and Yb). The bonding analysis of REAu5 revealed the dominance of the RE-d orbitals in the formation of frontier molecular orbitals. The spin magnetic moments of the REAun clusters show that the dopant RE atoms retain their atomic spin magnetic moments. This work was supported, in part, by the NSF S-STEM Scholarship (Award #2028230) and the West Chester University SURI program.

Trends and data analysis of light pollution in the Chester County Region
Presenter: Kate Frederick
Presenter Department: Earth and Space Sciences

Faculty Mentor: Marc Gagne
Faculty Mentor Department: Earth and Space Sciences

By recording Sky Quality Meter (SQM) measurements, uploading these data to Globe at Night, and comparing these findings to VIIRS, we can better assess the impacts of light pollution on the economy, environment, human and animal health in Chester County, Pennsylvania. An increasing body of evidence shows that light pollution damages human and wildlife, wastes energy, negatively impacts the economy, contributes to climate change, and blocks our view of stars, disconnecting us from our natural nighttime environment (Chepesiuk, 2009). To address light pollution in Chester County, PA, a multi-phase approach of public outreach, institutional advocacy, and quantitative research was utilized. SQM data were measured in Chester County, uploaded to the Globe at Night database, and compared to VIIRS remote-sensing imagery using Google Earth Engine. The analysis seeks to identify long-term light-pollution trends in Chester County over a 9 year period (April, 2014 - January, 2024). Supported by diverse light pollution research, our goal is to increase public awareness about light pollution, alleviate its ecological consequences, and support sustainable mitigation strategies. This work is being used to support PA HB1803, to reduce light pollution from state owned lighting fixtures. By integrating these efforts into public discourse and encouraging sustainable lighting practices, we aim to further the global shift toward environmental sustainability, preserve natural ecosystems, and create a world where the beauty of the night sky is protected, and accessible for generations to come. As such this research extends beyond localized impacts, taking into consideration the implications of light pollution around the globe.

Advances in Understanding the Microbiota of Ants in Brazil: Review and Future Perspectives

Presenter: Alexandra Gianaris
Presenter Department: Biology
Faculty Mentor: Manuela Ramalho
Faculty Mentor Department: Biology

Since the advent of DNA sequencing and the introduction of new sequencing technologies such as Next Generation Sequencing (NGS), we have advanced our understanding of ants, including the host-microbe interactions maintained within their bacterial communities, sometimes spanning 50 million years. This significant advancement has attributed to exploration of non-cultivable bacteria, yielding unprecedented data. Considering that Brazil harbors one of the world's largest ant diversity, exclusively unique biomes, it is expected that bacterial diversity is equally extraordinary. Thus, this study systematically reviews and shows meta-analysis aiming to provide a comprehensive view of ant microbiota in Brazil, identifying the studied ant species and genera, mapping the explored biomes, and delineating the functional attributes of studied ants, ultimately outlining future perspectives. This includes identifying hotspots for subsequent studies, and identity biomes that have not yet been investigated. This study for the first time, gaps in ant subfamilies/genera, and locations still underexplored in the context of host-microbe interactions in Brazil. Results of this study reveal that bacterial community composition is significantly affected by biome, subfamily, and diet type, being the first study of its kind to do so on such a large scale. Additionally, it can serve as a guide for the myrmecology community to direct future microbiota studies, aiming to expand both the number of ant species and investigated locations. Furthermore, this study has the potential to unravel more about Neotropical

microbiological diversity, contributing significantly to understanding the ecological and evolutionary mechanisms underlying ant-bacteria associations.

Music Therapy's Impact on Academic Performance
Presenter: Molli Gordon
Presenter Department: Music Education/Music Therapy
Faculty Mentor: Eun Sil Suh
Faculty Mentor Department: Music Education/Music Therapy

Music therapy is a tool that is slowly being integrated into schools, but in bringing music therapy into schools, its legitimacy is often questioned. In creating this article, the main goal was to explore music therapy's impact on academic performance, as well as how teachers can aid in the process. Initially, data was collected from a variety of articles to discuss music therapy's role in general within school-based settings. From there, the author completed a scoping review of 8 articles to find further evidence to support initial research. Articles were filtered based on how recently they were written, as well as their relevance to the research questions. There was sufficient evidence to determine that music therapy helps improve socio-emotional learning, and behavioral skills in elementary school children. There was not sufficient data to support teachers' roles, but there are implications for further research. Moving forward, researchers would benefit from looking at a wider range of schools and expanding outside of the socio-emotional and behavioral benefits. Overall, the research shows initial support for integrating music therapy within schools.

Beyond the Books: Benefits and Challenges of Service-learning in Undergraduate Research
Presenters: Kaylee Grazul, Tatum Williams
Presenters Departments: Psychology, Psychology
Faculty Mentor: Stevie Grassetti
Faculty Mentor Department: Psychology

Service learning (SL), combines community service with academic study and provides opportunities for learners to make meaning of their experiences (Myers, 2020). SL is associated with positive outcomes for undergraduate students including enhanced critical thinking, communication skills, independence, and problem-solving skills (Crowe and Boe, 2019). Students who participate in SL report high levels of satisfaction (Macías Gomez-Estern et al., 2021). SL is also associated with a stronger interest in pursuing a higher level of education (Crowe and Boe, 2019). Despite the general benefits of SL, not all SL experiences are equally beneficial (Schoenherr, 2015). For example, existing literature found that both faculty and students struggled to find adequate motivation, time, and support to implement or participate in SL courses (Chambers and Lavery, 2022; Lee et al., 2018). Additionally, students reported challenges finding transportation to community sites (Lee et al., 2018). More work is needed to determine the exact qualities that make SL impactful for students. In the current study, we reflect on our SL experiences in which we provided after-school programming for middle school students as part of an ongoing research study. We identify the specific learning outcomes gained from this experience, how this experience has shaped our educational goals, and aspects of this experience that were (positively and negatively) associated with our satisfaction. This case study models ways in which instructors can involve undergraduate students in a way that benefits student learning, research, and the community. Information can inform future SL experiences to maximize benefits to undergraduate students.

Disordered eating and intentional insulin restriction among individuals with type 1 diabetes: Examining diabetes distress, body image, and perceptions of weight as risk factors

Presenter: Jayden Hartlaub
Presenter Department: Psychology
Faculty Mentor: Erin Hill
Faculty Mentor Department: Psychology

Purpose/Objectives: Individuals with type 1 diabetes engage in disordered eating behaviors at twice the rate of the general population (Doyle et al., 2017; Luong et al., 2023). Those with type 1 diabetes can restrict insulin to control weight, sometimes referred to as diabulimia (Coleman & Caswell, 2020). When someone with type 1 diabetes does not take enough insulin, they cannot break down glucose, so it remains in the bloodstream rather than entering cells. Given the rates in the population and the health concerns related to disordered eating and insulin restriction, examining risk factors in this population is of critical importance. The present study aimed to identify risk factors for general disordered eating, diabetes-specific disordered eating, and intentional insulin restriction. Specifically, the present study measured diabetes distress, physical appearance comparison on social media, weight esteem, and perceptions of BMI as health. Methods: Participants were 199 individuals with type 1 diabetes between the ages of 18-39 recruited via Prolific, a crowdsourcing website. Participants completed a Qualtrics survey measuring risk factors and disordered eating behaviors. Results: Diabetes distress emerged as a risk factor across all three outcomes and was the strongest risk factor for both diabetes-specific disordered eating and intentional insulin restriction. Weight esteem was the strongest predictor for general disordered eating, and physical comparison and diabetes distress were both significant in that model. considered in clinical settings and further examined for their contributions to disordered eating behaviors in the type 1 diabetes population.

