

Oral Presentation Abstracts Session #1

9:45 am to 10:05 a.m. Friday, September 11, 2026

Location: SUB Top Floor Rooms

These abstracts were published unedited to reflect the author's original submission

Arias Lozoya, Jay - Major: Biomedical Sciences, Colorado State University
Mentor: Dr. Jayne Aiken, Assistant Professor, Department of Biomedical Sciences
Oral Presentation Session #1, Room: Acoma B

Title: *Mapping Microtubule Regulatory Programs Across Synaptic Development*

Abstract:

Human neuronal connections via synapses are a crucial part of regulating and controlling essential functions of living. Both in neuronal development and subsequent decline with aging, errors in synapse connectivity lead to disorders and diseases such as autism spectrum disorder (ASD) and Alzheimer's Disease. Microtubule dynamics, while not fully understood, have been found to play a pivotal role in the creation of synapses. Throughout the length of a neuron's axon, stable microtubules create a bridge wherein cargo can be transported. However, ongoing microtubule dynamics have been identified at specific synaptic formation landmarks periodically distributed along the axon, suggesting that local microtubule regulation may be an important upstream facilitator of synapse formation. This project aims to identify the microtubule regulatory proteins present at these synapse formation sites and understand their impact on neuronal connectivity. To accomplish this goal, we use human-induced pluripotent stem cells (iPSCs)-derived neurons co-plated with neonatal astrocytes to mimic the conditions required for synapse formation, isolate synaptic compartments from cultures across developmental timescales, and comparatively analyze their protein content using mass spectrometry. Together, this work will define the molecular signatures that govern microtubule dynamics during synaptic development, providing critical insight into how their disruption drives neurodevelopmental and neurodegenerative disease.

Borrego, Emily - Major: Psychology, University Of Northern Colorado
Mentor: Dr. Keeley Hynes, Assistant Professor, Department of Education and Behavioral Sciences

Oral Presentation Session #1, Room: Lobo B

Title: *How Does Social Media Influence The Psychological Well-being Of Racially Marginalized Identities?*

Abstract:

Previous research has examined the relationship between social media use and anxiety among college students, and this relationship remains complex and may differ across populations. Social media can contribute to anxiety through mechanisms such as fear of missing out (FOMO), loneliness, and exposure to online discrimination. However, social media can also help people find community, connection, and support. This complex relationship is worthy of further exploration, especially since relatively little is known about how students from marginalized communities experience social media and how these experiences influence psychological well-being. This proposed study seeks to examine the relationship between social media use and psychological outcomes among college students from marginalized communities. An explanatory sequential mixed-methods design will be used. First, participants will complete a survey assessing

demographic characteristics, including ethnicity, patterns of social media use, perceptions of social media, and psychological outcomes. Participants who volunteer for the second phase will then participate in semi-structured interviews to provide a deeper understanding of the social media platforms they use, their experiences with online content and interactions, and the positive and negative emotions associated with those experiences. By exploring these lived experiences, this study aims to address an important gap in the literature and increase awareness of the unique challenges faced by marginalized communities in online environments.

Brown, Miracle - Major: Psychology, Northeastern Illinois University

Mentor: Cristen Jenkins, Professor, Department of social justice

Oral Presentation Session #1, Room: Fiesta A

Title: *Perception and navigations of barriers to substance use treatment among individuals experiencing homelessness.*

Abstract:

Homeless Individuals' Perceptions and Navigation of Barriers to Substance Use Treatment

Homeless individuals lack information about the perceived and actual barriers to accessing substance use treatment as well as strategies for circumventing these barriers. For example, in one study of 32 patients with housing insecurity and OUD, only 40% reached out for follow-up contact after discharge (Oreper et al., 2023). This study will improve our understanding of the barriers experienced by homeless individuals to accessing treatment for substance use disorders. Further it seeks to identify successful coping strategies that can be used when accessing treatment for substance use disorders.

Utilizing a qualitative research methodology, the treatment seeking processes of adults with histories of substance use who are either currently or recently experienced homelessness will be explored. Participants will be recruited from a variety of Chicago-area sites including: shelters, organizations providing services to homeless individuals, and outreach programs. Through in-depth, semi-structured interviews participants will describe their experiences of seeking and engaging in substance use treatment as well as their perceptions of the various barriers to care. Interview data will be analyzed using thematic analysis to identify patterns and themes present across multiple participants' experiences.

The perspectives of individuals with lived experiences of homelessness and substance use is an important piece to understanding barriers and strategies to accessing effective substance use treatment. These results of this study will add to the body of knowledge of individuals and families experiencing homelessness and their struggles with substance use and develop more effective person-centered substance use treatment programs to improve outcomes.

Chavez, Victoria - Major: Psychology & Criminal Justice, University of Central Oklahoma

Mentor: Dr. Peter Rerick, Assistant Professor, Department of Psychology
Oral Presentation Session #1, Room: Fiesta B

Title: *When True Crime Gets Real: How Bingeing on Crime Media Shapes Perceptions of U.S. Correctional Systems*

Abstract:

True crime media has become an increasingly popular source of crime-related information, yet little research has examined how it influences perceptions of the United States correctional systems and outcomes. The present study examined the relationships among true crime exposure, fear of crime, prior criminal justice exposure, perceptions of offender dangerousness, protective behaviors, correctional systems, and DNA analysis. A total of 256 participants completed an online survey. Participants were categorized into high and low true crime exposure and fear of crime groups using median splits, and prior criminal justice exposure was included as a continuous covariate in factorial analyses of covariance (ANCOVAs). Results indicated a significant interaction between true crime exposure and fear of crime on perceptions of offender dangerousness, such that participants reporting both high true crime exposure and high fear of crime perceived offenders as significantly more dangerous than participants with high fear of crime who reported lower true crime exposure. Higher true crime exposure and greater fear of crime were also independently associated with increased engagement in protective behaviors. In contrast, neither true crime exposure, fear of crime, nor prior criminal justice exposure significantly influenced perceptions of correctional systems or DNA analysis. These findings suggest that true crime media may selectively reinforce perceptions consistently emphasized within crime narratives, particularly among individuals with elevated fear of crime, while having less influence on broader evaluations of correctional institutions.

Keywords: true crime media, fear of crime, offender dangerousness, cultivation theory, correctional system perceptions.

Cruz, Camille - Major: Education, Society, and Human Development, University of California, Riverside

Mentor: Dr. Bernardette J. Pinetta, Assistant Professor, Department of Psychology
Oral Presentation Session #1, Room: Santa Ana B

Title: *Parental Anti-Racism Socialization: How do multiracial youth become motivated to engage in social justice actions?*

Abstract:

How parents talk about race and racism (i.e., anti-racism socialization) plays a key role in how children shape their perspectives of their ethnic-racial group memberships (i.e., ethnic-racial identity), as well as their motivation to address racism (i.e., critical action or critical agency; Bañales and Rivas-Drake, 2022). Although such studies are incredibly valuable to social justice, there is limited research that considers the specific development of critical agency among multiracial youth (Vezaldenos et al., 2023). To better understand this process, the present study seeks to answer the following question: How do youth's ERI processes (i.e., exploration, resolution, and affirmation) serve as an underlying mechanism for the association between parental anti-racism socialization and multiracial youth's critical agency? The data included in this study

comes from a larger, longitudinal mixed-methods study. I hypothesize that more frequent parental anti-racism socialization leads to increased critical agency. Furthermore, ERI processes including exploration, resolution, and affirmation, are hypothesized to serve as a mechanism between parental anti-racism socialization and critical agency. Findings from this and future research can contribute to practices, policies, and generally social change that consider and support the development of multiracial youth.

Dominguez, Stephanie - Major: Psychological Science, University of Arizona
Mentor: Dr. Melissa Flores, Assistant Professor, Clinical, Department of Psychology
Oral Presentation Session #1, Room: Isleta

Title: *Social Support and Hypertensive Disorders of Pregnancy Across Maternal Ages: A Systematic Review*

Abstract:

Social support has been suggested to be an important protective factor that may improve maternal health outcomes through stress reduction and promoting health behaviors. It is unknown if there is a relationship between social support and HDP across maternal age groups. Maternal age is a known biological risk factor for hypertensive disorders of pregnancy (HDP), specifically chronic hypertension, gestational hypertension, pre-eclampsia, and eclampsia. The present study aims to review the available literature reviewing the relationship between social support and HDP while examining the moderating role of maternal age.

Using the databases CINAHL, PsycINFO, PubMed, and Scopus, a systematic review is in progress to identify studies that examine social support and HDP. The articles are being screened using Rayyan, a software assisting in the coding process for inclusion and exclusion criteria. Data from eligible articles will be extracted and synthesized to evaluate the relationships between the variables.

A narrative synthesis will be used rather than a meta-analysis. Preliminary findings from eligible articles have associated greater reported levels of social support with lower perceived stress among the age group 21-34 (Sarmasti et al., 1970, Masjoudi et al., 2022, Chen et al., 2025, Laresgoiti Servitje, 2014). Based on the current findings, it is expected that the data will demonstrate a descriptively stronger negative association in higher risk age groups >20 and 35+ with little to no change in the 21-34 age group.

This review seeks to understand if maternal age changes the relationship between social support and HDP. By synthesizing the data, a gap in the literature will be addressed to better understand how social support, HDP, and maternal age interact with each other.

Griffus, Trinity - Major: Biology, University of New Mexico
Mentor: Dr. David Hanson, Professor of Biology
Associate Vice President for Research, Department of Biology
Oral Presentation Session #1, Room: Luminaria

Title: *Impacts of Endomycorrhizal Inoculation on Sunflower Growth within Lunar Regolith Simulants*

Abstract:

Agricultural development beyond Earth will rely on in-situ resource utilization and the understanding of plant-microbial interactions in extraterrestrial substrates such as regolith (abiotic unconsolidated rock and dust). Endomycorrhizal fungi, or Arbuscular Mycorrhizal Fungi (AMF) have been shown to support and promote growth in varying species of plants on Earth. However, little is known about how plants could utilize AMF when grown in regolith. We questioned if inoculation of AMF into lunar regolith would assist in astronaut sustainability and lunar agriculture development. In this study, we measured the effects of inoculation of the AMF species, *Rhizophagus irregularis*, in plant resource acquisition, water stress reduction, photosynthesis, and higher growth of sunflowers (*Helianthus annuus*) in Lunar Highlands Regolith (LHS-1), chosen based on potential NASA Artemis mission landing sites. We measured total growth, biomass allocation, and quantum yield of photosystem II for *H. annuus*, and analyzed regolith bulk chemistry and mineral morphology. Preliminary experiments concluded that the inoculation of the species *R. irregularis* affected several physiological processes in *H. annuus* including higher and faster growth rate and higher quantum yield of photosystem II. Final results are expected to follow a similar trend. Investigation of fungi affects plant physiological processes and chemical composition of regolith will provide insight into strategies for food sustainability during space missions. Not only can these results exemplify the effectiveness of AMF for use in agricultural systems beyond Earth, but also reaffirms AMF inoculation methods in agriculture within regions on Earth with less fertile soils.

Imbert, Anthony - Major: Neurobiology, University of Wisconsin - Madison
Mentor: Dr. Haley C. Dresang, Assistant Professor, Department of Communication Sciences and Disorders

Oral Presentation Session #1, Room: Lobo A

Title: *Comparative Analysis of Language Impairment in Left versus Right Stroke Patients*

Abstract:

Semantic verbal fluency (SVF) assesses lexical-semantic retrieval and broader cognitive-language functioning. This study examined whether SVF performance differed among individuals with left cerebrovascular accident (LCVA), right cerebrovascular accident (RCVA), and cognitively healthy adults (CHA); whether general cognition predicted SVF performance; and whether group moderated the relationship between cognition and SVF. At Visit 1, the stroke sample included 17 RCVA and 15 LCVA participants. At Visit 2, it included 19 RCVA and 14 LCVA participants. The study also included [N] cognitively healthy adults. Participants completed an animal-naming SVF task and the Montreal Cognitive Assessment (MoCA). A one-way analysis of variance tested group differences in SVF, followed by Tukey post hoc comparisons. Two linear regression models examined the effects of MoCA and group on SVF. The second model included a MoCA x Group interaction. SVF performance differed significantly across groups, $F(2, 15.18) = 15.18$, $p < .001$. Both LCVA and RCVA participants produced significantly fewer animal names than healthy controls, whereas the two stroke groups

did not significantly differ. MoCA score and group significantly predicted SVF performance, $p < .01$. Membership in either stroke group was associated with an approximately 3.5-point reduction in SVF after controlling for cognition. The MoCA x Group interaction was not significant. These findings indicate that semantic fluency is reduced after stroke regardless of lesion laterality and that general cognitive functioning contributes similarly to SVF performance across groups.

Julio, Paulo - Major: Electrical Engineering, University of California, Riverside
Mentor: Dr. Alexander Khitun, Professional Researcher & Adjunct Professor, Electrical and Computer Engineering

Oral Presentation Session #1, Room: Trailblazer/Spirit

Title: *Breaking the Storage Limit with Magnonic Combinatorial Memory*

Abstract:

Current methods for creating memory in electronic devices may not be sufficient in the near future. With the rapid rise of artificial intelligence, the demand for larger and faster memory systems is increasing. This creates challenges in fabrication, material supply, device scaling, and heat management. Current devices such as phones, tablets, computers increase storage capacity by increasing device density, meaning more memory elements are placed within a smaller area. However, this approach has long-term limitations. As more elements form memory, devices become more difficult to fabricate, material availability becomes a concern, and scaling down is also a key factor in the creation of storage data devices. In addition, increasing the number of elements in the creation of memory can lead to higher heat generation and heat retention, which reduces efficiency. Several approaches have been working for other alternatives to produce memory such as stacking memory vertically, reducing the size of individual memory elements, and stacking entire chips. Although these methods can improve memory capacity, they do not fully solve the fundamental problems associated with scaling, material use, fabrication complexity, and heat dissipation. This research investigates magnonic combinatorial memory (MCM) as an alternative to traditional density-based memory devices by using signal propagation paths in a multi-port magnonic structure to encode information. By using spin wave propagation and path-based encoding, MCM could contribute to future memory technologies that are more scalable, energy efficient, and suitable for the growing demands of technologies such as artificial intelligence and advanced computing.

Melendez, Selena - Major: Molecular Biology, University of Wyoming

Mentor: Dr. Sheba David, Assistant Professor, School of Pharmacy

Oral Presentation Session #1, Room: Acoma A

Title: *Bioactive Wound Healing Hydrogel for Chronic Infected Wounds*

Abstract:

Chronic wounds are a major problem in healthcare because the complications associated with wound healing decrease the quality of life for patients. As more people develop conditions like diabetes, finding better ways to treat these wounds is becoming more urgent to target the high costs of treatments associated with chronic wounds. The purpose of the project is to develop a special type of gel that promotes wound healing, kills surrounding bacteria to control infection at the wound site, and releases bioactive

materials over time. The prolonged healing time of wounds increases susceptibility to infection, inflammation, excessive wound fluid buildup, or further opening of the wound. Many of the traditional dressings, such as band aids or gauze, provide the wound with the minimum amount of protection, which often lacks anti-bacterial properties and the adequate moist environment needed to promote wound healing. This study strives to engineer a multi-functional bioactive hydrogel that promotes moisture retention, exhibits antibacterial properties, and is temperature-responsive, slowing the gel's response over time. The main steps of this research are the preparation of the gel, testing the gel's mechanical and physical properties, ensuring minimal damage to the skin barrier, and ensuring advanced wound healing through in vitro testing. Developing a gel that can prevent infection and accelerate wound healing could improve the lives of many patients and reduce healthcare costs. Furthermore, it demonstrates the potential of using natural biomaterials, such as hydrogels, to develop improved wound-care treatments.

Zurasky, Melyssa - Major: Psychology, University of New Mexico

Mentor: Katie Witkiewitz, PhD, Distinguished Professor, Department of Psychology
Oral Presentation Session #1, Room: Santa Ana A

Title: *Mindfulness Based Relapse Prevention and Locus of Control: Laying the Foundation for Locus of Control as a Potential Mechanism of Behavior Change*

Abstract:

Substance use disorder (SUD) affects 48.4 million U.S. individuals. Outcomes vary across evidence-based treatments for SUD, highlighting the need to identify mechanisms of behavior change (MOBC) that causally link interventions to desired treatment outcomes. Locus of control (LOC)—one's belief that life outcomes are contingent on internal or external factors—is a theoretical potential MOBC in SUD treatment. Prior research suggests that internal LOC is associated with improved SUD treatment outcomes. While mindfulness is theorized to support internal LOC, research is limited on the extent to which mindfulness-based interventions (MBIs) for SUD impact LOC. We hypothesized that individuals assigned to an MBI condition would have statistically higher internal locus of control scores than those assigned to relapse prevention (RP) and treatment as usual (TAU; 12-step facilitation).

Oral Presentation Abstracts Session #2

10:10 to 10:30 a.m. Friday, September 11, 2026

Location: SUB Top Floor Rooms

These abstracts were published unedited to reflect the author's original submission

Barragan Manzo, Daniel - Major: Psychology, University of California, Riverside

Mentor: Dr. Bernardette Pinetta, Assistant Professor, Department of Psychology
Oral Presentation Session #2, Room: Lobo B

Title: *Online Victimization, Racial Attitudes, and Mental Health Outcomes: An Ecological Examination of Emerging Youth of Color*

Abstract:

Online racial discrimination (ORD) has emerged as a significant psychosocial stressor for youth of color, with growing evidence linking both direct and vicarious exposure to adverse mental health outcomes, including stress, anxiety, and depressive symptoms. Bronfenbrenner's revised bio ecological model, which incorporates a techno-

subsystem, highlights how youths' experiences in digital environments influence development. Integrating this framework with Quintana and Mckown's model of race and racism on child development allows us to examine online racial discrimination as a developmental experience shaped by both digital and racialized contexts. These frameworks recognize that exposure to racism in online spaces can affect psychological adjustment even when youth are not direct targets of discrimination. The extent to which racial discrimination impacts mental health may depend on how adolescents understand racism (i.e., racial attitudes). Using student survey data from a larger mixed-methods study conducted in a Southern California public charter school, this study examines whether color-blind racial attitudes moderate the association between ORD and psychological distress. We hypothesize that lower awareness of institutional racism (i.e., denial that systemic policies or practices disadvantage racial and ethnic minorities) and lower awareness of blatant racism (i.e., minimization of racism as a current problem or denial of its impact) will exacerbate associations between ORD and adverse mental health outcomes. Findings will contribute to a developmental understanding of how racial attitudes shape youths' responses to online racial discrimination.

Bolanos, Alberto - Major: Speech, Language, and Hearing Sciences, University of Arizona

Mentor: Dr. Genesis Arizmendi, Assistant Professor, Department of Speech, Language, and Hearing Sciences

Oral Presentation Session #2, Room: Lobo A

Title: *Whose Perspectives Count? A Critical Interpretive Synthesis of Autism-Service Literature for Latiné Borderlands Families*

Abstract:

The experiences of Autistic individuals and their families are shaped by their positions with respect to race, gender, national origin, and geographic location. Speech-language pathologists (SLPs) support their clients' communication goals, yet few studies address the autism-service needs of Latiné families in the US-Mexico Borderlands. Within a larger project examining autism-service systems and Latiné families in Southern Yuma County, the present study reviewed the literature on Autism, Borderlands families, and ethical autism-service provision using a Critical Interpretive Synthesis (CIS) strategy (Dixon-Woods et al., 2006). Ninety-four published works were reviewed between November 2025 to July 2026. First, comparative analysis produced a conceptual framework representing the nature and goals of autism-service provision for Latiné Borderlands families. Second, participant demographics, keywords, and research methods were analyzed by discipline and location to assess representational patterns across the literature. The findings point to a need for greater inclusion of community perspectives in research supporting Latiné Autistic individuals and their families in the US-Mexico Borderlands.

Garate, Yarely - Major: Biochemistry & Psychology, Central Washington University

Mentor: Dr. Samuel Lohse, Assistant professor, Department of Chemistry

Oral Presentation Session #2, Room: Trailblazer/Spirit

Title: *Binding Strength of Trypsin to Nanoscale Gold Surfaces*

Abstract:

Gold nanoparticles (AuNPs) are nanoscale gold crystals (1-100nm in diameter) that possess unique optical, chemical and biological properties. These characteristics, along with their biocompatibility and ease of surface modification, have made AuNPs promising theranostic materials. Protein-NP interactions play a critical role in determining their biological behavior and potential for targeted therapeutic use. By characterizing protein binding behavior in a controlled model system, this work lays the foundation for future studies aimed at engineering AuNPs capable of selective binding and targeted delivery in cancer cells.

This study provides insight into protein corona formation, a phenomenon in which proteins from a biological environment adsorb onto the surface of NPs. The protein corona alters the NP's biological behavior (stability, cellular uptake, toxicity, etc.). Specifically, this study investigates the binding affinity (K_a) between trypsin and 5 nm AuNPs to better understand the fundamental binding of enzymes to different NP surfaces.

Binding affinity was evaluated using fluorescence quenching titrations. Trypsin exhibits intrinsic fluorescence due to its aromatic amino acid residues, primarily tryptophan. Incremental additions of AuNPs results in fluorescence quenching as protein-nanoparticle complexes form. The resulting loss of fluorescence intensity was then quantified to determine K_a . These measurements provide a quantitative assessment of binding strength between trypsin and the AuNP surface. Early results show that trypsin binding to mercaptohexanoic acid-functionalized (MHA-AuNPs) binding at this length scale is not primarily driven by electrostatics; for trypsin- MHA-AuNPs, $K_a = 0.70 \pm .08$ nM⁻¹ in 100 mM NaCl and for trypsin-MHA-AuNPs, $K_a = 0.90 \pm .16$ nM⁻¹ in 0 mM NaCl.

