SURI
SUMMER
UNDERGRADUATE
RESEARCH INSTITUTE

OFFICE OF RESEARCH AND SPONSORED PROGRAMS (ORSP)

SUMMER UNDERGRADUATE RESEARCH INSTITUTE 2026

CLOSING CEREMONY
MONDAY, JULY 13TH, 2026
10:00 AM TO 12:30 PM



SYKES BALLROOMS

WELCOME

Welcome to the 2026 Summer Undergraduate Research Institute (SURI) closing event. This year's institute attracted a record number of applications from undergraduate students. The 28 students who were selected as "2026 SURI scholars" wrote compelling proposals for fascinating research and creative activities that could be completed during an intensive 5-week period under faculty mentorship. Over the past five weeks, the SURI scholars have worked tirelessly to complete their projects, and we are delighted for the opportunity to see these outstanding students present their work. We are happy to celebrate their success together at today's closing ceremony!



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

WHAT IS SURI?

The SURI is a West Chester University tradition by which undergraduate student researchers ("SURI scholars") spend 37.5 hours per week, over a 5-week period, with faculty mentors to complete a research project or creative activity. Scholars engage in weekly educational connection activities each week that combine research-based and social-based workshops to help scholars further build their professional skills and networks with peers and faculty. The purpose of the SURI program is to increase interest in and opportunities for undergraduate research and creative activities in all disciplines and prepare undergraduate students for their next steps!



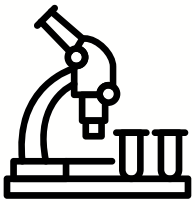


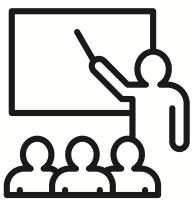
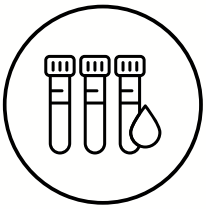


2026 SURI CLOSING CEREMONY

AGENDA

9:30 AM TO 9:50 AM	POSTER SET UP
9:50 AM TO 10:00 AM	SIGN-IN
10:00 AM TO 10:05 AM	WELCOME REMARKS
10:05 AM TO 10:20 AM	RECORDED LIGHTNING TALKS
10:25 AM TO 10:55 AM	POSTER PRESENTATION SESSION #1 *(EVEN)*
11:00 AM TO 11:45 AM	BRUNCH AND RECORDED LIGHTNING TALKS
11:50 AM TO 12:20 PM	POSTER PRESENTATION SESSION #2 *(ODD)*
12:20 PM TO 12:30 PM	GROUP PHOTO WITH RAMMY, REFLECTION, AND CLOSING REMARKS


1. Seung Mee Baak - *Exploring Imposter Syndrome Among Music Therapy Students: A Survey Study*
Major: Music Therapy, **Faculty Mentor:** Dr. Eun Sil Suh
Abstract: The impostor phenomenon (IP) refers to persistent self-doubt and feelings of intellectual fraudulence despite evidence of competence. Student music therapists (SMTs) must balance intensive musical training, clinical coursework, and practicum experiences, which may contribute to feelings of inadequacy and professional uncertainty. However, limited research has examined impostor phenomenon within undergraduate music therapy programs. This study examined the prevalence and characteristics of impostor phenomenon among undergraduate music therapy students across the United States at American Music Therapy Association-approved programs. Participants will complete the Leary Impostor Phenomenon Scale (LIPS) along with demographic and academic experience questions. Data was analyzed using descriptive statistics, ANOVA to examine differences by year in program, and Pearson correlations to explore relationships with stress, clinical confidence, and workload. Findings inform strategies to support student confidence, professional identity development, and well-being in music therapy education.

2. Luke Becton - *The Effects of Adolescent Nicotine Exposure via E-Cigarettes on Memory Performance in Adulthood*
Major: Psychology, **Faculty Mentor:** Dr. Kristen Breit
Abstract: Adolescent nicotine consumption is a public health concern, particularly with the popularity of e-cigarettes, and is associated with acute altered memory performance. However, little is known about whether adolescent nicotine exposure alters memory performance later in life. Given the limitations of drug research in clinical populations, this study will use a rodent model and a 4 (nicotine dose) x 2 (sex) design to examine whether adolescent e-cigarette exposure alters adult spatial memory performance. Adolescent female and male subjects are exposed to 1 of 4 nicotine doses (high: 36 mg/mL, moderate: 18 mg/mL, the e-cigarette vehicle, or air) for 30 minutes (16-second puff every 5 minutes) from postnatal days (PD) 31-36. During adulthood (PD 70-71), subjects perform a spatial object recognition task that utilizes rodents' tendency to explore novelty. Preliminary results suggest that female subjects exposed to high e-cigarette doses (36mg/mL) during adolescence show greater discriminatory indexes in adult spatial object location compared to low nicotine, vehicle, and control (air) conditions. Importantly, altered behavioral trajectories often yield compensatory behaviors and/or timelines in other domains. Further data collection inside and outside of this project should examine additional behavioral domains to better understand the potential public health implications of adolescent e-cigarette use.

