Aikey, Jennifer

Poster # 49

CVPA/Music Education

1:00-2:00

Faculty Mentor: Dr. Tami Draves

Social Sciences, Education, & Business

Impact: Societal

A Narrative of a Neurodivergent Preservice Music Teacher

The purpose of this narrative inquiry is to restory the experiences of a neurodivergent preservice music education major. This study examines the unique challenges and perspectives that arise from the intersectionality of their neurodivergence and the education and training to become a music teacher. Research questions included: (a) How does the participant describe challenges associated with neurodivergence or related comorbidities that they face in an undergraduate music education program? (b) What strategies and supports does the participant describe in obtaining success in a music teacher preparation program? (c) How does the participant describe their identity as a neurodivergent preservice music teacher? (d) How does the participant describe the intersectionality of their music training, teacher training, and neurodivergence?

Alemu, Abreham

Poster # 32

CAS/Biology

2:00-3:00

Faculty Mentor: Dr. Ayalew Osena

Natural, Physical, & Mathematical Sciences

Impact: Advancement

Gene Pyramiding and Transformation of Drought-Responsive Genes to Enhance Drought Stress Tolerance in Cereal Crops

Drought is a growing global challenge that severely impacts crop productivity and threatens food security. By 2050, it is estimated that over 75% of the world's population will be affected by drought. Recent studies indicate that over 30% of global agricultural land has experienced drought, leading to severe yield losses. Researchers are exploring ways to improve crop resilience by incorporating C4 and CAM traits into C3 crops. Eragrostis tef (tef), a C4 small, seeded cereal known for its drought tolerance, and can be a promising model for enhancing drought resistance. Tef is also highly valued for its nutritious, gluten-free grains, rich in proteins, calcium, iron, and zinc. In our recent study, we conducted an in silico analysis to identify drought-responsive genes across six major crops: rice, wheat, maize, barley, sorghum, and pearl millet and the model plant Arabidopsis thaliana. We identified 729 drought-related genes and reported 20 highly enriched genes for transformation intoother crops. These genes play key roles in stress response and resilience, offering exciting possibilities for improving drought tolerance in other crops. These findings provide a foundation for enhancing drought tolerance in crops through genetic transformation, helping mitigate global food security challenges under climate change.

Amarsanaa, Zolzaya

Poster # 33

CAS/Biology

2:00-3:00

Faculty Mentor: Dr. Sally Koerner

Natural, Physical, & Mathematical Sciences
Impact: Environmental

Does grazing make the grass greener?: A global exploration of herbivore effects on forage quality

Large herbivores significantly alter the habitats in which they live, altering plant community composition and biomass. My research investigates how large herbivores influence forage quality in grasslands, through a global meta-level analysis, using plant traits (leaf dry matter content (LDMC), specific leaf area (SLA), leaf nitrogen content (LNC), stem support, and legume cover percentage) as a proxy for forage quality. Specifically, I address three key questions First, how do herbivores influence forage quality across grassland ecosystems? Second, do site-specific factors, such as mean annual precipitation, gamma richness, and species dominance, affect how herbivores impact forage quality? Third, do herbivore characteristics such as herbivore richness, body size, or density, affect how herbivores impact forage quality? Forage quality directly affects herbivore nutrition, population dynamics, and ecosystem functioning. As grazing pressure and climate change alter grassland systems, this research provides crucial insights into plant-herbivore interactions, informing sustainable grazing management strategies that support biodiversity and ecosystem resilience.

Ayoub, Omiya

Poster # 34

JSNN/Nanoscience

2:00-3:00

Faculty Mentor: Dr. Dennis Lajeunesse

Natural, Physical, & Mathematical Sciences
Impact: Health and/or Safety

Battling Fungal Infections with Smart Surface Nanotechnology

Every day, we face an invisible enemy, C. albicans, that can silently spread and wreak havoc. Candida albicans grow resistant to common treatments, and the need for new, smarter solutions becomes critical. My research involves harnessing the power of specially designed surfaces using tiny structures, invisible to human eyes, that can stop these fungi before they cause infection. These surface patterns don’t just act as barriers; they can disrupt how fungi behave by altering the underlying genetic pathways, preventing them from forming stubborn layers that make them resistant to conventional medicine. By studying how these surfaces affect the fungus's response to stress, we aim to create environments where infections are less likely to take root—whether in hospitals or on medical devices. This could mean fewer infections, reduced antibiotic use, and a new weapon in the fight against drug-resistant superbugs. This project aims to shift the way we think about infection control. Instead of relying solely on medications, we can turn to the nature around us, creating smarter, safer environments. This research will make a tangible difference, saving lives and helping us step up our fight against harmful microbes that are becoming harder to beat.

Baker, McKinley

Poster # 1

CVPA/Ethnomusicology

1:00-2:00

Faculty Mentor: Dr. Gavin Douglas

Arts & Humanities

Impact: Social

Victoria Scone: A Case Study of Queer Performance

My presentation demonstrates the multifaceted nature of queer performance through the context of RuPaul's Drag Race franchises and how the platform has allowed drag queens to display their opinions, beliefs, and art as a performer. Through a case study of Victoria Scone, the first AFAB (assigned female at birth) drag artist to compete on the show, I will be analyzing her most notable performances on RuPaul's Drag Race UK and Canada's Drag Race: Canada vs. The World as well as her moving social conversation during Untucked. These performances, while highlighting different aspects of queer performance, allow Scone to voice the inequities and discrimination within the LGBTQ+ community and how she has had to fight to be seen on a larger platform within this marginalized group. I draw from recent scholarship (Gregory Barz 2020; Rachel Devitt 2006) that highlights the importance of queer performance in representing marginalized individuals. By examining the significance of these performances and the reactions of other performers and members of the LGBTQ+ community, this demonstrates that queer performance is not simply entertainment, but serves to raise awareness of discrimination and inequity within queer subcultures.

Barto, Garett

Poster # 35

CAS/Chemistry

2:00-3:00

Faculty Mentor: Dr. Jason Reddick

Natural, Physical, & Mathematical Sciences

Impact: Innovation

In vitro Characterization of Heavy-Metal Binding Domain Proteins in Bacillus anthracis Supported by Bioinformatics

Bacillus anthracis undergoes a lifecycle of dormancy, infection, proliferation, and host expiration. While its pathogenic genes are well studied, much of its non-pathogenic proteome remains uncharacterized. The B. anthracis proteome contains three homologous YbjQ (UPF0145) domain-containing proteins, part of a widespread bacterial family with over 23,000 homologs. Some YbjQ proteins form pentameric structures and are predicted to bind heavy metals, though empirical evidence is limited.

We hypothesize that YbjQ proteins bind metals, with preferences inferred through gene cluster analysis. We analyzed 100 randomly selected YbjQ homologs, predicting structures and metal-binding activity. All were linked to metal-dependent proteins, and predicted metal preferences aligned with their clusters.

To experimentally verify these properties, we expressed and purified the three B. anthracis YbjQ homologs in Escherichia coli and optimized purification. This poster presents our bioinformatic findings, oligomeric studies, and ongoing metal-binding assays.

Basurto, Marve

Poster # 36

CAS/Chemistry

2:00-3:00

Faculty Mentor: Dr. Jason Reddick

Natural, Physical, & Mathematical Sciences
Impact: Advancement

Investigating the Role of spd17 in the Biosynthesis of the Fungal Toxin Sporidesmin

Pithomyces chartarum is a fungus that produces Sporidesmin, an epidithiodioxopiperazine (ETP) natural product. This is known to cause hepatogenous photosensitization disease, or facial eczema in livestock. Despite Sporidesmin's effects on animal health, the biosynthetic pathway responsible for its production remain poorly understood. The biosynthesis of Sporidesmin involves the pathway encoded by the spd gene cluster. Spd17 encodes a small nonribosomal peptide synthase (NRPS) with two modules that direct the incorporation of two amino acids. We hypothesize that small NRPSs like spd17 can be cloned and expressed to allow in-vivo and in-vitro production of a 2,5-diketopiperazine derived from tryptophan and alanine. Our first aim is to clone and express the spd17 NRPS. These NRPSs are always made in apoprotein form and are activated to the holoprotein form by using a Phosphopantetheinyl transferase (PPTase). To accomplish our aim we will use the pET-Duet system to coexpress the PPTase sfp with spd17. This coexpression is expected to result in the formation of the spd17 holoprotein, which we will purify and characterize. This poster will display the progress towards purifying the active spd17 protein.

Beatty, Ally

Poster # 50

CAS/History

1:00-2:00

Faculty Mentor: Dr. Torren Gatson

Social Sciences, Education, & Business
Impact: Educational

Echoes of SidesTown: Preserving Winston Salem's Forgotten African American Neighborhood

Sidestown, a historically black neighborhood in Winston-Salem's Ardmore Historic District, has largely disappeared, with its only confirmed remaining structure being the community cemetery. However, a few houses in the area may have been part of Sidestown, warranting further research. This project seeks to reclaim Sidestown's history by securing local historic designation for the cemetery and recognizing the neighborhood's significance.

Through extensive research of deeds, maps, and archival records, this project traces Sidestown's origins to the late 19th century, when land was granted to freed African Americans by a German farmer, Sietz—whose name evolved into "Sides." The study highlights Sidestown's ties to the AME Zion Church and its role in Black landownership and community-building. Though no longer standing, Sidestown's log house school—one of the area's earliest black educational sites—reflects the community's commitment to education. The neighborhood also had ties to the Moravians, whose influence shaped black land ownership in Winston-Salem. Working alongside Preservation Forsyth, local historians, and community advocates, this project builds a case for historic recognition, ensuring Sidestown's cemetery and potential remaining homes stand as testaments to its residents. This work underscores the urgent need in preserving black heritage and protecting marginalized communities from erasure.