Gipson, Chadea' - Major: Sociology, University of New Mexico

Mentor: Dr. Ranita Ray, Associate Professor, Department of Sociology

Oral Presentation Session #2, Room: Santa Ana B

Title: *"The Minority Experience: Inside the Classroom"*

Abstract:

How might an imbalance of power impact institutions within the Education System? How can academic relationships formed in Early Education (K-12), influence underrepresented

undergraduate academic persistence and students' feelings of acceptance, respect, value, and importance? The "minority experience," inside classrooms, specifically focusing on the college cohort, is an underrepresented topic in the sociological theoretical discourse. This research conducts unstructured interviews, focusing on underrepresented undergraduate students to determine how K-12 educational experiences impact individual sense of self, belonging, and community in college. These interviews have been conducted at the University of New Mexico (UNM) to BIPOC students or anyone who identifies with a racial or ethnic identity. This research will specifically employ the method of unstructured interviews with the purpose of painting a descriptive narrative and in-depth understanding of academic relationships within

academic institutions. This research contributes to the field of Sociology, more specifically in the Sociology of Education, with further implications in Public Policy.

Lewis, Trey - Major: Neuroscience, University at Buffalo

Mentor: Dr. Thomas Covey, Associate Professor, Department of Neurology, JSMBS

Oral Presentation Session #2, Room: Acoma A

Title: *Neural Indices of Multisensory Processing Disturbances in Multiple Sclerosis*

Abstract:

Cognitive impairment is commonly reported in people with Multiple Sclerosis (PwMS). While a variety of cognitive performance measures are often obtained as part of standard clinical evaluation in MS, multisensory processing has largely been unexplored in the literature on MS cognition. Further work is needed to better understand the nature of disruption in multisensory processing in MS because cognitive performance in daily activities is often multisensory in nature and highly relevant to clinical outcomes. To address this current gap in understanding, the present study obtained neural indices of multisensory processing during target detection in PwMS. PwMS and healthy control participants completed an audio-visual processing task with target and non-target visual (blue/red circles) and auditory (high/low tones) stimuli. Event-related potentials (ERP) were obtained for each trial category. Results revealed that P3 amplitude was attenuated in MS compared to controls for unisensory target trials. During multisensory target trials, PwMS demonstrated an attenuated, delayed P3 component compared to controls. These findings indicate generalized disturbances in the neural response during target detection and suggest disruption of neural resources and delayed processing during multisensory integration, in PwMS compared to controls. This work identifies multisensory biomarkers that can be used as a framework to guide future research and highlight the clinical relevance of multisensory processing disturbances in PwMS. Further work will be conducted to evaluate the implications of earlier sensory components (e.g P1, N1).

Miller, Abigail - Major: Biology, West Virginia State University

Mentor: Dr. Barbara E. Liedl, Director of the WVSU Purdy School of Agriculture, Food and Natural Resources

Associate Professor of Plant Breeding and Genetics, Department of Biology

Oral Presentation Session #2, Room: Luminaria

Title: *Evaluating Molecular Markers for Fusarium Wilt Resistance and Plant Architecture to Develop Improved Vintage Tomato Varieties*

Abstract:

Tomatoes rank among one of the most economically important food crops worldwide. However, vintage varieties do not possess the general resistances, or a shorter architecture found in current varieties, making growing them problematic. This research was to determine if markers for these genes could be used to improve vintage tomato varieties. Three markers for the I gene controlling Fusarium wilt resistance, a soil borne fungal disease, were trialed. The brachytic (br) gene, which promotes shortened internodes to reduce plant architecture, tested two markers from the literature. DNA was extracted using a modified CTAB extraction protocol from several vintage varieties and the donor. Marker specific primers along with Taq DNA Polymerase and DNA were used

to create the amplicons. PCR conditions were poorly documented; thus, amplicons were generated using a range of annealing temperatures based on the primers' melting temperatures. Gel electrophoresis confirmed expected amplicon sizes, and optimal annealing temperatures were selected. All amplicons were digested with marker-specific restriction enzymes, and the fragment sizes were analyzed by electrophoresis to verify banding profiles based on the literature. Only one br marker showed variation between the donor and vintage varieties, but more work is needed to verify its use in the breeding program. One marker for I had the expected band sizes for the donor and most of the vintage varieties. This marker was used on BC2 breeding lines for one vintage variety and the resistant marker genotype correlated with the SNP marker for I developed by the University of Florida.

Palafox, Aretzy - Major: Criminal justice/criminology and sociology, University of Northern Colorado

Mentor: Dr. Lisa Nichols, Assistant professor, Department of criminal justice
Oral Presentation Session #2, Room: Fiesta A

Title: *Gender in helping*

Abstract:

Vicarious Trauma, Compassion Fatigue and Secondary Traumatic Stress are all symptoms that are found to be experienced within job fields that involve workers to be exposed to victims. It's been found that many workers within the criminal justice system such as: Policer officers, social workers and Victim advocates. Due to these symptoms eventually many workers must make the choice to leave their fields for their mental health. There is a big gender gap within these jobs, with men making up majority of the work force within Policing. Women make up majority of the work force in social work, human services, victim advocacy and more. Though much research is out there with a focus of supporting workers with mental health services within the workplace, little focuses on the prevention and early actions before workers face these symptoms. I plan to answer the following question: How do college students' perspectives on the psychological vulnerability within their intended careers and their commitment to criminal justice careers differ by gender? This research study will focus on Higher education students wanting to go into these fields. Data will be collected through surveys and optional interviews with students in majors such as social work, human services, criminal justice, criminology, sociology and psychology. These surveys will be shared with students from University of Northern Colorado within the following departments: Criminal Justice/Criminology, Human Services and Sociology.

Rodriguez-Inosencio, Miguel - Major: Chemical Engineering, University of Wisconsin - Madison

Mentor: Dr. Glen S. Kwon, Professor, Pharmaceutical Sciences, School of Pharmacy
Oral Presentation Session #2, Room: Acoma B

Title: *Toward Donor-Independent Hemostasis: Multi-Functional Biodegradable Microspheres as Synthetic Platelet Analogs*

Abstract:

Trauma induced hemorrhage is one of the leading causes of preventable death globally, yet the clinical tools available to address it remain severely limited. Donor derived

platelets, the current standard for treating hemorrhage related bleeding, face persistent challenges including short shelf life, strict storage requirements, risk of contamination, and chronic supply shortages that make them unavailable in many pre-hospital and resource limited settings. These limitations have motivated a growing field of research aimed at developing synthetic platelet alternatives: engineered particle systems designed to mimic the hemostatic functions of natural platelets without relying on donor blood. Natural platelets perform hemostasis through a coordinated sequence of adhesion, activation, and aggregation at the site of vascular injury, but replicating this complexity in a synthetic system has proven difficult. Despite significant progress, most existing synthetic platelet designs replicate only a single aspect of this process, and this narrow functional scope has constrained their therapeutic potential. A more integrated approach, one that simultaneously targets multiple stages of clot formation, offers a compelling path forward. The goal of this project is to develop and characterize a biodegradable microsphere platform surface functionalized with multiple hemostatic ligands, designed to engage the coagulation cascade at more than one point of intervention. By building a system capable of addressing hemostasis more broadly within a single particle construct, this work aims to advance the rational design of scalable, donor-independent hemostatic agents with meaningful potential for trauma care and surgical applications.

Roman, Natalia - Major: Political Science/Gender and Sexuality, University of California, Riverside

Mentor: Professor Michelle Bloom, Associate Professor, Department of Comparative Literature & French

Oral Presentation Session #2, Room: Fiesta B

Title: *Self Mutilation as a Catharist: Female Embodiment in New French Extremity Films In My Skin (2002) and The Substance (2024)*

Abstract:

In the late 1990s and early 2000s, the genre of New French Extremity emerged as a controversial cinematic movement that became distinguished through its extreme displays of graphic violence, bodily mutilation, and psychological severity. While the term, originally coined by film critic James Quandt, has been used as a condemnation of this transgressive cinema, it has evolved to be used in association with films that use intense violence and body horror as a commentary of broader cultural and social issues. Despite these films being widely dismissed as exploitative and misogynistic due to their graphic portrayals of violence typically against women, this genre acts as an imperative source for feminist film analysis. Through this research, I will examine how two films from the genre, *In My Skin* (2002) directed by Marina de Van and *The Substance* (2024) directed by Coralie Fargeat represent self-mutilation as a form of catharsis and embodied reclamation within systems of patriarchal commodification. Through analyzing feminist theory, I will argue how patriarchal systems produce self-objectification that causes women to experience a sense of disconnection from their own bodies. From this analysis, I will synthesize this theory alongside a close film analysis of key scenes from the selected films to investigate how cinematography and narrative constructs bodily mutilation as a response to patriarchal disembodiment. Through contributing to the gap in existing scholarship surrounding female agency in body horror cinema, this research

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recontextualizes the display of self-mutilation in New French Extremity as a feminist critique of patriarchal commodification.

Self, Mazzarine - Major: Psychology, University of Minnesota Morris
Mentor: Dr. Marissa Holst, Assistant Professor, Department of Psychology
Oral Presentation Session #2, Room: Isleta

Title: *How does parental loss following a terminal illness influence the development of narrative identity across adolescence and into emerging adulthood?*

Abstract:

Losing a parent to terminal illness during adolescence is a life-changing experience that can shape an individual's lifelong development. Although many researchers have examined grief, coping, and resilience following parental loss, less is known about how adolescents integrate parental loss into their personal narratives. This literature review will examine the relationship between parental bereavement, narrative identity, and meaning-making during adolescence and into emerging adulthood. To explore this topic, I will analyze current peer-reviewed research to examine existing findings and highlight the limited research examining how adolescents integrate parental loss into their developing identities. Current research proposes that parental loss during adolescence influences identity development. Furthermore, narrative identity helps individuals make sense of parental loss within their evolving sense of self. I argue that understanding the interaction between narrative identity and meaning-making can inform interventions that better support bereaved adolescents and emerging adults.

Torrey, James - Major: Social Work, Northeastern Illinois University
Mentor: Professor Ashor Jajou, Professor, Social Work
Oral Presentation Session #2, Room: Santa Ana A

Title: *Stigma and Perception of Health Needs in Addiction Care. Centering the Lives of Persons Who Use Drugs To Better Inform Health Literacy Programming*

Abstract:

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Oral Presentation Abstracts Session #3

10:35 to 10:55 a.m. Friday, September 11, 2026

Location: SUB Top Floor Rooms

These abstracts were published unedited to reflect the author's original submission

Alcoser, Karis - Major: Environmental science, Our Lady of the Lake University
Mentor: Dr. Chloe Lash, Assistant Professor, Department of biology
Oral Presentation Session #3, Room: Luminaria

Title: *Evaluating Nutrient and Yield Efficiency in Traditional vs. Urban Agriculture*

Abstract:

As communities seek more sustainable ways to produce food, understanding how efficiently different agricultural systems use limited resources is vital. Exploring how these systems use resources can help inform future agricultural decision-making and sustainability efforts. This study examines resource efficiency by comparing nutrient retention and yield between urban hydroponic and traditional basil production systems.

Basil is currently being cultivated in both a university hydroponic system and an outdoor traditional growing system. Nutrient retention and yield data are being collected from each system to evaluate how efficiently available resources are converted into plant biomass. If sufficient data cannot be collected from the outdoor system due to environmental limitations, secondary data from comparable agricultural systems will be incorporated to support the analysis. Resource efficiency will be evaluated by comparing average nutrient retention and yield across the two production methods. Data collection and analysis are ongoing. This research is expected to provide insight into how different growing systems allocate and utilize resources, contributing to a broader understanding of sustainable food production. By identifying similarities and differences in resource efficiency, this study aims to provide information that may help guide future research and agricultural decision-making.

Arenas-Rocha, Diana - Major: Sociology, University of Wyoming
Mentor: CJ Stewarts, SEO Project Coordinator, Student Educational Opportunity
Oral Presentation Session #3, Room: Fiesta A

Title: *Staff Morale and Job Satisfaction in a Homeless Shelter Setting*

Abstract:

Working on the front lines at homeless shelters is a high-demand job. Every day, staff have to endure the weight of constant exposure to high-stakes emotions and decisions, which can result in compassion fatigue and burnout. This study seeks to gain an understanding of how homeless shelters mitigate the issue of burnout and how the employees manage their relationships with residents and co-workers under these conditions. Staff at the Cheyenne COMEA shelter were interviewed and surveyed. The participants' responses suggested that, despite experiencing compassion fatigue and burnout, staff have a lot of pride in their work and continue to find fulfillment in their work.

Castillo, Emely - Major: Chicano Studies, University of California, Riverside
Mentor: Dr. Linda Lemus, Associate Professor of Teaching, Department of Hispanic Studies

Oral Presentation Session #3, Room: Santa Ana B

Title: *Constructing Black and Brown Lived Experiences: A Critical Discourse Analysis of the Compton Art & History Museum*

Abstract:

Community-based museums play an important role in preserving local histories and shaping collective memory, yet limited scholarship has examined how these institutions construct representations of Black and Brown communities. This study investigates how the Compton Art & History Museum represents community identity and collective memory through its exhibits, digital platforms, and founder narratives. Situated within broader conversations about race, representation, and narrative authority, the research examines how the museum challenges, negotiates, or reproduces dominant portrayals of Compton. Compton is frequently represented through deficit-based narratives emphasizing crime, violence, and urban decline. Such portrayals often obscure the city's cultural contributions, community resilience, and ongoing efforts toward cultural preservation and development. This study explores how the Compton Art & History

Museum participates in constructing alternative narratives about place, identity, and belonging. Drawing on Critical Discourse Analysis (CDA), this research utilizes the work of Norman Fairclough and Teun A. van Dijk to examine how discourse produces meaning, identity, and power relations. The study is further informed by Gloria Anzaldúa's Borderlands Theory and scholarship on collective memory to analyze how Black and Brown histories are represented and positioned in relation to one another. Data sources include museum exhibits, social media content, and founder-produced narratives such as Color Compton and Developed in Compton. By focusing on a community-based institution rather than a large national museum, this study contributes to museum studies, Chicano studies, and discussions of cultural representation. Ultimately, it demonstrates how local institutions help shape public understandings of community history, identity, and belonging.

Donner, Angela - Major: Psychological Sciences, University of Arizona
Mentor: Dr. Zachary D. Cohen, Assistant Professor, Department of Psychology
Oral Presentation Session #3, Room: Santa Ana A
Title: *From Daily Rumination to Weekly Overload: Trait and State Effects on Emotion Regulation in Emerging Adults*

Abstract:

Traditional clinical screeners rely on retrospective, cross-sectional assessments that fail to capture how repetitive negative thinking (rumination) fluctuates within a person from day to day. This gap is especially limiting during emerging adulthood (ages 18–25), a developmental period marked by academic, financial, and social stressors that can heighten vulnerability to frequent rumination. Existing approaches infrequently examine how the daily relationship between rumination and emotion regulation difficulty relates to broader weekly overload. Using a secondary analysis of Ecological Momentary Assessment (EMA) data from the WARN-D study, this study evaluates two multilevel models. Model 1 examines whether a person's overall tendency to ruminate (trait-level) and their day-to-day deviations in rumination (state-level) relate to same-day difficulty regulating emotions, reported at the end of each day. Model 2 examines whether trait-level and state-level rumination and regulatory difficulty, aggregated across the week, relate to end-of-week overload. It is hypothesized that state-level rumination will show a stronger association with same-day emotion regulation difficulty than trait-level rumination. Similarly, this pattern of state effects outweighing trait effects is expected to hold for both rumination and emotion regulation difficulty in predicting weekly overload.

Ehlers, Solomon - Major: Chemistry, University of New Mexico
Mentor: Dr. Dongchang Chen, Assistant Professor, Department of Chemistry and Chemical Biology
Oral Presentation Session #3, Room: Trailblazer/Spirit
Title: *Better Battery Electrolytes: Investigation of Solid-State Electrolyte (SSE) Chemistries*

Abstract:

With the advent of commercial electric vehicles and the continued rise of renewable energies, more researchers are making efforts to improve battery life, durability, and energy density. Of particular interest is the implementation of solid-state electrolytes

(SSEs) to replace organic liquid electrolytes, due to SSEs' appealing properties such as being nonflammable, more resistant to battery degradation, greater temperature range performance, and better energy density. A large factor impeding the widespread adoption of SSEs is their lower average ionic conductivity compared to organic liquid electrolytes. This research involves the synthesis and characterization of promising novel solid-state electrolyte candidates for implementation in real batteries. To do so, a variety of techniques, including mechanochemical synthesis, electrochemical impedance spectroscopy, chronoamperometry, and x-ray diffraction spectroscopy will be used in the creation, evaluation, and mechanism analysis of the candidate materials. Then, a promising candidate will be used in a real cell and undergo capacity cycling to determine its performance in realistic conditions.

Jaramillo, Jazmine - Major: Communication Sciences and Disorders, University of Northern Colorado

Mentor: Dr. Ramesh Muralimanohar, Assistant Professor, Department of Communication Sciences and Disorders

Oral Presentation Session #3, Room: Lobo A

Title: *Persistence In Communication Sciences And Disorders From Undergraduate To Graduate Programs Among Diverse Students*

Abstract:

Underrepresentation in healthcare professions can result in patients from diverse backgrounds receiving inadequate care, improper diagnoses, or avoiding care altogether. A lack of trust, the fear of not receiving adequate services, and cultural biases leading to misdiagnoses are amongst several causes that contribute to this problem. The Communication Sciences and Disorders (CSD) fields of speech-language pathology and audiology are particularly affected by this problem with over 90% of clinicians being white women. Efforts to mitigate this mismatch have led to steady increases in the number of minority students enrolled in undergraduate and graduate CSD programs. However, persistent gaps between the percentages of minority students in undergraduate and graduate programs remain. While other countries have successfully attracted diverse students into their CSD programs, America continues to struggle with systemic issues and negative collegiate experiences hindering minoritized students. My study intends to identify the reasons that perpetuate this representational gap in student retention of diverse CSD students. Previous studies have researched barriers to diverse CSD students, which will serve as models for this study. I intend to use focus groups with diverse and majority CSD students to identify key themes regarding career preparation and persistence, followed by a survey administered to a larger group of CSD students to assess the effect of these factors. Results from this study will help CSD programs improve student accessibility, ultimately improving the field's ability to serve diverse patient populations.

Keywords: Communication Sciences and Disorders; speech-language pathology; audiology; student retention; diversity; undergraduate; graduate; underrepresentation; clinicians; experiences; focus groups; graduate school preparation

Jidan, Ahsanul - Major: Neuroscience, University at Buffalo

Mentor: Dr Stewart Clark, Associate Professor, Department of Pharmacology and Toxicology

Oral Presentation Session #3, Room: Acoma A

Title: *Multilevel Characterization of Progressive Supranuclear Palsy Pathology in a Rat Model*

Abstract:

Progressive Supranuclear Palsy (PSP) is a rare tauopathy with heterogeneous clinical presentations. No disease-modifying treatments exist, limiting treatment to symptom management. This study characterizes PSP-like pathology in a rat model integrating behavioral, MRI, and histological measures to inform earlier diagnosis and treatment.

Prior work produced a rat model expressing eGFP or hTau via AAV in the pedunculo pontine tegmentum (PPTg). hTau rats showed reduced acoustic startle reflex, hindlimb clasp reflex, and impaired horizontal ladder performance. Our current cohort of rats underwent post-mortem MRI and histological analysis 20 weeks post-AAV. We correlated acoustic startle response and pre-pulse inhibition data with MRI measurements of lateral ventricle volumes and midbrain-pons ratios. Histological analysis assessed cholinergic and dopaminergic markers and hyperphosphorylated tau (AT8 antibody). We found correlation between neuronal loss in posterior cholinergic PPTg and startle deficits in hTau rats.

Future work will further integrate behavioral and histological datasets to identify prognostic biomarkers.

Mahkuk-Guaman, Nani - Major: Communication, Media, and Rhetoric, University of Minnesota Morris

Mentor: Dr. Nadezhda Sotirova, Associate Professor, Department of Communication and Media Studies

Oral Presentation Session #3, Room: Fiesta B

Title: *My Teacher, My Love: How Shōjo Manga Grooms Its Audience*

Abstract:

Anime and manga became a global phenomenon between the 1980s and 1990s, with titles like Dragon Ball Z and Sailor Moon breaking out of the Japanese market to become household names around the world. One of the most popular demographic “genres” of manga and anime in Japan, known as shōjo (meaning “young girl”), is marketed to preteen and teenage female audiences, and typically follows young girls navigating adolescent life and building romantic relationships.

This project examines how some popular shōjo manga titles normalize teacher-student relationships by presenting them as equal, consensual partnerships, often with the child “in control”. In real life, many child sexual abuse victims falsely believe that they are the ones initiating a sexual relationship, when they are in fact being deliberately groomed by an adult predator. This project focuses on sexual grooming defined as the deceptive process used by an abuser to facilitate a sexual relationship with a minor, while hiding

their intentions from the victim and avoiding detection by external observers (Winters, Kaylor, Jeglic, 2022).

The project will overview the existing literature, and further examine several cases of teacher-student relationships portrayed in shōjo manga, and a sample of audience responses. By examining reactions and contrasting media, I show how these manga romanticize predatory relationships and discuss the implications for the young audience.