The Impact of Health Promotion Home Visits on Loneliness in an Older Adult Population

Presenter: Jean Herb
Presenter Department: Nursing

Background/Literature review: Loneliness in the older adult population has been identified as a global public health issue that can accelerate physiological aging, lead to functional decline, and premature mortality from all causes. Loneliness is also associated with increased utilization of healthcare. The literature recommends providing a home visit intervention that can reduce this feeling in older adults. This evidence-based practice project evaluated loneliness by comparing the Revised UCLA Loneliness Scale -Version 3 scores before and after a series of health promotion home visits (HPHV) conducted by student nurses at a home health agency. PICO Question: Do community-dwelling older adults receiving health promotion home visits from student nurses every other week have a reduction in loneliness after eight weeks? Source of evidence synthesis: A comprehensive search was conducted using databases such as PubMed, CINAHL, Cochrane Library, AgeLine, Elsevier, HealthSource: Nursing Academic Edition, and Penn Libraries. The evidence synthesis was based on a review of systematic reviews, RCTs, observational, scoping, integrative, rapid, and umbrella reviews, published in peer-reviewed journals. Keywords and phrases included: loneliness, older adults, non-skilled home visit; health promotion home visit, nurse, and student nurse. Limitations were English language, full text, publication dates between 2013-2024, and adult research participants. The geographical location of studies was not exclusive. Studies that implemented routine and structured home visitation interventions resulted in statistically

significant data regarding older adults and their feelings of loneliness. Proposed EBP changes: This project supports the integration of the evidence-based strategy of HPHV that reduces loneliness and may improve overall health and quality of life in the older adult population. Findings may contribute to broader discussions on nursing interventions for loneliness, inform policy recommendations for the assessment and treatment of loneliness, and could contribute to lowering healthcare utilization.

Virtual Reality and Language Production in Aging: The Role of Natural Cognitive Decline
Presenter: Kaitlyn Horn
Presenter Department: Communication Sciences and Disorders
Faculty Mentor: Sojung Kim
Faculty Mentor Department: Communication Sciences and Disorders

Purpose/Vision: Virtual reality (VR) allows users to immerse themselves in a simulated environment that replicates the real world. Research suggests that VR may be more effective for language and cognitive rehabilitation compared to traditional, non technology-based methods. However, it is unclear whether normal aging and natural cognitive decline affect the benefits of VR for language. This study aims to examine the relationship between VR and language in healthy older adults (65+ years of age) compared to younger adults (20-25 years of age). Methods/Design: The participants included four older adults and five younger adults. Each participant was asked to describe two pictures- one presented on paper and the other in a VR modality- which were then analyzed and compared. Counterbalancing techniques were used between the paper and VR conditions to minimize order effects. Additionally, two cognitive tests were administered to screen participants' cognitive abilities. Outcomes/Implications: The finalized results will include: (1) lexical variation, measured by the type-token ratio (i.e., the number of unique words / the total number of words); (2) language proficiency, measured by mean length of utterance (i.e., the number of morphemes / the number of utterances in a sample), and (3) clausal density, measured by subordination index (i.e., the total number of clauses / the total number of T-unites). It is hypothesized that natural cognitive decline significantly influences language production in VR but not in the paper-based condition. Future research plans include extending this study design to individuals with cognitive impairments (e.g., dementia, intellectual disabilities).

Building Thinking Classrooms in STEM
Presenters: Dan Ilaria, Jenifer Hummer
Presenter Department: Secondary and K-12 HPE

The concept of a "Thinking Classroom" is to implement the factors necessary for students to doing the thinking when solving problems. A major incoherence in the math and science education preparation program is the effective, research-based pedagogical approaches included in methods courses and the pedagogical approaches of mentor teachers in field experiences and student teaching. This project seeks to create a learning space where teacher candidates learn pedagogy and pedagogical content knowledge in an authentic "Thinking Classroom" environment so they can understand the factors needed to replicate these ideas in their own classrooms.

Perceptions of School Garden Programming and Their Communities: A Mixed-Methods Research Study
Presenter: Briana LaFratte
Presenter Department: Educational Leadership and Higher Education Administration
Faculty Mentor: Mimi Staulters
Faculty Mentor Department: Educational Leadership and Higher Education Administration

School gardening has been connected to improving student nutritional knowledge (Landry et al., 2021; Leuven et al., 2018), academics (Eugenio-Gozalbo et al., 2020), and pro-environmental attitudes (Zelenika et al., 2018; Chang, 2015). Caring for plants in the garden fosters a positive and caring relationship with plants, allowing students to see themselves as a part of the natural world and promoting environmentally active stances in adulthood (Kalvaitis & Monhardt, 2012; Chawla, 2007). This exploratory sequential mixed methods study explores the scope of how school gardening programs are being utilized across a specific county in Pennsylvania to promote student community involvement, how and to what extent food bank partnerships impact student engagement in the garden, and to gain an understanding of the experiences of school garden coordinators who partner with the county food bank. The first phase of this study examined the qualitative perspectives of school garden coordinators who partner with the county food bank through interviews and observations at their respective garden sites. The findings of these interviews and observations were then utilized to develop a context-specific and sensitive qualitative and quantitative survey that was administered to a larger sample. The survey was collected from school garden coordinators who partner with the county food bank's gardening program, with the goal of analyzing the extent to which coordinators use school gardens to promote student involvement with food bank programs.

Thermodynamic Characterization of N-Methyl-Mesoporphyrin IX
Presenters: Bri Landwersiek, Brendan Donovan, Skylar Todd
Presenters Departments: Biomedical Engineering, Biology, Biomedical Engineering
Faculty Mentor: Shawn Pfeil
Faculty Mentor Department: Physics

N-methyl mesoporphyrin IX (NMM) has rapidly become a significant tool for the characterization of quadruplex DNA (GQ-DNA) structures. These novel DNA structures are of interest due to their enrichment in protooncogene sequences and telomeres [Kosiol 2021]. As NMM becomes a standard tool in the sub-field of GQ-DNA research, it becomes increasingly important to understand its behavior. NMM's utility is based on a shift in absorbance from a max at 379nm to 400nm and fluorescence enhancement upon the presence of binding partners, including but not limited to GQ structures. In this work we present preliminary results utilizing non-negative matrix factorization (NNMF) that NMM, in aqueous solution and without GQ-DNA present, shows a concentration dependent shift in peak absorbance from 400 nm to 379 nm with increasing concentration, which is consistent with NMM forming a dimer. Furthermore, NNMF analysis reveals that NMM exhibits a nonlinear decrease in fluorescence intensity with decreasing concentration and an increasing fluorescence intensity with increasing temperature, which is also consistent with fluorescence quenching in the dimer state.