Berlowitz, Audrey — Poster # 51

SOE/Teacher Education — **1:00-2:00**

Faculty Mentor: Dr. Ryan Hughes

Social Sciences, Education, & Business

Impact: Societal

Affective Risks and Entanglements in the Teaching and Learning of Difficult PRC History: A Case Study of Two Undergraduate Courses in a US University

This dissertation is a qualitative case study of how a Chinese heritage history professor taught the Chinese Cultural Revolution as difficult history, the deep attachments she had to the material she taught, and her struggle to convey to students the human significance of this traumatic event. The central line of inquiry concerns the opportunities and challenges faced by a college professor transmitting difficult historical knowledge when the professor is themself personally connected to that history through lived and vicarious experience. During the spring 2023 semester, the history professor taught recent enigmatic events in Chinese history using a history-memory lens in two different undergraduate seminars at a US university. Although the primary participant was the professor, whom I interviewed five times, student data was culled through classroom observations, which enabled me to track the affective student-teacher relationships and entanglements that arose. I also observed a one-time panel of Chinese heritage historian-professors, including the professor who was the primary study participant, discussing their philosophies of teaching China's recent history during the current US-China estrangement. Data analysis techniques, including narrative based inquiry, portraiture, writing as method, and theoretical sampling of affect theories, were used to draw out findings related to intersecting research questions.

Bomstein, Zachary — Poster # 15

HHS/Nutrition — **2:00-3:00**

Faculty Mentor: Dr. Clinton Allred

Health Sciences

Impact: Health and/or Safety

Combined Effects of Environmentally Relevant Phthalate Exposures and a Western-Style Diet on Colonic Inflammation

Diets rich in fat and ultra-processed food (Western-style diets; WD) increase the risk of colorectal cancer (CRC) through the promotion of colonic inflammation. Di(2-ethylhexyl) phthalate (DEHP) & Diisononyl Phthalate (DINP) are phthalates used in food packaging and ultra-processed and fat-rich foods are susceptible to their contamination. Previously, our lab demonstrated that both phthalates disrupt cellular responses in colonocytes in vitro. This study aimed to determine the effects of DEHP and DINP combined with a WD on colonic inflammation in vivo. Mice consumed a diet with or without DEHP or DINP for 13 weeks. At week 11, a subset of mice received a colitis-inducing agent (DSS) to examine exposure effects on acute colitis. WD significantly increased body, colon, liver, and spleen weight compared to control diet irrespective of DSS exposure, while the disease activity index (DAI) colitis score was highest in mice consuming a WD with DEHP. DSS-exposed mice consuming a WD with DEHP or DINP weighed significantly less than mice consuming WD only. These data demonstrate that WD consumption increases indicators of colonic/systemic inflammation, and WD+DEHP exposure exacerbates acute colitis. Our findings are important as understanding how multiple exposures exacerbate colonic inflammation has clinical implications for patients with this disease.

Brown, Nikkola

Poster # 2

CAS/English

2:00-3:00

Faculty Mentor: Dr. Amy Vines

Arts & Humanities

Impact: Scholarly

Traumatic Hauntings: The Book of Margery Kempe, Sexual Violence, and Survivor Tales

Most individuals reading The Book of Margery Kempe do not focus on the contentious relationship between Margery Kempe's desire for chastity and her husband's refusal. Emma Lipton suggests the Book's depictions of their sexual relationship are due to Kempe's wish to develop a hagiography (130). Because of this, her husband takes on the role of a lustful, forceful abuser (Lipton 130). In contrast, I reevaluate Kempe's Book to reveal that it contains the inner workings of a traumatized woman in a sexually abusive marriage. The Book, and Kempe's spiritual journey, are evidence for a medieval trauma narrative. By evaluating Kempe through this lens, modern and medieval understandings of rape culture reveal that these two worlds, though separated by years, are not that different from each other as the medieval period displayed numerous stigmas of rape culture that are still present today. Highlighting these disempowered voices is a necessary step in resisting patriarchal oppression. Kempe's narrative is a necessary, additional voice within the void against patriarchy as the more rape culture is discussed, the more power survivors and all marginalized people are given.

Cabo, Maurelio Jr

Poster # 37

JSNN/Nanoscience

2:00-3:00

Faculty Mentor: Dr. Dennis Lajeunesse

Natural, Physical, & Mathematical Sciences

Impact: Health and/or Safety

EutectoGel: A Next-Generation Sustainable Antimicrobial Material

Infection control remains a critical challenge due to the rise of antimicrobial resistance and the limitations of traditional treatments. EutectoGel, a next-generation sustainable antimicrobial material, addresses these issues by integrating bacterial nanocellulose (BNC) as a scaffold with deep eutectic solvents (DES) as antimicrobial agents. This system enables a controlled and sustained release of antimicrobial compounds, reducing reliance on conventional antibiotics and toxic solvent-based treatments. Antimicrobial tests, including disk diffusion, minimum inhibitory concentration (MIC), and reactive oxidative stress (ROS) assays, demonstrate that EutectoGel effectively kills both bacterial and fungal strains at a susceptible rate. With customizable formulations and structural adaptability, EutectoGel is a promising candidate for applications in wound care, medical coatings, and infection-resistant biomaterials. This innovation represents a sustainable and highly effective alternative for infection control, addressing the growing need for safe, eco-friendly, and long-lasting antimicrobial solutions.

Campbell, Sarah

Poster # 3

CAS/History

2:00-3:00

Faculty Mentor: Dr. Torren Gatson

Arts & Humanities

Impact: Educational

Revolution, Restoration, Recognition: The House in the Horseshoe National Register Nomination Reimagined

This project complicates, expands, and diversifies the National Register of Historic Places listing for the House in the Horseshoe, the circa 1772 Georgian home and property named for its location within a bend of the Deep River near Sanford, NC. The original 1971 National Register nomination, focused on early white owners Col. Philip Alston and Gov. Benjamin Williams, totaled just seven pages and utilized three sources. Not highlighted: that both men were enslavers. This updated nomination aims to tell a more complete historical narrative. Working with Heather Slane of hmwPreservation, our time period stretches from the house's construction through the bicentennial in 1976. The updated nomination documents its conversion from private residence to public historic site, and describes a site of significance rather than a single historically significant building. We recognize the contributions of enslaved labor. All of these are supported by a greater variety of primary and secondary sources.

Cardenas Vasquez, Delicia Esther

Poster # 16

CAS/Biology

1:00-2:00

Faculty Mentor: Dr. Zhenquan Jia

Health Sciences

Impact: Health and/or Safety

The Effects of Carbon Nanodots on Ultrasonic Vocalizations and Other Behaviors of C57BL/6J and LDLr -/- mice.

Carbon Nanodots (CNDs) are new nanomaterials widely used in biomedicine for their cost-effectiveness, low toxicity in comparison with other nanomaterials and applications such as bioimaging and drug delivery. While multiple in-vitro and in-vivo studies elucidated low-toxicity of CNDs during short period of time (7 days or less), limited information exists regarding their long-term effects on in-vivo models. Specifically, we do not understand the potential toxicity of CNDs on the observable appearance, development, and behavior of an individual. We hypothesized that long term administration of CNDs alters behavior and physiology in laboratory mice. We tested our hypothesis using C57BL/6J mice and LDLr -/- mice and evaluated behavioral and physiological responses to 2.5 mg/kg CNDs over an 8 week period. Specifically, we focused on evaluating the effects of CNDs on Ultrasonic Vocalizations (USVs) as a measure of communicative behavior. Additionally, we utilized two standardized behavioral tests, namely the Open Field Test and the Elevated Plus Maze Test, to analyze alterations in specific behavioral patterns induced by CNDs. Finally, we examined the influence of CNDs on the force strength of mice through a neuromuscular test. We found that CND treated C57BL/6J mice produced fewer USVs than control mice and that CNDs treated mice

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Carsley, Jessica — Poster # 38

CAS/Chemistry — **1:00-2:00**

Faculty Mentor: Dr. Kimberly Petersen

Natural, Physical, & Mathematical Sciences

Impact: Scholarly

Asymmetric Synthesis with the use of a Microwave Reactor

The microwave reactor has been shown capable of shortening the reaction time and maintaining the selectivity of the product. The microwave is able to shorten the reaction time because it heats the reaction flask more uniformly than an oil bath. The enantioselective synthesis of compounds is important because drug compounds need to be enantioenriched. The reaction completed was a cyclization and the selectivity was comparable to that in an oil bath. This method with the microwave reduced the reaction time from three days to twenty minutes. We are also completing reactions from other research labs to confirm that this method is universal and applies to other reactions and not just our own.

Chapman, Olivia — Poster # 39

CAS/Biology — **2:00-3:00**

Faculty Mentor: Dr. Bryan S. McLean

Natural, Physical, & Mathematical Sciences

Impact: Environmental

Seasonal microstructural plasticity in the gastrointestinal tracts of wild-caught Peromyscus maniculatus

Some small mammal species exhibit gastrointestinal tract (GIT) plasticity in response to changing energetic demand. In North American deer mice (Peromyscus maniculatus), the length of the gut can be 35% longer during winter, a hypothesized means of extracting more energy from poorer-quality food. Further, a seasonal inversion in robustness of the small and large intestine has been documented; the small intestine was least robust in the winter, but this flipped during warmer months, suggesting that trade-offs exist between gut sections. However, the underlying microstructural changes associated with this potential trade-off are not well understood. We present work examining macroscopic and microstructural seasonal changes in a Virginia P. maniculatus population. We did seasonal sampling of 20 adult individuals for 5 seasons. Macroscopic traits were collected, and histological preparations were taken from the small and large intestines. Gross traits revealed that the total length of the GIT was highest in spring and lowest in summer, while both the stomach and cecum were longest in winter. We measured villi height and width, thickness of the mucosal epithelium, and thickness of the mucosa. This work furthers our understanding of how individuals achieve GIT plasticity, a crucial way that they cope with rapidly changing environments.