3. Mira Benson - *Your Brain on Paper: The History and Significance of Notebooks in Organizing, Expressing, and Remembering Information*
Major: English, **Faculty Mentor:** Dr. Rodney Mader
Abstract: Notebooks have played a crucial role throughout history by providing means to organize, understand, and recollect knowledge, skills, and experiences. However, within the 20th and 21st centuries, personal writing habits shifted due to technological advancements. Despite the continued promotion of digital alternatives to notebooks, physical books continue to be used across all sectors of society. To determine themes surrounding individual usage and motivations for different notebook types, I performed a discourse analysis of social media content under notebook-related hashtags, specifically: #journal, #diary, #sketchbook, #commonplacebook, and #scrapbook. Review of these posts demonstrated that the continued usage parallels its historical motivations that guided their emergence, in addition to personal desires to reduce technology usage and pursue digital minimalism. Examining social media has confirmed that handwritten information management habits have persisted despite technological shifts, indicating a cultural and social significance in maintaining, processing, and retaining information and materials through manuscript. Future individual surveys and interviews could further clarify the roles notebooks play in contemporary society, specifically how preceding attitudes and habits manifest themselves today.

4. Eric Blanke - *Calibrating a Digital Holographic Microscopy System using Brightfield Microscopy and Hydrodynamic Theory*
Major: Physics/Engineering, **Faculty Mentor:** Dr. Kevin Aptowicz
Abstract: Digital Holographic Microscopy (DHM) enables high-speed, three-dimensional tracking of micron-sized particles. This technique is useful to characterize both physical or biological systems where particles move rapidly in all directions. The primary goal of my SURI project is to calibrate and validate our new DHM system to ensure tracking accuracy. To achieve this, we measured the Brownian motion of polystyrene spheres suspended in water using both DHM and traditional brightfield microscopy. By extracting their trajectories and calculating their experimental diffusion coefficients, we were able to compare our values to ideal theoretical predictions. The diffusion coefficients calculated from our DHM system were internally consistent and strictly agreed with the diffusion coefficients calculated from brightfield microscopy. However, both microscopy methods yielded dramatically lower diffusion coefficients than predicted by theory. These results are promising, as the agreement with brightfield indicates that our holography system is now properly aligned and can precisely track particles. That said, the systematic discrepancy between our experimental results and theory must be addressed and resolved before our system is ready for further undergraduate research.

5. Jolie Bolognini - *Perspectives on Interfaith Engagement: Interpretive Phenomenological Analysis of Student Experiences at a Public University*
Major: International Business, **Faculty Mentor:** Dr. Zachary Wooten
Abstract: This study examined how students at a public regional university interpret the meaning of interfaith engagement and what factors shape their willingness to participate. Although prior research emphasizes benefits such as belonging and reduced prejudice, many students still feel detached from religious or spiritual life during college. This study explores why that gap exists and how students describe the benefits, barriers, and recommendations for strengthening interfaith engagement. Using a mixed-methods approach, 10 students completed a demographic survey and then participated in a 90-minute semi-structured interview via Zoom. Data was analyzed using Interpretive Phenomenological Analysis, focusing on the lived experiences of participants, identifying shared patterns across narratives. Four major themes emerged: (1) experiences shaping interfaith engagement, including misconceptions of faith; (2) benefits such as personal growth; (3) barriers, including social-emotional obstacles; (4) student recommendations emphasizing a stronger community. Findings suggest interfaith engagement must be intentional, relational, and visible. Students need supportive spaces to explore identity and difference. Future research should examine program models that reduce barriers and enhance campus belonging.

6. Richard Brown - *Script vs. Playbook: Scaling Windows Server 2022 Hardening*
Major: Computer Science, **Faculty Mentor:** Dr. Md Amiruzzaman
Abstract: Out-of-the-box Windows Server 2022 places greater emphasis on compatibility than on security, leaving services vulnerable to attack. To reduce exposure to threats and human error, hardening through automation is crucial. This research focuses on two automated hardening pipelines, with the first being Ansible for network-wide administration and the second being PowerShell DSC for local compliance. Two Windows Server 2022 VMs were initialized to assess the pipelines. The first pipeline employed PowerShell Desired State Configuration with PowerSTIG for local compliance. The second pipeline implemented Ansible through WinRM to send YAML-defined security thresholds. As a result, both frameworks were successful in transforming manual hardening into fast, repeatable deployments with over 90% compliance. All configuration scripts are hosted within their respective directory on a public GitHub repository for reproducibility. Each pipeline has its benefits and trade-offs. Ansible excels at hardening fleets of servers simultaneously. PowerShell DSC shines with isolated, air-gapped systems. All things considered, this research exemplifies that Infrastructure as Code (IaC) is critical for achieving scalable enterprise security.