Winters, G. M., Kaylor, L. E., & Jeglic, E. L. (2022). Toward a Universal Definition of Child Sexual Grooming. *Deviant Behavior*, 43(8), 926–938. <https://doi-org.ezproxy.morris.umn.edu/10.1080/01639625.2021.1941427>

Morales, A.J. - Major: Social Work, Northeastern Illinois University
Mentor: Asher Jajou, LCSW, Associate Professor, Department of Social Work
Oral Presentation Session #3, Room: Isleta

Title: *ADHD in Women from Racial and Ethnic Minority Groups*

Abstract:

ADHD in Women from Racial and Ethnic Minority Groups: Exploring Symptom Presentation and Factors Contributing to Delayed Diagnosis

Attention-deficit/hyperactivity disorder (ADHD) is a neurological disorder that's historically been studied in the male populace. Since the diagnostic criteria are biased towards how ADHD symptoms are presented in males, females have been underdiagnosed--specifically women from ethnically minority groups. Additionally, research recognizes ADHD as a lifelong neurodevelopmental disorder. Significant gaps remain in understanding how symptoms present in adulthood vs childhood and how ethnicity and gender influence diagnosis. This study seeks to address these gaps by examining the lived experiences of ethnically minoritized women diagnosed with ADHD.

The proposed study will investigate two research questions: (1) What does ADHD look like in racially and ethnically minoritized women? and (2) What factors contribute to a later diagnosis of ADHD among these women? Participants will include cis-gender adult women aged 18 years and older and identify as members of racial or ethnic minority groups. A minimum of 50 participants will be recruited through social media platforms and university email distribution lists using convenience sampling. Data will be collected through an anonymous online survey consisting of approximately ten closed-ended and open-ended questions. Descriptive statistics will be used to summarize quantitative responses, while thematic analysis will be conducted to identify common themes within qualitative responses. The findings from this research have the potential to expand understanding of ADHD in historically underrepresented populations, inform more equitable diagnostic practices, and contribute to improving support services for women whose symptoms have traditionally been overlooked.

Mota Gutierrez, Anahi - Major: Biological Sciences, University of Northern Colorado
Mentor: Dr. Patrick Burns, Professor, Biological Sciences

Oral Presentation Session #3, Room: Acoma B

Title: *Effects of Omega-3 Fatty Acids on Progesterone Production in Bovine Granulosa Cells*

Abstract:

Women in the U.S. have been having their first child at an increasingly older age due to changes in social, economic, and educational factors. Despite this, it is well known that as a woman's age increases, fertility decreases. Progesterone, which is a hormone that is essential in early pregnancy and produced by the corpus luteum, has been frequently studied by researchers as low progesterone levels are suspected to be a culprit in recurrent pregnancy loss (RPL) and Luteal Phase Defect (LPD). A recent area of focus in research has been the use of omega-3 fatty acids in improving reproductive outcomes. The results of these studies suggest that omega-3 fatty acids influence a number of factors in the reproductive cycle such as increasing follicle size, increasing blood flow, and increasing progesterone production. However, mechanisms behind how exactly omega-3 fatty acids improve these reproductive outcomes remain unknown and widely discussed. This study will examine how omega-3 fatty acids influence progesterone production and luteal cell function in an in vitro luteinized bovine granulosa cell model. We hypothesize that omega-3 fatty acid supplementation will enhance mitochondrial function and lipid droplet metabolism, leading to increased progesterone production. This study will measure progesterone production via ELISA, along with changes in mitochondrial function and lipid droplet formation, to determine how omega-3 fatty acids influence luteal cell steroidogenesis.

Najar, Alexis - Major: Psychology & Criminal Justice, New Mexico State University
Mentor:

Michael Kalkbrenner, Full Professor of Counseling and Educational Psychology
Director, M.A. Clinical Mental Health Counseling Program, Counseling and Educational Psychology

Oral Presentation Session #3, Room: Lobo B

Title: *The Impact of Media Framing of Mass Shootings on Mental Health Stigma Among U.S. Adults*

Abstract:

Media coverage of mass shootings may contribute to stigma toward individuals with severe mental illness, particularly when violent behavior is explicitly attributed to mental illness. This study examines whether media framing that links a mass shooting to severe mental illness influences perceptions of dangerousness and desired social distance toward individuals with mental illness. Adults aged 18 and older residing in the United States will be randomly assigned to one of two conditions. They will read one of two nearly identical mock news articles describing a mass shooting. In the mental illness attribution condition, the article will explicitly attribute the perpetrator's actions to severe mental illness. In contrast, the control condition will describe the same event without mentioning mental illness. Following exposure to the article, participants will complete self-report measures assessing perceived dangerousness and desired social distance toward individuals with severe mental illness, along with demographic questions and an attention check. Differences in stigma-related responses between the two conditions will be examined using statistical analysis. It is expected that participants

Oral Presentation Abstracts Listed by Session #
Friday, September 11, 2026 - Location: SUB Top Floor Rooms

exposed to the mental illness attribution framing will perceive individuals with severe mental illness as more dangerous and report greater desired social distance compared with participants in the control condition. This study aims to contribute to understanding how media framing may influence mental health stigma and perceptions of dangerousness, with potential implications for more responsible media reporting and stigma-reduction efforts.

Oral Presentation Abstracts Session #4

11:00 to 11:20 a.m. Friday, September 11, 2026

Location: SUB Top Floor Rooms

These abstracts were published unedited to reflect the author's original submission

Ambriz, Sofia - Major: Fish, Wildlife, and Conservation Biology, Colorado State University

Mentor: Dr. Liba Pejchar, Associate Professor, Department of Fish, Wildlife, and Conservation Biology

Oral Presentation Session #4, Room: Luminaria

Title: *Evaluating the diet of urban Eastern Screech Owls using multiple approaches*

Abstract:

Eastern Screech Owls are understudied in urban areas and on the western edge of their range. Understanding their diet in urban areas is critical to conservation efforts and assessing their ecological impact, particularly since they are considered an indicator species for healthy riparian areas by some communities. Our objectives were to assess the diet of screech-owls in an urban area within the western portion of their range and to evaluate whether diet differs between male and female owls. We collected 31 pellets from four pairs in and near the City of Fort Collins, Colorado from April-June 2026. We then utilized two methods, morphological identification of bones within pellets and DNA metabarcoding, to identify prey items. Thus far, we have identified two species of vole skulls (*Microtus pennsylvanicus* and *Microtus ochrogaster*) using the morphological approach, and we are in the process of completing metabarcoding for vertebrates and invertebrates on all samples. We also intend to assess whether diet differs between the male and female of the pair and the potential implications of this on fitness and rearing of chicks. Our findings will advance understanding of urban owl diets and could help inform efforts to protect and restore screech owl habitat in cities.

Castillo, Xitlali - Major: Education, Society, & Human Development, University of California, Riverside

Mentor: Dr. Jose Del Real Viramontes, Assistant Professor, School of Education

Oral Presentation Session #4, Room: Fiesta B

Title: *Experiencing and Navigating the Impostor Phenomenon Among Parenting Students Transferring from Community College to a Four-Year University*

Abstract:

In California, parenting students are a growing population in higher education, with approximately 400,000 parents pursuing degrees (California State Senate, 2025). Many begin at community colleges before transferring to four-year universities, where they must navigate new academic environments and expectations while balancing financial

and caregiving responsibilities (Tighe et al., 2024). Guided by the Impostor Phenomenon framework (Clance & Imes, 1978), my qualitative case study explores how parenting community college transfer students experience and navigate persistent feelings of self-doubt despite academic success. Previous research documents parenting students' financial, academic, and caregiving challenges (Estes, 2011), while research on community college students emphasizes how institutional experiences influence transfer students' confidence and adjustment (Martinez & Munsch, 2019). However, little is known about how parenting community college transfer students experience the Impostor Phenomenon during the transition to four-year universities. Semi-structured interviews will examine these experiences and how students respond to them. Findings will expand the literature on parenting community college transfer students and inform universities on how to develop policies, programs, and support services to address the needs of parenting community college transfer students.

Chatterley, Dylan - Major: Psychology, University of Wyoming
Mentor: Dr. Kayla Burd, Associate Professor, Department of Psychology
Oral Presentation Session #4, Room: Fiesta A

Title: *Juror Decision-Making in an Intimate Partner Violence Trial: Impact of Victim Gender and Borderline Personality Disorder Psychoeducation*

Abstract:

Prior research indicates that individuals with borderline personality disorder (BPD) are at an increased risk of experiencing intimate partner violence (IPV; Baker et al., 2022). Moreover, gender differences have been found related to criminal victimization, as women are victimized more often than men, while men are taken less seriously when seeking justice (Fox et al., 2009; Hobbs, 2023). The current study examines the unique biases that victims of IPV may face given their sex (i.e., male or female), and psychoeducation regarding their BPD diagnosis (i.e., present or absent). Participants read a vignette detailing a court case in which a heteronormative IPV scenario has taken place and expert witness testimony is given regarding the BPD diagnosis. Participants then answered case-related measures. Results indicated that psychoeducation was able to reduce the likelihood of a guilty verdict.

Goodman, Hazel - Major: Psychology, Concord University
Mentor: Dr. Karen Griffie & Dr. Rodney Klein, Distinguished Professor & Professor, Department of Psychology x2
Oral Presentation Session #4, Room: Santa Ana A

Title: *The Role of ACEs on Stress Response in Traditional College Students*

Abstract:

Adverse childhood experiences (ACEs) are linked to reduced quality of life for people entering adulthood due to heightened stress responses, among other contributing factors. ACEs occur at any time before a child is 18 years old and are categorized into three broad categories: abuse, neglect, and household dysfunction. Early intervention is vital in supporting ACE survivors due to potential long-term effects such as mental illnesses, substance misuse, or chronic health problems. This study investigated 16 college students' stress levels by monitoring their heart rate during exposure to a set of

stimuli. Participants were randomly assigned to one of two stimuli groups: neutral or mildly stressful. Finally, every participant scored their ACEs through a 10-item questionnaire to determine any correlation with the stress responses. Through data analysis, no statistically significant correlation was found between ACE scores and heart rate responses. This study aims to raise awareness about the various impacts of adverse childhood experiences and the weight that they continuously hold as an individual gets older and collects more responsibility.

León Lazcano, Mariel - Major: Secondary Education (Social Studies), University of New Mexico

Mentor: Dr. Carlos LópezLeiva, Associate Professor, Department of Language, Literacy, and Sociocultural Studies

Oral Presentation Session #4, Room: Santa Ana B

Title: *Educators' Perspectives and Uses of Translanguaging in Multilingual Classrooms*

Abstract:

The increasing linguistic diversity of classrooms has prompted educators to reconsider traditional approaches to language instruction and adopt practices that better support multilingual learners. Among these approaches, translanguaging has emerged as an asset-based pedagogical framework that recognizes bilingual and multilingual students' full linguistic repertoires as valuable resources for learning. Ultimately, this study aims to explore educators' perspectives and uses of translanguaging in the multilingual classroom. This presentation will review existing literature to present initial themes and approaches that have been implemented in the field. The reviewed literature highlights translanguaging as an approach that enables multilingual students to access content, construct meaning, and engage more fully in classroom learning, but less is known about how educators conceptualize and implement these approaches within their own classroom, especially in New Mexico. Additionally, themes depicted through this review also suggest that educators' beliefs, professional development, and school contexts significantly influence the extent of how translanguaging is incorporated into classroom ecology. By showcasing these initial findings in the literature, this study advocates for culturally and linguistically responsive instructional approaches that position multilingualism as an asset rather than a deficit. As multilingual student populations continue to grow, these findings have the potential to inform teacher preparation, professional development, and educational policies that foster more equitable and inclusive learning environments.

Li, Jiaye - Major: Information Technology & Management, University at Buffalo

Mentor: Dr. Zhuoyue Zhao, Associate Professor, Department of Computer Science and Engineering

Oral Presentation Session #4, Room: Trailblazer/Spirit

Title: *DBMS Extension Fuzzing Test*

Abstract:

Database Management Systems (DBMS) have become an integral component of large scale software systems. Extensibility mechanisms that allow applications to customize DBMS code have increased extension development, but also introduced more opportunities for crashes and vulnerabilities. To detect these issues, fuzz testing is

needed: an automated technique that feeds unexpected or malformed inputs to a program to uncover bugs, crashes, and security vulnerabilities. In this research, we use PostgreSQL as our primary DBMS, building seed files and a C-language test harness that links target extensions to PostgreSQL for fuzzing. The fuzzing program first uses seed files as initial inputs, then mutates them to generate new test cases of similar length and structure. We are currently in the testing phase, fuzzing a list of about 454 extensions that pass SQL syntax checks and include user-defined functions (UDFs) — SQL functions written by users that extensions can call. In the final phase of this research, we expect to establish a reusable pipeline for fuzzing PostgreSQL extensions.

Munstedt, Saturn - Major: Molecular and Cellular Biology, University of Arizona
Mentor: Leonie Ewald, PhD Student, Institute of Experimental Pharmacology and Toxicology at the Universitätsklinikum Hamburg-Eppendorf
Oral Presentation Session #4, Room: Acoma B

Title: *Contractile and mitochondrial impairment in engineered heart tissues with myofibrillar myopathy genetic variants*

Abstract:

Myofibrillar myopathies (MFMs) are rare inherited diseases that weaken skeletal and heart muscles, often leading to heart failure, yet no curative treatments currently exist. Although different genetic variants can cause MFM, including changes in the CRYAB and BAG3 genes, patients develop many of the same heart-related symptoms, suggesting they may share common disease mechanisms. This study investigated whether mitochondrial dysfunction, which reduces the ability of cells to produce energy, is one such shared mechanism. Human induced pluripotent stem cells carrying disease-causing CRYAB or BAG3 variants were generated, differentiated into heart muscle cells, and engineered into functional heart tissues. These tissues were analyzed for their contractile performance, structural organization, and mitochondrial function. Heart tissues carrying either CRYAB or BAG3 variants showed weaker contractions, slower contraction or relaxation, and structural abnormalities compared with healthy controls. In addition, tissues with homozygous BAG3 or CRYAB variants exhibited reduced mitochondrial respiration, indicating impaired energy production. BAG3 mutant tissues also had lower mitochondrial DNA content, further supporting mitochondrial dysfunction. Together, these findings establish a new human stem cell-derived model for studying BAG3-associated MFM and demonstrate that impaired mitochondrial function occurs across genetically distinct forms of the disease. Identifying mitochondrial dysfunction as a shared feature of MFM highlights mitochondria as a promising therapeutic target and provides a valuable platform for testing future treatments that could benefit patients with different genetic causes of this currently incurable disorder.

Rizvi, Ayesha - Major: Neurobiology, University of Wisconsin - Madison
Mentor: Dr. Nathan Sherer, Professor, Molecular Virology & Oncology - School of Medicine and Public Health
Oral Presentation Session #4, Room: Acoma A

Title: *Defining the significance of CRM1/XPO1 dimerization for HIV-1 RNA nuclear export in cell-based assays*

Abstract:

Human Immunodeficiency Virus Type 1 (HIV-1) relies on the host nuclear export receptor XPO1 to transport unspliced and partially spliced viral RNAs from the nucleus to the cytoplasm, a vital step in viral replication. This process is mediated by the viral Rev protein, which multimerizes at the Rev Response Element (RRE) and recruits XPO1 via the Rev-encoded Nuclear Export Signal (NES). Previous research using purified protein in vitro suggests that XPO1 forms dimeric complexes in an RRE- and Rev-dependent manner. However, whether XPO1 dimerizes in cells during HIV-1 infection and represents a viable target for antiviral therapy has yet to be demonstrated. We hypothesize that XPO1 multimerization occurs in living cells and is enhanced by the presence of Rev and the RRE. To address this question, we established a split nanoluciferase (Nluc) complementation assay in which XPO1 proteins are expressed from plasmids and fused to complementary Large BiT (LgBiT) and Small BiT (SmBiT) luciferase fragments. When two XPO1 molecules are brought into proximity through protein-protein interactions, the fragments reconstitute an active Nluc enzyme that, upon substrate addition, produces a luminescent signal. This system enables quantitative detection of XPO1-XPO1 interactions in living cells. Using this approach, we will determine whether XPO1 dimerization depends on the presence of Rev, the RRE, and specific structural elements of predicted Rev-RRE complexes. By comparing Rev with mutants defective in RNA binding or in Rev-Rev interactions, and with RRE-deletion variants, we will determine how RNA structures influence XPO1 dimerization and whether this correlates with Rev/RRE-dependent gene expression.

Tilley, Kurtis - Major: Biology, University of Northern Colorado
Mentor: Dr. Michael Kimball, Professor, Department of Anthropology
Oral Presentation Session #4, Room: Lobo B

Title: *How Practicing Taijiquan Affects Identity and Belonging for Practitioners over 30 years of Age: A Pilot Study*

Abstract:

We know that breath and movement are both physiologically and psychologically beneficial, and group memberships are sociologically valuable for mental health. We don't know if Taiji groups are different from other memberships, or if levels of experience affect profundity and the felt sense of meaning. Loneliness and mental health are significant matters in our society and research pertaining to how Taiji affects these is limited. This study will examine how affiliation to a Taiji community influences practitioners' sense of identity and belonging. Using semi-structured interviews, this research will investigate whether belonging to a Taiji group influences identity and how that differs from other groups. These interviews will attempt to find common themes relating to changes in the perception of meaning, physical function, and psychological health over the time participants have trained. This study builds upon the already existing knowledge of the physiological and psychological benefits of Taiji and relates that to group and personal identity. It also builds upon phenomenological studies regarding increased bodily awareness by addressing how training Taiji specifically differs from other groups, how improved function affects profundity and shared experience, and how time training affects those experiences. This research could demonstrate the significance of community based mindful movement practices and add

to the knowledge healthcare professionals use to recommend these forms of interventions.

Valdez, Frankois - Major: Global Studies, University of Arizona

Mentor: Dr. Monica Ramirez-Andreotta, Assistant Professor, Department of Environmental Science

Oral Presentation Session #4, Room: Lobo A

Title: *STEAM Powered: Improving College-Going Skills and Attitudes in Environmental Justice Communities through Community-Based Youth Science Education Programs*

Abstract:

Rural communities have historically faced lower college enrollment and degree attainment rates compared to suburban and urban areas. Additionally, certain rural communities are considered Environmental Justice (EJ) communities, which may make the college-going process more difficult for youths. This study bridges the gap between Community-based STEAM Education Programs (CSEPs), rural EJ community youths (approx. ages 11-18), and Social and Emotional (SE) skills and attitudes for college enrollment and retention. Our study centered on community-based and co-created STEAM education programs in rural Arizona known as Youth Advisory Boards (YABs). Following Palawat et al. (2026), we used a mixed-methods analytical approach consisting of thematic analysis of qualitative focus groups (n=15) and quantitative/qualitative surveys. We sought to answer three main questions: (1) Do rural EJ youths experience an increase in desires to change and give back to their communities as a result of CSEPs, (2) Do CSEPs develop SE skills for college success in their participants, and ultimately (3) Do CSEPs increase chances of college enrollment and retention in EJ community youths? The results suggested an increase in attitudes and skills desirable for college admission and retention. Although directly answering our third question was outside the scope of the recorded data, results suggested an increase in SE skills and an improvement in youths' educational outlook. Therefore, we suggest further research on the relationship between college attendance and retention for EJ community youths who participate in Community-based STEAM Education Programs.

Zavala, Elizabeth - Major: Psychology and Criminal Justice, Washington State University

Mentor: Chris Barry, Professor, Department psychology

Oral Presentation Session #4, Room: Isleta

Title: *Narcissism and Impulsivity Association With Alcohol Use & Misuse Through an Ecological Framework*

Abstract:

Despite extensive research on alcohol use and misuse, two out of five college students are categorized as binge drinkers, contributing to 1,825 deaths annually. Furthermore, there is a significant gap in understanding the factors that might relate to risky alcohol consumption. This quantitative study aims to examine narcissistic personality traits and impulsivity as potential risk factors for alcohol misuse within an ecological framework. From this framework, peers represent an important microsystem that influences individual behavior. Moreover, because narcissism is associated with social status

concerns, and young adults may be more impulsive, such individuals may be influenced by peers who engage in similar behaviors.

This study aims to examine the relation between narcissistic personality traits, impulsivity, alcohol use, and Bronfenbrenner's ecological framework among young adults.

Adult participants will complete a series of questionnaires assessing their personality traits, including the Narcissistic Personality Inventory to assess narcissism and the UPPS-P scale to measure impulsivity. Alcohol use and consumption from the AUDIT will be assessed. Participants will also recruit a peer who will self-report their alcohol use.

It is expected that higher levels of self-reported narcissism and impulsivity will be correlated with greater self-reported alcohol use and misuse (H1). Higher participant self-reported alcohol use and misuse will be correlated with peer self-reported alcohol use and misuse, as well as peer-reported attitudes that favor alcohol use (H2). The relations of narcissism and impulsivity with alcohol use/misuse will be particularly strong for individuals whose peers engage in, and favor, alcohol use. (H3)

Oral Presentation Abstracts Session #5

11:25 to 11:45 a.m. Friday, September 11, 2026

Location: SUB Top Floor Rooms

These abstracts were published unedited to reflect the author's original submission

Allataifih, Noor - Major: B.S. Biology, New Mexico State University

Mentor: Dr. Charles Brad Shuster, Professor and Department Head, Department of Biology

Oral Presentation Session #5, Room: Trailblazer/Spirit

Title: *Characterization of Novel Fluorescent Probes to Study Cellular Mechanics*

Abstract:

Characterization of Novel Fluorescent Probes to Study Cellular Mechanics

Noor Allataifih, Priscila Fourzan, Taylor Landfair, and Charles B. Shuster

Department of Biology, New Mexico State University- Las Cruces, NM

The actin cytoskeleton is the primary determinant of cell shape and driver of shape change in animal cells. Understanding how alterations in the cytoskeleton translate into changes in cell mechanics not only requires direct biophysical measurements but also intracellular biosensors that can detect forces on the cytoskeleton with high spatiotemporal resolution. Towards these ends, we are testing two candidate reporters, consisting of red or green fluorescent proteins fused to the THATCH domain of Talin and the LIM domains of Zyxin. These two actin-binding domains form “catch” bonds with actin filaments, non-covalent interactions where binding to actin filaments are higher when the filament is under tension. To validate these candidates, we are expressing each a variety of cellular contexts, including cultured mammalian cells. In human U2OS osteosarcoma cell, the Talin-based reporter bound to all actin structures when expressed at high levels, whereas the Zyxin-LIM domain bound to focal adhesions and cell-cell contacts, suggesting that the Zyxin construct may be exhibiting the desired

mechanosensitivity. Current efforts focus on up- or downregulating myosin II contractility in cells expressing these constructs and then measuring whether reporter recruitment to the actin cytoskeleton increases or decreases in response. Lastly, the activity of these reporters will be analyzed in embryonic systems, where it is anticipated that they can be used to map forces in a multicellular context.