Chen, Yu — Poster # 52

HHS/Human Development and Family Studies — **2:00-3:00**

Faculty Mentor: Dr. Esther Leerkes

Social Sciences, Education, & Business

Impact: Social

Maternal Stressful Life Events During Pregnancy and Infant Cortisol

Cortisol, a biomarker that reflects stress reactivity, is related to infant developmental outcomes concurrently and longitudinally. According to the Development Origins of Health and Disease perspective, maternal perceived stress during pregnancy activates the maternal hypothalamic-pituitary-adrenal (HPA) axis, which then affects the fetal and infant HPA axis and cortisol secretion. However, empirical findings about the associations between women's prenatal reports of stress and infant cortisol reactivity are mixed. Thus, we examine the extent to which specific prenatal stressful life events predict infant cortisol reactivity at 2 months. During their third trimester, women (N = 299, Mage = 29.7) reported whether or not 43 specific stressors occurred and the extent to which each affected them. Five infant salivary cortisol samples were collected at 2 months across benign and stressful activities. Area under the curve with respect to ground was calculated to reflect infant overall cortisol reactivity during the visit. After partial correlations and the Benjamini-Hochberg procedure, results showed that only 4 stressful life events during pregnancy predicted infant cortisol levels at 2 months. Findings suggest that more acute and non-normative stressors (e.g., experienced a trauma) are more relevant to infants' developing HPA system.

Devireddy, Keerthi — Poster # 40

CAS/Computer Science — **2:00-3:00**

Faculty Mentor: Dr. Shan Suthaharan

Natural, Physical, & Mathematical Sciences

Impact: Environmental

Bridging the Human-AI Gap: Consistent Explanations in Living Organisms

Artificial Intelligence (AI) models frequently change their reasoning when analysing the same animal image multiple times, creating uncertainty in human-AI interactions. Our research investigates how this instability in explainability affects human understanding and trust in AI models. We developed and tested new methods to make AI explanations more consistent, focusing on applications in animal identification. By measuring both the technical improvement in stability of explainability and its impact on human users, we found that more consistent explanations significantly improve human-AI collaboration. In technological perspectives, we utilized the AI model Inception V3 and LIME – the well-known explainability framework along with the computational techniques that include a hybrid perturbation strategy combining Markov Chain Monte Carlo (MCMC) approach (40%) with traditional random sampling (60%). We enhanced the framework further through Adaptive Segment Merge (ASM) for improved region identification and Sign Entropy Based Feature Elimination (SEFE) for better feature selection. These enhancements make the explanations more robust and reliable, fostering greater trust in AI-driven decision support systems. Our research work helps bridge the gap between AI capabilities and human trust, particularly in fields where reliable animal identification is crucial, such as veterinary care and wildlife conservation.

Dexter, Yolanda

Poster # 17

HHS/Community Health Education

1:00-2:00

Faculty Mentor: Dr Stefanie Milroy

Health Sciences

Impact: Health and/or Safety

"Raising Awareness of Challenges and Support Strategies for Women in Skilled Trades":A Research Study on Workplace Equity and Wellness

Women in skilled trades face unique challenges that impact their career advancement, workplace experiences, and overall well-being. My research explores these challenges, focusing on barriers such as workplace culture, safety concerns, and access to professional development. Through a combination of literature review,and surveys with women in skilled trades, I aim to gather firsthand insights into their experiences. The findings will help identify key areas where support and resources are needed to improve retention, job satisfaction, and career growth. By analyzing this data, my research seeks to inform policies and programs that promote inclusivity, equity, and wellness for women in skilled trades.

Dunlap, Kyle

Poster # 53

SOE/Special Education

2:00-3:00

Faculty Mentor: Dr. Heather Coleman

Social Sciences, Education, & Business

Impact: Educational

Implications of self-initiated movement in early childhood development: Insights from Pikler-Lóczy educational practice

This literature review explores Pikler-Lóczy early care and education practices, which center on self-initiated movement opportunities for the child in the first three years, and the implications for early childhood care and education across various settings, including the home, early education settings, and early intervention programs. The framework for this investigation is Self-Determination Theory, which assumes that competence, relatedness, and autonomy are fundamental to well-being and self-integration. The review analyzes the physical environment created for children and the adult-child relationship, focusing on demonstrations of (a) the child's competence as an active participant, (b) the child and caregiver's relatedness to the activity and environment, and (c) the child's autonomy in movement or adaptive skills development. The literature review concludes that early care, education, and intervention practices that prioritize cooperative caregiving and self-initiated motor development within responsive child-adult relationships foster healthy psychomotor development, supporting overall early childhood growth.

Keywords: early childhood education, early childhood intervention, self-initiated motor development, Pikler pedagogy, Emmi Pikler, Self-Determination Theory, approaches to play and learning

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Franklin, Eliana

Poster # 4

CAS/English

1:00-2:00

Faculty Mentor: Dr. Emilia Phillips

Arts & Humanities

Impact: Cultural

Field Notes from a Teacher

My creative project is a series of poems that explores the intersection between education and the environment. After teaching sixth grade at an outdoor school in Asheville, NC, I wrote 14 poems that highlight the daily struggles and joys as a teacher during our current times. In a time when both education and our environment are facing continual setbacks, these poems seek to emphasize the benefits of connecting students to nature. The poems combine science and storytelling to demonstrate how the youngest generations are faced with climate change yet still are immensely curious about the world around them. Additionally, these poems describe the various social justice issues that students are facing today, including gun violence, affordable housing, standardized testing, and environmental disasters such as Hurricane Helene.

Gray, Kyle

Poster # 5

CVPA/Music Education

2:00-3:00

Faculty Mentor: Dr. Tami Draves

Arts & Humanities

Impact: Educational

"Sing With Your Brain": A Case Study of Self-Regulated Learning in the Choral Ensemble

Music ensembles produce their best and most meaningful sound when each member is aware and in control of their contribution to the collaborative performance. One way to achieve this is through self-regulated learning during rehearsal. While researchers have explored self-regulated learning in instrumental musicians' individual practice, little research has been done relating to choral musicians' experiences in rehearsal. The purpose of this case study was to explore self-regulated learning in the choral ensemble. Research questions included: (a) How does the choral director describe their approach to promoting self-regulated learning in the choral rehearsal? (b) How, if at all, do choral students display self-regulated learning in the choral rehearsal? (c) How do choral students describe the experience of self-regulation during choral rehearsals? (d) What is the choral director's experience of directing an ensemble engaged in self-regulated learning? To address these, I examined a university choral ensemble over seven weeks of preparation for a Fall concert. Participants included four singers and the director. Data analysis revealed several emergent themes, suggesting the importance of cognitive load, social factors, and the rehearsal environment on self-regulation. A model for self-regulated learning in choral rehearsals was produced from the findings.

Hernandez, Paula

Poster # 54

SOE/Educational Leadership

2:00-3:00

Faculty Mentor: Dr. Kathy Hytten

Social Sciences, Education, & Business

Impact: Educational

Nonprofits & College Access: Helping Undocumented Youth Attend College in a Democratic Society

An estimated 98K undocumented youth graduate from public high schools in the US each year. Upon graduating high school these students' college options are limited due to active restrictions that ban them from accessing both in-state tuition rates (ISTR) and financial aid resources depending on where they live, regardless of how long they have lived there. Access to ISTR and financial aid resources have been proven to greatly increase college attendance and success for this population. Ten states have active policies that ban undocumented youth from accessing ISTR and financial aid. A few nonprofits across these restrictive states actively work to help this population access college, opening the door for this group to participate in and contribute to our society and ultimately thrive as members of our community—all of which are habits of democracy. Participants from 18 nonprofits/community organizations were interviewed across eight of these restrictive states to better understand the work being done to help this population access college. The goal of this study was to bring to light the strategies used and barriers faced by these organizations as they do this work, as well as the impact these organizations have on college access and maintaining our democracy.

Herring-Nicholas, Ashley

Poster # 41

JSNN/Nanoscience

2:00-3:00

Faculty Mentor: Dr. Eric Josephs

Natural, Physical, & Mathematical Sciences

Impact: Innovation

Making the Cut: TOP-SECRETS for Ultra-Specific Gene Editing

CRISPR-Cas9 is a groundbreaking gene-editing tool with great potential for treating genetic diseases. However, the major challenge lies in avoiding unintended genetic changes, particularly when distinguishing between single letter DNA differences (SNVs) in genes. To address this, we developed TOP-SECRETS, a method that allows for highly precise targeting of disease-causing mutations while leaving healthy DNA untouched.

We tested this approach on the KRAS G12D mutation, a common cancer-linked mutation that cannot be targeted with conventional drugs. Using TOP-SECRETS, we screened millions of guide RNAs with extensions (x-gRNAs) and identified ones that could accurately edit the mutant version of the gene while avoiding the healthy version. Further validation of this method with single mutations in MED12, a gene linked to about 70% of uterine fibroids, showed successful targeting as well, where traditional CRISPR methods fail.

TOP-SECRETS simplifies the process of generating precise gene edits, reducing the need for complex design and validation. This breakthrough has major implications for personalized medicine, allowing for more accurate, safer, and personalized gene therapies for cancer, inherited disorders, and other genetic diseases—especially in cases where standard CRISPR approaches are limited.