7. Fiona Buffington - *Geothermal Exchange System Cost-Benefit Analysis*
Major: Economics, **Faculty Mentor:** Dr. Matthew McMahon
Abstract: West Chester University has one of the largest university geothermal exchange systems in the United States. It heats and cools 40% of the campus building space and reduces the school's carbon footprint. This research aims to compare the costs and benefits of geothermal energy versus traditional sources and estimate the geothermal system's break-even point. Monthly building-level data were collected from PASSHE utility reports and WCU Facilities records. Explicit and implicit costs were to be analyzed using a spreadsheet model designed to estimate a counterfactual—which supposed WCU's coal plant was never decommissioned in 2014—and the break-even point of geothermal. Unforeseen challenges hindered the completion of the project, and the break-even point wasn't estimated. Yet, the analysis that was completed found that geothermal operating costs depend on the electricity used by the pumphouse. Electricity prices remained relatively stable and didn't increase by more than $0.01/kWh from 2011 to 2025. Contrastively, coal prices were more volatile, including a dramatic spike in 2022. Although this study could not conclude that geothermal energy is cheaper than coal, it suggests that geothermal is a less risky long-term investment because of its more stable operating costs, supporting the reliability of cleaner energy sources.

8. Alexander Fry - *Music for the Deaf: How Music Can be Created, Performed, and Enjoyed by Everyone*
Major: Music Education, **Faculty Mentor:** Dr. Angela Guerriero
Abstract: Music, though difficult to define, is seemingly enjoyed through listening—so how can a person who is deaf meaningfully experience music? What works beyond listening alone? How are DHH (Deaf and Hard-of-Hearing) individuals currently successful with music careers, and what can promote music accessibility across the nation? This mixed-methods study consisted of a survey analyzing current levels of music accessibility, including barriers to access and misconceptions about experiencing music. Some participants, including ASL interpreters, Deaf musicians, and industry professionals, participated in an interview to gather perspectives on accessibility. Preliminary results indicate that access for DHH individuals currently exists but is not thriving. Technologies and efforts are under-resourced, treated as optional, and depend heavily on individuals or institutions. DHH individuals experience limited participation and hearing-centric priorities. Meaningful access requires cultural understanding, intentional design, and sustained collaboration. This research informs a future where DHH accessibility becomes the norm. Filling this research gap will guide musicians, educators, therapists, scholars, and audiences toward inclusivity, ultimately strengthening careers and expanding who can meaningfully participate in music. Through nationwide dissemination, this project aims to spark new accessible performance models, refine best practices, and inspire long-term change in how society understands and supports connection through music.

9. Naomi Groves - *Interoperating GPR data to locate and date Shell Middens at risk from Sea-Level Rise in the Delaware Bay*
Major: Geoscience, **Faculty Mentor:** Dr. Daria Nikitina
Abstract: Shell middens are anthropogenic refuse composed of Mollusca shells accumulating in heaps containing other artifacts formed over several events of deposition. Early humans settled along the Atlantic coast harvested marine resources following the Last Glacial Maximum as sea level rose and coastal landscapes migrated inland. Field surveys using a non-invasive geophysical instrument ground penetrating radar (GPR) have been collected in the past to detect cultural resources; however, interpretation of the data was inconclusive. Meeting with Dr. Barb Silber, I reviewed artifacts collected from the site and GPS coordinates in GIS for locating a new area for data collection. Returning to the site, land surveying was conducted to assess the damage done to the area by looters prior to field work. Transects were then redone over past GPS coordinates collected to reexamine the length and width of the feature. Further interpretation of the data collected by myself and previous students concluded numerous disturbances damaging the site as well as multiple features. The location of one shell midden was identified at a depth of 1.5-2 meters beneath the surface. A Google Earth map was constructed for further excavations of the site to collect samples for radiocarbon dating.

10. Carly Gutmann - *Effects of Early Prenatal Alcohol and Nicotine Co-Exposure on Adolescent Nicotine-and Vehicle-Seeking Behavior in Rats*
Major: Psychology, **Faculty Mentor:** Dr. Kristen Breit
Abstract: Alcohol and nicotine are the two most commonly used licit substances during pregnancy, and approximately 30% of pregnant people who consume alcohol also report using nicotine. Given that 40% of pregnancies are unplanned, understanding the consequences of early prenatal exposure is important; however, little is known about whether first-trimester co-exposure affects later-life behaviors, including adolescent drug-seeking behaviors. Due to the limitations of clinical research, translational and ethical preclinical models are critical to this field. This study uses a rodent model and a 4 (prenatal exposure) x 2 (sex) x 2 (self-administration drug) design to examine whether prenatal co-exposure to alcohol and nicotine alters drug self-administration during adolescence. Pregnant rats are exposed to alcohol, nicotine, the combination, or the control (vehicle) during the human first trimester equivalent. During adolescence, offspring were examined for self-administration of nicotine or the e-cigarette vehicle control using conditioned nose pokes. Preliminary data suggest that neither prenatal exposure to alcohol and/or nicotine nor sex altered adolescent nicotine self-administration. However, prenatal exposure to nicotine alone increased adolescent self-administration of the e-cigarette vehicle, particularly among female offspring. This ongoing study will inform public health about whether prenatal exposure to alcohol and/or nicotine may alter later-life substance use disorder susceptibility.