"A Face in the Cloud, No Trace in the Crowd": The Linguistics of Schizophrenia in Danielewski's House of Leaves
Presenter: Matthew Leardi
Presenter Department: Languages & Culture
Faculty Mentor: Eirini Panagiotidou
Faculty Mentor Department: English

Schizophrenia has been found to have many effects on both spoken and written language used by people diagnosed with the disorder as well as impairing their 'Theory of Mind' (ToM), i.e. the comprehension of others and their mental states (Brüne 2005). Since ToM relies on communication-based on a speaker-hearer/writer-reader relationship, impaired language use in Schizophrenia affects both the social elements of language and its syntactic, semantic, and pragmatic structures, also known as Formal Thought Disorder (FTD) (Covington et al 2005). This analysis aims to demonstrate how FTD, impaired handwriting, and impaired ToM in people with Schizophrenia are portrayed in the novella The Whalestoe Letters included in House of Leaves (2000) by Mark Z. Danielewski through the lenses of linguistic analysis. House of Leaves surrounds L.A. tattoo artist Johnny Truant's gradual degradation of his mental health while annotating an indescribable book, as he comes to terms with his repressed guilt involving his institutionalized mother Pelafina, a poet with Schizophrenia. The Whalestoe Letters are a collection of disturbing letters Pelafina sent to Johnny while he was growing up. For our analysis, we examine the contents of the letters from 1982 to November 1, 1988, to identify the linguistic characteristics of FTD as well as its multimodal manifestations (Bansal et al 2024) and to examine how Theory of Mind (ToM) impairments are depicted in the novella. We conclude by considering the effects of these features on characterization and readerly experience.

Examining the Outcomes of Justice-Involved Adults at Various Demographic Levels
Presenter: Alexander Markel
Presenter Department: Economics
Faculty Mentor: Simon Condliffe
Faculty Mentor Department: Economics and Finance

A newly available data set describes the outcomes of justice-involved adults in Pennsylvania's urban and rural counties at multiple demographic levels (e.g., breakdowns by race, age, offense type). Outcome measures include economic (e.g., employment, earnings), health and recidivism. These data offer an opportunity to understand the experiences of justice-involved adults in rural and urban communities and how these experiences differ by characteristics such as race/ethnicity, gender, and criminal record. The research will offer direction for policies to improve the outcomes of these individuals. We will gather, clean and analyze data from the Justice Outcomes Explorer (JOE) on justice-involved individuals in Pennsylvania counties. Our goal is to explore the multifaceted impacts of justice system involvement on individuals in rural and urban Pennsylvania, examining socioeconomic and health outcomes through statistical and descriptive analysis of demographic patterns and longitudinal trends across diverse population segments.

INFLUENCES ON MICROPLASTIC CONCENTRATIONS IN PLUM RUN
Presenter: Chloe Mattie
Presenter Department: Earth and Space Sciences
Faculty Mentor: Elliott Arnold
Faculty Mentor Department: Earth and Space Sciences

Microplastic pollution poses a growing threat to both environmental and human health, with particles now ubiquitous in air, soil, water, and within living organisms. Understanding the accumulation of microplastics in aquatic environments is an emerging field, as such, studies on microplastic concentrations are limited in their geographical extent. This study focuses on Plum Run, a stream in the Chester County Watershed, to investigate whether atmospheric and meteorological conditions, particularly wind and rainfall, correlate with increased microplastic concentrations in waterways. We also looked at the variability of sampling of the same stream, which did produce highly variable counts, even within same-day sampling. Over the course of the year, we collected and analyzed 40 water samples from the stream. Microplastic particles within these samples were isolated, quantified through light microscopy, and classified into four polymer types using Scanning Electron Microscopy with Energy Dispersive X-ray Spectroscopy (SEM-EDS). Our findings indicate a low correlation among microplastic particle counts in samples collected during windy and rainy periods, suggesting limited influence of these atmospheric conditions on microplastic levels in our waterway. Therefore, the high variability ($n=40$, mean=12.7, $1\sigma= 7.4$) in microplastic counts and their low correlation with meteorological conditions, suggests that natural heterogeneity of plastic dispersal throughout aquatic systems may be a first order control on inter-sampling variability. While our results highlight a preliminary link, further quantitative studies are essential to further our understanding of the role meteorological factors play in transporting microplastics from air to water systems, contributing to the pollution in aquatic environments.

Exploring Ant Diversity and Diapause Patterns in West Chester, PA in Response to Environmental Contexts
Presenter: Kay McFadden
Presenter Department: Biology
Faculty Mentor: Manuela Ramalho
Faculty Mentor Department: Biology

Diversity is evident in all aspects of life. It is the cornerstone of evolution and a major difference between species. Diversity is important genetically and morphologically. Without diversity, scientists would not be able to discern between organisms. In ants, diversity is widened even more. There are many species of ants worldwide that have different habitats, diets, morphologies, colony structures, and more. The emphasis of this study is to observe the diversity of ants on the West Chester University campus, and their patterns of diapause or, dormancy. The specific species of ants that live in West Chester and on campus is not widely known. By setting up in-ground samples at least once a month for several months, we could determine the patterns of ants on campus and what species live here. Collections were set up on the Francis Harvey Green Green Roof, the Gordon Natural Area, the outdoor classroom outside of Science Complex North, and two off-campus locations still located within West Chester. Our findings will expand the knowledge of ants on campus and show the abundance of diversity of ants as a whole.

Investigating the Impact of Genetic Background on the Development of Alcohol Tolerance in Staphylococcus aureus
Presenter: Sasha Mochocki
Presenter Department: Biology
Faculty Mentor: Sean Buskirk
Faculty Mentor Department: Biology

Common in healthcare, the bacterial pathogen Staphylococcus aureus is notoriously challenging to treat due to widespread antibiotic resistance. The spread of S. aureus is often controlled with germicides such as alcohol. Previous work from our lab has shown that repeated exposure to alcohol drives the emergence of alcohol tolerance and antibiotic resistance in S. aureus. In this study, we investigated if genetic background impacts the emergence of alcohol tolerance by S. aureus. First, we identified eight genetically diverse strains of S. aureus to serve as ancestors for adaptive laboratory evolution. Using a liquid-handling robot, we then performed a high-replicate evolution experiment in which 192 populations of S. aureus were subjected to a daily cycle that included a brief exposure to alcohol. After three weeks, the evolved populations were assayed for alcohol tolerance. We found that alcohol tolerant populations emerged from all eight ancestors and that the level of tolerance depended on the genetic background of the ancestor. To determine if the genetic mechanism of alcohol tolerance was also impacted by genetic background, we analyzed the evolved genomes of the alcohol-tolerant populations. We identified several genes that were mutated in multiple populations, noting that most were associated with cell wall metabolism and gene expression. We found that these common targets of selection were non-uniformly distributed across genetic background, indicating that genetic background influences the genetic mechanisms associated with alcohol tolerance. These findings represent a significant advancement in our understanding of the mechanisms of alcohol tolerance and the repeatability of adaptive evolution.