Hibbard, Alice — Poster # 6

HHS/Kinesiology — **1:00-2:00**

Faculty Mentor: Dr. Louisa Raisbeck — Arts & Humanities

Impact: Health and/or Safety

Enhancing Balance and Postural Control in Older Adults Through Attentional Focus in Interactive Movement Sculptures

As public art increasingly incorporates interactive elements, it presents a unique opportunity to design sculptures that encourage physical engagement, particularly for older adults. This study seeks to explores whether attentional focus strategies—internal (body mechanics) and external (environmental interaction)—could influence balance and postural control when older adults engage with movement-based sculptures.

Attentional focus plays a key role in motor performance. While internal focus emphasizes bodily control (e.g., "contract your core"), an external focus directs attention toward movement outcomes (e.g., "shift your weight toward the sculpture"). Research suggests that external focus enhances motor learning by promoting automatic control, which may be beneficial for older adults experiencing balance declines.

This study would examine whether integrating attentional focus strategies into interactions with sculptural environments could improve postural stability. Findings could help bridge kinesiology and public art, demonstrating how interactive sculptures might serve as functional movement spaces. Beyond aesthetic appeal, these installations could potentially promote physical well-being in aging populations by subtly encouraging movement and balance training. By exploring this intersection of art and movement science, this research aims to inform the design of public artworks that engage communities artistically while supporting safety and health in older adults.

Hoeffner, Jasmine — Poster # 7

CAS/History — **2:00-3:00**

Faculty Mentor: Dr. Anne Parsons — Arts & Humanities

Impact: Community Engagement

Building Bridges: Crossing the Creek into Winston-Salem

This public history research project will produce comprehensive education curriculums, that will focus on the Black History of Winston-Salem, North Carolina. The project is centered around the construction, curation, and general planning for the last surviving Shotgun house of the historic Black community of Happy Hill. The home will be transformed into a historic site and museum, and exhibit content and organization will be drawn from the curriculum formatted for the site specifically. On the other hand, another, separate curriculum, will be formatted for use by educators in local K-12 public schools in Forsyth county. While the Shotgun home curriculum will specifically be curated for site staff, to include docents and tour guides. The central mission of both curriculums will contrast current historiography. While both curriculums will include the Moravian religious group, it will avoid focusing on the group and rendering Black historical subjects to the periphery.

The central goal of this project is to provide the people of Winston-Salem with a community-oriented public history site, that simultaneously draws from rich local history, while actively involving the local community.

Hossan, Sakhawat

Poster # 42

CAS/Computer Science

2:00-3:00

Faculty Mentor: Dr. Jing Deng

Natural, Physical, & Mathematical Sciences

Impact: Advancement

Benchmarking Large Language Model Hallucination

Large Language Models (LLMs) have demonstrated remarkable capabilities in natural language processing tasks; however, they remain susceptible to hallucination—generating factually incorrect or nonsensical information. Addressing this issue is critical for ensuring their reliability in high-stakes applications such as healthcare, legal, and scientific research. In this study, we aim to establish a robust benchmarking framework to systematically measure and quantify hallucination in LLMs. Current solutions for mitigating hallucination include retrieval-augmented generation, reinforcement learning with human feedback, and model alignment techniques, yet a standardized evaluation metric remains elusive. Developing such a benchmark poses several challenges, including defining hallucination across different contexts, distinguishing between minor inaccuracies and severe misinformation, and ensuring generalizability across diverse datasets and use cases. By designing a comprehensive benchmark, this research seeks to provide a foundation for evaluating and improving LLM reliability, ultimately contributing to safer and more trustworthy AI applications.

Hudgins, Brynn

Poster # 18

HHS/Kinesiology

2:00-3:00

Faculty Mentor: Dr. Jaclyn P Maher

Health Sciences

Impact: Health and/or Safety

Affective Responses to Sedentary Behavior in Older Adults

Sedentary behavior (SB) has negative mental health consequences, yet older adults spend most waking hours engaged in SB. Most of the research focusing on relations between SB and mental health uses contextless, summary-based measures. Therefore, it is unclear how SB occurring in specific contexts and domains impacts affective states in real-time and real-world environments. Ecological Momentary Assessment (EMA) can overcome limitations of previous research by pairing accelerometers and smartphones to capture behaviors of interest as they occur in naturalistic settings. The current study seeks to use an event contingent EMA prompting schedule triggering EMA prompts after 30 minutes of continuous SB to (1) determine momentary contextual factors (i.e., physical and social context, and domain type) that are associated with affective responses during SB and (2) determine the extent to which mental engagement in SB moderates the association between SB domain type (screen-based vs. not) and affective responses during a bout of SB. One hundred older adults will be recruited to wear an accelerometer and carry a smartphone for seven days. Anticipated findings from the current study will be used to make recommendations for limiting specific types of SBs in specific contexts that contribute to poor mental health and well-being.

Huff, Stacy — Poster # 55

SOE/Educational Research, Measurement, and Evaluation — **1:00-2:00**

Faculty Mentor: Dr. Sandra Ayoo

Social Sciences, Education, & Business

Impact: Social

The Weight of Stories: How Program Evaluators Experience Compassion Fatigue

Compassion fatigue (CF) is a common challenge in caregiving professions, but it's rarely discussed in the field of program evaluation. This research explores how CF impacts evaluators, focusing on the emotional toll of working closely with people's stories, challenges, and traumas. Using a method that emphasizes personal experiences and social connections, the study reveals how evaluators navigate their roles, including the tension between staying neutral and acting as advocates, while balancing their own identities and emotional resilience. It highlights both the struggles evaluators face and the strategies they use to cope. By emphasizing the need for trauma-informed practices, this research offers insights to help organizations better support evaluators in emotionally demanding roles. The goal is to raise awareness and provide practical solutions to improve the well-being and effectiveness of evaluators.

Hung, Esther — Poster # 8

CAS/Creative Writing — **1:00-2:00**

Faculty Mentor: Dr. Xhenet Aliu

Arts & Humanities

Impact: Social

the dead don't get to speak: a Novel on Grief, Belonging, and Invisible Violence

This experimental novel combines the wuxia and historical fiction genres to explore the social structures and complex human interiority that obstruct the full rendering of grief and identity. Inspired by the geopolitical struggles present in eighteenth and nineteenth-century East Asia, particularly Taiwan, this project additionally investigates the sociopolitical issues surrounding refugees, immigrants, and discrimination that remain relevant in current society. By highlighting the unavoidable impact of geographical location and culture on how an individual learns to cope, and utilizing craft such as multiple points of view and tonal shifts, this projects showcases how grief, blame, and forgiveness can hover within a morally gray area, and how our understanding of the self and others can spur—for better or worse—changes in our society.

Jochim, Alex

Poster # 19

HHS/Kinesiology

2:00-3:00

Faculty Mentor: Dr. Jaclyn Maher

Health Sciences

Impact: Health and/or Safety

Determinants of older adults' sedentary behavior in the context of everyday life: A dual process approach

Older adults engage in high levels of sedentary behavior (SB). Yet, we lack understanding of the conscious and unconscious constructs that predict SB for SB reduction adopters and maintainers. Using a dual process framework, this study aims to understand the conscious and unconscious determinants of SB in older adults' everyday life. Older adults (≥60 years; N=202) participated in a 1-year study with three 14-day waves of data collection. Each wave, participants wore an accelerometer to measure SB and completed a 4-day protocol with 10 short questionnaires per day to assess conscious and unconscious determinants of SB. On occasions when SB occurred, adopters and maintainers that reported higher than usual levels of intentions, self-efficacy, and plan specificity to limit SB, engaged in less SB. When older adults were outdoors, they engaged in less SB but with greater effect for adopters than maintainers. Maintainers but not adopters were less sedentary when they were with others or when they followed their routine to a greater extent than usual. Findings suggest conscious and unconscious constructs are important determinants of SB in older adults, though nuances in associations exist among adopters and maintainers and may have implications for interventions to reduce SB.

Jordan, Jenna

Poster # 43

CAS/Biology

1:00-2:00

Faculty Mentor: Dr. Malcolm Schug

Natural, Physical, & Mathematical Sciences

Impact: Environmental

Characterization of ultrasonic vocalizations produced by wild woodland jumping mice.

Rodents represent 41% of all living mammals and vocal communication in rodents is important for mediating a variety of behaviors (identity determination, defending territories, mother-offspring interactions, etc.). The study of rodent communication and its behavioral context is widely used in biomedical comparative studies, for the understanding of evolutionary processes and to provide valuable information for effective conservation strategies, yet less than half of all rodent species have a defined vocal repertoire. Furthermore, most rodent communication studies have been conducted in laboratory settings which do not allow for the most natural observation of communication and behavior. This study aims to define the vocal repertoire and behavioral context of the woodland jumping mouse (Napaeozapus insignis). This study will be the first description of communication in a member of the Dipodidae super-family. Audio detection devices were used to record vocalizations and video cameras to record behaviors from a population of free-living (wild) woodland jumping mice at the southernmost point of their geographic range. Vocalizations will be defined using specialized machine learning programs to analyze the structure of each vocalization. The goal of this study is to elucidate the differences between vocalization types and if those differences are correlated with specific behavioral patterns.