11. Meredith Hoppenstein - *Model of Basic Competency for Developmental Feeding Milestones*
Major: Communication Sciences and Disorders, **Faculty Mentor:** Dr. Sarah Moreau
Abstract: Speech-language pathologists (SLPs) play a critical role in identifying and treating pediatric feeding disorders, yet this content remains broadly underrepresented in graduate education. Research indicates that over 90% of SLPs received 20 hours or less of pediatric feeding training, and 60% reported feeling unprepared to provide these services upon graduation (Knollhoff, 2023). To contextualize this gap, 68 ASHA-accredited Northeast SLP graduate programs were reviewed for pediatric feeding course prevalence. Only 28.4% offered dedicated coursework, consistent with existing literature. In response, two asynchronous learning modules were developed for Foundations of Feeding, an upcoming graduate-level course at West Chester University's Communication Sciences and Disorders (CSD) program. Modules cover infant feeding development from birth to 24 months and include recorded lecture videos, milestone charts, case study questions, and readings across topics including breastfeeding, bottle feeding, literature discrepancies, texture progression, and cup and straw drinking development. Content was grounded in peer-reviewed literature and supplemented by clinical resources to support visual learning. This project reflects a literature-informed educational intervention, not a systematic review. This research is ongoing. Future steps include a randomized pretest–posttest study to evaluate student competency gains and further demonstrate the need for dedicated pediatric feeding education in SLP graduate programs.

12. Layla King - *Collaborative Research: Investigating the Impact of Video-based Analysis of Classroom Teaching on STEM Teacher Preparation, Effectiveness, and Retention*
Major: English Education, **Faculty Mentor:** Dr. Brett Criswell
Abstract: Video-based analysis has been used in both preservice and in-service contexts to support teacher learning. Much of this work has focused on assisting teachers in attending to student thinking within a single context. The innovation of this project is to integrate responsive pedagogical approaches within video analysis tasks to support teacher candidates and novice teachers across multiple universities to not only be able to recognize key aspects of student thinking, but also to broaden that recognition to ensure the classroom environment and learning activities value students' ideas, life experiences, and cultural and linguistic resources. This project investigated the relationship between developing professional vision for responsive science teaching and teacher effectiveness and retention in high-need schools. The larger project is a collaboration of seven science teacher preparation programs. By synthesizing research across these sites, the project findings will be applicable to a broad range of teacher preparation and induction contexts.

13. Mikaila Kornbau - *Mechanical Analysis of Two Cervical Spinal Fixation Techniques*
Major: Biomedical Engineering, **Faculty Mentor:** Dr. Muzammil Mumtaz
Abstract: Upper cervical instability resulting from trauma or deformity often requires surgical fixation. This study compared two posterior cervical fixation techniques using finite element analysis (FEA): the Harms construct, which uses C2 pedicle screws, and the Wright construct, which uses C2 translaminar screws that cross over each other through the lamina. Simplified bone blocks, screws, and rods were modeled in SolidWorks and analyzed under identical material properties, boundary conditions, and a 100 N compressive load. Maximum von Mises stress, peak stress location, and maximum displacement were evaluated. The Harms construct exhibited a maximum von Mises stress of 645 MPa, compared with 678.5 MPa for the Wright construct. Maximum displacement was also lower for the Harms construct (13.35 mm vs. 16.13 mm). In both constructs, peak stresses occurred near the screw head and rod mid-section, indicating similar load transfer pathways. These findings suggest that construct design influences load distribution and mechanical response under identical loading conditions, with the Harms construct demonstrating more efficient load transfer. Although simplified, this study demonstrates that FEA is an efficient method for comparing spinal fixation constructs. Future work should incorporate anatomically accurate vertebral models and experimental validation.

14. Avery Kryspin - *Shifting Conversations: The Implications of Intentional Language Choices in Violence Prevention Education and Survivor Support*
Major: Educational Studies, **Faculty Mentor:** Dr. Lisa Huebner
Abstract: Well-intentioned messages such as "You're so strong!" told to survivors of sexual assault aren't always complementary. This phrasing implies societal expectations of conformity to "appropriate" emotional responses in efforts to align with the messenger's provocation. When these implicit expectations aren't met, survivors could experience social isolation—leading to an increased vulnerability to harm from institutions of power. I identified gaps in violence research and prevention scholarship to formulate my research questions, which focus on identifying prevalent messages and how they can impact the reader. I developed my framework for the study by synthesizing Black feminist and language acquisition scholarship. Then I began content analysis of survivor support services, which is the first step of my research study. My preliminary findings are deductive: survivor spaces use positive rhetoric when describing experiences of sexual assault, and inductive: support services frequently spread misinformation. This is the first stage of my research trajectory; in Spring 2027, I will test ideas in this paper and develop a new educational program from those results.