Brown, Collin - Major: Neuroscience and Cognitive Science | Molecular and Cellular Biology, University of Arizona

Mentor: Dr. Mark Lemmon, Alfred Gilman Professor and Chair of Pharmacology, Yale University: School of Medicine | Department of Pharmacology

Oral Presentation Session #5, Room: Acoma A

Title: *Rethinking the Orphan Receptor: Ligand Recognition by ErbB2*

Abstract:

Receptor Tyrosine Kinases (RTKs) are a type of surface-cell receptor that regulate essential cellular processes such as cell growth, proliferation, and survival. Dysregulation of the Human Epidermal Growth Factor Receptor (HER/ErbB) family of RTKs is implicated in numerous cancers such as breast and gastric cancer. Unlike the traditional ErbB receptors, ErbB2 lacks a known endogenous ligand and adopts an extended extracellular conformation that resembles the ligand-bound state of the other ErbB family member receptors, classifying it as an orphan receptor. The Drosophila Epidermal Growth Factor Receptor (dEGFR) shares a highly similar extracellular architecture with ErbB2 but is activated by the membrane-associated ligand Spitz, which remains tethered through an EGF-like domain and palmitoylation, increasing its local concentration near the receptor. In humans, the ErbB family contains 13 ligands that signal through the three ligand-binding receptors, with many ligands capable of activating multiple ErbB receptors. Among these, the ErbB1/EGFR ligands amphiregulin (AREG) and heparin-binding epidermal growth factor (HB-EGF) possess heparin-binding domains that promote cell-surface association, resembling the membrane-associated presentation of Spitz. We hypothesized that this mode of ligand presentation could enable direct interaction with the ErbB2 extracellular domain. To test this hypothesis, we evaluated the binding of AREG and HB-EGF to ErbB2 extracellular domain using surface plasmon resonance (SPR). In addition, we tested Epigen (EPGN), which lacks a heparin-binding domain, as a negative control. These preliminary findings support further investigation of ligand recognition by ErbB2 and may provide new insights into HER2 signaling mechanisms relevant to cancer biology.

Byrd, Grace - Major: Criminology & Psychology, University of Oklahoma

Mentor: Drs. Jeff Gruenwald, Steven Windisch, Michael Niño, and Maria Scaptura, Professor(s), Department of Professional and Continuing Studies

Oral Presentation Session #5, Room: Fiesta A

Title: *Strained Masculinity and the Endorsement of Sexual Violence Myths*

Abstract:

Strained masculinity refers to the psychological tension men experience when they perceive themselves as failing to meet socially enforced masculine norms. This strain has been consistently linked to insecurity, emotional dysregulation, and aggression, as

well as the endorsement of beliefs that justify violence against women. Such beliefs, including rape myths and domestic violence myths, reinforce cultural narratives. Understanding how masculinity strain shapes these cognitive patterns is essential for developing interventions that challenge harmful gender norms and reduce violence supportive attitudes. The present study draws on Dr. Maria Scaptura's Identity, Self Perception, and Relationships Survey (2024), a cross sectional dataset of heterosexual men aged 18-87. The survey includes measures of masculinity strain, including the Masculinity Contingency Scale, Sport Masculinity, Controlling Space, and Masculinity Challenges, alongside scales assessing endorsement of sexual violence related myths. Using regression analysis, the study examines how specific dimensions of masculinity strain predict acceptance of sexual violence myths. Results indicate that higher masculinity strain significantly increases the likelihood of endorsing both rape and domestic violence myths. The strongest predictors were the Masculinity Contingency Scale and Sport Masculinity, while Controlling Space was more closely associated with domestic violence myth endorsement. Masculinity Challenges did not significantly predict myth acceptance. These findings highlight masculinity strain as a key cognitive mechanism underlying violence supportive beliefs and underscore the importance of early interventions that address rigid gender expectations. Future work should examine whether these patterns extend to LGBTQ+ men and more diverse populations to assert external validity.

Camacho, Veil - Major: Conservation Biology, Colorado State University
Mentor: Dr. Sara Bombaci, Assistant Professor, Department of Fish, Wildlife & Conservation Biology

Oral Presentation Session #5, Room: Luminaria

Title: *"Can You Hear Me Now?": A comparison of acoustic recording outputs to measure bird biodiversity*

Abstract:

Bioacoustic recording has become an increasingly common method for non-invasive sampling of species such as birds, providing important information about avian biodiversity and behaviour. Traditionally, researchers collect data using Acoustic Recording Units (ARUs) and analyze it manually or using software built specifically for the scientific community, e.g. BirdNET. The development of easy-to-use, public-facing audio analysis tools such as the Cornell Lab of Ornithology's "Merlin" that offer near instantaneous ID via smartphone app offers a new, potentially faster approach while providing accessibility to members of the public through citizen science initiatives. However, the efficacy of using this approach is not well understood. For this research, I explore the efficacy of a bioacoustics data collection and analysis protocol that uses the Merlin app. By collecting avian acoustic data from 70 sites across two Colorado cities using smartphones and ARUs simultaneously, I am able to compare analytical outputs from both collection approaches across Merlin and BirdNET, as well as outputs between two types of smartphone compared to each other and to ARUs. This work will help inform the development of a new citizen science project called Concrete Chorus, an avian biodiversity study assessing factors that may contribute to higher diversity within urban areas across the United States.

Day, Vae (Navaeh) - Major: Native American and Indigenous Studies; Medical Science, University of Minnesota Morris

Mentor: Kevin Whalen, Associate Professor of Native American and Indigenous Studies, Department of Humanities

Oral Presentation Session #5, Room: Lobo A

Title: *The Pattern of Practice: Integrating Indigenous and Western Holistic Models in Health Education*

Abstract:

This research analyzes commonalities in holistic thinking across Indigenous ways of knowing and Western health education, focusing on how elements of Indigenous teaching and learning can address key problems in health education. STEM and medical education create a fundamental and primary issue for learners by first training students to think reductionistically in classroom settings and assessing knowledge on this basis. Later, institutions attempt to condition students back into being holistic thinkers by utilizing frameworks like the Systems Thinking Scale to help them apply their acquired knowledge to real-life situations. Students often struggle in applying their knowledge in and out of classroom settings because of how pattern recognition, as a learning skill, is treated and taught. This is because Western models treat pattern recognition as a mechanical skill to be acquired and tested. In contrast, Indigenous frameworks and ways of knowing and thinking demonstrate that pattern recognition is a useful, lived reality where cycles, ethics, and accountability are embodied. This cyclical way of thinking naturally shapes Indigenous people, how they interact with the world, and how they learn. Indigenous ways of thinking, knowing, and teaching can address this issue in health science education by interrupting the reductionist way of learning in classrooms; this is achieved through repetitive, hands-on, and experiential learning both in and outside the classroom. By using relevant knowledge and enabling learners to acquire tangible skills outside of the classroom, this integrative approach equips students and future healthcare professionals with the holistic problem-solving skills needed for real-world practice.

Dominguez, Natalia - Major: Biochemistry, St. Edwards University

Mentor: Dr. Emily Que, Professor, Department of Chemistry, University of Texas at Austin

Oral Presentation Session #5, Room: Acoma B

Title: *Should We be Worried About Antibiotic Resistance? New Delhi Metallo β -lactamase Prevalence and Inhibitor Discovery*

Abstract:

New Delhi Metallo- β -lactamase (NDM-1) is a globally disseminated, di-zinc catalytic center enzyme that confers resistance to nearly all β -lactam antibiotics, including carbapenems, which are often regarded as last-line defenses. Despite the clinical urgency, the Food and Drug Administration has no approved inhibitors for NDM-1. Design of stable orthosteric binders is significantly hindered by the enzyme's shallow active site groove and its inherent flexibility. To address this challenge, we employed a high-throughput screening strategy to identify structurally diverse, non-traditional scaffolds capable of novel mechanisms of action. Utilizing an active-site-targeting fluorescence polarization probe as a direct reporter of active-site perturbation, 14,665

compounds were screened. This binding-based approach provides higher stringency than conventional activity assays by avoiding substrate-dependent limitations. The optimized assay achieved a Z' factor of 0.61, indicating robust performance and reliable differentiation of candidate inhibitors. Candidate molecules were subjected to dose-response analysis to determine IC50 values, identifying several leads with nanomolar potency. To ensure the leads were authentic protein binders rather than non-specific chelators, compounds were evaluated via a Zinc challenge assay. Molecules demonstrating consistent inhibition are currently being evaluated through bacterial susceptibility assays to measure their ability to restore meropenem efficacy in clinical isolates. Statistical analyses are in progress, and preliminary findings regarding inhibition kinetics will be presented. This study provides a blueprint for developing narrow-spectrum agents that bypass traditional permeability barriers and combat the evolving NDM crisis.

Hollins, Mary Josephine - Major: Elementary Education with a minor in Population Health, University of New Mexico

Mentor: Dr. Mia Sosa-Provencio, Professor, Department of Education

Oral Presentation Session #5, Room: Lobo B

Title: *Embodied Healing: A look into Albuquerque's Breaking Even. How the Creative Individual Cultivates Intentional Communities.*

Abstract:

How does embodied healing, realized as dance and performance allow the creative individual to discover and curate holistic inclusive communities? How does dance troupe BreakingEven utilize performing arts to showcase embodied healing through dance and cultivate resilient creative communities which curate inclusive and meaningful avenues of narrative for women at the intersections of race, class, ability and sexuality? This qualitative research analyzes pre-existing knowledge, scholarly research and literature on embodiment realized as dance to illuminate creative individual as well as genuine inclusive communities. This qualitative research utilizes the analytical lens of Testimonio narrative, a land-based Latina Feminist methodology to review key features of Albuquerque's performing arts group BreakingEven. An analysis of literature and knowledge contextualizes moments from history to the present day. Which highlights the necessity of BreakingEven and dance groups similarly situated that proactively exercise the goal of inclusive creativity and rejection of societal norms to discover identity, agency, and community that is accessible. As dance, body movement, and performance create a trinity equivalent to the critical creative that the mind, body and soul is; embodiment serves as a ritually rich language that showcases the unique range of holistic healing.

Le, Amanda - Major: Medicine; Applied Humanities, University of Arizona

Mentor: Dr. John Ruiz, Professor, Department of Psychology

Oral Presentation Session #5, Room: Santa Ana A

Title: *Examining whether social support buffers associations between adverse childhood experiences and COVID-19 infection*

Abstract:

Over 60% of U.S. adults report at least one adverse childhood experience (ACE) with

roughly 17% reporting ≥ 4 . Growing research supports a relationship between ACEs and health, including compromised immune functioning. Less is known about the influence of social support, a moderator of stress-immune functioning relationships, on the linkages between ACEs exposure and COVID-19 infection. This study tested the hypothesis that greater social support buffers positive associations between ACEs exposure and COVID-19 infection.

Cross-sectional, self-reported survey data were collected from students across five U.S. universities ($n = 3,176$; $M_Age = 24.9$). Participants completed a COVID-19 history and validated measures of ACE exposure and perceived social support.

Most of the sample endorsed ACEs exposure (1-2 ACEs = 37.5%; ≥ 3 ACEs = 34.6%) and COVID-19 infection (58.3%). T-test results demonstrated that ACEs exposure did not differ by COVID-19 infection history, but average social support was significantly lower among participants who had never contracted COVID-19 ($t[2,895] = 3.91$, $p < .001$, $M_Diff = 1.01$). Contrary to our hypotheses, adjusted logistic regression models demonstrated that ACEs exposure, social support, and the ACEs-social support interaction were not associated with COVID-19 infection ($Bs < 0.08$, $ps > .080$, all OR 95% CIs contained 1.00).

Results indicated that likelihood of contracting COVID-19 did not differ by ACEs history, and this lack of association persisted across all levels of social support. Future research should consider differences in social support and varying measurements of infection outcomes.

Mize, Jewel - Major: Education, Society and Human Development, University of California, Riverside

Mentor: Dr. Louie Rodriguez, Vice Provost and Dean of Undergraduate Education and Professor, School of Education

Oral Presentation Session #5, Room: Fiesta B

Title: *Power of the student: The stories of Latinx First Generation students' use of Possible Selves and Social Dreaming in Higher Education*

Abstract:

Research on first-generation college students often emphasizes individual persistence to educational attainment, or studies focus on deficit ideologies, arguing that these students often lack the ability and knowledge to navigate higher education. Literature on Latinx students is shaped by their use of cultural capital, or community cultural wealth (Yosso, 2005), and academic achievement gaps. Some research focuses on student experiences of imposter syndrome due to family and social expectations and pressures. Limited research has examined how emerging concepts such as Possible Selves and Social Dreaming work together to influence the experiences of first-generation Latinx students in higher education. This study explores how first-generation Latinx students at a college campus use Possible Selves and Social Dreaming to navigate their educational journeys. By using qualitative interviews, this research examines how students envision their futures in order to create meaning, discipline, and motivation from their aspirations. These interviews also explore how and why students rely on their

Oral Presentation Abstracts Listed by Session #
Friday, September 11, 2026 - Location: SUB Top Floor Rooms

community, peers, and mentors to create hope, resilience, and motivation to navigate higher education. The researcher expects that the framework of Possible Selves and Social Dreaming will help us understand the experiences of first-generation, Latinx students as they navigate their internal vs external drives, motivations, and desires to achieve their goals to become the first in their family to obtain a college-level degree.

Ramirez, Rosa - Major: Spanish; Sociology; History, Colorado State University Pueblo
Mentor: Dr. Vaiulatasi S. Tuatoo, Interim Director, McNair Scholars Program, Trio Program

Oral Presentation Session #5, Room: Santa Ana B

Title: *Public Opinion on Bilingual Public Education System in the United States*

Abstract:

This study examines public opinion on bilingual public education in the United States and the influence of race, Latinx identity, gender, and income on attitudes toward bilingual education policies. Using a mixed-methods approach, survey data from 115 U.S. adults were combined with follow-up interviews to better understand the factors shaping public opinion.

Findings revealed strong support for bilingual public education, contradicting expectations based on earlier research on English-only policies. More than 81% of respondents supported adopting legislation similar to Connecticut's bilingual education model. Race emerged as the strongest predictor of attitudes toward bilingual education, with people of color and Latinx respondents expressing significantly higher levels of support than White and non-Latinx respondents. Gender was not a significant predictor, while income showed a secondary but meaningful influence.

Interview findings provided insight into these patterns. Hispanic participants often linked their support for bilingual education to experiences with language, cultural identity, and discrimination. White participants generally emphasized the educational, social, and economic benefits of multilingualism. Despite these differences, all interviewees supported bilingual education and opposed English-only policies.

Overall, the findings suggest that support for bilingual public education is widespread and that lived experiences and identity play an important role in shaping attitudes toward language policy in the United States. Race, in particular, influences not only opinions but also the personal meaning attached to language and education policy.

Oral Presentation Abstracts Session #6

11:50 a.m. to 12:10 p.m. Friday, September 11, 2026

Location: SUB Top Floor Rooms

These abstracts were published unedited to reflect the author's original submission

Atakilt, Milaat - Major: Communication Sciences and Disorders, University of Northern Colorado

Mentor: Dr. Caitlin Raaz, Associate Professor, Department of Communication Sciences and Disorders

Oral Presentation Session #6, Room: Acoma A

Title: *Cisplatin's Ototoxic Effects: Incorporating the Patient Perspective*

Abstract:

Hearing loss is an issue that affects a large portion of the population. Its effects are not only physical, but psychological as well; this impact is greater when the loss is not expected, affecting patients' quality of life. This study's research questions are 1) What is the patient perspective of cisplatin chemotherapy's ototoxic effects from the beginning of chemotherapy to 6-months after? 2) How satisfied are patients with the overall quality and clarity of informational counseling? With this, I propose a study to investigate the patient perspective of informational counseling prior and throughout the treatment of cisplatin chemotherapy. Researchers and providers are aware of the ototoxicity of cisplatin and are still exploring its effects, but patients, the group most susceptible to cisplatin induced hearing loss, tend to be unaware of it and the underlying implications that come with it. With the focus being on cisplatin's physiological effects, the patient perspective lags behind. Having informed consent of treatment is critical for patient-centered care. This study intends to use semi-structured interviews to address this gap in research, allowing for participants to tell their story alongside questions with direction. Gaining knowledge of patients' experiences regarding informational counseling within all stages of treatment allows for the betterment of their care, mitigation of physiological and psychological disarray that comes with obtaining and approaching a hearing loss, and increased awareness for both patients and providers on how and when it is best to communicate these potential effects.

Barkley, Juan - Major: Environmental Studies, California State University, Monterey Bay

Mentor: Dr. Madeline L. Nyblade, Assistant Professor, Department of Environmental Science, State University of New York College of Environmental Science and Forestry, Syracuse, New York

Oral Presentation Session #6, Room: Lobo A

Title: *Transcending Environmental Education: An Educational Model Guiding the Cooperation Between Indigenous Wisdom and Empirical/Western Sciences*

Abstract:

Empirical sciences tend to limit students' ability to form relationships with the natural world by requiring the separation between the researcher and research subject. In contrast, Native American educational practices center relationships through cultural and traditional ways of knowing deeply rooted in place. This research explores how we might construct an educational model where cultures can work collaboratively to address environmental issues. To answer this question, we completed a literature review of 41 readings on Indigenous environmental education suggested by faculty and graduate students at the Center for Native Peoples and the Environment at SUNY-ESF. From those 41, we selected documents by Indigenous authors that focused on education. The final literature selection included 6 books, 5 peer-reviewed journals, and 1 Master's Thesis. Juan (lead author) coded these readings, highlighting themes and viewpoints on cross-cultural work to create a vision for this cross-cultural educational model for Haudenosaunee territory. Key components of this model draw from the Two-Row Wampum treaty belt between the Haudenosaunee Confederacy and Dutch settlers. This treaty belt has two parallel rows representing Indigenous Nations and

settler nations traveling alongside each other in the river of life without interference and in peace. A second component includes the teachings around a circle, representing equality and continuance. Together, the parallel lines and a circle represent cultural individualism while forming ongoing collaborative relationships as equals. While this model is specific to this place, we hope it provides an opening for respectful engagement between Indigenous communities and the dominant culture in other communities.

Buenaventura, Jamie - Major: Biology, University of California, Riverside
Mentor: Dr. Lisa Perez-Quetives, Assistant Director, TRIO Programs
Oral Presentation Session #6, Room: Fiesta A

Title: *Breaking The Cycle*

Abstract:

Being raised in an immigrant household deeply shapes a young person's mental health, identity, sense of belonging, and the places they go for support. For children of immigrant parents, immigration stress may come from discrimination, poverty, cultural conflict, family pressure, emotional distance at home, strict parenting, school struggles, and feeling unsupported in the community. When these challenges are not addressed, youth may begin searching for acceptance, protection, respect, or belonging in spaces that place them at greater risk for gang involvement.

This research focuses on understanding how immigration stress and lack of support may make youth more vulnerable to gang affiliation, especially in communities where gang involvement is often treated only as a crime issue. Rather than labeling, profiling, stereotyping, or incarcerating gang involved youth, this project inspects the root causes that may lead young people toward gangs before involvement happens. Strain theory will guide this study by explaining how stress, pressure, blocked opportunities, and lack of guidance can influence behavior and decision making.

While this research primarily focuses on immigration stress and lack of support, it also considers the larger cycle youth can become trapped in once they are criminalized or excluded. Gang involvement affects identity, safety, mental health, and future opportunities over time. This study also recognizes how over policing and criminalization can deepen feelings of exclusion. By prioritizing prevention, this research highlights the importance of sports, mentorship, and community based programs that can provide structure, belonging, guidance, and positive alternatives before youth lose access to their potential.

Burke, Francisco - Major: Sociology, University of Arizona
Mentor: Dr. Karla Silva, Director, Hispanic Serving Initiatives
Oral Presentation Session #6, Room: Lobo B

Title: *The Clerics Who Make Do: How Academic Capitalism Impacts Survivor Support Services & The Butterfly Centers' Gender-Based Violence Prevention Initiatives at Reithwin College*

Abstract:

This Study explored the impact of Academic Capitalism on Survivor Advocacy and gender-based violence (GBV) prevention work at Reithwin College. A Digital Ethnography was conducted in which data was extracted from digital online sources with content surrounding survivor support services and GBV prevention work at Reithwin College. Four themes—lack of institutional support, lack of resources, understaffing, and budgetary shortfalls—were chosen for this study to determine if Academic Capitalism was present in a data source. 6 key sources were found to have direct themes of academic capitalism. The 6 sources consisted of 2 news articles, 2 institution-specific websites, 1 online published video documentary, and 1 digitally published student list of demands. The most common theme across the 6 sources was a lack of resources occurring in 4 out of 6 sources; understaffing and lack of institutional support were present in 3 out of 6 sources. budgetary shortfalls had the least occurrences out of the four themes appearing in 2 out of 6 sources. Understaffing was especially prevalent in Survivor Advocacy, with there being only 2 Advocates for Reithwin's campus of 50,000+ students. Additional findings suggested a relationship between the Butterfly Center and the survivor advocates, as they both encounter similar adversities under academic capitalism.