Journey, Azariah

Poster # 9

CAS/History

1:00-2:00

Faculty Mentor: Dr. Torren Gatson

Arts & Humanities

Impact: Cultural

Quantum Identities: Speculative Fiction's Role in Identity Formation

Speculative fiction—including science fiction, fantasy, and related genres—plays a crucial role in the formation and affirmation of LGBTQIA2+ identities. As identity is fluid, complex, and deeply personal, these genres provide a transformative space for individuals to navigate, question, and express their authentic selves. By blending personal narratives with broader cultural analysis, this project examines how speculative fiction challenges societal norms, fosters self-discovery, and reshapes identity formation within LGBTQIA2+ communities. Additionally, it highlights the role of fandoms as sites of solidarity, where queer individuals and their allies engage with stories that validate their experiences and expand the possibilities of identity. Through this exploration, speculative fiction emerges as a vital framework for understanding, affirming, and celebrating the diverse narratives of LGBTQIA2+ individuals.

Khan, Ajmal

Poster # 20

CAS/Biology

2:00-3:00

Faculty Mentor: Dr. Zhenquan Jia

Health Sciences

Impact: Health and/or Safety

Investigating the Link Between Nanoplastics and Inflammation in Human Cardiac Cells - A Silent Culprit Behind Heart Attacks?

Cardiovascular diseases (CVDs), commonly referred to as heart and blood vessel disorders, are the leading cause of death worldwide.

Atherosclerosis, a prevalent form of CVDs, is characterized by the thickening of blood vessels due to plaque accumulation.

Every year, approximately 18.6 million people, which accounts for 33% of all global and more than 75% in low- and middle-income countries, die from CVDs. One person dies every 34 seconds in USA.

Environmental pollutant, microplastics and nanoplastics (M-NPLs) are everywhere including human food, plants, water, and air. M-NPLs could enter the body through ingestion, inhalation, and dermal contact and have been detected in human blood, stool, placenta, lungs, sputum, saliva, hair, and skin (3).

M-NPLs presence in human tissues, its role reactive oxygen generation, cytotoxicity and various diseases such as ovarian, pulmonary and cardiac fibrosis, and apoptosis of myocardium suggests a potential link between M-NPLs exposure and atherosclerosis (4, 5).

This research aims to investigate the molecular and cellular mechanisms underlying the induction of endothelial inflammation by M-NPLs, which play a critical role in the initiation and progression of atherosclerosis.

KianvashRad, Nooshin — Poster # 21

JSNN/Nanoscience — **1:00-2:00**

Faculty Mentor: Dr. Dennis LaJeunesse — Health Sciences

Impact: Health and/or Safety

Nano-Enhanced Fibers: Boosting Antifungal Drug Effectiveness in Yeast

Candida albicans is a common microorganism in the human body, but under certain conditions, it can turn into a harmful pathogen. Its ability to form protective layers, called biofilms, makes it harder to treat with standard antifungal drugs, especially as drug resistance becomes more common. Finding new ways to improve treatment is essential.

Nanomaterials—tiny engineered materials—are gaining attention for their potential medical applications. In this study, we explore how C. albicans responds to a specialized nanomaterial called esPAN. We created and analyzed esPAN, which has a unique 3D structure, and tested its effects on C. albicans. Our results showed that exposure to esPAN triggered changes in the fungus's gene activity, including stress responses and modifications to its outer structure. These findings suggest that nanomaterials like esPAN could help improve antifungal treatments in the future. This research takes a step toward using nanotechnology to develop more effective, personalized approaches for fighting fungal infections.

Lassiter, Ebonie — Poster # 56

SOE/Special Education — **1:00-2:00**

Faculty Mentor: Dr. Heather Coleman — Social Sciences, Education, & Business

Impact: Educational

"Blindsided": Perceptions of Preservice Teachers and the Influence of Social Justice Teaching

Systemic inequities in society pervade education and exacerbate racial inequalities already prevalent in our nation, specifically as they relate to the overrepresentation of Black and Brown students in special education. Current literature suggests that the overrepresentation of Black and Brown students in special education is linked to teacher microaggressions and stereotypes. These attitudes stem from implicit biases. While preservice and in-service teachers receive training on implicit bias and how to combat bias in the classroom, the current research on training and professional development to change or impact implicit biases is limited. Therefore, this study aims to examine the perceptions of preservice teachers through their responses to a series of prompts based on the text "We Want to Do More Than Survive: Abolitionist Teaching and the Pursuit of Educational Freedom " (Love, 2019).

Lilford, Candace

Poster # 10

CVPA/Drama

2:00-3:00

Faculty Mentor: Dr. Anna Dulba-Barnett

Arts & Humanities

Impact: Educational

Monster High Theatre: Staging Historic Texts Through Recycled Toy Puppetry

A research based theatre piece looking to explore broadening of theatre education and archival preservation through performing non canonical theatrical texts from different time periods using second hand Monster High and Ever After High dolls converted into puppets modeled after Indonesian puppets such as wayang golek. Proposed texts can range from closet dramas and masques to radio play scripts and children poetry. The aims of this project is to highlight and preserve obscure historic texts through engaging performance styles while also making historic theatre widely accessible and providing a cost effective form of theatre that can also be used to teach a variety of subjects such as history, literature, composition and recycling in a captivating way.

Low, Ashley

Poster # 11

CAS/History

1:00-2:00

Faculty Mentor: Dr. Anne Parsons

Arts & Humanities

Impact: Scholarly

Tar Heels & Torah: 100 Years of Southern Jewish History in North Carolina, 1910-2010

My dissertation focuses on this history from the late 19th century to the present. My research demonstrates the ways North Carolina Jews crafted their shared identity as Southerners while negotiating their position within Jewish and American history at both a grassroots and professional level through public outreach efforts in Raleigh, Greensboro, Kinston, and Durham. This study focuses upon four Jewish organizations in the state—the Judaica Art Gallery at the North Carolina Museum of Art (1970-present), Temple Israel in Kinston (1903-present), Jewish Heritage North Carolina (1989-present), and Temple Emanuel in Greensboro (1907-present). I bring together material culture, public history, archival production, media studies, Judaica, architecture, gender studies, and art history in this multidisciplinary study. Through this kaleidoscope of various sources and organizations, I will demonstrate not only how Jews have contributed to the landscape of public history but also how these communities shape our collective understanding of Southern history.

Mauney, Mary Kate

Poster # 12

CAS/History

1:00-2:00

Faculty Mentor: Dr. Torren Gatson

Arts & Humanities

Impact: Educational

Freedom From Freedom To: Free People of Color at Hephzibah Baptist Church

The population of free people of color in North Carolina grew by 604% between 1790 and 1860. Yet their stories are often relegated to footnotes or forgotten. Freedom From & Freedom To is a digital history project and commemorative event that explores the lives of 16 free people of color who were all members of Hephzibah Baptist Church in Wake County, North Carolina.

Mckelvey, Diamond

Poster # 22

HHS/Kinesiology

2:00-3:00

Faculty Mentor: Dr. Jaclyn P. Maher

Health Sciences

Impact: Environmental

Daily perceptions of the built environment and physical activity in adolescent girls: role of motivation

Research highlights the impact of the built environment on adolescent girls' physical activity (PA), yet little research explores how daily fluctuations in environmental perceptions (e.g., walkability) relate to PA. Additionally, it remains unclear whether motivation (i.e., the extent to which PA is perceived as self-determined) moderates this relationship. This study examined whether daily changes in perceived built environment predicted moderate-to-vigorous PA (MVPA) and whether motivation influenced this association.

Over 28 days, adolescent girls completed evening surveys assessing daily perceptions of the built environment and MVPA. At baseline, they reported their level of self-determined motivation for PA. Multilevel modeling examined (a) within-person (daily) associations, (b) between-person (average) associations, and (c) motivation as a moderator. On days when girls perceived the environment as more supportive of PA, they reported significantly higher MVPA ($ß = 1.00$, $SE = 0.36$, $p < 0.01$), but average perceptions were not associated with PA across individuals ($p = 0.43$). While self-determined motivation correlated with MVPA, it did not moderate the built environment–MVPA relationship ($p = 0.24$). Findings suggest daily perceptions of the environment influence PA, but motivation does not alter this link, challenging prior theoretical frameworks. Future research should explore diverse samples and dynamic PA influences.

Meh, Htay — Poster # 23

HHS/Social Work — **2:00-3:00**

Faculty Mentor: Dr. Ana Dominique Sucaldito — Health Sciences

Impact: Health and/or Safety

Va Meh Du (My Big Brother): A Mental Health Soccer Program for Karenni Refugees

Background: Karenni refugees face significant mental health and healthcare inequities, however, there are no mental health programs that address their needs in a culturally congruent way.

Methods: Using community-engaged research, we developed Va Meh Du (VMD), a pilot mental health intervention using soccer to promote positive mental health among Karenni refugees in NC. In this six-month non-randomized control trial, adult and child participants received evidence-based and culturally relevant mental health education (e.g., coping skills) and promotion (e.g., mentoring) during weekly soccer practices. Psychological well-being and social connectedness were quantitatively assessed in adult participants; process evaluation outcomes were assessed via mixed methods among all participants.

Results: Both adult and child participants (n=36) considered the program culturally relevant, feasible, and appropriate for Karenni refugees, reporting benefits including self-improvement, connections across ages, and increased time spent outdoors. The sample size for adult participants was too small to detect significant differences (n=16), however, post-VMD, intervention participants had higher social connectedness scores compared to control. No difference was detected in psychological well-being.

Conclusion: Results from this pilot show potential for VMD, a culturally relevant mental health program for Karenni refugees, to promote positive mental health among children and young adults.