15. Parker Lane - *Using geochemical proxies to reconstruct population dynamics within a Maya settlement*

Major: Geoscience, **Faculty Mentor:** Dr. Elliott Arnold

Abstract: During the Terminal Classic Period (950CE), the Maya populations in the southern Yucatan declined. This decline may have been related to environmental stress, or cultural and political instability. Our project examined Lake Xcach in the southern Yucatan, an understudied Maya heritage site at the junction between the population decline in the south and the increase in the north. Biomarkers within Lake Xcach's sediments record approximately 2,000 years of change within the watershed. We used fecal stanol abundances, carbon to nitrogen ratios (TOC: TN), and nitrogen isotopes of organic matter (δ15N) as proxies for population shifts and anthropogenically induced environmental change within the Xcach watershed. Bulk δ13C and δ15N values were analyzed on an Isotope Ratio Mass Spectrometer, while our fecal stanols will be analyzed via GC/MS. The δ15N signature of bulk organic matter correlates with elemental phosphorus and mercury concentrations preserved in the same sediment core, suggesting that nitrogen isotope ratios are tied to forest clearance and agricultural production. During the post-Classic period, when Maya city-states in the southern Yucatan were largely abandoned, nitrogen isotope ratios decreased as TOC:TN values reached a maxima, indicating forest regrowth in conjunction with depopulation across the Xcach watershed.

16. Mayowa Lawal - *The Significance of Heat Exposure and Preterm Birth in Philadelphia*

Major: Public Health, **Faculty Mentor:** Dr. Sharon Dejoy

Abstract: Extreme heat is becoming more frequent as the climate continues to change, making it an increasing public health concern. Growing evidence suggests that heat exposure during pregnancy may increase the risk of preterm birth, yet not everyone experiences this risk equally. This review examines the relationship between heat exposure and preterm birth while exploring the urbanization of Philadelphia and why some communities may be more vulnerable than others. A review of peer-reviewed literature, systematic reviews, government reports, and Philadelphia environmental justice reports was conducted to examine the evidence linking heat exposure and preterm birth. The literature was analyzed to identify common findings, research gaps, and factors that influence vulnerability. The literature consistently found that prenatal heat exposure is associated with an increased risk of preterm birth. The review also showed that biological changes during pregnancy, neighborhood conditions, housing quality, access to cooling, and historical environmental inequalities increase vulnerability, particularly in disadvantaged Philadelphia communities. Although the evidence supports a relationship between heat exposure and preterm birth, more research is still needed. Additional epidemiological studies are needed to better understand the biological mechanisms involved and to determine why some racial and ethnic groups appear to be more vulnerable to heat-related preterm birth. More research is also needed to better understand how neighborhood conditions and environmental factors contribute to differences in heat exposure and pregnancy outcomes. This knowledge may help guide more effective and equitable public health strategies.

17. Avery Leber - *Evaluating the Robotic Control Reasoning Potential of Locally-Hosted AI*
Major: Computer Science, **Faculty Mentor:** Dr. Linh Ngo
Abstract: Several existing studies have examined the capabilities of cloud-hosted Large Language Models (LLMs) in the field of robotics; however, integrating robotics with LLMs hosted on local machines is a field that has been sparsely explored. In this study, we aim to understand how locally-hosted LLMs can be utilized within the reasoning section of robotic control by creating a kinematic-semantic evaluation framework that separates the complexity of fine-grained technical controls from high-level human language controls. This framework involves connecting two open source services, Webots for its deterministic physics simulation environments and Ollama for its API access to local LLMs, with a Python-based supervisor controller. The results showed that among the five selected local LLMs, the Qwen2.5:3b and Qwen2.5:7b models demonstrated the highest robotic control reasoning potential due to their scores in accuracy, efficiency, and latency tests. Further study of the use of LLMs in edge devices may prove it to be an alternative to cloud-hosted LLMs, especially in industries that handle confidential data, in areas that do not guarantee stable internet connectivity, and for individuals looking to reduce their operational costs.

18. Paige McNamee - *Making a Difference with Native American Children: Supporting the Spirit Lake Tribe Head Start Program*
Major: Special Education and Early Grades, **Faculty Mentor:** Dr. Dawn Patterson
Abstract: This research project focused on the development of a modified curriculum to support the Spirit Lake Tribe Head Start Program in North Dakota. Early intervention is crucial to the language and communication development of all young children, but especially to those who are living in poverty. Limited access to literacy-rich interactions can impact early language development and school readiness. I designed 12 culturally responsive lesson plans that coincided with developmentally appropriate story adaptations to enhance accessibility and engagement for preschool learners. We also gave the Head Start Program more background knowledge and assistance to develop their curriculum to meet the needs of their children through a 3-hour professional development. We traveled to North Dakota and spent time observing the teachers and their students, and then created a professional development on best practices when interacting with preschool learners and how to implement the West Chester University Lesson Plan Template. We emphasized the importance of constantly using language with the students, including talking through play and meal time to increase their exposure. The headstart program will begin to implement these stories and their accompanied lesson plans when their new school year begins in August.