Holt, Samantha - Major: Wildlife Biology, West Texas A&M University
Mentor: Dr. Joshua Brown, Assistant Professor of Biology, Life, Earth and Environmental Science

Oral Presentation Session #6, Room: Luminaria

Title: *Mitochondrial DNA based assessment of genetic diversity and the evolutionary origin of game-farm Ring-necked Pheasants in North America.*

Abstract:

The Ring-necked Pheasant (*Phasianus colchicus*) is one of the most widespread upland game birds in the world. While this unique species is native primarily to Asia, it has long been of interest to sportsman in Europe and North America. In the US specifically, introductions started around the 1700's, with populations being naturalized by the 1900's. In Texas, the history of pheasants has been more uncertain, with populations colonizing the Panhandle in the 1950s, where they thrived until ~1980, when populations began to experience declines. This has led to ongoing game-farm releases as private landowners aim to supplement declining populations. Our objectives are to investigate the evolutionary origin and current genetic diversity of North American game-farm pheasants, particularly in the Texas Panhandle. To do so, we collected blood from known Texas game-farm pheasants as well as from a North Carolina game-farm to be used as a secondary reference population. We sequenced ~1000 base pairs of the mitochondrial DNA control region and then performed haplotype network analysis and quantified levels of genetic diversity in the different game-farm lineages. We predicted that due to artificial selection, game-farm pheasants would show evidence of population bottlenecks and increased inbreeding. We also expect that haplotype networks will show evidence of shared haplotypes if North American game-farm lineages came from the same stock, or clear haplogroup differentiation if lineages originated from different stocks. Understanding how inbreeding from introduced game-farm pheasants affects wild populations is critical for sustaining healthy and viable populations into the future.

Luhando, Benite - Major: Neuroscience and Cognitive Science, University of Arizona
Mentor: Dr. Melville Joseph Wohlgemuth, Assistant Professor, Department of Neuroscience

Oral Presentation Session #6, Room: Isleta

Title: *Influence of Experience in Sensing Behaviors During Spatial Orientation*

Abstract:

An open question in neuroscience is how experience in a novel environment shapes the acquisition of sensory information. This process is particularly important during spatial navigation and orienting, when an animal must first detect a target, direct attention toward it, and then execute movements to approach and intercept it, despite dynamic environmental disturbances. Echolocating bats provide an ideal model for investigating this question because they actively generate the sensory signals; they use to perceive their surroundings. Because vocal production, echo reception, and movement are tightly coupled, the complete sensorimotor loop can be measured in real time using synchronized audio and video recordings. In this experiment, natural hunting behaviors are recreated under controlled laboratory conditions, enabling simultaneous recordings of echolocation calls and flight trajectories during free flight in a three-dimensional environment. This project examined how repeated experience influences the sequencing of sensory sampling and motor behavior during spatial orienting. We hypothesize that experience-dependent learning will produce measurable changes in echolocation pattern and flight trajectories, reflecting more efficient sensorimotor coordination over time. Understanding these adaptive mechanisms will provide new insights into the neural principles underlying learning, spatial navigation, and active sensing across species.

Mackey, Andrew - Major: Psychology, Washington State University
Mentor: Dr. Luke Huckaby, Assistant Professor, Department of Psychology
Oral Presentation Session #6, Room: Fiesta B

Title: *Exploring Impostor Phenomenon Among First-Generation College Students from a Social Cognitive Personality Approach*

Abstract:

First-generation (FG) college students represent a historically underrepresented and academically vulnerable population, especially as academic systems often aren't designed with FG experiences in mind. FG students may thus be more susceptible to experiencing impostor phenomenon, an internalized perception that one's success is undeserved and a fear of exposure as a fraud, which can lead to negative academic outcomes. There is growing awareness of the challenges faced by FG students, yet minimal research has assessed their personality constructs in context, particularly their self-perceptions, academic goals, and whether those goals satisfy psychological needs.

Social-Cognitive Personality Theory (SCPT), an extension of Self-Determination Theory and Bandura's Social Learning approach, emphasizes dynamic interactions between personal, behavioral, and environmental factors that shape personality. This framework that explores psychological needs, goals and standards, and the broader context they are situated in, may provide a unique glimpse into how experiences of impostor

phenomenon may relate to specific needs and self-perceptions of FG students. The present study draws on the Person-in-Context Assessment (PICA) to evaluate social-cognitive personality constructs, including self-as-student schemas and academic goals and standards, among FG and continuing-generation (CG) college students.

This study sought to determine whether FG students reported higher levels of impostor feelings than CG students and whether higher scores on SCPT variables, like Relatedness Satisfaction and Goal Self-Efficacy, predicted higher levels of impostor phenomenon for FG students compared to CG students. Understanding the personality and motivational patterns of FG students could lead to practical implications for mental health support, academic advising, and institutional design.

Nava, Maira - Major: Social Work, Northeastern Illinois University
Mentor: Dr. Andrew Brake, Department Chair | Associate Professor | School Social Work Endorsement Program Faculty Lead, Social Work Department
Oral Presentation Session #6, Room: Santa Ana B

Title: *Navigating Language Choices: How Family Values, Cultural Identity, and Language Ideologies Shape Parental Decision-Making Among Bilingual Parents of Children with Language Delays*

Abstract:

Parents in bilingual households raising children with language delays often face difficult, complex decisions about language use. Research demonstrates that bilingualism does not cause or worsen language delays and may provide cognitive, social, and cultural benefits. In contrast, medical professional's advice are shaped by language ideologies that prioritize English and assumptions that associate language delays with limited bilingual capacity. Therefore, parents are left to navigate inconsistencies across systems and relationships while trying to support their child's development and maintain their family's cultural and linguistic identity. This study seeks to identify what factors influence decisions of parents of children with language delays in bilingual households when choosing to maintain their heritage language or adopt English-only practices.

Using a mixed-methods design, bilingual parents of children with language delays will complete a survey examining how professional recommendations, family values, educational systems, cultural beliefs, and personal experiences influence their language usage decisions. A subset of participants will participate in semi-structured interviews to provide a deeper understanding of how they interpret conflicting guidance and navigate these decisions within their families.

By centering parents' perspectives, this research seeks to better understand how to align professional guidance and language ideologies with family values to assist parental decision-making on at home language usage. The findings will inform culturally responsive, family-centered practices and support evidence-based recommendations that recognize bilingualism as a strength while respecting both language diversity and disability.

Peralta, Yasmin - Major: Biochemistry and Medical Sciences, University of Idaho
Mentor: Dr. Jill Johnson, Professor, Department of Biological Sciences
Oral Presentation Session #6, Room: Trailblazer/Spirit

Title: *Effect of Selective Hsp90 Mutations' Ability to Survive Various Environmental Conditions*

Abstract:

Heat shock protein 90 (Hsp90) is a molecular chaperone that is essential for protein folding, stabilization, and cellular stress response. This protein plays a critical role in maintaining proteostasis by assisting client proteins under varying environmental conditions. Mutations in Hsp90 can alter its conformational cycle, affecting its ability to respond to stress. This study examines how yeast Hsp90 mutations alter the conformational cycle are affected by environmental stressors. Previous research indicates that growth of Hsp90 mutants is affected by exposure to high salt, temperature fluctuations, and ethanol stress. Using a growth curve analysis, we evaluated how these stressors altered a mutant's stability and folding efficiency. Our findings suggest that specific stress conditions have selectively impacted mutant performance, suggesting that shifting that duration of the conformation cycle alters response to stress. With these findings, it could provide a better understanding of Hsp90 functions and bring a change to research findings and medical research.

Schildmeier, Sierra - Major: Psychology and Criminal Justice, University of Wyoming
Mentor: Dr. Joshua Clapp, Professor, Department of Psychology
Oral Presentation Session #6, Room: Santa Ana A

Title: *Impacts of Social Acknowledgment, Self-Stigma, Family History, and Trauma Type on Positive and Negative Disclosure Beliefs Following Exposure to Trauma*

Abstract:

Disclosure expectancies examine what outcomes and reactions an individual believes others may have to their disclosure of traumatic events. Disclosure expectancies can impact an individual's willingness to share about traumatic events that occurred during their lives. Family history in the study will account for parents who experienced abuse or neglect in childhood or adolescence. Current research lacks understanding of how family history may impact disclosure expectancies with many studies only accounting for family history in youth. The current study examined the impact of self-stigma, social acknowledgment, and family history on disclosure beliefs. Participants included undergraduate students (N=251) reporting probable trauma exposure on an initial screener. Students enrolled in the study completed a series of focused interviews and a series of online surveys. Regression analyses indicated that social acknowledgment was correlated with less negative and more positive disclosure beliefs. Self-stigma was found to correlate to more negative expectancies. Experiences of interpersonal trauma types showed connections to more positive beliefs while parental trauma history was correlated with greater negative expectancies. Finally, increased self-stigma evidenced a unique relation with more positive expectancies. Overall, the study increases understanding of disclosure beliefs by evaluating how self-stigma, social acknowledgment and family history may contribute to positive and negative beliefs. This research can be beneficial to better understand individual reactions to events based on their environment contributing to potentially better treatment based on individual needs.

Oral Presentation Abstracts Session #7

1:25 to 1:45 p.m. Friday, September 11, 2026

Location: SUB Top Floor Rooms

Bowen, Amy - Major: Biology, University of New Mexico

Mentor: Dr. Jake Greenberg and Dr. Kenwyn Croaock, Lecturer III and Principal Investigator, University College for Jake, and Director, Office of Pre-Health Professions Student Development for Ken, Department of Chemistry and Chemical Biology
Oral Presentation Session #7, Room: Acoma B

Title: *Medical Professional Knowledge Of Vector-Borne Diseases In New Mexico*

Abstract:

Mosquitoes and tick vectors are expanding their ranges, altering patterns of disease exposure. In New Mexico, species of concern include the mosquito *Aedes aegypti* (Yellow fever, Dengue, or Egyptian mosquitoes) and ticks such as *Dermacentor andersoni* (Rocky Mountain wood tick) and *Rhipicephalus sanguineus* (brown dog tick). Diagnosing vector-borne infections is challenging because many mosquito- and tick-borne diseases present with nonspecific symptoms. Misdiagnoses delay treatment and public health responses.

This project examines New Mexico medical professionals' awareness of vector-borne disease risks. A cross-sectional survey was distributed to pre-health and health program students and practicing medical professionals. The survey assessed knowledge of local mosquito- and tick-borne diseases, vector ecology, and diagnostic symptomology.

Understanding clinicians' knowledge regarding vector-borne diseases can inform training and communication. Improving clinician knowledge in this area is essential for protecting the New Mexico population.

The expected results of this project include identifying gaps in clinicians' awareness of local vector species and early symptomatology, with participants likely to show greater familiarity with mosquito-borne diseases than with tick-borne pathogens. Survey responses are anticipated to reveal moderate confidence in diagnosing vector-borne infections and uncertainty in distinguishing them from common viral illnesses. It is also expected that respondents will express interest in additional training related to changing vector distributions and emerging disease risks in New Mexico.

Cao, Anna - Major: Economics, University of New Mexico

Mentor: Dr. Xiaoxue Li, Associate Professor, Department of Economics
Oral Presentation Session #7, Room: Fiesta A

Title: *Analysis of SNAP Purchasing Power based on Local Food Prices*

Abstract:

Food is a necessity that is crucial to providing the body with energy and is vital to maintaining good physical and mental health. The Supplemental Nutrition Assistance Program (SNAP), formally known as Food Stamps, is a federal social support program

that provides financial assistance to help more than 40 million Americans purchase food. SNAP has shown to improve food security, increase access to nutritious foods, and lift families and individuals out of poverty. This study examines the relationship between SNAP purchasing power and the well-being of potential beneficiaries. To measure SNAP purchasing power, local food price indexes are constructed using 8 years of local food price data (2012-2018) from 10 metropolitan areas drawn from the USDA's Development of the Food-at-Home Monthly Area Prices Data. In addition, the CDC's SMART: BRFSS City and County Data is used to establish measures of well-being such as general health, physical health, and mental health. The relationship between SNAP purchasing power and well-being is measured using a difference-in-differences model. Findings will improve our understanding of how SNAP benefits influence health outcomes, leading to policy efforts aimed at improving food security in areas with higher food prices. Continued investment in SNAP remains pivotal to combating food insecurity, alleviating poverty, and enhancing quality of life.

Gloria, Jacqueline - Major: Social Work and Spanish, Our Lady of the Lake University
Mentor: Dr. Joy Patton, Associate Professor, Worden School of Social Service
Oral Presentation Session #7, Room: Fiesta B

Title: *The Influence of Family Achievement Guilt on College Persistence Among Hispanic Early College High School Graduates*

Abstract:

Family Achievement Guilt refers to the emotional distress students experience when navigating postsecondary environments that differ from their family's background. This includes feeling guilty for having opportunities their families did not have, experiencing physical and emotional distance, feeling pressure to compensate for family sacrifices, or perceiving their educational pursuits as selfish. This study explores the influence of family achievement guilt on college persistence among Hispanic Early College High School (ECHS) graduates, examining how this guilt acts as both a barrier and a source of motivation in the pursuit of a bachelor's degree. The ECHS model allows underrepresented communities to earn an associate degree while completing their high school diploma, which inherently shapes student motivation toward postsecondary education. Using an explanatory sequential mixed methods design, data was collected through a Qualtrics survey and semi-structured interviews. Quantitative data was analyzed using SPSS for t-test analysis to examine whether varying degrees of family achievement guilt significantly predict persistence, and qualitative data was examined through thematic analysis. Results found no statistically significant group differences. Thematic analysis identified five themes that explain family achievement guilt. Findings suggest that persistence among Hispanic Early College High School graduates is shaped by the interaction of family support, cultural values, and students' own agency, highlighting the importance of culturally responsive support for ECHS students.

Hill, Desmond - Major: Physics, Central Washington University
Mentor: Dr. Darci Snowden, Professor | Associate Professor, Physics
Oral Presentation Session #7, Room: Trailblazer/Spirit

Title: *How Different Fin Geometries Affect the Center of Pressure and Stability in a Rocket*

Abstract:

Rocket fins are thin aerodynamic surfaces that extend outward from the body of a rocket. Rocket fins are essential to ensure a precise trajectory, predictable movement, and aerodynamic stability of the model rocket. Three unique fin geometries: clipped delta, trapezoidal, and elliptical will be modeled in OpenRocket, simulated, and tested, each having its own model rocket with the same materials, mass, propulsion, dimensions, and avionics. Simulations will be conducted on OpenRocket to evaluate each model rocket's theoretical performance, which will be compared with each rocket's tested flight data to validate the simulated data. This study provides insight into how surface area and fin geometry affect the location of the center of pressure and stability of the rocket.

Keywords—Model rockets, rocket stability, aerodynamics, fin geometry, center of gravity, center of pressure, OpenRocket, aerospace engineering, flight simulation.

Imber, Moxi - Major: Chemistry, West Virginia State University

Mentor: Douglas Bright, Academic Lab Manager, Department of Biology

Oral Presentation Session #7, Room: Acoma A

Title: *Chemical Modification of Mycelium-Based Materials Through Citric Acid Crosslinking*

Abstract:

Crosslinking is a process in which polymer chains are covalently bridged together by a multifunctional molecule. Citric acid contains three carboxyl groups that readily form ester linkages with hydroxyl groups at elevated temperatures. Crosslinking hydroxyl-rich biopolymers (such as starch) with citric acid is a method used to make green materials more stable, durable, and water resistant. Mycelium is being used and heavily researched as a sustainable alternative to a variety of common materials. Mycelium is abundant in β -glucans, which are hydroxyl-rich polysaccharides. As such, it is hypothesized that the treatment of mycelium with citric acid will induce crosslinking. This treatment could improve the mechanical properties of mycelium-based materials for structural and other applications. In this study, mycelium blocks will be treated with aqueous citric acid solutions under varying treatment conditions and characterized to evaluate for evidence of crosslinking and altered material performance.

Molina Gutierrez, Micheal T. - Major: Psychology, University of Arizona

Mentor: Dr. William D. S. Killgore, Dr. Shivani Mann, Department of Psychiatry, College of Medicine

Oral Presentation Session #7, Room: Santa Ana A

Title: *Examining Emotional Training as a Resilience-Building Intervention Across Military Members*

Abstract:

Military service members face repeated stressors that can affect psychological functioning, making resilience an important concern in military populations. Rather than as a fixed trait, resilience is generally understood as a dynamic process of maintaining or regaining adaptive functioning after adversity (Abate et al., 2024; Egan et al., 2024; Hamby et al., 2025). Emotional intelligence (EI), including emotional awareness,

understanding, and regulation, is proposed as one of the foundations of resilient functioning (Smith et al., 2018). The University of Arizona SCAN Lab developed an online Emotional Intelligence Training (EIT) program that improved self-reported and performance-based EI, mindfulness, emotional awareness, and emotion regulation (Durham et al., 2023; Smith et al., 2024). However, it remained unclear whether these gains translated into higher resilience scores. This secondary analysis examined whether EIT increased total Connor-Davidson Resilience Scale (CD-RISC) scores and whether change differed among participants who were nondeployed, deployed without combat exposure, or deployed with combat exposure. A mixed-design repeated-measures ANOVA found no significant increase in total CD-RISC scores following EIT and no meaningful moderation by deployment or combat history. These findings suggest that EIT can improve targeted emotional skills, yet these benefits alone may not be sufficient to address the broader processes that underlie resilience. These results may also reflect a mismatch between the mechanisms targeted by EIT and the broader range of personal and adaptive capacities measured in the CD-RISC.

Murray, Kaela - Major: Anthropology, John Jay College of Criminal Justice, CUNY
Mentor: Dr. Deneia Fairweather, Assistant Professor, Anthropology

Oral Presentation Session #7, Room: Isleta

Title: *Do I Exist? An Examination of African American Youth's Perceptions of the New York City Education Curriculum*

Abstract:

Studies consistently show that African American student in the New York City Public School system underperform academically. This research will analyze the disconnect between the NYC curriculum and the lived experiences of African American Youth. The study will utilize qualitative methods and an anthropological perspective to highlight systematic gaps in education. The study sample includes African American juniors and seniors ages 16–18 in Title I public or charter high schools in low-income Bronx neighborhoods. The purpose is to better understand how African American students experience representation, identity, and inequality within the NYC school system. Participants will be recruited through flyers, emails, and collaboration with school staff. In addition, teachers, counselors, and administrators will also be interviewed to provide additional perspectives.

Rocha-Hernandez, Crystal - Major: Psychology, University of California, Riverside
Mentor: Dr. Perez-Quetives, Assistant Director, TRIO Program

Oral Presentation Session #7, Room: Santa Ana B

Title: *Religious Trauma: The Negative Effects Of A Strict Religious Upbringing*

Abstract:

A religious upbringing influences the development of an individual's identity. Religion can help many individuals with their mental health by promoting healthy religious coping mechanisms, like active prayer, instead of resorting to unhealthy coping mechanisms like relying on spiritual beliefs to avoid processing emotions. Although religion can help promote better mental health, a strict religious upbringing can risk people developing mental disorders such as depression and anxiety. Various studies done on mental health and religion have reported a positive effect on a religious upbringing among

adults, such as a sense of community. However, they rarely address the possible negative effects that a religious upbringing can have. Therefore, it is important to analyze the long-term effects of a religious upbringing, such as the development of religious trauma syndrome. A religious upbringing may negatively impact an individual's mental health long-term due to feelings of constraint as a result of shaping their intersectional identities to appease their religion. This research further examines and analyzes the long-term effects of a religious upbringing and how it contributes to the long-term impact on mental health for adults with intersectional identities. I argue through thematic analysis that although some adults do experience a positive effect, the negative effects of religious trauma are underreported.

Sandoval Diaz, Drizella - Major: Psychology, B.A., University of Arizona
Mentor: Dr. Melissa Flores, Assistant Professor, Clinical Director, Department of Psychology

Oral Presentation Session #7, Room: Lobo A

Title: *Hypertensive Disorders of Pregnancy, Social Support, and Racial-Ethnic Differences: A Systematic Review*

Abstract:

Hypertensive disorders of pregnancy (HDP), including eclampsia, preeclampsia, chronic hypertension and gestational hypertension, are the leading cause of maternal morbidity and mortality, affecting about 10% of pregnancies worldwide. Current literature indicates maternal health outcomes disproportionately affect historically excluded racial-ethnic groups and suggests social support may be associated with improved maternal health outcomes. This systematic review aims to understand how racial-ethnic differences may moderate the association between social support and HDP.

Torres, Noelia - Major: Sports and Exercise Science, University of Northern Colorado
Mentor: Dr. Abbie Ferris, Associate Professor, College of Natural and Health Sciences
Oral Presentation Session #7, Room: Lobo B

Title: *Effectiveness of Conservative Treatment for Hip Pain in Young Adults*

Abstract:

Hip pain is an increasingly recognized musculoskeletal condition among young adults and may negatively affect physical activity, daily function, and quality of life (Frank et al., 2014). It affects both the active and sedentary individuals, both male and female, and at any age. Previous research suggests that femoroacetabular impingement (FAI) and hip dysplasia may be the leading causes for hip pain in young adults. However, there is minimal on young adults with unidentified hip pain.