Montero Herrera, Bryan — Poster # 24

HHS/Kinesiology — **1:00-2:00**

Faculty Mentor: Dr. Eric S. Drollette — Health Sciences

Impact: Health and/or Safety

A novel approach predicts time in physical activity: Evidence from electroencephalography and accelerometry

This study examines whether frontal alpha asymmetry (FAA), a neural marker associated with motivation and affect, predicts engagement in physical activity (PA). Prior studies rely on self-report data or broad categories like light and moderate PA. This study investigates FAA's relationship with different PA categories using objective accelerometry data. Understanding the neural mechanisms behind PA behavior can help identify factors that drive or hinder active lifestyles. By demonstrating that FAA is linked to duration, intensity, or both through specific brain patterns in waveforms, we could potentially develop interventions to increase PA levels. With the current rise in sedentary lifestyles and the associated health risks, the low levels of PA participation have become a major concern. Uncovering neural predictors of PA can help develop targeted strategies to promote higher PA engagement. If FAA indeed reflects motivational tendencies toward PA, interventions could be designed to enhance these processes. This study advances research on the neural basis of PA by integrating EEG and accelerometry. It aligns with work exploring the psychology of motivation and affect but provides a novel perspective by linking FAA to objective PA. This approach could potentially improve how daily PA is prescribed and, therefore, improve overall well-being.

Negi, Shourya — Poster # 57

HHS/Human Development and Family Studies — **2:00-3:00**

Faculty Mentor: Dr. Kierra Sattler

Social Sciences, Education, & Business

Impact: Health and/or Safety

Trajectories of Material Hardship and its Association with Child Outcomes

In recent years, material hardship has emerged as a proxy to measure deprivation due to poverty among respondents. Material hardship is the inability of families to meet their basic needs but there is heterogeneity in the material hardship experiences of families with low incomes. However, the consequences of material hardship patterns over time on child outcomes remain unexplored. Thus, the current study examined the trajectories of material hardship among families with young children and how these profiles are related to children's social, behavior, and cognitive outcomes. The sample included 3,001 mothers who participated in year 1, year 3, and year 5 of data collection. Using repeated measure latent class analysis, a four-class solution was selected, and the four classes included: stably high hardship, stably low hardship, increasing hardship, and decreasing hardship. The results demonstrated that children in families with high material hardship experiences are more likely to show behavior problems and lower cognitive outcomes. The results highlight heterogeneity among low-income families regarding their material hardship experiences and implications for children's development.

Numan, Muhammad — Poster # 44

CAS/Biology — **1:00-2:00**

Faculty Mentor: Dr. Ayalew Ligaba-Osena

Natural, Physical, & Mathematical Sciences

Impact: Economic

Improving iron contents of crops using the mechanism of iron rich grass (Eragrostis tef) to reduce iron deficiency anemia

Iron (Fe) availability is extremely limited in most soils, which not only restricts plant growth but also limit Fe accumulation in edible plant tissues. Plants have developed sophisticated mechanisms to cope with limited Fe conditions. The physiological and molecular mechanisms regulating Fe acquisition and accumulation have been characterized in the model plant Arabidopsis thaliana and a few major cereals which are generally poor in Fe content. By contrast, Fe acquisition and storage mechanisms in underutilized "orphan" crops which are rich in grain Fe concentrations, for example, tef (Eragrostis tef) remained unknown. Tef is the most important crop in the Horn of Africa and is becoming popular in the western world for its healthy and nutritious grains, and forage quality of its straw. In our previous study, we identified the iron uptake mechanisms of tef. In this study, we use agrobacterium mediated mechanism to transfer the tef genes that has potential role in iron uptake to rice to improve its iron contents. Rice plantlets are regenerated from the transformed Calli and transferred to soil to collect seeds. Seeds will be analysed for iron contents and compared with wild type. We are expecting higher iron contents in the transgenic rice.

Nya Mar, Marthalenar — Poster # 25

HHS/Community Health Education — **2:00-3:00**

Faculty Mentor: Dr. Ana Sucaldito — Health Sciences

Impact: Community Engagement

The Kayah Li Lay Klo: A Culturally-Tailored Mental Health Program

Karenni refugee communities (ethnic minority group from Myanmar) experience isolation, stress, and intergenerational disconnect due to language barriers, cultural adaptation, and limited access to mental health services. The Kayah Li Lay Klo: Karenni Heritage Project (KLLK), a year-long series of seven workshops in North Carolina, addresses the mental health challenges faced by the Karenni community through cultural preservation and art as tools for mental health support and community healing.

This project matters because mainstream mental health services often fail to address the unique needs of refugee communities. By using familiar cultural traditions (e.g., backstrap weaving, basket making, painting) as a vehicle to promote positive mental health and increase access to health promoting-resources, KLLK empowers participants to navigate challenges through a stronger connection to their heritage. These intergenerational workshops also helped bridge gaps between younger and older generations.

KLLK contributes to the broader conversation on mental health equity by demonstrating the power of culturally tailored interventions. It highlights the need for healthcare providers and policymakers to consider cultural identity as a strength when addressing mental health disparities. Ultimately, this project shows how strengthening cultural roots can strengthen mental resilience, making it a model for other refugee communities facing similar challenges

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O'Hare, Samantha — Poster # 58

CVPA/Music — **1:00-2:00**

Faculty Mentor: Dr. Erika Boysen — Social Sciences, Education, & Business

Impact: Educational

Leveling Up Music History Pedagogy: Creating A Game-Based Learning Prototype

Music history pedagogy scholars have called for solutions to alleviate the current pressures on music students and music curriculums. Particularly, music students in the 21st century are living in an extremely fast paced society which demands their attention in multiple directions more than ever before. This has caused reflection to be done by music history pedagogy scholars, who are recognizing the need for improvement in the methods by which students are asked to engage with material. As an answer to music history pedagogy scholars' call for a creative solution to improve the traditional methods of sharing material with students, this dissertation project will be the creation of a game-based learning music history video game prototype. This new medium will differ from traditional textbooks by providing an immersive learning experience. The immersive learning experience will combine listening to music examples with experiencing the historical setting at the same time. Through this immersive learning environment, students will achieve specific student learning outcomes.

Ojo, Omodolapo — Poster # 59

SOE/Educational Research, Measurement, and Evaluation — **2:00-3:00**

Faculty Mentor: Dr. Sandra Ayoo

Social Sciences, Education, & Business

Impact: Educational

Values' Engagement in Evaluation Capacity Building: A Cross-Examination Study of Nigeria and the USA

This convergent mixed methods research study responds to the need for empirical literature that addresses the knowledge gap in stakeholders' values engagement in evaluation capacity-building (ECB). Several extant studies have highlighted that the lack of stakeholders' value engagement in ECB constitutes a significant barrier to harnessing the initiative's potential in boosting effective decision-making and transformative programming and limits its sustainability. This study adopted the culturally responsive and systems theory (CRE-ST) conceptual framework to elicit a comprehensive insight into the experiences of study participants engaged concurrently in survey and interview. Findings from the study showed that participants from Nigeria and the USA noted that ECB offered transdisciplinary values that cut across various levels. The participants also shared diverse views on what they identified as their values engaged or looked out for in ECB initiatives. However, while participants from Nigeria noted that youths, women, and people with disability were conspicuously missing within the ECB landscape, their counterparts from the USA highlighted that youth values' engagement in ECB lies within the developmental stage. The implication of the study findings applies to diverse stakeholders and opens avenues for further research on innovative ways to design and implement values-engaged ECB initiatives across diverse contexts.

Pasupathi, Praveen — Poster # 26

HHS/Kinesiology — **2:00-3:00**

Faculty Mentor: Dr. Eric Drollette

Health Sciences

Impact: Health and/or Safety

Effects of acute exercise on various cognitive domains in emerging adults.

Research highlights that acute exercise positively influences cognition yet, it remains unclear if these improvements are specific to a single cognitive domain or have global effects. Additionally, there is a limited understanding of how the timing of assessments impacts cognitive performance following exercise. This study investigates these gaps by examining the effects of acute exercise on different cognitive domains in emerging adults, with a focus on timing-specific changes. The results show that episodic memory improves immediately after exercise, which could help emerging adults remember information better after exercising. Working memory and inhibitory control, on the other hand, were maintained after short (5 minutes) and long delays (25 minutes), highlighting the lasting effects of exercise. The findings have important implications for emerging adults, suggesting that exercise can be a simple yet powerful tool to enhance performance at work, school, and daily activities. By clarifying how the timing and specific cognitive domains are affected, this research strengthens the existing literature and offers practical strategies for using exercise to boost mental performance in daily life.

Porter, Cynthia — Poster # 27

CAS/Environmental Health Science (Biology) — **1:00-2:00**

Faculty Mentor: Dr. Yashomati Patel — Health Sciences

Impact: Health and/or Safety

The Effect of Naringenin on Insulin Resistant Adipocytes

Obesity currently affects over 40% of the adult population in the United States and millions of children nationwide. Along with heart disease, type II diabetes mellitus is a serious health complication of obesity. As the prevalence of obesity increases, the need for alternative treatments that are safe and effective is critical. Previous studies have recognized naringenin, a natural citrus flavanone, for its ability to regulate glucose and lipid metabolism. We aim to study naringenin's effects on the glucose and lipid metabolism in mouse fat cells (adipocytes). Whereas previous studies have been conducted in insulin sensitive models showing naringenin's ability to prevent weight gain, we will investigate the role naringenin has on lipid metabolism and glucose uptake in insulin insensitive adipocytes. This research will advance our understanding of how naringenin can affect the lipid-laden insulin resistant adipocytes that are present in metabolic disorders such as obesity and type II diabetes and justify the possibility of using naringenin as a natural treatment for weight loss and alleviate symptoms of type II diabetes.