19. Marlene Moore - *Prevalence of PMOS on WCU's Campus*
Major: Biology, **Faculty Mentor:** Dr. Melissa Reed
Abstract: Polyendocrine metabolic ovarian syndrome (PMOS) is a hormonal disorder that affects 1 in 8 women and can result in multiple metabolic, reproductive, psychological, and dermatological symptoms. Research largely focuses on infertility, often leaving college-aged women with limited information and support. The purpose of this SURI project was to survey women on campus diagnosed with PMOS about their symptoms and diagnosis. Six participants completed the Qualtrics survey. The average age at diagnosis was 18.3 ± 1.9 years. Diagnoses were based on irregular or absent periods (83%), increased androgen hormones (33%), and polycystic ovaries (66%). Common treatments included birth control and dietary changes. Five of six participants reported feeling overwhelmed and/or scared after diagnosis and noted limited follow-up support. Additionally, 66% reported disordered eating thoughts after diagnosis that continue today. All participants reported irregular periods, with the longest time without menstruation ranging from 2 months to 2 years. Average menstrual pain was 7.5 ± 2.3 out of 10. These preliminary findings highlight the need for more research on PMOS in younger women and improved support from medical professionals after diagnosis.

20. Isabel Petula - *Photochemistry of 2-Pyridones with Ortho-Substituted Benzenes*
Major: Chemistry, **Faculty Mentor:** Dr. Lauren Rossiter
Abstract: Photochemistry uses light to induce chemical reactions, allowing access to complex chemical scaffolds highly relevant to medicinal chemistry. This project focuses on the synthesis of novel ortho-substituted 2-pyridone derivatives as precursors for future photochemical reactions. A synthesis was completed where 2-hydroxynictinic acid was reduced with lithium aluminum hydride, methylated with methyl iodide, then chlorinated with thionyl chloride in three separate steps. A Williamson ether synthesis then coupled the chlorinated intermediate with either 2-methoxybenzyl alcohol or 2-methylbenzyl alcohol, resulting in novel compounds that were purified and characterized by ^{1}H NMR spectroscopy. Both desired ortho-substituted 2-pyridone derivatives were successfully synthesized, which provides access to previously unreported compounds that are suitable for future photochemical research. The successful synthesis of these 2-pyridone derivatives provides a necessary foundation for future photochemical reactions. Future analysis of the distribution of these photoproducts will provide insight into how modifications to the benzene ring's ortho substituents influence molecular reactivity under UV light. If the controlled formation of medium-sized heterocycles is demonstrated, it could introduce new synthetic approaches to complex molecular scaffolds that frequently appear in pharmaceutical compounds.

21. Grace Polywacz - *Neoliberalism and Social Welfare in Philadelphia*
Major: Political Science, **Faculty Mentor:** Dr. Sally Lawton
Abstract: Neoliberalism is an ideology that applies market logic to all parts of political and economic life (Brockman 2013, Welch 2012). Scholars center their analysis on the political development of discrete neoliberal policy programs or economic crisis responses (President Clinton's Welfare Reform and President Obama's response to the 2008 Housing Crisis). However, few scholars have traced the evolution of neoliberal logic between Clinton's 1994 Welfare Reform and President Obama's American Recovery and Reinvestment Act. Research acknowledges that Welfare Reform, which included lifetime limits on financial assistance and income tax credits for people experiencing poverty, failed to provide basic needs, such as expanded access to daycare for working mothers and accessible public transportation, thereby increasing the burden on the working poor (Lens 2002). I posit that the narrowing of welfare benefits not only contributed to worse outcomes for people experiencing poverty but also underwrote the market logic of the 2009 financial crisis response. This move increased the crisis's impact on working-poor women. In other words, the 2008 financial crisis would not have had as negative an impact had Welfare Reform never been passed.

22. Samuel Quinlisk - *The Neoliberal Borough, An Acute Articulation of Market Logics*
Major: Political Science, **Faculty Mentor:** Dr. Sally Lawton
Abstract: This project investigated how race and ethnicity shape political development in small towns by analyzing West Chester, Pennsylvania's historically Black East End through the lens of neoliberal urbanism. Neoliberal city theory, developed primarily from large metropolitan cases, emphasizes business-oriented governance and growth-oriented redevelopment but often overlooks how racialized neighborhood boundaries structure local investment and exclusion. Using a qualitative archival case study of the East End from roughly 1970–2000, drawing on oral histories, NAACP records, documents from the Charles A. Melton Arts and Education Center, and local news, the study traces how patterns of investment and disinvestment affect infrastructure, services, and political voice. Findings suggest that the expansion-exclusion dynamics are not unique to big cities, but also structure the politics of small towns in ways that are deeply entangled with race, segregation, and local institutional development. In doing so, the project aims to extend dominant theories of urban politics and offer a model for future research.

23. Ethan Radcliffe - *Preparation and Spectroscopic Analysis of Standards of Natural Resins Used in 18th and 19th-Century Furniture for Determining Period of Manufacture of Unprovenanced Fac Simile of T. Jefferson's 'Declaration Desk.'*
Major: Chemistry, **Faculty Mentor:** Dr. Zachary Voras
Abstract: Spectroscopy is the ideal method for non-invasive analysis of art and artefacts by conservators. Although there are compendiums of spectral data for natural and synthetic compounds, they are mostly limited to pure substances. Because traditional wood finishes are often mixtures of several resins or gums, their spectra cannot be easily compared to the existing literature. This study characterizes ingredients common in 18th-century wooden furniture finishes using Raman and FTIR. An array of standards of ten natural resins/gums were dissolved or melted in ethanol and turpentine, then binary and trinary combinations of each resin were applied to a wood substrate, scanned, then compared against the unknown wood finish. The analysis revealed the primary resin used in the unknown finish was shellac. Further analysis is required to determine the presence and identity of secondary components. Our results are consistent with the Department of the Treasury records for the cabinet shop that manufactured the 1880s facsimiles, and we failed to find any evidence inconsistent with manufacture in that period. The data collected for binary and trinary mixtures of natural resins builds upon existing spectral databases, such as CAMEO, referenced by conservators in spectral analyses of museum artefacts.