Coping with the Adjustment to College
Presenters: Ashley Molchany, Isabella Trujillo, Katherine Tran
Presenters Departments: Psychology, Psychology, Psychology
Faculty Mentor: Susan Gans
Faculty Mentor Department: Psychology

The transition to college presents multiple challenges to emerging adults, including newfound independence and responsibility. First-year college students may struggle with feelings of loneliness, lack of belonging, and increased perceived pressures that can cause disruptions to sleep and physiological markers of stress/challenge. To understand how emerging adults cope with this difficult transition we gathered data from 18-19 year old first-year undergraduates enrolled in Introductory and Multicultural Psychology courses. Students came to our laboratory where they filled out questionnaires, provided saliva samples, and performed a mildly challenging task either alone or in triad groups. Saliva samples allow for the assessment of cortisol, the primary hormone released during times of challenge in humans. Participants answered questions about their sleep quality, feelings of depression, anxiety, loneliness, and belonging, and their adaptation during the transition to college. This study is a replication of an experiment completed in 2017, which fortuitously allows us to examine the effects of the global covid pandemic on emerging adults making the transition to college. We hypothesize that emerging adults who feel less lonely and more like they belong will also report feeling better adapted to college, with fewer symptoms of depression and anxiety. We further hypothesize that we will observe a significant shift

since the covid pandemic, with current emerging adults reporting elevated levels of loneliness, depression, and anxiety, and reduced levels of belonging and adaptation during the transition to college.

The Effect of Drama Improvisation Programs on Social Anxiety, Self Esteem, and Tolerance of Uncertainty in Middle School Youth
Presenters: Megan Newman, Tyler Lehman, Sophia Jampo, Caylee Givnish
Presenters Departments: Psychology, Psychology, Psychology, Psychology
Faculty Mentor: Stevie Grassetti
Faculty Mentor Department: Psychology

Drama therapy utilizes elements of improvisation theater to relieve psychological symptoms and encourage personal growth (Johnson, 1984). It has shown to increase confidence, develop new coping mechanisms, increase self-worth, create social connections, and decrease depressive symptoms (Jensen & Blonde, 2018). Drama improvisation programs have demonstrated positive impacts in both workplace and therapeutic settings (Gagnon et al., 2012; Shivarajan & Andrews, 2021). Outside of therapeutic contexts, improvisation programming can provide an opportunity for participants to practice tolerating uncomfortable scenarios, accepting unpredictable events, and learning how to respond in the moment, despite feeling anxious. We argue that these exercises, when offered in non-therapeutic contexts, like after-school programs, can increase accessibility to mental-health interventions by acting as a form of exposure therapy, gradually decreasing the negative associations with unpredictable social situations (De Mooij et al., 2023). This poster will discuss preliminary findings from a larger, ongoing study examining the impacts of a six-week drama improvisation program on social anxiety, tolerance of uncertainty, and self-esteem in middle-school-aged youth. The aim of this poster is to examine the relationships between social anxiety, self-esteem, and tolerance of uncertainty at baseline in a sample of 11 middle-school students participating in an after-school drama improvisation program. We predict that low levels of tolerance of uncertainty and low levels of self-esteem will be independently correlated with high levels of social anxiety, and vice versa. We hope that these preliminary analyses will fill gaps in the literature and inform the next steps for the larger study.

Presenter: Megan Nolan
Presenter Department: Psychology
Project Title: Lead Well: A Leadership Competency Workshop

This project developed an online, asynchronous Leadership Competency Workshop to teach students about leadership competencies and prepare them for participation in a Leadership Assessment Center (LAC), which is a work simulation designed to assess and enhance leadership skills (Thornton & Rupp, 2006). While LACs are often used to help organizations identify and develop leaders, they can also equip students with essential leadership-related knowledge, skills, and capabilities (Jacobs et al., 2018), though their complexity often limits accessibility to academically gifted students. The current workshop was designed to help students develop the skills required to benefit from LACs, regardless of background or preparedness. Piloted in November 2024 with 35 senior seminar psychology students at West Chester University (WCU), the workshop covered leadership competencies, assessment center methods, and strategies for effective responses. On average, participants indicated that the workshop increased their knowledge of leadership competencies and assessment center exercises. Pre- and post-test comparisons showed that after the workshop, participants felt greater self-efficacy to complete assessment center exercises and participate in a LAC. Finally, reactions

were positive; participants reported satisfaction with the workshop and indicated they would recommend it to others. Results from this pilot study suggest that developing a full LAC at WCU may benefit students and would align with WCU's Strategic priority to promote students' educational and career development.

The effect of Orsay infection and its variants on the fertility of C. elegans
Presenter: Carolynn O'Donnell
Presenter Department: Biology
Faculty Mentor: Jessica Sowa
Faculty Mentor Department: Biology

Viral variants and infections have been found to affect human fertility. To investigate this, the nematode C. elegans is used as a model organism to study host pathogen interactions and reproductive diseases. Bacterial or viral infections in closely related nematode species have affected their fertility by changing the timing of when they have offspring or the overall number of progenies. The Orsay Virus is the only known virus to naturally infect C. elegans, our lab has discovered two Orsay Variants, V2 and V13. This project aims to characterize how V2 and V13 differ from standard Orsay and healthy C. elegans in terms of their impact on fertility. This was done by infecting the C. elegans with Orsay and its variants and counting the resulting progeny over a ten-day period. We found that there was no significant difference in the average number of offspring per day or when the nematodes stopped reproducing. Orsay had a lower overall brood size compared to V2, V13, and a mock infection due to a large number of the Orsay infected nematodes dying from eggs hatching internally, which has not been seen in previous experiments. We also investigate why this is occurring through qRT-PCR of the nematode and the filtrate. Understanding how the Orsay virus and its variants affect the health of C. elegans can provide insight on how viruses affect human fertility.