Postlethwait, Emily — Poster # 28

HHS/Kinesiology — **1:00-2:00**

Faculty Mentor: Dr. Jaclyn P. Maher — Health Sciences

Impact: Health and/or Safety

The Role of Domain-Specific Physical Activity on Mental Well-being in Emerging Adults

It is estimated that one in five emerging adults experience depression and one in three adults experience anxiety (Harvard Medical School, 2017; Lee et al., 2023). While previous research has largely explored relations between total PA and mental well-being and indicated a positive relationship between these constructs, emerging evidence suggests that specific domains of PA (e.g., occupation-related PA) may be associated with poorer mental well-being (Meckes et al., 2020). Little attention has been given to the role domain-specific PA can play in mental well-being. This study will examine associations between occupational, leisure-time, and transportation-related PA with indicators of mental well-being. The current study utilizes data from a cross-sectional study of emerging adults (age 18-29 years) identifying as military-affiliated or student-athletes, two groups that likely engage in high levels of occupational PA requiring physical prowess, to better understand the relationships between various domains of PA and their association with mental well-being. Regression analyses will test how each domain of PA predicts indicators of mental well-being. This study will deepen our understanding of the role different types of PA play in mental well-being and inform targeted interventions to improve mental well-being in emerging adults.

Raymond, Brytani

Poster # 60

CAS/English

1:00-2:00

Faculty Mentor: Dr. Risa Applegarth

Social Sciences, Education, & Business
Impact: Educational

Ungrading: Classrooms Without Traditional Grades

The purpose of this presentation is to explore the impact of an Ungrading approach on accessibility and inclusion in composition classrooms. In this Ungrading model, rooted in anti-racist and feminist pedagogies, students are assessed using a system of 'complete' or 'incomplete' grades for assignments, allowing them to revisit and improve incomplete tasks, while ultimately engaging in self-assessment to determine their final grade at the course's conclusion. This Ungrading system promotes a student-centered learning environment, wherein students can thrive through agency and self-reflection. When grades are not the primary focus of a course, conversations between students and instructors become more open and honest regarding challenges. The collaborative atmosphere created through continuous communication not only strengthens students' self-awareness of their learning, encourages self-advocacy, and instills trust in the instructor, but most importantly, it establishes equity. This Ungrading approach intends to encourage a growth mindset and emphasizes the importance of student experiences over traditional grading metrics. This is beneficial not only for the students, but for the instructor as well.

Robbins, Emilee

Poster # 61

CAS/History

1:00-2:00

Faculty Mentor: Dr. Linda Rupert

Social Sciences, Education, & Business
Impact: Educational

There's No Place Like Home: Teaching North Carolina's Revolutionary History Using a Digital Exhibit

With the advent of online exhibits, public history is more accessible than ever before. Teachers, students, and curious minds alike can explore historical monuments, artifacts, and documents from the comfort of their own homes. In my exhibit, "Mapping Revolution in North Carolina," I demonstrate the efficacy of online resources and their utilization in both public venues and university courses. This exhibit identifies numerous sites of Revolutionary public memory throughout North Carolina to highlight the ways our state contributed to the conflict and sought to remember it. As the 250th anniversary of the American Revolution grows nearer, exhibits available online offer an educational opportunity that is far more accessible than traditional museums or lectures while also bringing to light narratives oft overlooked in the general narrative of the Revolution. My exhibit demonstrates the ways educators can utilize online exhibits to bring North Carolina's history even closer to home.

Seebaluck, Karina — Poster # 62

CAS/Psychology — **1:00-2:00**

Faculty Mentor: Dr. Michaeline Jensen

Social Sciences, Education, & Business

Impact: Cultural

Collectivist Beliefs, Parenting Profiles and Depressive Symptoms in Parent-Older Adolescent Dyads

Authoritative parenting is associated with fewer youth depressive symptoms (relative to authoritarian, indulgent, and neglectful parenting) but there is less evidence in emerging adulthood. We previously identified four parenting profiles in this sample capturing constellations of parental responsiveness, demandingness, and autonomy support in emerging adulthood; the "potentially indulgent" profile was associated with better mental health. Cultural normativeness theory suggests that parenting style efficacy may differ across cultural contexts. In Fall 2021 college students in the Southeastern U.S. (N=680; Mage= 19; SD= 1.44; 70.8% Female; 34.3% White, 33.1% Black, 14.7% Hispanic/Latinx) completed online surveys on primary caregiver behaviors, individualism/collectivism, and youth depressive symptoms. This study tests competing hypotheses: "potentially indulgent" parenting might be less OR more protective against depressive symptoms in collectivist cultures.

Depressive symptoms were regressed on parenting profiles, collectivism, and their interaction (controlling for youth age and gender). Youth in the potentially indulgent parenting profile saw fewer depressive symptoms (relative to the very authoritarian profile; this was true across all levels of collectivism), though this effect was even stronger for youth endorsing high collectivism values was associated with for emerging adults who endorsed lower collectivism (bHigh Collectivism= .748, SE= .132, p< .001; bLow Collectivism= .350, SE= .086, p< .001).

Sheikh, Md. Hasan — Poster # 63

BSBE/Consumer, Apparel, and Retail Studies — **1:00-2:00**

Faculty Mentor: Dr. Jin Su

Social Sciences, Education, & Business

Impact: Environmental

Consumer Perceptions of Sustainable Supply Chain Transparency: A Text Mining Analysis of Patagonia and The North Face

This study examines consumer perceptions of apparel firms' sustainable supply chain and transparency initiatives. It focuses on the initiatives of the two leading global apparel firms, Patagonia's Footprint Chronicles and The North Face's Responsible Down Standard. 1,015 consumer reviews were collected on the Trustpilot platform. Drawing on the theory of consumption values and attribution theory, the data was analyzed through text mining and several machine learning techniques (i.e., structural topic modeling, hierarchical clustering, sentiment analysis, SHAP analysis, and XGBoost regression) were used to understand consumer perceptions of the two firms' initiatives. Results identify 24 topics categorized into six thematic clusters: quality excellence, brand-consumer relationship, maintenance and repair needs, activity-specific utility, temperature protection, and comfort during active use. Sentiment analysis reveals distinct emotional patterns between the brands. The SHAP analysis with XGBoost regression identifies transparency, commitment, and comfortability as the primary predictors of positive sentiment. The North Face excels in environmental commitment and material durability, while Patagonia demonstrates strengths in design practicality and service quality. These findings advance our understanding of the effectiveness of sustainable supply chain and provide strategic insights for aligning transparency initiatives with consumer expectations.

Shirley, Olivia

Poster # 45

CAS/Chemistry

2:00-3:00

Faculty Mentor: Dr. Jason Reddick

Natural, Physical, & Mathematical Sciences
Impact: Advancement

The Role of the Flavin-dependent Halogenase Spd4 in the Biosynthesis of Sporidesmin

The molecule sporidesmin is an indole-containing fungal metabolite produced by Pseudopithomyces chartarum, known to cause hepatogenous photosensitization disease, or facial eczema in livestock and ruminating animals. Sporidesmin is a member of a class of molecules called diketopiperazines, and it is noted for containing an unusual aromatic chloride, which is of interest to this project. Sporidesmin is produced by a cluster of 21 genes known as "spd," in which the gene spd4 is found. The sequence of spd4 is the only gene in this cluster that is a homolog of flavin dependent halogenase enzyme, so it is theorized that spd4 is a flavin dependent halogenase responsible for placing the chlorine on the sporidesmin molecule as a late step in the biosynthesis of sporidesmin. The use of the spd4 enzyme could be co-opted and possibly be used for biocatalytic reactions as a more efficient way of installing chlorine or other halogens on an indole, therefore being a useful tool for new green chemistry processes and developments. We have already completed the first goal of this project, which was to express and purify the spd4 enzyme. We are currently investigating the halogenation of simplified indole and indoline analogs of sporidesmin.

Tarr, Kathryn

Poster # 46

CAS/Chemistry

1:00-2:00

Faculty Mentor: Dr. Jason Reddick

Natural, Physical, & Mathematical Sciences
Impact: Advancement

SAM-Dependent Methyltrasferases role in the Biocatalysis of Sporidesmin

Pseudopithomyces chartarum is a fungus found in rye grasses that produces a mycotoxin, Sporidesmin, known for causing acute liver toxicity in livestock. Sporidesmin belongs to the epipolythiodiketopiperazine (ETP) class of natural products. The biosynthesis is encoded by 21 genes referred to as "spd," notably spd1, a homolog of a SAM-dependent methyltransferase that methylates nucleophilic substrates. This enzyme holds promise as a biocatalyst for laboratory methylation reactions. Our project aims to clone and overexpress spd1 in E. coli to obtain the enzyme for further investigation. We utilized Gibson assembly to create the spd1 protein fused to maltose-binding protein (MBP) for optimal folding in E. coli. The recombinant DNA system featuring MBP-spd1 has been successfully generated, and the protein has been purified. Ongoing testing will classify this protein, enhancing our understanding of the Sporidesmin biosynthetic pathway and its potential as a methylation biocatalyst for drug discovery.

Trail, Bryce — Poster # 64

HHS/Kinesiology — **2:00-3:00**

Faculty Mentor: Dr. Alan Chu — Social Sciences, Education, & Business

Impact: Educational

Self-Compassion, Mindfulness, and Athlete Resilience Training (SMART): Perceived Impacts on Youth Male Basketball Players

Current research supports the idea that self-compassion fosters resilience and enhances sport performance (Kuchar et al., 2023). However, evidence related to working with youth athletes is limited. Based on qualitative feedback from the 8-session Self-compassion, Mindfulness, and Athlete Resilience Training (SMART) Program (Chu et al., 2023; 2024), this presentation will address how elite youth male basketball players perceived self-compassion training impacted them. Because self-compassion research on elite youth athletes has been minimal, this scholarship enhances the understanding needed to work with youth male athletes on self-compassion training effectively. The scholarship serves as an initial step to develop feasibility and acceptability for the SMART Program to be conducted across the country or even other countries. Self-compassion training is more significant than just sport performance on the basketball court. Playing at a higher level of sport can cause athletes to be overly self-critical. The skills taught to the athletes apply to life skills they can use during and after their playing career. This research continues the original project, and the SMART Program Dr. Alan Chu started with collegiate athletes, showing effectiveness in adapting the Mindful Self-Compassion Program (created by psychologist Dr. Kristin Neff) to sport settings.