24. Luke Regnier - *Examining Food Insecurity in Graduate Students*
Major: Psychology, **Faculty Mentor:** Dr. Alison Gardiner-Shires
Abstract: What is known from the existing literature about the prevalence, associated factors, and outcomes of food insecurity among graduate students in the United States? Research indicates that graduate students commonly struggle with FS at higher rates than UG students. A focused review of the literature related to food security among graduate students. Studies were included if they were published in the last five years, were written in English, and were available via full text. The following Boolean string guided the search in the EBSCO database: (food insecurity OR food security OR hunger OR food insufficiency) AND (graduate student OR master's student). I extracted the key components of each article and compiled descriptive statistics. The search yielded 158 studies, and after screening, eight were chosen for this review. The articles assessed 28 unique factors related to FI. Nineteen were found to be significant. FI prevalence was between 12.3% and 65.2%. This is typically the result of the greater competing demands and priorities of graduate students. FI is a multivariate issue that is common amongst college students and threatens their mental and physical well-being and their agency, with few reliable solutions at present.

25. Casey Russoman - *Nature, Nurture, and Notes: How Environments and Level of Privilege Shape the Choice to Pursue Adapted Music Education*

Major: Music Education, **Faculty Mentor:** Dr. Angela Guerriero

Abstract: Adapted music education provides specific modifications and accommodations for students with a variety of disabilities. Targeted support, individualized goals, and inclusion are the key aspects. The field requires a deep understanding of disability terminology and advocacy, new conversations in music and social change, and the natural inclusivity and diversity of music. This research study explored how various influences and factors in one's life may shape them as an adapted music educator and advocate for those with disabilities. This study aimed to understand and examine how one's personality, environment, and privilege may impact their teaching philosophies. This qualitative research study included semi-structured interviews with adapted music educators and was analyzed through Charmaz Constructivist Grounded Theory. This study sought to uncover the traits and motivations that characterize adapted music educators. Preliminary results present main themes of early exposure to disability among those going into adapted music education, such as a parent working in a related field with individuals with disabilities or a friend or family member being a part of the disability community. Another emerging theme is the integration of character education into teaching practices, even among educators who have not received formal training in this area. Character education typically involves teaching students about positive character traits such as responsibility and kindness, often through lessons facilitated by guidance counselors (Kreutzfeld & Lins, 2022). Qualities such as openness, empathy, patience, emotional awareness, respect, and strong interpersonal abilities have emerged as another theme.

26. Jule Serao - *Emotional and Behavioral Effects of News Exposure via Instagram in Early Adulthood*

Major: Social Work, **Faculty Mentor:** Dr. Susan Wysor Nguema

Abstract: Short-form video platforms such as Instagram have become a source of news for a majority of those in early adulthood. Problematic consumption of news is correlated with greater mental and physical detriment. Many studies that look at the effect of news on well-being focused on traditional news media, while studies that look at social media and well-being tend to focus on younger populations. This exploratory study utilized a concurrent mixed-method design. Participants aged 20-40 completed an anonymous survey. They provided data on basic demographics and self-reported their moods, behaviors, and beliefs with a focus on both intentional and incidental news exposure on Instagram. Participants were given the option to provide qualitative data in a long-answer question about how they feel they have been affected. Initial results highlight that the emotional effects are overwhelmingly negative regardless of age, political beliefs, time spent on Instagram, or if the exposure was intentional or incidental. A majority of participants self-reported engaging in negative behaviors and shared the negative impacts they've observed on their lives and well-being. This study highlights an opportunity to look into ways to mitigate incidental exposure or negative impacts through limiting or protective factors.

27. Taryn Wallen - *Method Development and Validation for the Determination of Fentanyl and Cutting Agents by GC-MS*

Major: Forensic & Toxicological Chemistry, **Faculty Mentor:** Dr. Constantinos Pistos

Abstract: The illicit drug landscape is rapidly evolving, with veterinary sedatives like xylazine and medetomidine frequently used as “cutting agents” in fentanyl and heroin supplies. Simultaneous detection of these analytes is critical for forensic science and public health; however, to our knowledge, no literature reports exist for their simultaneous determination. We aimed to optimize and validate a single gas chromatography-mass spectrometry (GC-MS) method to simultaneously detect medetomidine, xylazine, and fentanyl in whole blood using solid-phase extraction (SPE), according to the ANSI/ASB036 Standard. Initial retesting of a previously developed method revealed poor chromatographic separation between medetomidine and xylazine, requiring further optimization. Through subsequent experiments, separation was successfully re-established, and SPE was applied to spiked whole blood samples. While linearity results for medetomidine and fentanyl were satisfactory, xylazine’s results were not. Specifically, a co-eluting blood matrix interfered with xylazine’s analysis, affecting proper quantitation. This highlights the challenges of extracting multiple sedatives from complex biological matrices. The extraction protocol will be further optimized to accurately quantify xylazine before completing the validation. Once resolved, this GC-MS method will provide public forensic toxicology labs with a tool to process complex samples much faster, supporting public safety and early detection efforts.