Exploring Trash Dynamics in Southeastern Pennsylvania's Stream Ecosystems
Presenter: Gianna Parrish
Presenter Department: Biology
Faculty Mentor: Megan Fork
Faculty Mentor Department: Biology

This study investigated the impact of single-use plastic bans on freshwater pollution by analyzing trash accumulation in streams across southeastern Pennsylvania. Using a Before-After-Control-Impact (BACI) study design, we collected and categorized trash from nine stream sites, comparing those with and without bans. We examined the effects of urbanization, socio-economic factors, and proximity to parks on trash composition and abundance. Our results revealed that plastic waste, particularly clear, white, and brown debris, dominated stream pollution. These findings are particularly notable as the predominance of neutral-colored items may make the trash less conspicuous against natural backgrounds, like riverbeds and banks, where brighter, unnatural colors might stand out more. No significant differences in trash accumulation were observed between streams with and without plastic bans ($p = 0.42$), nor between those located in parks versus non-park areas ($p = 0.37$). Socioeconomic status and urban development intensity also showed no significant correlations with trash levels ($p = 0.09$ for each). These findings suggest that municipal-scale single-use plastic bans alone may not significantly reduce pollution and that broader waste management strategies are needed. We hope to use this information to provide actionable recommendations to local policymakers and agencies responsible for waste management to safeguard the ecological integrity of our waterways.

Does Skin Color our Judgement of Young Children?
Presenter: Amani Patel
Presenter Department: Psychology
Faculty Mentor: Eleanor Brown
Faculty Mentor Department: Psychology

Across the past five years, a spotlight has focused on the negative consequences of implicit racial biases targeting Black male individuals in the United States. Emerging literature suggests that these biases hold relevance for judgements about young children, yet few studies have experimentally examined judgements made regarding Black versus White boys in early childhood educational settings. The present study employed an experimental design based on brief observations. Participants included 388 college students, who were randomly assigned to one of two conditions involving brief video observations of preschool children naturalistically engaging in their preschool classrooms. In the first condition, the target child was Black and in the second condition, the target child was White. Targets were matched in terms of age, socioeconomic status, and expert-rated level of problem behavior. Following the video, participants provided ratings of child behavior using the Conners Teacher Rating Scale- Revised (CTRS-R). A MANCOVA that included participant demographic covariates indicated a statistically significant impact of condition on behavior ratings. Univariate tests and descriptive statistics suggested that the ratings of participants who viewed a Black child were higher for overall problem behavior and for oppositional behavior. The covariate of participant racial/ethnic status also statistically predicted ratings, with Black/African American status predicting lower overall problem behavior ratings. Implications include understanding the impact of implicit racial biases for Children of Color, and furthering efforts to end racism and promote social justice.

Perceptions of Terrorism
Presenter: Emily Pierce
Presenter Department: Criminal Justice
Faculty Mentor: Jaeyong Choi
Faculty Mentor Department: Criminal Justice

This study explores terrorism perceptions among undergraduate students at West Chester University, a crucial topic given its perceived threat to public safety. Using a survey with eight vignette scenarios designed as simulated news articles regarding a shooting, participants will evaluate the crime by labeling it, identifying motives, assigning sentencing, assessing policy implications, dangerousness, and social distance from the offender. The scenarios vary only by ethnicity and familial structure, allowing analysis of these variables' influence on terrorism perceptions. By involving students from all seven colleges, this study provides insights into biases, advancing research on terrorism perceptions and their societal and policy implications.

Effects of Adolescent E-Cigarette Exposure on Thermoregulation and Organ Development in Rats
Presenter: Hope Rice
Presenter Department: Psychology

Faculty Mentor: Kristen Breit
Faculty Mentor Department: Psychology

Nearly 6% of adolescents consume nicotine via electronic cigarettes (e-cigarettes), partly due to the assumption that e-cigarettes are safer than combustible cigarettes. However, research illustrates that e-cigarettes increase plasma drug levels more than combustible cigarettes. Additionally, e-cigarette use may alter both behavioral and physical development, including regulatory behaviors (such as thermoregulation) and organ development. Adolescence is a critical developmental period, and it is likely that adolescent e-cigarette use may have greater consequences than adult consumption, yet the long-term effects of adolescent e-cigarette are unknown. Translational animal models allow for accelerated research timelines and have strong concordance with clinical research. Using a rat model, this project investigates the potential consequences of adolescent e-cigarette exposure on anxiety- and memory-related behaviors in adulthood. During adolescence (postnatal days [PD] 31-36), adolescent rats are exposed to vaporized nicotine at a moderate dose (18mg/ml), high dose (36 mg/ml), or control condition (e-cigarette vehicle or ambient air). Core body temperatures are recorded before and after vapor inhalation to examine intoxication effects on thermoregulation. Adult tissue was collected (between PD 71-74) to examine long-term effects of exposure on gross organ development. Preliminary results suggest adolescent nicotine exposure interrupts thermoregulation, resulting in lower body temperatures after acute exposure sessions. In addition, adolescent nicotine exposure may increase gross liver weights of male subjects. Data are currently being collected for final analyses. The completed results of this project will provide important public health information regarding adolescent e-cigarette use and both acute and long-term physical regulation and development.

Relationship Between Health-Focused Majors and Positive Mental Health Outcomes
Presenter: Amber Riley
Presenter Department: Public Health
Faculty Mentor: Zeinab Baba
Faculty Mentor Department: Public Health

Nearly half of all 16 million U.S. college students experience anxiety or depression, with 80% reporting negative academic impacts as a result (ACE, 2024). Despite this, only 46% seek counseling services (ACE, 2024). A literature review proposes the connection between college major, mental health literacy, and well-being. Considering their exposure to health-related coursework, students in health-focused majors may exhibit stronger mental well-being and emotional resilience than their peers. In one study, public health students reported the lowest rate of mental health issues, whereas art and design students reported the highest (Lipson et al., 2015). Additionally, major satisfaction correlates with higher self-esteem and lower depression (Zhang et al., 2024). However, a gap remains in determining the association between health-related majors and positive mental health outcomes. This study aims to explore this relationship, providing insights that could inform programs to enhance student well-being across disciplines using data from the 2023-2024 Healthy Minds Network, an annual web survey of college student mental health. 61,402 students were included in the initial analysis; 63% identified as non-Hispanic White and 10% of students reported studying in a health-related major. A chi-square comparative analysis identified positive mental health, major depression, suicidal ideation, and resilience as factors that were statistically significant between health-related and non-health-related majors. This study will continue to analyze this data to determine plausible associations and perform a multivariate analysis to control for other independent variables.