I purpose a study to evaluate the effectiveness of conservative treatments, including physical therapy and activity modification, in reducing pain and improving function among young adults aged 18–25 experiencing hip pain. I will be requesting between 40–80 student volunteers that are experiencing hip pain to go through a supervised home exercise program. They will need to go through a questionnaire at the beginning and throughout the study, as well as getting measurements of their hip mobility through mobility testing and hip angle measurements.

It is expected that participants who consistently complete the intervention will demonstrate improvements in hip mobility, reduced pain, and improved functional ability.

This research may provide evidence supporting conservative treatment as an effective first-line approach for young adults with hip pain and contribute to rehabilitation strategies that reduce the need for surgical intervention.

Ward, Holly - Major: Anthropology, University of Wyoming

Mentor: Dr. Allison Mann, Assistant Professor, Department of Anthropology

Oral Presentation Session #7, Room: Luminaria

Title: *Identifying the Many Varieties of Orestias Fish Found in Lake Titicaca*

Abstract:

The fish genus *Orestias* has played varying cultural and subsistence roles throughout history. *Orestias* are one of only two native fish genera found in Lake Titicaca and are the primary source of food for the endangered bird species the Titicaca Grebe (Villar et al., 2024). The number of species in *Orestias* has been debated over time, and while past studies have highlighted their genetics, only one study has created a phylogenetic tree using their DNA (Takahashi & Moreno, 2015). This study will use Genotype by Sequencing (Tabima et al., n.d.) on a collection of 45 *Orestias* comprised of six morphologically identified species from Lake Titicaca in the Andean mountain range to identify phylogenetic groups and compare sequenced genomes of each sample for commonalities and variations between species. We expect three groups to be identified in this sample set. These groups may or may not be consistent with the results of Takahashi and Moreno (2015); if consistent, two of the groups will genetically reflect morphological phylogeny, while the third will not genetically reflect morphological phylogeny. Sample species are expected to vary genetically from one another or share a significant number of genetic characteristics. These results would either support their continued categorization as separate species or they would suggest that current species classifications are not reflective of their genetics. These findings will support future research into the number of *Orestias* species found in Lake Titicaca, which can be used for both conservational purposes and archaeological research.

Oral Presentation Abstracts Session #8

1:50 to 2:10 p.m. Friday, September 11, 2026

Location: SUB Top Floor Rooms

These abstracts were published unedited to reflect the author's original submission

Amezcuca Campos, Yuridia - Major: Molecular and Cellular Biology, University of Arizona

Mentor: Valerie Schaibley, PhD, Associate Professor of Practice, Department of School of Health Professions

Oral Presentation Session #8, Room: Acoma B

Title: *A Genetic Counseling Workforce Assessment: Analyzing Workforce Practices Across Specialties*

Abstract:

Genetic counselors (GCs) are healthcare professionals that assess patient/familial risk for genetic conditions and provide patient support. As the field continues to expand and evolve, it is important to understand the workforce. Although current studies examine workplace practices, analysis by specialty is limited. This study examined differences in workplace practices across clinical genetic counseling specialties in the United States

by focusing on patient wait times, billing methods and patient referrals. A national workforce survey was distributed through the American Board of Genetic Counseling (ABGC) by email to certified GCs. Chi-squared tests were conducted on variables that focused on billing, referrals, and wait times. The data's final sample size after removing nonclinical GCs, those defined as non-patient facing or only seeing patients via telehealth, was 128. The primary specialties reported among participants were reproductive health, cancer, and pediatrics. Across clinical GC specialties, we found a significant difference in referrals for patients with complex conditions ($p < 0.01$), general education ($p < 0.0001$), and explanation of test results that other providers could not provide ($p < 0.005$). Wait times were also significantly different across specialties ($p < 0.0001$). Pediatrics had high wait times, while reproductive health had the lowest wait times. These results on patient wait times were consistent with previous research. Differences in referrals suggest that GC roles vary across specialties, reflecting differences in patient needs. These findings contribute to the understanding of differences in workplace practices across GC specialties. Future research should explore the factors driving these differences.

Angulo, Denise - Major: Psychology, California State University, Monterey Bay
Mentor: Dr. Mayra Y. Bámaca (2.), Associate Professor of Developmental Psychology,
Department of Psychology Sciences

Oral Presentation Session #8, Room: Santa Ana B

Title: *Roots and Identity: The impact of Grandparent Socialization on Grandchildren Identity*

Abstract:

Latinos in the U.S. face challenges involving racial discrimination, deportation, and hostile political climates. One developmental process, Ethnic-racial identity (ERI), can help individuals cope by promoting cultural pride, belonging, and resilience (Yip, 2018). Studies examined how Ethnic-racial socialization (ERS) encourages ERI by helping youth understand discrimination, build resilience, and maintain connections to their culture (Hughes et al., 2006). Most studies examine parents as drivers of ERS, and less attention has focused on grandparents, despite their prominent influence in Latino families (Chen & Guzman, 2022). Burgeoning evidence suggests that grandparents are vital agents of ERS. For example, Jackson et al. (2020) noted that grandparents were often the primary source of cultural exposure. Moreover, research suggests that relationship quality can influence the association between ERS and ERI. Constante et al. (2020) found that family cohesion shaped the association between ERS and ERI among Latinx adolescents. This study examined whether grandparent ERS (cultural socialization and advocacy) was associated with grandchild ERI (resolution) and whether relationship quality (affection) moderated these associations. Findings showed that grandparent cultural socialization ($\beta = .1958$, $p = .0010$) and advocacy ($\beta = .1212$, $p = .0172$) were positively associated with ERI resolution. In addition, grandparent affection strengthened the associations between cultural socialization, advocacy, and ERI resolution ($\beta = .1279$, $p = .0014$ and $\beta = .0957$, $p = .0088$, respectively). This study expands understanding of Latinx college students' ERI and emphasizes the need to understand grandparents as contributors to culture, emotional development, and ethnic identity.

Boegeman, Leah - Major: Chemical Engineering, University of Cincinnati
Mentor: Dr. Yoonjee Park, Associate Professor, Department of Chemical and Environmental Engineering

Oral Presentation Session #8, Room: Acoma A

Title: *Light-Activated Liposomes for Drug Release: Comparison of Geometric Position of Photothermal Croconium Dye*

Abstract:

With light-activated drug delivery a photothermal agent is needed to activate the liposomes. Commonly, gold nanorods are used, however, these are prone to having minor toxic effects. For sensitive areas such as the eye, low toxicity is needed. Croconium dye has been shown to have lower toxicity and is photothermally active when using the 808nm laser.

This study aims to prove the optimal geometric position of the Croconium dye on the liposome system. In previous studies, the dye was placed in the lipid bilayer. However, this showed a lower performance than the free dye showed. A new geometric position was proposed to include the dye on the outside of the lipid bilayer.

A direct comparison of the two systems was performed with the goal of finding that the new system has higher drug release at a lower concentration of drug, decreasing the potential of toxicity.

To execute the comparison, different concentrations in the liposomes were analyzed and multiple trials of drug release were conducted. Three power densities (4W/cm², 6W/cm², and 8W/cm²) were used at three time intervals (0min, 1min, and 2min) to compare the two systems.

During the studies, the original system showed wavelength absorbance of 650nm while the new system showed absorbance at ~800nm. Higher absorbance around 808nm allows the laser to have a higher effect on the liposomes. The new system also showed a higher encapsulation of drug and ultimately better drug release at a lower concentration of dye.

Bosco, Noel - Major: Biology, Northeastern Illinois University
Mentor: Dr. Beth Reinke, Associate Professor, Department of Biology
Oral Presentation Session #8, Room: Luminaria

Title: *Season-Mediated Individual Change In Plastron Coloration In Painted Turtles (Chrysemys Picta)*

Abstract:

Studying turtle coloration can help us understand evolutionary pressures and mechanisms that lead to variation within a species. Painted turtle (*Chrysemys picta*) plastron coloration is due to carotenoid pigments that could have antioxidant properties that protect them from oxidative damage after winter brumation. We hypothesize that turtles will have duller plastrons after harsher winters, because they will spend more carotenoids to protect against oxidative damage. We captured individuals and took color-standardized pictures to add to an existing database of the same population. We used the image editing software Image J to extract quantitative color data from pictures of the same individuals from 2019-2025 and measured individual change over time. We will run a time-series analysis to determine if a turtle's coloration in a given year is

related to the previous winter's temperature and other climate variables. By observing the variation in coloration over time, we can learn about the antioxidant role of carotenoids, as well as how increasing temperatures could affect color evolution.

Chavarria, Casandra - Major: Psychology, University of Arizona

Mentor: Dr. Sarah Grace, Assistant Professor, Psychology

Oral Presentation Session #8, Room: Isleta

Title: *ChatGPT as an Academic Tool: Perceptions Among First-Generation Hispanic/Latino/a College Students*

Abstract:

Artificial intelligence has gradually been integrated into higher education institutions over the last couple of decades, but only recently, in late 2022, did generative AI break into higher education with the launch of ChatGPT. The integration of generative AI into higher education shifted traditional classroom structures and impacted student learning and professors' teaching practices. Existing research has collected data on student and faculty perceptions of generative AI in higher education but has failed to present literature on how generative AI is affecting different demographics of students, specifically first-generation and Hispanic/Latino/a college students. The purpose of this study is to highlight the perceptions of first-generation Hispanic/Latino/a students on ChatGPT and generative AI tools. This study also evaluates if first-generation status and Hispanic/Latino identity influence student perception on ChatGPT. A mixed-methods survey was given to 558 undergraduate students enrolled across four sections of an introductory level psychology course that integrated ChatGPT into the coursework. Six likert-scale survey questions asking students about ChatGPT and generative AI's influence on academic development, support, and confidence were analyzed for the study. A two-factor ANOVA test was conducted for each of the six survey questions, and all results came back non-statistically significant. While this study's findings are not statistically significant, further research on generative AI influence on first-generation and Hispanic/Latino/a students is still needed to determine whether generative AI tools are helping meet the specific educational needs of this population of students or if generative AI is being used as a temporary solution by higher education institutions.

Green, Sasha - Major: Public Health, Washington State University

Mentor: Dr. Kimberly McBride, Associate Professor, School of Molecular Biosciences

Oral Presentation Session #8, Room: Lobo B

Title: *Exploring Male College Students' Attitudes, Perceptions and Motivations Toward Male Hormonal Contraception*

Abstract:

In the US, roughly fifty percent of pregnancies are unintended. While women have had access to a wide range of contraceptive options since the 1960s, contraceptive methods for men have remained limited to withdrawal, external condoms, or vasectomies. Efforts to develop hormonal male contraceptives have been ongoing since the 1970s but progress has been slow due to both the physiological challenges associated with spermatogenesis and perceived financial and liability risks. Despite these challenges, research suggests that there is significant demand for novel male contraceptive options and recent consumer data indicates that millions of men in the United States would

consider using new methods. Existing research on social attitudes toward male birth control has largely focused on men in long-term, committed relationships. However, this focus leaves a gap in understanding how sexually active young adult men think about male hormonal contraceptives. This is a critical oversight given that a substantial proportion of sexually active college men have more than one partner, whether simultaneously or sequentially. This study aims to explore college men's attitudes, perceptions, and motivations toward male birth control. Eligible participants will be recruited from the student population at a mid-sized university located in the northwestern United States. A mixed-methods approach that includes surveys and structured interviews will be utilized. The study findings may help researchers identify the characteristics of male hormonal contraceptives that will make a method more likely to be adopted by young men. The data can also be applied to developing educational programs to prevent unintended pregnancies.

Johnson, Tina - Major: Public Health, University of Cincinnati

Mentor: Dr. Stephanie Weber, Associate Professor, UC Department of Pediatrics

Oral Presentation Session #8, Room: Lobo A

Title: *Understanding Behavior Challenges after Prenatal Opioid Exposure: A Caregiver Perspective*

Abstract:

Background:

Children with prenatal opioid exposure (POE) face a higher risk of neurodevelopmental challenges and behavior difficulties. Previous analysis of a shared decision-making tool used in a clinic for preschoolers with POE revealed problem behavior as the top caregiver concern, with 72% being referred for behavioral therapy. However, barriers to accessing behavioral interventions and the caregiver perspective remain understudied.

Project Objective:

Our objective is to gather information about the behavioral challenges of children with POE, caregivers' priorities for interventions, and barriers to care in order to inform the development of therapeutic behavioral interventions.

Lambert-Norfleet, Jeremiah - Major: Criminology, John Jay College of Criminal Justice, CUNY

Mentor: Dr. Robert Garot, Assistant Professor, Department of Sociology

Oral Presentation Session #8, Room: Fiesta A

Title: *Beyond the Food Pantry: Food Justice, Institutional Responsibility, and Student Need at CUNY*

Abstract:

Food insecurity impacts millions of people in the U.S. Commuter Students in urban settings such as New York City are at a particular disadvantage, often having to choose between work, commuting costs, family commitments, academics, and access to healthy, culturally relevant foods. These struggles can negatively affect students' well-being and academic success. To help address this issue, CUNY campuses have established Wellness and Health Centers that offer students free or low-cost medical

care, mental health support, and emergency food resources. However, research shows nearly 39% of CUNY students experience food insecurity, suggesting that many student needs are not being met, even though resources are available. This study seeks to explore this gap by examining accessibility, strengths, and limitations of these centers through interviews with the directors who oversee these support services to better understand this disconnect between students' lived realities and the resources available to support them.

Maldonado Castellanos, Alexander - Major: Mechanical Engineering, University of California, Riverside

Mentor: Dr. Lisa Perez-Quetives, Assistant Director, McNair Scholars

Oral Presentation Session #8, Room: Trailblazer/Spirit

Title: *Surviving atmospheric reentry: An introductory study of drag reduction on space vehicles using oblique wing designs and porous opposing jets*

Abstract:

As the aerospace industry develops designs aimed at increasing performance for space exploration, the incredibly demanding conditions of atmospheric reentry become a crucial barrier that requires constant optimization for practical operations. Several recent advancements have been made to decrease drag, rolling, and yawing moment under high velocity conditions including an oblique wing shape design proposed by Sun. However, the study did not explore the benefits and liabilities of their proposed oblique wing designs in higher velocities such as the hypersonic speeds that are reached during reentry. Additionally, the Porous Opposing Jet systems studied by Luo demonstrate potential application for thermo-shielding and drag reduction in hypersonic vehicles. This study aims to leverage these advancements to first understand how the reduction in drag and increased lateral stabilities shown in the proposed oblique wing designs function in the altered shock structures created by the POJ systems. Using CFD software to create numerical simulations. These simulations will be analyzed using RANS to study flow fields created by OWD and POJ under hypersonic velocity and compared to previous observations at lower velocities. Secondly, I will determine whether the proposed design can still reduce the rolling and yawing moments known to be a problem in traditional oblique wing designs in the reentry environments withstood by hypersonic vehicles.

Martin, Layla - Major: Psychology, University of New Mexico

Mentor: Dr. Cecilia A. Hinojosa, Assistant Professor, Department of Psychology

Oral Presentation Session #8, Room: Santa Ana A

Title: *Perceived Historical Loss, PTSD, and Alcohol Use Among Emerging Adult Latina and Native American Women with Histories of Sexual Trauma*

Abstract:

Historical trauma is an invisible wound that can persist across generations through the effects of colonial violence and the loss of culture, land, and language. It has been associated with posttraumatic stress disorder (PTSD) symptoms and maladaptive coping, including alcohol use, and is especially relevant for Native American and Latina women who experience elevated rates of violence and trauma, particularly during emerging adulthood (ages 18-29). This study examines whether perceived historical

loss is associated with PTSD symptom severity and alcohol-related behaviors among emerging adult Latina and Native American women with histories of sexual trauma in the Southwest. Data collection will include validated, standardized measures of historical loss, PTSD, alcohol use, sexual trauma, and acculturation-related experiences, along with semi-structured interviews, developed in collaboration with a community advisory group. Quantitative analysis will use a simple mediation model to test associations between historical loss and alcohol use with PTSD as the mediator. Interview data will be analyzed using thematic analysis to contextualize quantitative findings and account for additional factors related to participants' PTSD and alcohol use. It is anticipated that higher perceived historical loss will be associated with greater PTSD symptom severity and alcohol use, with PTSD partially mediating this relationship. Latina and Native American women face overlapping exposures to trauma. Understanding the role of historical loss may be especially useful for creating culturally grounded measures as well as prevention and intervention efforts that better align with community needs.

McDermid, Ian - Major: Psychology, University of Central Oklahoma
Mentor: Dr. Robert Mather, PhD, Professor, Psychology Department
Oral Presentation Session #8, Room: Fiesta B

Title: *Reexamining the Deficit Narrative: Psychological Profiles of Traditional and Nontraditional College Students*

Abstract:

Three quarters of U.S. undergraduates meet at least one criterion for nontraditional status, yet institutional support for this population remains organized around a deficit assumption: that nontraditional students are psychologically at risk by virtue of their structural circumstances. This pilot study tested that assumption directly. Traditional ($n = 82$) and nontraditional ($n = 204$) college students at a regional public university were compared on five psychological constructs: psychological well-being (Ryff), contingent self-esteem (Kernis), self-concept clarity (Campbell), authenticity (Kernis-Goldman), and life satisfaction (Diener). Classification followed a modified NCES framework using five criteria at a single-criterion threshold, with age as a covariate. Two MANCOVAs on composite and subscale scores yielded no significant group differences on any identity-level construct. The sole significant finding was a small group difference on life satisfaction, $F(1, 283) = 4.565$, $p = .033$, $\eta^2p = .016$, with traditional students reporting higher satisfaction. This effect disappeared when controlling for first-generation status ($p = .668$). Post hoc decomposition confirmed that non-first-generation nontraditional students were indistinguishable from traditional students ($p = .917$), while first-generation nontraditional students drove the entire difference ($p = .011$). Parental education predicted life satisfaction as a linear gradient (Spearman $\rho = .168$, $p = .005$), and when entered as a predictor, rendered the group variable nonsignificant ($p = .442$). Results suggest that the life satisfaction gap reflects graded intergenerational resource deprivation rather than a psychological deficit attributable to nontraditional student status.

Keywords: nontraditional students, first-generation college students, psychological well-being, life satisfaction, deficit narrative

Oral Presentation Abstracts Session #9

2:15 to 2:35 p.m. Friday, September 11, 2026

Location: SUB Top Floor Rooms

These abstracts were published unedited to reflect the author's original submission

Beltran, Kimberly - Major: Psychology, West Texas A&M University

Mentor: Dr. Alicia Macchione, Assistant Professor of Psychology, Psychology, Sociology and Social Work

Oral Presentation Session #9, Room: Lobo A

Title: *"Affirming the Healer, Honoring the Patient: Psychological Strategies for Equitable BIPOC Care"*

Abstract:

Racial and ethnic bias can influence how healthcare providers interact with patients, potentially affecting confidence in care, empathy, communication, and treatment decisions. Because these biases can contribute to disparities in patient experiences and outcomes, identifying practical strategies to reduce them is important. The present study examines whether two brief interventions, self-affirmation and commonality-focused reflection, can reduce racial and ethnic bias in healthcare providers' responses to patients.

Approximately 300 healthcare providers are being recruited for the study. Participants are randomly assigned to complete a self-affirmation exercise, a commonality-focused reflection, or a neutral control writing task. They then review a standardized patient profile depicting either a BIPOC or non-BIPOC male patient presenting with the same clinical concern. Participants report their confidence in providing care, empathy and respect toward the patient, diagnostic certainty, comfort communicating with the patient, willingness to spend additional time with the patient, and likelihood of providing a referral.

We predict that providers will respond less favorably to the BIPOC patient than the non-BIPOC patient, demonstrating racial and ethnic bias in patient evaluations. We also predict that both the self-affirmation and commonality-focused interventions will reduce this difference, leading to more equitable responses across patients compared with the control condition. Data collection is currently ongoing and will be completed prior to the conference. This research may help identify simple, accessible strategies healthcare providers can use to reduce bias and promote more equitable interactions with patients from diverse backgrounds.

Chowdhury, Iqra - Major: Public Health, University at Buffalo

Mentor: Dr. Jamal B. Williams, Associate Professor, Public Health

Oral Presentation Session #9, Room: Acoma B

Title: *Motivational Interviewing in Collectivist and Islamic Contexts: A Pilot Survey with Afghan Community Mental Health Trainees*

Abstract:

Motivational Interviewing in Collectivist and Islamic Contexts: A Pilot Survey with Afghan Community Mental Health Trainees Abstract: Afghan refugees experience significant mental health challenges, yet barriers such as stigma, language differences, and limited access to culturally responsive care can prevent individuals from seeking support. Motivational Interviewing (MI) is an evidence-based counseling approach that promotes behavior change by helping individuals explore motivation and resolve ambivalence. While MI is traditionally grounded in individual autonomy and intrinsic motivation, this research explores how it translates to collectivist and Islamic contexts, where family, community, and faith can influence decision-making. We conducted a narrative literature review of 18 peer-reviewed articles and a pilot survey of seven Afghan community mental health worker trainees participating in a New York State-funded MI training program. Findings suggest that MI's collaborative and client-centered principles are compatible with collectivist and Islamic perspectives but may benefit from culturally responsive adaptations. Survey responses highlighted the influence of family, faith, and personal coping strategies, while all respondents identified mental health stigma as a barrier in their community. This research will help inform culturally responsive adaptations of MI and improve mental health support for Afghan and other underserved Muslim communities.