Tran, Kaitlyn — Poster # 65

HHS/Human Development and Family Studies — **2:00-3:00**

Faculty Mentor: Dr. Bridget L. Cheeks — Social Sciences, Education, & Business

Impact: Scholarly

The daily associations between social media racial experiences and positive and negative emotions among first year African American college students

This study examines the ways race is experienced via social media among African American first-year college students and ways these racial experiences impact their positive and negative emotions. This study offers important contributions to the existing research by using a daily diary method that increases our understanding of the everyday, lived experiences of youth. Additionally, while there is previous research on how youth are racially socialized by parents, this study highlights an important context – social media, as a mechanism of racial socialization. The positive emotional development of youth transitioning into emerging adulthood and a new college environment is essential to their overall psychological well-being and positive adjustment (Conley et al., 2014; Leary & DeRosier, 2012). Thus, the current study aims to examine the ways students' daily emotions are associated with the race-related content they are exposed to on social media. The study included 35 African American first-year college students (Mage = 18 years old; 82.2% women) who completed a short, online survey every day for 15 consecutive days. Results from this study highlight the critical need for research to attend to the ways youth's positive and negative emotions are linked to social media exposure. (194/200)

Ullah, Raza — Poster # 47

CAS/Environmental Health Science (Biology) — **1:00-2:00**

Faculty Mentor: Dr. Ayalew Ligaba-Osena — Natural, Physical, & Mathematical Sciences

Impact: Environmental

Microplastics and Antimicrobials from treated wastewater into Agriculture: Unveiling their impacts on plant growth and soil microbiome

Wastewater irrigation contaminates agricultural soils with microplastics (MPs) and antimicrobials (AMs). The underlying mechanism of how MPs influence the persistence and bioavailability of AMs in soil and their concurrent impacts on plants and soil microbiome are not well studied. We used one type of MPs, i.e., polyamide (PA) and three types of AMs, i.e., sulfamethoxazole (SMX), ciprofloxacin (CIP), and triclosan (TCS), to evaluate their individual and combined effects on rice physiological and biochemical attributes, impact of MPs on bioaccumulation of AMs in plant tissues, as well as their interaction with soil microbiome. Results revealed that PA alone has a minimal effect on growth parameters and photosynthetic pigments of rice, while AMs alone or in combination with PA significantly decreased these parameters, especially under the SMX. In addition, more accumulation of AMs was observed in plant shoots and roots in the presence of PA except SMX. Microbiome analysis showed that there was no significant change in bacterial abundance and diversity, however, the abundance of various antibiotic resistance genes (ARGs) was increased. Results from this research provide novel evidence on interaction, fate, and risks of AMs loaded on MPs in the agroecosystem and their impacts on plants and soil microbiome.

Vidal Carnero, Berta — Poster # 29

HHS/Kinesiology — **2:00-3:00**

Faculty Mentor: Dr. Jaclyn Maher — Health Sciences

Impact: Health and/or Safety

Sedentary Behavior and Physical Activity in Adolescent Girls: The Moderating Role of Social Media Encouragement

Adolescents spend significant time in screen-based sedentary behavior (SB), which can limit physical activity (PA). Social media, a dominant presence in adolescents' lives, is a screen-based SB that can affect engagement in movement behaviors such as PA or SB. For instance, social media may encourage PA or create unrealistic expectations, discouraging PA. This study examined the relationship between screen-based SB, social media, and PA through a 28-day daily diary study involving adolescent girls (n = 66, ages 12–18). Girls reported their daily minutes PA and SB and facilitators to daily PA engagement including PA encouragement on social media. PA encouragement on social media moderated the relationship between girls' daily SB and PA (ß = 0.32, SE = 0.15, p = 0.03). On days when girls reported being encouraged to engage in PA on social media, there was a slight positive relationship SB and PA, but on days when girls were not encouraged to engage in PA on social media, there was a negative relationship between SB and PA. Sitting while using electronics for entertainment purposes may result in lower PA, but there may be a protective effect of being exposed to PA encouragement while using those electronics.

Wessinger, Chad

Poster # 30

HHS/Kinesiology

2:00-3:00

Faculty Mentor: Dr. Jennifer L. Etnier

Health Sciences

Impact: Health and/or Safety

Grip strength, genetic risk, and memory in middle-aged women with a family history of Alzheimer's disease

Alzheimer's disease (AD) is a major public health concern with no cure, making prevention a priority. Poor muscle health and carrying the APOE-e4 allele are both linked to increased AD risk, but how these factors interact to influence memory decline remains unclear. This study investigated whether muscle health, measured by handgrip strength, is related to memory performance in cognitively normal middle-aged women and whether this relationship differs based on their genetic risk for AD determined by APOE-e4 status. Findings suggest that benefits associated with better muscle health may not apply equally to everyone. In those without the APOE-e4 allele, better muscle health was linked to better memory. However, this relationship was absent in APOE-e4 carriers, who also had lower handgrip strength compared to non-carriers. This raises key questions about whether genetic risk alters how muscle health relates to brain health. If APOE-e4 carriers experience lower muscle health on average and lack cognitive benefits associated with better muscle health, they may benefit from early interventions that improve muscle health like resistance exercise. Future research should explore whether resistance exercise can mitigate cognitive decline in at-risk populations and how genetic differences influence the effectiveness of such interventions for brain health.

Williford, Shelby

Poster # 48

CAS/Biology

1:00-2:00

Faculty Mentor: Dr. Kevin Wilcox

Natural, Physical, & Mathematical Sciences

Impact: Environmental

Rooting for Savannas! Linking synergies among response traits to savanna responses to grazing and drought

Extreme ecological events – such as drought and intense herbivory – are increasing in frequency and will very likely occur concurrently in the future. Understanding the future of savanna ecosystems requires understanding the effects of these compound extremes on ecosystem function, as well as the factors that control resistance to them. Here, I present findings from the first year of the Navigating Extremes in Savannas (NExS) experiment, where we have simulated extreme drought and extreme herbivory – singly and in conjunction – in the Satara region of Kruger National Park. I will focus on how population and community diversity of plant traits, specifically root traits, contribute to the resistance of plant aboveground primary productivity in savannas and if communities see synergistic or antagonistic responses during these compound extremes. We found substantial variation of plant traits across space, which corresponded with dominance of different grass clades. By identifying if the compound event has a synergistic, or additive negative effect, or an antagonistic effect, where the second driver mitigates the negative effect of the first, we will be able to better predict how different plant communities respond under compound extreme events.

Wright-Harris, Lauren — Poster # 13

CVPA/Music Performance — **2:00-3:00**

Faculty Mentor: Dr. Robert Wells — Arts & Humanities

Impact: Cultural

A Great Cloud of Witnesses: Research and Song Cycle centered on the Black Family Unit Outside of Trauma

The purpose of this project is to address the comparative lack of musical material centered on a non-traumatic-based view of the Black Family Unit by creating a song cycle in collaboration with a living Black composer. One of the goals of this project serves to answer the following questions: Who is part of the Black American community? Why is it important for this music to have a positive perspective in contrast to the negative portrayal of Black Americans? In addition to these research questions, it is important to speak to the commodity of Black Trauma in Film and Art Music. This song cycle attempts fill a void within Western Art Music because it is not centered on historical trauma or the more common societal gaze on the lived experience of the Black community.

Zelada Bazan, Moises Jonathan — Poster # 31

JSNN/Nanoscience — **1:00-2:00**

Faculty Mentor: Dr. Daniel Rabinovich — Health Sciences

Impact: Health and/or Safety

Anticancer Effects of Silver-Containing Caffeine-Derived Compounds

Caffeine and theophylline are bioactive compounds that can be used as scaffolds to synthesize imidazolium salts that serve as precursors to N-heterocyclic thione (NHT) and selone (NHSe) ligands. These chalcogenone ligands, and their corresponding imidazole-derived analogues, have been used to prepare coordination complexes with a variety of metals, including palladium, platinum, silver, and mercury. In particular, the palladium and silver compounds have potential applications as anticancer drugs. This presentation outlines the syntheses, molecular structures, and reactivity of four new N-heterocyclic chalcogenone ligands derived from caffeine or theophylline. More specifically, these novel ligands have been used to prepare several series of silver(I) complexes of general formula [Ag((i)CaffER)n]X (n = 2, 3, 4; R = Me, Bz; E = S, Se; X = NO3, BF4, ClO4), several of which have been structurally characterized by X-ray crystallography. In order to assess the electronic effect of the pyrimidinedione backbone in the caffeine derivatives, the simpler imidazole-based analogues and their silver complexes have also been isolated and fully characterized. Preliminary studies to evaluate the biological activity of the silver complexes will also be discussed in this presentation.

Zhao, Linxi
CVPA/Music Performance
Faculty Mentor: Dr. James Douglass

Poster # 14
2:00-3:00
Arts & Humanities
Impact: Innovation

Can AI Rock?

Artificial intelligence (AI) is changing how music is composed, offering new tools for creators. My research explores what AI can and cannot do in music composition. I examine how AI generates music, whether it can be truly creative, and how it works alongside human composers. I also consider ethical concerns, such as authorship and originality. By analyzing current AI technologies and their role in music, this study provides insights into the future of music creation and the evolving relationship between humans and machines.