Creative Movement and Yoga Intervention Relates to Stress Reduction for Children in Head Start Preschool
Presenters: Nasserra Robinson, Ekaterini Nakos, Celia Wu-Hacohen
Presenters Departments: Psychology, Psychology, Psychology
Faculty Mentor: Eleanor Brown
Faculty Mentor Department: Psychology

The present study examined a creative movement and yoga intervention in relation to cortisol levels for children attending Head Start preschool. Stress and trauma related to poverty and systemic racism can lead to toxic levels of stress hormones such as cortisol. Creative movement and yoga have been linked to stress reduction, but few studies have examined these approaches concomitantly or with young children facing environmental adversity. Participants included 151 children attending a Head Start who were randomly assigned, by preschool class, to receive: (1) "Creativity" (1x per week creative movement); (2) "Calm" (1x per week yoga/mindfulness); (3) "Creativity and Calm" (1x per week creative movement and 1x per week yoga/mindfulness); or (4) Control (Head Start as usual). Children held cotton swabs in their mouth for approximately 2 minutes after yoga, creative movement, or control classes to provide saliva samples which were assayed for cortisol using standard procedures. Hierarchical Linear Models or HLMs examined the within- and between-participants impact of experimental yoga and creative movement versus control classes on cortisol. Children showed lower levels of cortisol following both yoga ($\beta = -0.166344$, $SE = 0.050250$, $p < .001$) and creative movement ($\beta = -0.151733$, $SE = 0.055170$, $df = 986$, $p = .006$). This is the first investigation we know of to document cortisol reductions correspondent to participation in yoga/mindfulness for children in Head Start. The present results encourage a scalable model of arts and mindfulness for preschool children who face stress and trauma related to poverty and racism.

Implementation and Impact of Mastery Grading on Student Learning and Affect in Introductory Geology and Science Teaching Methods
Presenter: Christopher Roemmele
Presenter Department: Earth and Space Sciences

This research investigated the attitudes, understanding, and impact of Mastery Grading (MG) on students' confidence, motivation, and academic success of students in introductory geology and a science teaching methods class for pre-service teachers. The essence of MG is based on demonstrating proficiency, or mastery, of course learning outcomes and that grades are a better reflection of student achievement. There is a modicum of research in the ways MG impacts students in a STEM course, but none in introductory geology, and the same for pre-service teachers' courses. This research fills a gap in our understanding of how a non-traditional grading system is implemented and what the outcomes are on the students. Students in an introductory geology class and pre-service teacher science teaching methods experienced their respective courses using mastery grading and were asked to complete pre- and post-surveys and interviews, however an insufficient number consented to allow their input (qualitative and quantitative) to be used for analysis. We plan to modify data collection for students in upcoming semesters to increase participation for a more robust database. We anticipate that MG will show student affective behavior and learning (both measured and perceived understanding) trending more positively. If so, then equity gaps may begin to lessen, and retention and completion rates may begin to

increase, especially in STEM but also with pre-service teachers who may have to implement MG in their own classrooms.

The COVID-19 Pandemic and Cortisol Levels for Children Beginning Head Start Preschool
Presenters: Jordan Salafia, Sanjana Vinjamuri, Caitlyn Thomas, Markis Haynes
Presenters Departments: Psychology, Psychology, Psychology, Psychology
Faculty Mentor: Ellie Brown
Faculty Mentor Department: Psychology

The COVID-19 pandemic was associated with unique stressors for families with young children. Yet no published studies have compared stress levels in Head Start context for young children beginning preschool before versus during the pandemic, and the present study represents an initial effort to address this gap. Participants included 206 children attending a Head Start preschool on the East Coast of the US, and their parents or primary caregivers. Of these, 148 children began preschool in 2019 and 58 began in 2021. Of the children, 100% faced economic hardship and approximately 86% were Black/African Heritage or Latine. Children provided saliva samples 5 times across the preschool day on 2 days approximately 1 month after beginning preschool, and saliva samples were assayed in duplicate to test levels of the stress hormone cortisol. An Analysis of Covariance (ANCOVA) examined group differences in overall levels of the stress hormone cortisol for children who began preschool prior to the COVID-19 pandemic compared with those who began in the late stage of the pandemic, controlling for demographic covariates. The ANCOVA indicated a statistical effect of cohort on stress ($F(1, 193) = 18.26$, $MS = 1.17$, $p = 0.001$). Overall, children who began preschool in 2019 showed cortisol levels that were higher than their peers who began in 2021. Notwithstanding the stressors faced by families, children who began preschool in the late stage of the pandemic showed lower stress levels in preschool than their peers who began before the pandemic.

Exploring the Complex Relationship Between Race, Gender, and Perspectives on Existing Terminology in Myrmecology
Presenter: Ethan Scolastico
Presenter Department: Biology
Faculty Mentor: Manuela Ramalho
Faculty Mentor Department: Biology

This study examines problematic terminology in Myrmecology and its impact on scientific communication and inclusivity. Traditional terms like "queen," "soldier," "worker," and "slave-making ants" have been criticized for their anthropomorphic and colonial connotations, which may misrepresent ant behavior and reinforce outdated frameworks. Using a global survey, this research explores Myrmecologists' perceptions of these terms and alternatives that better reflect contemporary science. Findings show that slave-making ant received an average discomfort rating of 1.98/5, with 39.4% supporting its replacement. Caste was rated 1.51, with 21.2% advocating for change. While many respondents see these terms as scientifically functional, others highlight their ethical and historical implications. Myrmecologists from diverse backgrounds are more likely to support revising terminology, recognizing the influence of colonial biases on scientific discourse. Additionally, the study reveals that perspectives on terminology shift based on cultural and academic exposure, with those aware

of colonial legacies in science more inclined toward change. Some argue that while these terms provide consistency in classification, they can also obscure the complexity of ant behavior. The study also uncovers how the broader context of decolonizing science and promoting diversity in research plays a crucial role in shaping these views. These findings contribute to discussions on scientific language reform, emphasizing the need for more appropriate conscious terminology in Myrmecology and related disciplines.

Water samples from West Chester University Campus buildings tested for Poly Aromatic Hydrocarbons (Carcinogenic Compounds)
Presenters: Alyssa Slickers, Roger Cabrera, Riya Chandrasekar, Nihaal Zaheer
Presenters Departments: Nutrition, Nutrition, Nutrition, Biology
Faculty Mentor: Amir Golmohamadi
Faculty Mentor Department: Nutrition

Introduction: Polycyclic aromatic hydrocarbons (PAH) are contaminants entering drinking and natural waters from several sources such as industrial emissions, incomplete fossil fuel combustion, and smoked and grilled foods. Despite their trace levels, PAHs can cause adverse health effects, such as cancer and mutagenesis, making their detection and regulation crucial for public health. Objectives: This study investigated the presence and concentration levels of selected PAHs in West Chester University drinking water samples. These PAHs included anthracene (Ant), phenanthrene (Phe), pyrene (Py), fluorene (Flu), naphthalene (Nap), and acenaphthalene (Acy). Methodology: A random sample (total of 15) of tap water and water fountains was collected from selected newly constructed and old campus buildings (SECC, Philips, Hollinger Fieldhouse, Swope Music Building, and Science Complex North). To quantify PAHs, method 550.1 of the Environmental Protection Agency (EPA) was utilized for Liquid-Solid Extraction (LSE) prior to High-Performance Liquid Chromatography (HPLC) with an Ultraviolet Detector. In preparation for HPLC analysis, pre-concentration of PAHs, was conducted to increase detection sensitivity and accuracy. Results and conclusion: The average PAH concentration in all drinking water samples fell between 2.5 ± 1.7 ng/L, well below the maximum contaminant level (MCL) set by the Environmental Protection Agency (EPA). The MCL goal for benzo(a)pyrene in drinking water is 200 ng/L. This suggests that WCU's campus water supply has a significantly low and minimal PAHs risk to the campus community.