Cooper, Jobie - Major: Marketing Major, University of Central Oklahoma
Mentor: Dr. Grant Aguirre-Y-Luker, Professor of Sales and Marketing, Marketing Department of the College of Business
Oral Presentation Session #9, Room: Fiesta B

Title: *The Cognitive Impact of Generative AI in Higher Education*

Abstract:

The rapid adoption of generative artificial intelligence in higher education has changed how college students study, write, solve problems, and complete academic assignments. Although generative AI may improve productivity and provide academic support, concerns remain regarding its potential effects on critical thinking, memory retention, independent problem-solving, and student dependence. This mixed-methods study examines how college students use AI and how they perceive its influence on their cognitive and academic experiences. The study specifically investigates students' frequency and purposes of AI use, whether AI serves as academic scaffolding or dependency, its perceived effects on critical thinking and information retention, and the role colleges and professors should play in promoting responsible use. Quantitative data were collected through an anonymous Qualtrics survey completed by 168 college students. Survey responses were analyzed using descriptive statistics to identify patterns in AI usage, student attitudes, and perceived learning outcomes. Qualitative data were collected through 20-minute, in-depth interviews with six college student workers. The interviews were transcribed and analyzed to identify recurring perspectives and experiences related to AI use. By combining survey data with students' personal experiences, this research offers a student-centered examination of both the benefits and risks associated with generative AI in higher education. The study contributes to ongoing discussions regarding AI literacy, academic integrity, and cognitive development. Its findings may assist colleges and instructors in developing

policies and instructional practices that encourage students to use generative AI as a supportive learning resource without replacing independent thought, meaningful engagement, or the development of essential academic skills.

Costello, Katherine - Major: Planetary Geosciences and Applied Mathematics, University of Arizona

Mentor: Dr. Caroline Morley, Associate Professor, Department of Astronomy, University of Texas at Austin

Oral Presentation Session #9, Room: Trailblazer/Spirit

Title: *Exoplanet Atmospheres: Cloud Behaviors of SIMP-0136*

Abstract:

Exoplanets are difficult observational targets due to their small size and the brightness of the star they orbit. Brown dwarfs, or failed stars, are excellent analogs for researching exoplanets as their atmospheres are similar. SIMP-0136 is an isolated planetary mass object that lies on the boundary between exoplanets and brown dwarfs. Current atmospheric observations of SIMP-0136 are best explained with a patchy forsterite cloud layer above an opaque iron layer. These observations also reveal brightness, or flux variations, thought to be the clouds appearing as the object rotates. These variations are not well understood, so we utilize a cloud model to investigate how different parameters impact the strength of the flux. Four parameters were varied: the amount of iron and the amount of forsterite, the temperature of the object, and the sedimentation efficiency. For each variation, a cloud model was created and then applied to generate an atmospheric spectrum. This spectrum was used to calculate the flux transmitted through two different James Webb Space Telescope (JWST) filters. Our analysis of flux variations shows that temperature doesn't largely impact the flux. Forsterite and iron's impact are independent of each other, but they both depend on the sedimentation efficiency. Increasing the sedimentation efficiency leads to thinner clouds, and therefore a higher flux, while lower flux is achieved by either increasing the amount of forsterite or iron.

Guare, Kage - Major: Environmental Science, Northeastern Illinois University

Mentor: Dr. Beth A. Reinke, Associate Professor, Department of Biology

Oral Presentation Session #9, Room: Luminaria

Title: *Aquatic Mites (Hydrachnidia) as Bioindicators of Long-term Physiochemical Conditions of Lac Courte Oreilles*

Abstract:

Aquatic mites (Hydrachnidia) are bioindicators whose presence in bodies of water can be used to assess environmental conditions. There are over 7,500 species of aquatic mites, but their presence in freshwater bodies is often ignored due to their small size (1-2mm) and a lack of knowledge about them. Lac Courte Oreilles is a large, two-story fishery recreational lake in Sawyer County, Wisconsin that presents a range of shoreline conditions. We were interested in assessing aquatic mite biodiversity in sites with different environmental conditions and testing for correlations between the physicochemical factors of the water and the genera of mites present. Aquatic invertebrate traps were placed in seven locations of the lake to attract aquatic mites in the littoral zone. pH, conductivity, nitrates, temperature and turbidity were measured at

each site the night the traps were deployed. Mites were then collected the next day and preserved in ethanol. We used microscopy to analyze the colors, setae, palps and ventral view of the mites' shields to identify the genus. We expect to find that the genera found at each site will change depending on the conditions of the water. This could make certain genera of aquatic mites indicative of specific long-term water conditions. Mites are under-represented organisms in aquatic ecology and should be considered more often for their bioindicator potential. Adding aquatic mites (family/genus specific and not lumped as one) to macroinvertebrate water assessments would further our understanding of the long-term health of our freshwater bodies.

Morales-Greene, Xavier - Major: Sociology, Northeastern Illinois University

Mentor: Dr. Aneta Galary, Instructor, Department of Sociology

Oral Presentation Session #9, Room: Lobo B

Title: *The Colonized Workspace: How Contemporary Workplaces Reproduce Colonial Arrangements and Logics to Control and Exploit Human Labor*

Abstract:

Work environments exhibit a variety of characteristics that are indicative of larger societal phenomena and the more individualized factors which create them. These characteristics/factors can be seen in work type, power imbalances/organizations, shift structures, workspace, and so on. It is through these factors that the global history of colonization comes through. Reinforcing norms and mechanisms of control which come inherently to the teachings of capitalism, which has historically developed through colonial projects. The colonial nature of the workplace and labor as a whole is an area of analysis rarely examined by academics outside of postcolonial studies. This study intends to intersect labor theory—the study of labor and workplace organizations—and postcolonial theory—the study of colonialism and its lasting effects. This intersection will be used to investigate the ways in which the ways in which Western colonialism in particular has influenced the workplace and the way managerial control over laborers and the labor process is formulated. Interviews of management and workers will be used to investigate hierarchies of racialized labor and exploitation amongst the staff. As well as participant observation of the labor process from the role of a busser for a period of 8 days. This investigation seeks to answer two questions: In what ways are colonial logics of control and labor exploitation reproduced in the workplace? How does the modern workplace perpetuate colonial epistemologies and control norms? This line of research will provide insights to better improve upon oppressive work environments and practices.

Noriega, Dorian - Major: Mechanical Engineering, University of Arizona

Mentor: Dr. Roberto Andresen Eguiluz, Professor, Department of Bioengineering, UC Merced

Oral Presentation Session #9, Room: Acoma A

Title: *Investigating the effects of cannabidiol exposure and substrate stiffness on micropatterned endothelial monolayer contractility*

Abstract:

Cannabidiol (CBD) is a non-psychoactive phytocannabinoid isolated from Cannabis sativa that has been shown to have anti-inflammatory and anti-cancer effects in both

animal models and in vitro cell models. In cancer, tumors can cause increased local tissue stiffening and increased vascularization due to the secretion of growth factors that recruit the endothelial cells, which form the inner lumen of the vasculature. However, whether CBD exposure alters endothelial cell mechanics and whether these effects are modulated by substrate stiffness remains unknown. To address this question, human umbilical vein endothelial cells (HUVECs) were seeded on collagen-patterned polyacrylamide hydrogels (PAH) with Young's moduli of 8 and 32 kPa. Then, HUVECs were cultured on micropatterns to confluence before treatment with 1 μ M and 10 μ M CBD for 24 hours. Using traction force microscopy (TFM), fluorescent bead positions were imaged before and after HUVECs were attached to the PAH, then a MATLAB-based TFM macro was used to quantify cell contractility, cell area, root-mean-squared tractions, and normalized tractions. However, ongoing optimizing is required as first, HUVECs formed cord-like structures rather than confluent monolayers and second, fluorescent beads were not visible beneath the patterned regions, suggesting partial disruption of the polyacrylamide hydrogel surface during fabrication. To address these challenges, hydrogel polymerization and HUVEC seeding time was altered but requires further optimization, and collagen patterning protocols are being optimized. This work will provide insight into how CBD and substrate stiffness interact to regulate endothelial cell mechanics, improving our understanding of vascular function in healthy and diseased tissue.

Ortiz, Zandria - Major: Psychology, University of New Mexico

Mentor: Dr. Cecilia A. Hinojosa, Assistant Professor, Department of Psychology

Oral Presentation Session #9, Room: Santa Ana A

Title: *Sex Differences in the Reward-Related Neurocircuitry of Trauma-Exposed, Alcohol-Using Individuals*

Abstract:

Posttraumatic stress disorder (PTSD) and alcohol use disorder (AUD) are highly co-occurring (PTSD + AUD), with individuals having both disorders often experiencing greater symptom severity and worse health outcomes relative to those with only one disorder. Of additional significance, women develop PTSD at twice the rate that men do, and also suffer more detrimental health effects from alcohol consumption. Crucially, very few studies have examined the neural underpinnings of both ailments in their comorbidity, although separate research for each disorder has revealed similar reward processing alterations among people with either PTSD or AUD. This cross-sectional sub-study, via data collection from the Sex Hormones, Alcohol, & Reward in Exposure to trauma (SHARE) Study, will use functional magnetic resonance imaging to examine the reward-related neurocircuitry of trauma-exposed, alcohol-using individuals during the completion of a monetary reward task, aiming to (a) identify the neural mechanisms that may contribute to PTSD + AUD and (b) investigate sex differences in this context. Namely, we believe that the aforementioned sex discrepancy may reflect more severe impairments in reward processing among females. With past research illuminating the ventral striatum as commonly hypoactive during reward tasks in people with AUD or PTSD, we first hypothesize that females will exhibit reduced nucleus accumbens (NAcc) activation during gains versus losses compared to males. Given the role that the medial

prefrontal cortex (mPFC) plays in value-based decision making, we also predict that females will exhibit lower NAcc-mPFC functional connectivity during reward processing, reflecting dysregulated frontostriatal circuitry and diminished executive control of the reward response.

Salguero Jimenez, Edyn - Major: Political Science & History, University of California, Riverside

Mentor: Dr. Alessandro Fornazzari, Associate Professor, Ethnic Studies

Oral Presentation Session #9, Room: Santa Ana B

Title: *Violence, Immigration, and Economic Stagnation: Guatemala and El Salvador in the Cold War*

Abstract:

From the 1960s through the 1990s, Central America was plagued by proxy wars, where major powers indirectly supported local political combatants, which left long-lasting damage to the countries of the region, such as Guatemala and El Salvador. Their economy, politics, and family structure still feel the aftermath of the wars to this day. The United States (U.S.) utilized the military in Guatemala and El Salvador to place leaders who aligned with the United States' political and economic goals. The U.S. intervention in these countries impacted immigration and increased violence that led to the disappearance of approximately 40,000 people in Guatemala known as the "Silent Holocaust". However, this period in Central American history is often overlooked despite the US foreign policy halting the progress and development of the region. This research project analyzes the testimonies of Guatemalan and Salvadoran people to show that the Global North's foreign policy has politically destabilized the region. Through a comparative analysis and literature review, I show that the unstable political climate of Guatemala and El Salvador created the conditions that allowed the U.S. military intervention to occur for its own political gain. Although the United States and the Soviet Union did not engage directly with Central America, it shows how the Cold War had a greater global influence beyond Eurasia.

Verdugo-Lopez, Paulina - Major: Business Administration, University of California, Riverside

Mentor: Dr. Kyle E. Ingram, Associate Professor of Teaching in Management, School of Business Admin Ops

Oral Presentation Session #9, Room: Fiesta A

Title: *Paradox of Citizenship: Systemic Barriers Faced by Transnational U.S. Citizens Seeking Postsecondary Education*

Abstract:

U.S.-born citizens who left the country as minors and received their primary and secondary (K-12) education in Mexico face severe political, systemic, and institutional barriers when returning to the United States seeking to pursue higher education as adults. Framed by the paradox of legal citizens being treated as non-citizens, this research study evaluates the gap between federal educational equity mandates and local institutional policies using borderlands theory from Gloria Anzaldúa, framing

postsecondary institutions as active borderlands. A comprehensive analysis of current educational policies and literature reveals that a lack of coherent policy and cross-border communication results in a massive loss of human talent, specifically of bicultural individuals who could serve as bridges between both nations. The findings suggest that educational attainment for this transnational population is not a linear result of academic grit, but is heavily restricted by systemic barriers. Ultimately, this research study underscores the value of establishing standardized cross-border credit transfers while highlighting the critical need for equitable institutional pathways that recognize the unique legal and educational status of returnee U.S. citizens.

Zambrano, Jennifer - Major: Chicana/o and Latinx Studies, University of Northern Colorado

Mentor: Dr. Ather Zia, Associate Professor, Department of Anthropology and the Department Gender Studies

Oral Presentation Session #9, Room: Isleta

Title: *No soy chismosa, soy informativa: I'm Not a Gossip, I'm Being Informative*

Abstract:

Chisme is an informal practice of communication that shares information amongst Latines. This practice has long been associated with feminine characteristics and is therefore dismissed as trivial. Numerous scholars, such as Ybarra and Player, suggest that chisme is feminist praxis and resistance for Latines and Women of Color. Their reasoning lies within chisme's ability to create trust, provide an emotionally structured environment, and host conversations that would not happen outside of other chismosas. Published research on chisme is overwhelmingly positive, with common themes arguing that it serves as a site for feminist discourse and colonial resistance. However, gaps remain in understanding negative aspects of chisme. Zaragoza-Petty and Flores diverge from the notion that chisme serves primarily as a decolonial practice. Both authors display how chisme can police other bodies.

Other voices that influenced this research include Lugones, Dotson, and Crenshaw. Dotson was key in connecting the impact of epistemic violence within Latine communities and therefore chisme. Crenshaw provided the framework of intersectionality in order to explore intersectional identities for Women of Color. Lugones argument that our modern understanding of gender is a result of colonialism assisted in addressing negative and positive aspects of chisme being treated as a gendered form of communication.

To explore whether chisme is a decolonial practice, regardless of intentionality, I propose to use ethnographic interviews and small groups for 1-3 participants. Focusing on the personal experiences of a few individuals allows my research to shift as it progresses within deeper narratives. My research project builds upon a strong knowledge of recent discourses concerning chisme, primarily how empirical evidence will aid in examining uncomfortable truths within Latine communities.

Oral Presentation Abstracts Session #10

2:40 to 3:00 p.m. Friday, September 11, 2026

Location: SUB Top Floor Rooms

These abstracts were published unedited to reflect the author's original submission

Almeida Ruiz, Enrique - Major: Applied Mathematics, University of New Mexico
Mentor: Dr. Avinash Sahu, Assistant Professor, Comprehensive Cancer Center
Oral Presentation Session #10, Room: Acoma B

Title: *Explainable AI with multi-agent collaborative system for colonoscopy and Dermoscopy diagnosis*

Abstract:

Gastrointestinal and skin cancers are among the leading cancer types when it comes to deaths in the United States. Colorectal cancer and melanoma alone are expected to contribute roughly 61,040 deaths in 2026, according to the American Cancer Society. Early detection of both cancers greatly improves patient outcomes and can be achieved using imaging techniques. However, current evaluation systems tend to be inefficient, in part due to the demand placed on health care systems. Current approaches to AI for image classification offer little to no explainability of the reasoning behind diagnoses and little flexibility for domain specialization. To overcome these challenges, this project proposes... developing Endo-Insight Gen, a multimodal AI model that generates real-time, textual descriptions of endoscopic and skin ablation images, and creating MED-X, a multi-agent AI system that integrates models such as Endo-Insight Gen to analyze endoscopic images and the Panderm encoder by collaborating with other models to provide a reason-based decision for Kudo and skin ablation pattern classification. Endo-insightGen, intended for colonoscopy images, was trained on the HyperKvasir dataset, which comprises 10,000 labeled polyp images. The Panderm encoder, intended for skin lesion classification, is trained on the Ham10000 dataset. MED-X works as a zero-shot mechanism, meaning the model can be applied to cross-cohort data and produce similar results. Upon testing, MED-X surpassed the capabilities of current baseline models, serving as a groundbreaking diagnostic assistant, achieving 82% and 85% accuracy for melanoma and polyp classification, respectively.

Belanger, Gabriel - Major: Computer Science - Game Development, Michigan Technological University
Mentor: Dr. Leo C. Ureel II, Associate Professor, Department of Computer Science
Oral Presentation Session #10, Room: Santa Ana A

Title: *Geriatric Gaming: Optimizing a Serious Alzheimer's Disease Data Collection Video Game for Older Adults*

Abstract:

Alzheimer's Disease (AD) is a neurodegenerative disease that affects millions of individuals globally. Despite there being no cure, early mitigation is effective in slowing the progression of the disease. The most effective time to implement an intervention is before the individual or the family detects any symptoms. One promising method of detection analyzes visuomotor deficiencies using the Kinarm End-Point Lab's (KINARM) Object Hit and Avoid (OHA) task. Recent research has found that individuals with AD experience deficiencies in their visuomotor capabilities compared to their non-affected peers through the application of OHA. To analyze these deficiencies further, we are developing a serious data collection video game titled Space Trash modeled after OHA. An important aspect for development is optimizing the game to appeal to elderly

populations, which will allow for a diverse dataset. This is achieved through several deliberate game design choices. The use of a gesture-based input system allows for motion gaming for inexperienced players, and the use of video demonstrations allows for an understanding of game tasks before gameplay. To improve the appeal to older adults, Space Trash will leverage nostalgia for retro gaming systems. This decision will appeal to older gamers who played retro games when they were younger, if implemented correctly. Space Trash will collect data from online gaming communities through a free-to-play PC distribution method. With this data, improved early detection methods could be developed for AD. Additionally, the game design optimizations can be applied to other elder-focused video games.

Buenrostro, Deanna - Major: Political Science, Washington State University
Mentor: Hillary Mellinger, Assistant Professor, Department of Criminal Justice and Criminology

Oral Presentation Session #10, Room: Fiesta A

Title: *From Fields to Futures: Migrant students journey through Dare to Dream and their pursuit of higher education*

Abstract:

Migrant students in Washington State are considered a high-risk population due to challenges such as food insecurity, economic instability, language barriers, and family responsibilities that can disrupt their education. A migrant student is defined as someone under 21 who has moved within the past 36 months due to economic necessity, often for agricultural or fishing work. While existing research highlights these structural barriers, less attention has been given to how targeted support programs assist migrant students in transitioning to higher education. This study examines how support programs can improve migrant students' access to and success in college. How do students describe Dare to Dream's role in shaping college aspirations? Which program components are most supportive? How do students navigate barriers to higher education? I am conducting a qualitative study using focus groups with current and former Dare to Dream participants. My perspective as both a former participant and current mentor informs my understanding of the program while I maintain a focus on participants' voices. Expected results include identifying key program components that support migrant students' college readiness, such as mentorship and exposure to college environments. The findings may also reveal how participation influences students' confidence and knowledge of higher education pathways. This study highlights the importance of targeted support programs in addressing educational inequities. Future research should examine long-term outcomes and expand access to similar programs. The findings may inform policies and practices aimed at improving college access and success for migrant students.

Burnett, Owen - Major: Molecular Biology, University of Wyoming
Mentor: Dr. Grant Bowman, Professor, Department of Molecular Biology
Oral Presentation Session #10, Room: Acoma A

Title: *PopZ Ultrastructure as a Kinetic Regulator of Bacterial Condensate Signaling*

Abstract:

PopZ is a polar organizing protein that concentrates cell cycle regulators in

Alphaproteobacteria, specifically *Caulobacter crescentus*. Recent work shows that PopZ assembles hierarchically into filaments, exposes client binding regions, and changes client mobility in the cell pole as the dense phase matures. We ask if the same assembly process that improves client recruitment eventually reduces effective signaling by limiting molecular exchange. We develop a phenomenological model in which productive signaling output depends on a rising recruitment term and a falling mobility term. The model will produce falsifiable predictions suitable for future comparison with localization, FRAP, and signaling data.

De Silva, Parami - Major: Ecology and Evolutionary Biology, University of Arizona
Mentor: Dr. Nathan Hadland, Research Scientist, The Arizona Astrobiology Center
Oral Presentation Session #10, Room: Trailblazer/Spirit

Title: *Building an "Astrobiology Atlas": Mapping Biosignatures in Mars-Analog Environments*

Abstract:

One of the central questions in astrobiology is whether life exists beyond Earth. Addressing this question requires understanding how biosignatures are distributed and preserved in terrestrial environments analogous to Mars. This project compiled a georeferenced database of quantitative biosignature measurements from published studies of Mars-analog environments through a literature-based data synthesis. Published studies were identified through literature searches using Google Scholar, publisher databases accessed through the University of Arizona Library, and AI-assisted literature discovery tools, including Elicit and Consensus. Data were extracted only when quantitative biosignature measurements and geographic coordinates were reported. Variables collected included environmental setting, latitude, longitude, DNA concentration, adenosine triphosphate (ATP), total organic carbon (TOC), and other reported biosignatures, together with associated sampling and analytical metadata. The resulting dataset standardized measurements from diverse analog environments into a consistent format suitable for comparison across studies. The database was designed to facilitate analyses of relationships between biosignature abundance, environmental conditions, and sampling location. By integrating biological, geochemical, and spatial information into a single resource, this work established a foundation for future statistical analyses and predictive modeling of biosignature occurrence. The database also provides a framework that can support the development of machine learning approaches for identifying environments with the highest potential for biosignature preservation and detection. This project contributes to ongoing astrobiology research by improving the accessibility and organization of Mars analog biosignature data and supporting future planetary life-detection missions.