28. Nawal Zaman - *A Mixed Methods Study Examining the Impact of Culture and Religiosity on Mental Health and Help-Seeking Attitudes Among College Students With and Without Immigrant Backgrounds*

Major: Psychology, **Faculty Mentor:** Dr. Lauren Brumely

Abstract: College students with immigrant backgrounds face unique mental health challenges related to cultural adjustment and acculturative stress. Religion and culture can act as coping mechanisms or promote stigma, influencing help-seeking. This mixed-methods study examined how culture and religiosity impact mental health attitudes among college students with and without immigrant backgrounds. Undergraduate participants (N=87; 17 first- or second-generation immigrants) completed an online survey assessing demographics, religiosity, and help-seeking attitudes. Quantitative data were analyzed using Pearson correlations. Open-ended responses regarding cultural influences were analyzed via thematic analysis, and theme frequencies were compared using Chi-Square tests. Immigrant students' most common themes were Mental Health Stigma (47%), Emotional Suppression/Self-Reliance (35%), and Family Influence (29%). Non-immigrant themes were Religious Coping (39%), Positive Support Systems (31%), and Family Influence (25%). Only Religious Coping, Mental Health Stigma, and Cultural Identity themes differed significantly between groups. No significant correlations were found between religiosity and help-seeking in either group. Findings suggest immigrant students' mental health attitudes are shaped by distinct cultural, familial, and identity factors. These results highlight the need for culturally responsive campus interventions addressing specific cultural barriers rather than generalized stigma reduction.

THANK YOU!

Faculty Mentors

Enriching learning experiences like the SURI would not be possible without faculty members who are dedicated to mentoring undergraduate students' research and creative activities. We appreciate faculty mentors' investment in the SURI scholars and their collaboration in creating a successful institute! Thank you to this year's SURI faculty mentors: Drs. Criswell, Gardiner-Shires, Wysor Nguema, Guerriero, Brumley, Arnold, Huebner, Breit, Lawton, Dejoy, Rossiter, McMahon, Nikitina, Ngo, Mumtaz, Patterson, Aptowicz, Reed, Suh, Amiruzzaman, Moreau, Voras, Mader, Wooten, and Pistos.

Workshop Facilitators

SURI included weekly opportunities for students to build connections with other SURI scholars and faculty members through research-based and social-based workshops. We appreciate the many faculty members and university staff who contributed to these connection events. Thank you to Dr. Amir Golmohamadi, Dr. Emily Duckett, Ron McColl (Special Collections Librarian), Amanda Brooks (Library Technician), Dr. Dara Dirhan, Dr. Tom Pantazes (Assistant Director of Reflective Practice and Scholarship, TLC), Catherine Baxter (Associate Director of Wellness Promotion), and Amanda Baker (Assistant Director of Career Development Center).





WCU Council on Undergraduate Research

The West Chester University Council on Undergraduate Research (CUR) is a University-wide service committee that actively promotes and supports undergraduate students' research and scholarly activities. The council collaborates actively with ORSP to support the University's overall strategic plan and research strategic plan. CUR members specifically support the SURI through meetings that aid in planning for the SURI, reviewing and rating SURI applications, and assisting in coordinating SURI logistics. We appreciate the work of all 2025-2026 CUR members: Stevie Grassetti (Chairperson), Ron McColl (Vice Chairperson), Eirini Panagiotidou, Carolyn Sorisio, Simon Condliffe, Jaeyong Choi, Brie Radis, Heather Edelblute, Emily Duckett, Megan Fork, Maria Stetter, David Levasseur, Zach Wooten, David Thomas, Lisa Marano, Devin Arne, Angela Guerriero, Brittany Severino, Gianna Parrish (student), and Kate Frederick (student).

THANK YOU!

WCU Digital Media and Photography

We appreciate the services of WCU photography (especially Madison Ogle) and Digital Media (especially El Walton, Dan Kadushin, Noah Smith, and Ashley Battiste) in photo and video graphing SURI events.

The ORSP Team

The SURI would not be possible without the help and support of the entire ORSP team, including Patricia Kennedy (Administrative Assistant), Catherine Spaur (Pre-Award Submission and Faculty Funding), Cara Williams (Post-Award Process and Policy Compliance), Charles Graham (Post-Awards Grants Manager), Sue Kertis (Post-Awards Grant Manager), and Dr. Brittany Severino (ORSP Faculty Associate).



SURI 2026 PHOTO ALBUM













SURI 2026 PHOTO ALBUM