Speech Therapy in Morocco: A Review of Current Literature
Presenter: Madeline Spaulding
Presenter Department: Communication Science and Disorders
Faculty Mentor: Reva Zimmerman
Faculty Mentor Department: Communication Science and Disorders

Boueddine and Boulahna (2022) write, “Language is the goal and tool of a speech therapist (p. 5).” If language truly is the goal and tool of a speech therapist, what happens when the speech therapist doesn’t speak the same language as their client? What if there are no tools to assess or treat that language? These questions and many more are currently playing out in Morocco, a country characterized by a rich linguistic heritage. Each of the five languages in Morocco (Tamazight, Arabic, French, Spanish, and English) carries immense cultural baggage,

creating a tangled linkage of language, history, and societal implications. There are little to no screening, evaluation, or therapy tools in the mother tongue languages of Morocco, Darijah (Moroccan Arabic) and Tamazight, and a similar lack of research on the field of speech language pathology in Morocco. To address the gap in current research on SLP in Morocco, this study will answer two questions: What is the current state of speech language pathology in Morocco? and What are relevant research questions to be asking about SLP in Morocco? To find current literature on speech language pathology in Morocco, ComDisDom, MEDLINE Complete, Communication Source, Revues de La Société Marocaine des Sciences Médicales, and Google Scholar were searched. A review of current literature indicates that the current state of speech pathology in Morocco is one of continual challenge, yet persistent emergence. Future research on SLP in Morocco should include the perspectives of Moroccan speech language pathologists.

Contested Space: Sui Sin Far's Response to Tourist Literature's Representations of Chinatown
Presenter: Alexis Stakem
Presenter Department: English
Faculty Mentor: Carolyn Sorisio
Faculty Mentor Department: English

Chinatowns are important cultural touchstones, and given their growing scarcity and endangerment, it is relevant to understand historical representations of various Chinatowns and how communities and individuals have responded to these intrusions and misrepresentations. My research contextualizes Edith Maude Eaton's, or Sui Sin Far's (her pseudonym), writings, and examines how her representations of Chinatown responded to popular representations in newspapers and tourist literature. Sui Sin Far, a British-Chinese immigrant - writing in the late nineteenth century – is the first known writer of Asian descent in American literary tradition. A significant portion of her literary work is centered around the Chinese immigrant experience in the United States and Montreal. Through the textual analysis of several of her well-known short stories and recently discovered works, I will demonstrate that not only did Eaton push back against the stereotypes entrapping Chinatown in popular culture, but that she represented it as a multi-dimensional space in which she examined how space, race, and Americanization interacted with one another. Furthermore, while most tourist literature provided white Americans the coveted "insider" role – essentially purporting they were proprietors of Chinatown – Eaton reverts this power back to the Chinese Americans living in Chinatown, allowing their perspectives and knowledge to dominate.

Place- and Space-Based Pedagogies for Preservice Teachers
Presenter: K.C. Thoman
Presenter Department: Secondary Education
Faculty Mentor: Pauline Schmidt
Faculty Mentor Department: Secondary Education

The goal of the research was to explore the impact of the integration of Place and Space-based Learning (PSBL) within the 9-16 classroom. PSBL provides an immersive, educational experience for students to learn from and with their physical environments through an actualization of place that combines background knowledge and

student buy-in. PSBL is an invaluable tool in creating the global learner, who not only has a knowledge of the global community, but an understanding and appreciation. This qualitative, exploratory research utilized methodologies including focus groups, individual interviews, and the submission of reflection-based assignments. The participants included students who participated in study abroads to Norway and the UK. These data sources were transcribed and were coded and analyzed for themes and insights until saturation was reached. The primary finding was an understanding of the impact of PSBL called "Actualization of Place". Actualization occurs when a student becomes aware of the alignment in three related elements: the (1) location in which a (2) person/presence creates a phenomena in (3) time. In this awareness place is actualized as significant or particularly meaningful to the student. Actualization of place requires two additional elements: background knowledge and buy-in on the part of students. "Actualization of Place" transforms how educators approach place and space-based learning. Students must be prepared in two ways in order to support effective place-based pedagogy to encourage actualization: (1) providing them thorough background knowledge and (2) instilling them with a sense of "buy-in". While educators can control the amount of background information provided for students, they cannot necessarily control the buy-in students possess towards a place and subject. Therefore it is imperative that educators do their best to get students engaged and excited about a topic and location beforehand, to ensure the best results of PSBL, and in turn creating adept, global learners.

Singing for Self Regulation
Presenters: Caitlyn Thomas, Noah Bellaire, Rhianna Noble
Presenters Departments: Psychology, Psychology, Psychology
Faculty Mentor: Eleanor Brown
Faculty Mentor Department: Psychology

This study explored an early childhood music intervention aimed at enhancing self-regulation using a quasi-experimental design with two preschools. In Year 1, both preschools followed their usual curriculum. In year 2, preschools received an additional music intervention, led by a credentialed music teacher, incorporating music as a regulatory tool through 24 sessions, each lasting two hours. Participants included 234 children ages 3-5 years, with 104 receiving the music intervention and 130 continuing with standard programming. Of child participants, 54% were Black/African Heritage, 7% Latine, 1% Asian, and 3% White/European Heritage, and 100% experienced economic hardship. Standardized assessments measured receptive vocabulary at the start of the year and the inhibitory control aspect of self-regulation at three time points; start, middle, and end of the year. Latent Growth Curve Analysis (LGCA) examined levels and growth in the inhibitory control aspect of self-regulation over time. The music intervention significantly predicted growth in inhibitory control, controlling for demographics and receptive vocabulary. Children who participated in the intervention demonstrated greater gains in self-regulation than their peers ($B = .92$, $SE = 5.94$, $p < .001$). This study's robust, quasi-experimental design highlights the impact of music on self-regulation for children experiencing economic hardship. Findings contribute to research supporting music as an effective tool for fostering self-regulation in young children, highlighting its potential in early childhood education. By integrating music into preschool curricula, the field can enhance the resources available to support children facing poverty-related risks, promoting critical social-emotional development.

Ambulating ECMO Patients to Improve Patient Outcomes In The Face of Complications and Difficulties
Presenter: Kylie Trankle
Presenter Department: Nursing
Faculty Mentor: Kathy Crawford
Faculty Mentor Department: Nursing

For my medical-surgical nursing class, we spent the semester creating an evidenced based practice poster that correlated to a change we'd like to see in clinical practice. I am passionate about critical care nursing- it is where I believe I will thrive as a registered nurse. For my project, I decided to research ECMO, a type of life support used in the critical care setting. During ECMO treatments, a patient's blood is shunted out of their body through large cannulas (the size of gardening hoses), and is pumped into a machine that removes waste and adds oxygen. The blood is then put back into the patient's body. ECMO, thus, gives the heart and/or lungs a rest to increase chances of recovery. For this process, most patients are sedated. However, in nursing practice, movement and ambulation is emphasized, as it is well known that walking and moving decreases complications and increases patient outcomes significantly. Knowing this, I researched how ambulating ECMO patients, as opposed to keeping them sedated, impacts patient mortality. While ambulation of ECMO patients is risky and difficult, the outcomes show significant decreases in mortality rate. My poster project examines the current research surrounding ECMO and ambulation, and advocates for change within the critical care world. Using examples from previous research, I advocate for more ICUs to ambulate ECMO patients, and examine potential ways in which this can be safely achieved.

Development of a Culturally Sensitive & Cost-Effective Battery of Assessment for ADHD in Youth of Diverse Cultures
Presenters: Eneida Vega, Emma Slade, Daisy Cerrato
Presenters Departments: Psychology, Psychology, Psychology
Faculty Mentor: Stevie Grassetti
Faculty Mentor Department: Psychology

Attention-Deficit/Hyperactivity Disorder (ADHD) is a mental health concern characterized by inattention and hyperactivity/impulsivity (American Psychiatric Association, 2013). ADHD is common among children in the United States affecting approximately 11.4% for ages 3-17 (Centers for Disease Control and Prevention, 2024). Receiving a diagnosis of ADHD can connect those with symptoms to supports that help promote their success. Unfortunately, not all children are able to access accurate ADHD assessments and race has been linked to diagnosis such that concerns recognized as ADHD symptoms among some children may be mislabeled as “bad behavior” among other children (Slobodin & Masalha, 2020; Dong et al., 2020). This mismatch in perception due to cultural differences can trigger ADHD evaluations with the use of assessment tools that may not take culture into account and potentially lead to misdiagnosis. The purpose of this research was to determine which ADHD assessment measures have the most empirical support for assessing ADHD among youth of color. We conducted a systematic literature review focused on the psychometric properties of assessment measures by which caregivers, teachers, and youth report on ADHD symptoms. We retrieved, reviewed, and cataloged data from more than sixty-four studies of 17 different ADHD diagnostic tools. We cataloged data describing samples in which these measures have been validated, the psychometric properties of these measures, and the cost to administer these measures. Findings yield important clinical implications in developing an affordable, culturally adapted approach to meeting the mental health needs of underserved and diverse populations.

Presenter: Lynn Zubernis
Presenter Department: Counselor Education
Project Title: Video Casebook for Teaching Case Conceptualization

The Video Casebook is a collaborative project (Counselor Education and Theatre and Dance) which provides an innovative and effective pedagogical approach to teaching Counselor Education students the important skill of case conceptualization. Counseling is a skill which requires application and practice in order to master – the more practice, and the more realistic that practice, the better. Thus, for our counseling students, going beyond the traditional domain of learning solely by reading is the most effective way of training students in clinical work. The video casebook offers an additional creative and exciting way to teach counseling, helping students hone their observation and conceptualization skills needed to be effective counselors. We collaborated with Theatre students, who were able to practice their acting and standardized patient skills by portraying a variety of clients in recorded sessions. The project is in keeping with WCU's Strategic Plan goal of enhancing learning through creative activity.

INTERDISCIPLINARY FACULTY PANEL

The Interdisciplinary Faculty Panel will be held from 11:45am-1pm Sykes Ballroom C.

This year we will host an interdisciplinary faculty panel that will consist of faculty members from each college who have been awarded internal grants (PRG, FPDC, PEPI, Sustainability, Diversity and Inclusion) in the past year. Faculty will share about their projects and present an opportunity for fellow faculty peers (and students!) to join to see what is happening across colleges in research and creative activities.

Faculty Panel Members:
Lauren Brumley (Psychology)
Patricia Davidson (Nutrition)
Michelle Blake (English)
Pauline Schmidt (Secondary Education)
Crystal Loose (Early Middle Grades)
Simon Condliffe (Economics and Finance)
Megan Schraedley (Communication and Media)
Emily Duckett (Sports Medicine)
Meghan Ramick (Sports Medicine)

Moderator: Amir Golmohamadi (Nutrition)

FACULTY/STUDENT RESEARCH CONNECTION: 1-2pm Sykes Ballroom C.

All WCU Students are invited to "mingle" with faculty research mentors in a casual "meet and greet" format to talk about research opportunities available in faculty spaces (e.g., labs, volunteer opportunities, grant funded opportunities, work study opportunities). Food and door prizes are available for students who attend!

College of Science and Math
Stevie Grassetti (Psychology)
David Cooper (Computer Science)
Brandon Mitchell (Physics)
Kurt Kolasinski (Chemistry),
Elliot Arnold (Earth & Space Sciences)
Shannon McQueen (Political Science)
Manuela Ramalho (Biology)
Kristen Breit (Psychology)
Megan Fork (Biology)

College of Health Sciences
Jeanie Subach (Nutrition)
Harry Holt (Public Health)
Renee Hammoud (Physician Associate Education)
Melanie Vile (Environmental Health Science)
Sharon Bernecki DeJoy (Public Health Sciences)
Meghan Ramick (Kinesiology)
Lorenzo Cena (Public Health)

College of Arts and Humanities
Jacqueline Alnes (English)
Nogin Chung (Art)
Elizabeth Urban (History)
Lisa Hubner (Women and Gender Studies)
Joseph Moser (Languages and Cultures)
Ashley Patriarca (English)
Tonya Thames-Taylor (History)

College of Business and Public Management
Simon Condliffe (Economics and Finance)
Jaeyong Choi (Criminal Justice)
Jongwoong Kim (Geography & Planning)

College of Education and Social Work
Crystal Loose (Early and Middle Grades)
Emmaline Ellis (Early and Middle Grades)

School of Music
Devin Arne (Music Theory, History & Composition)
Angela Guerriero (Music Education & Music Therapy)

University Libraries
Gary Childs
Ron McColl

2025 STUDENT RESEARCH AND CREATIVE ACTIVITIES AWARD WINNERS

Undergraduate Recipients

Gianna Parrish
Biology

Kate Frederick
Earth and Space Sciences

Alexandra Gianaris
Biology

Carolynn O'Donnell
Biology

Jayden Hartlaub
Psychology

Sasha Mochocki
Biology

Graduate Recipients

Zoe Campanella
Psychology

Jay Ni
Biology

Elvin Winter
Psychology

Madeline Spaulding
Communication and Science Disorders

Daniel Engelbrecht and Jess Hampton
Health Sciences

Jennifer Ruggiero-Patel
Policy Planning and Administration

West Chester University of Pennsylvania
Office of Research and Sponsored Programs
SECC Building, third floor
West Chester, PA 19383
610-436-3557
research@wcupa.edu