Gaytan, Abby - Major: Biology Pre-Vet, West Texas A&M University
Mentor: Dr. Fernando Diaz, Assistant Professor Of Biology, Department of Life, Earth, and Environmental Sciences

Oral Presentation Session #10, Room: Luminaria

Title: *Thermal tolerance in response to larval acclimation in cactophilic *Drosophila**

Abstract:

Rising global temperatures and increasingly frequent heat stress events pose significant

challenges for insects because they rely on environmental temperatures to regulate their body functions. Thermal plasticity, including the ability to acclimate to sublethal temperatures, allows insects to improve their tolerance to changing thermal conditions. While thermal acclimation has been widely studied in adult insects, relatively little is known about these responses during larval development, particularly in desert-adapted species such as *Drosophila mojavensis*. The purpose of this study was to examine how different durations of larval thermal acclimation influence heat tolerance and larva-to-adult viability in *D. mojavensis*. Larvae were reared under controlled laboratory conditions and exposed to two-hour acclimation treatments before undergoing a standardized heat shock at 41.5 Celsius at a one hour or one-and-a-half-hour duration. Following a one-hour recovery period, larvae were incubated under standard conditions until adult emergence. Larval heat tolerance was assessed by measuring the proportion of individuals that successfully developed into adults after each treatment. This study addresses a gap in the understanding of developmental thermal plasticity in a desert-adapted insect and provides insight into how early life stages respond to thermal stress. Improved knowledge of these responses may contribute to a better understanding of how insects are likely to cope with increasing environmental temperatures associated with climate change.

Guzman de la Rosa, Citlaly - Major: Latin American Studies, Westminster University
Mentor: Dr. Carolina Bloem, Associate Professor and Director of the Center for Latin American Studies at SLCC, Humanities and Languages at Salt Lake Community College

Oral Presentation Session #10, Room: Fiesta B

Title: *Claiming Indigeneity, Inheriting Mestizaje: Ethics of Belonging within Identities*

Abstract:

The legacies of mestizaje and Indigenismo have left some people of Mexican descent with complex ideas of identity that can simultaneously romanticize and erase Indigenous peoples. Many use cultural expressions, spiritual practices, or DNA testing to “reclaim Indigenous roots”, though often without community accountability, questioning, or awareness of critiques of appropriation. These claims, increasingly visible in digital spaces, are rooted in settler colonialism and ideologies of racial mixture. This study addresses this phenomenon and asks: How can people of Mexican descent understand their distant connections to Indigeneity in a historically informed and ethically responsible way?

This is a humanities field study that uses multiple interdisciplinary frameworks. Discourse and thematic analysis were used to analyze social media videos, hashtags, and trends where Indigeneity was claimed through DNA results, language use, or ancestral pride. Patterns or themes that used things like Aztec or Mayan aesthetics, Nahuatl language, or Danza Azteca performances were examined and interconnected to the legacies of mestizaje and Indigenismo. Decolonial and critical Indigenous studies were also applied to examine the extent to which these practices challenged or perpetuated colonial projects. The study is especially influenced by critiques of settler colonialism and symbolic appropriation but not intending to dismiss previous work within the conversation, but rather to include more perspectives and explore what it means to inherit this complex and colonial history.

Lara-Sotelo, Stephanie - Major: Statistics and Data Science, California State University, Monterey Bay

Mentor: Dr. Matthew Beckman, Research Professor, Department of Statistics, The Pennsylvania State University

Oral Presentation Session #10, Room: Isleta

Title: *Evaluating the Influence of Linguistic Diversity for Statistics Students in Short-Answer Responses with Causal Inference*

Abstract:

Writing is a crucial part of learning statistics as it can help assess a student's statistical reasoning. However, using writing as a grading component introduces challenges, especially in evaluating students' responses with the presence of variability in linguistic backgrounds. Prior work shows that linguistic discrimination can occur in writing assessment, raising concerns about whether grading practices reinforce inequities for linguistically diverse students. At the same time, automated assessment tools, such as large language models, have the potential to support grading and timely feedback at scale, but less is known about how fairly these tools evaluate short responses in statistics education. This study examines whether linguistic bias is present in the grading of written responses from statistics courses. Specifically, we investigate if the linguistic backgrounds of students and graders influence how a response is evaluated. This study also evaluates how artificial intelligence (AI) performs in grading short response answers when linguistic diversity is present among students. We use causal inference methods to estimate differences in grading outcomes between human graders and a trained algorithm across students from different language groups. By reporting confidence intervals, we assess both the magnitude and precision of these differences. These results will help determine whether human judgment, an algorithm, or a combined strategy can provide more reliable and equitable assessment across linguistic diversity. Ultimately, this study aims to inform more unbiased grading practices in statistics education and support the development of assessment systems that are fair for all students.

Molina, Mia - Major: History & Russian and Slavic Studies, University of Arizona

Mentor: Dr. Colleen Lucey, Associate Professor, Russian & Slavic Studies Department

Oral Presentation Session #10, Room: Santa Ana B

Title: *The Illusion of Liberation | Red Army Sexual Violence in 1945*

Abstract:

Despite the extensive research scholars have done on the Holocaust, the topic of Soviet sexual violence against Jewish women during the liberation of the concentration camps is largely understudied. This can be attributed to many reasons, such as the uncomfortable nature of the topic, the poor training interviewers received when talking to survivors, or the political atmosphere of countries that were in alliance with the Soviet Union. However, despite the fact that the research on this topic is limited, many testimonies from the USC Shoah Foundation have recounted stories of Soviet soldiers raping Jewish women. The motivation behind the rape often comes from a place of entitlement, as soldiers who liberated the Jewish women expected them to partake in sexual intercourse as a reward. Alternatively, soldiers saw women as tools of sexual

desire rather than humans, thus taking advantage of them in such a vulnerable state. In this paper, the primary analysis is on the motivation behind Soviet rape as well as the circumstances that soldiers experienced both during and before World War II that promoted an environment of rape. Analysis is conducted by watching testimonies from the USC Shoah Foundation and organizing the videos based on the motivations that the survivors have attributed either to their rape or the rape of someone they know and whether the rape was committed by an individual perpetrator or by a gang-rape.

Velasco Jr, Pedro - Major: History, University of California, Riverside
Mentor: Juan Manuel Rubio, Assistant Professor, Department of History
Oral Presentation Session #10, Room: Lobo A

Title: *Unearthing Environmental Inequality: Historical Development of Soil Contamination in Anaheim, California (CA)*

Abstract:

Soil contamination is often an overlooked aspect of urban environments, despite its disastrous consequences on the environment and public health. Among heavy metal contaminants, lead is one of the biggest concerns because of its harmful effects on neurological development, educational outcomes, and life expectancy, partially among children. While lead exposure has been primarily studied through the public-health lens, less attention has been given to the historical processes that have resulted in these contaminated urban landscapes. Understanding lead contamination requires an examination of the ways in which urban development, transportation corridors, and land-use decisions have shaped the landscape over-time. This project seeks to generate crucial data in understanding the possible correlations between soil-based contaminations in Anaheim, California by investigating how patterns of urban growth and roadway development have contributed to the accumulation and distribution of lead within the city. Using historical maps, aerial imagery, and Geographic Information Systems (GIS), this study seeks to reconstruct the changes in Anaheim's built environment and identifies potential sources of contamination. Rather than viewing lead contamination solely as a contemporary environmental problem, this research examines it as the outcome of historical decisions and development processes whose effects continue to be felt even today. By tracing environmental conditions back to the historical process that produced them, this research seeks to historicize urban development and historical mapping of mostly roads rather than viewing soil contamination as an isolated or public health issue

Villegas, Zcherina - Major: English and Anthropology, University of Wyoming
Mentor: Dr. Lauren Hayes, Assistant Professor, Department of Anthropology
Oral Presentation Session #10, Room: Lobo B

Title: *Shapes of Fear: Adaptations of Aswang in Filipino Folklore*

Abstract:

In Filipino folklore, the aswang is widely recognized as a monstrous, shape-shifting figure that actively embodies the evolving fears and anxieties among its people. Where folklore acts as an extension of cultural knowledge and memory, representations of aswang play a crucial part in understanding Filipino identity. However, amidst technological innovation and global shifts in the Philippines, particularly those of

colonization, imperialism, political change, and migration, folklore faces the risk of fading away from cultural memory. In the present day, where adaptations of the aswang and its related figures (manananggal, kapre, tikbalang, etc.) are predominantly depicted through film and media, it becomes imperative that research examines the themes present within those contemporary narratives, alongside the lived experiences, perspectives, and fears of Filipinos today. This study explores how aswang reinterpretations evolve alongside historical, cultural, and migration dynamics. Framed by post-colonial studies, this research uses a qualitative approach, combining film thematic analysis alongside ethnographic interviews. Crucially, this study works to deconstruct the colonial mentalities that are deeply embedded within the culture to preserve, reclaim, and decolonize this essential form of Filipino storytelling.

Oral Presentation Abstracts Session #11

3:05 to 3:25 p.m. Friday, September 11, 2026

Location: SUB Top Floor Rooms

These abstracts were published unedited to reflect the author's original submission

Abdulkadir, Hakima - Major: Political Science, University of Arizona

Mentor: Dr. Mónica Ramírez-Andreotta, Professor, Department of Environmental Science

Oral Presentation Session #11, Room: Isleta

Title: *Striving for equity in data report back for rural and urban environmental justice communities*

Abstract:

Environmental monitoring and biomonitoring help environmental justice (EJ) communities understand what type of environmental risks they face. Such assessments contribute to their understanding of the health adversities stemming from disproportionate exposure to environmental risks. Report back of research results (RBRR) to EJ communities can increase their environmental health literacy. Researchers/practitioners have observed that EJ communities want their research results reported back; however, RBRR is not universally practiced in environmental health research, and when practiced, there is a lack of equity in its implementation. Via participatory science approaches, the Integrated Environmental Science and Health Risk Laboratory has established partnerships with diverse rural/urban EJ communities in Arizona and Ohio, USA. To inform equitable RBRR and identify preferred RBRR, we used previously collected environmental monitoring/biomonitoring data to co-create report-back strategies centered around three design types: graphs, art, and maps. Rapid prototyping/formative analysis was then extended to diverse community members/interested parties from south-central Arizona rural/active/legacy mining towns during our co-created science and art exhibit titled "Rooted in Resilience" at the Cobre Valley Center for the Arts (Globe, AZ, April 3-25, 2026). Quantitative survey data (N=22) indicated that maps were the most preferred form of data visualization. In addition, over 40% of participants reported feeling empowered across all three design types. Aiding EJ communities in their ability to understand and mitigate the environmental risks they face must go beyond the acquisition of data, as the manner and process in which data is extended is just as important.

Dacpano, Jeremiah - Major: Electrical Engineering, University of New Mexico
Mentor: Dr. Edl Schamiloglu, Distinguished Professor, Department of Electrical and Computer Engineering

Oral Presentation Session #11, Room: Acoma A

Title: *Simulating Multi-Stream Electron Beams: A Proposed Framework for Verifying the Two-Stream Instability*

Abstract:

Modern high-power microwave (HPM) research increasingly seeks to enhance tube effects through multi-stream electron beam configurations, yet the two-stream instability detailed by recent analytical theory (Figotin, 2021) remains experimentally unverified for specific cathode geometries. This research proposes numerically simulating electron beam current distribution and energy spectra generated by single-stalk and dual-stalk cathode designs using particle-in-cycle (PIC) methods informed by established Fedosov-based conventions. This proposal details proceeding through five stages: literature review, cathode configuration design, iterative PIC simulation, comparative spectral analysis, and evaluation of implications. Findings from future studies will inform microwave engineering, accelerator physics, and directed energy applications, offering the first targeted computational validation of two-stream instability spectrum under these design parameters.

Danko, Lucas - Major: Biology with a concentration in Ecology & Evolution, University of Northern Colorado

Mentor: Dr. Stephen P. Mackessy, Professor & Post-doctoral Research Associate, College of Biological Sciences

Oral Presentation Session #11, Room: Luminaria

Title: *Unique Adaptation: A Potentially Novel Toxin in the Cerbat Mountain population of The Arizona Black Rattlesnake*

Abstract:

Venom variation is a rapidly growing area of interest in the study of rattlesnakes, with rippling impacts in evolutionary understanding, reduction of blind spots in envenomation treatment, and therapeutic application of toxins. An ongoing study in the Mackessy lab presented a unique venom profile during the survey of the Arizona black rattlesnake (*Crotalus cerberus*) for the analysis of venom variation for the species. The sample of interest is from the Cerbat mountains, a unique and isolated population of *C. cerberus*. Primarily, venom variation is driven by prey specificity, with other factors including age and sex. Given the influence of multiple ecological factors on this adaptation and rapid evolution, populations of the same species can present varied toxin composition. This venom demonstrates high mass thrombin-like activity, indicating the potential for a novel serine protease. Few examples of a high mass TLEs have been documented, one such example being Bilineobin in the common cantil (*Agkistrodon bilineatus*). Broadly, venom studies have revealed other cases of unique enzyme activity, with some leading to the characterization of novel toxins with therapeutic potential. Following the general procedure of prior studies, our purpose is to purify this high mass TLE and run various biochemical tests to characterize it. This will include SE chromatography, RP-HPLC, gel electrophoresis, mass spec, and other biochemical assays. The characterization of this high mass TLE would contribute to the known toxins within

snake venom broadly, add additional advocacy for the conservation of this species, and analyze existing antivenom's ability to inhibit it.

Domínguez, María - Major: Psychological Science, University of Arizona

Mentor: Dr. Ying-hui Chou, Associate Professor of Psychology, Cognition and Neural Systems Program, Graduate Interdisciplinary Programs in Cognitive Science and Neuroscience, Research Associate, Arizona Center on Aging, Evelyn F. McKnight Brain Institute, University of Arizona., Associate Professor of Psychology, Cognition and Neural Systems Program.

Oral Presentation Session #11, Room: Santa Ana A

Title: *Analyzing the Neural Correlates of Experiences Associated with Lower Social Hierarchies: A Comprehensive Review of Neuroimaging Findings.*

Abstract:

Experiences associated with lower positions within social hierarchies, including discrimination, social exclusion, and socioeconomic disadvantage, are consistently associated with adverse mental health outcomes. Guided by the Social Competition Hypothesis of Depression (Price et al., 1994) and the Dahlgren-Whitehead model (1991) of the social determinants of health, this comprehensive literature review examined how these experiences are associated with neural systems involved in stress regulation and emotional processing. Peer-reviewed neuroimaging studies examining discrimination, social exclusion, or socioeconomic disadvantage were synthesized using electroencephalography/event-related potentials (EEG/ERP), functional magnetic resonance imaging (fMRI), structural magnetic resonance imaging (MRI), and functional near-infrared spectroscopy (fNIRS). Across modalities, discrimination was associated with alterations in neural systems supporting stress regulation, emotional processing, cognitive control, and attention. Social exclusion was associated with neural responses related to conflict monitoring, attentional orienting, cognitive evaluation, and social cognition. Socioeconomic disadvantage was linked to altered neural responses to social stress, with some findings varying across racial and ethnic groups. Collectively, these findings highlight the importance of incorporating sociocultural context and increasing representation of diverse populations in neuroimaging research.

Garcia, Alyssa - Major: Art History, University of New Mexico

Mentor: Dr. Ray Hernandez Duran, Professor, Department of Art

Oral Presentation Session #11, Room: Santa Ana B

Title: *Exploring Historical Precedents of Racism and Colorism in the Chicana and Chicano Community*

Abstract:

The goal of this research project is to trace the development of colorism and racism, in the Chicano community by considering historical precedents. As people of Mexican descent living in the United States, Chicanos inherit ideas about race and class that originated in the Spanish colonial period, and they negotiate this understanding of difference within the context of U.S. racial dynamics. If we begin looking at Mexico's colonial history, pinturas de castas or caste painting serve as an ideal place to begin this analysis. Caste paintings by colonial artists, such as Juan Rodríguez Juárez and

Miguel Cabrera are components of my research, enabling an understanding of how casta paintings visually capture some of the central ideas about race that took shape in Mexican from the 16th- through the 18th centuries. These ideas continued to shape Mexican thinking about race through the 19th- and 20th century, which costumbrista painting of the period is reflective of these ideas, for example, the painting by Mexican artist José Agustín Arrieta *La Sorpresa* (The Surprise) (ca.1850). Following the Mexican American War (1846-1848), Mexican communities became part of the American Southwest, which introduced a new racial dynamic to the region. Understanding the Chicano experience in the U.S, which is thus central to my research, entails an exploration of American and Mexican ideas about race and how they interact to shape Chicano's racial ideologies.

Gonzalez Perez, Jacqueline - Major: International Business, Westminster University
Mentor: Dr. Julian Mendez, Associate Professor of Psychology, Department of Psychology

Oral Presentation Session #11, Room: Lobo B

Title: *Rebranding Access: Examining Students Of Color's Experiences In The Wake Of H.B.261, Anti-Dei Policies In The State Of Utah*

Abstract:

Anti-DEI policies are legislative or organizational measures designed to dismantle Diversity, Equity, and Inclusion (DEI) initiatives. These policies prohibit the use of race, gender, or identity in hiring, admissions, and funding, advocating instead for the myth of colorblind fairness. Anti-DEI policies also cut off scholarships, grants, and contracts that favor underrepresented groups. Studies indicate that anti-DEI policies limit affordability, reduce sense of belonging, and negatively impact retention and graduation rates for students of color. In the state of Utah, HB 261 was designed to prohibit the use of any personal identifying characteristics in education and employment. However, few studies have examined how this new law impacts students of colors' ability to afford college in Utah and how they experience campus climate in the wake of this anti-DEI policy. Therefore, the purpose of this study is to examine how institutions are responding to anti-DEI policies, sustaining affordability, and helping students of color feel supported in the wake of anti-DEI policies within the state. Semi-formal interviews will be conducted with students of color and university administrators in the state of Utah to compare how administrators believe they are supporting students, while enforcing this policy and how students are actually experiencing college (i.e., affordability, belonging, and climate). The findings from this study will highlight how higher education professionals can better serve students of color in regard to affordability, support, and creating an inclusive climate despite harmful anti-DEI policies being in place in the state of Utah.

Harris, LaTra - Major: Civil Engineering, Washington State University
Mentor: Dr. Zhijie Wang, Assistant Professor, Department of Civil and Environmental Engineering

Oral Presentation Session #11, Room: Lobo A

Title: *ANN Development to Assess the Post-Wildfire Slope-Stability and Debris-Flow Risk in Connection to Hazard Mitigation Policies*

Abstract:

With the effects of climate change altering the duration, intensity, and impact of wildfires, there is a mounting push for wildfire research in civil engineering. However, there is very little research dedicated to developing tools that can assist engineers assessing the stability of a slope in a timely manner. Furthermore, with any tools developed, they are predominantly used in research. Therefore, this study aims to develop an artificial neural network (ANN) to assess the stability of slopes and the risk of any sliding events to determine the applicability of integrating artificial intelligence into hazard mitigation procedures. This study will assess the connection between wildfires, slope stability, and the risk of debris flows by accounting for soil, slope, and precipitation characteristics in three phases of development. In the initial two phases, utilizing public and privately sourced data, I will generate train and develop the ANN so that it will output the factor of safety (FoS) and a distribution of debris-flow risk severities (DFRS). To verify the reliability of the ANN, I will check those results through the use of the root mean square error (RMSE) and correlation coefficient (R). With the ANN outputting reliably, I will analyze the current wildfire procedures in Washington State to assess the social, political and psychological barriers that would hinder the ANN from being integrated affectively into hazard mitigation policies. Therefore, from this study, we anticipate the ANN to offer a contemplative look into the post wildfire risk strategies.

Newcomb, Michael - Major: Biochemistry, The College of St. Scholastica

Mentor: Dr. Krysta Riel Maas, Instructor, Department of Biochemistry, Chemistry, Math and, Physics

Oral Presentation Session #11, Room: Trailblazer/Spirit

Title: *Medicinal Qualities of Native Plant Prunus Virginiana in Antioxidant Research*

Abstract:

Chokecherries (*Prunus virginiana*) are rich in phenolic compounds that contribute to antioxidant activity and potential health benefits. While drying is commonly used to preserve berries, processing conditions, such as temperature, may affect phytochemical stability and the ability to neutralize free radicals. This study examines how different drying temperatures and durations influence total phenolic content and antioxidant activity in chokecherries. Fresh chokecherries were dried under various controlled temperature conditions. After drying under various conditions: fresh to frozen, room-temperature table-dried, grass-mat-dried, and oven-dried at 25 °C, 50 °C, and 100 °C. Samples were extracted using an aqueous solvent system. Total phenolic content was measured using the Folin–Ciocalteu assay and expressed as gallic acid equivalents. Antioxidant activity was evaluated using a radical scavenging assay. All treatments were performed in replicate to ensure reliable results. Preliminary results indicate that drying temperature impacts both phenolic content and antioxidant activity. Moderate room temperature drying conditions retained higher levels of phenolic compounds, whereas higher temperatures (50 °C and 100 °C) reduced measured antioxidant capacity. These findings suggest that careful optimization of drying parameters is important for preserving chokecherries' bioactive compounds. This work better clarifies how processing affects the levels of natural antioxidants and the medicinal and nutritional

potential of chokecherries. Identifying processing conditions that preserve phytochemicals may help inform future applications in functional foods and natural medicines.

Ramirez, Isabella - Major: Biology, Anthropology, New Mexico State University

Mentor: Dr. Maria G. Castillo, Professor, Department of Biology

Oral Presentation Session #11, Room: Acoma B

Title: *Modulation of Thioester-Containing Proteins in Hemocytes of Resistant and Susceptible Biomphalaria glabrata Snails Upon Exposure to Schistosoma mansoni Larval Transformation Products*

Abstract:

Schistosomiasis is a neglected tropical disease caused by the parasitic flatworm *Schistosoma mansoni*. It affects millions of people worldwide, particularly in regions where access to clean water and proper sanitation is limited. The parasite has a complex life cycle that depends on both humans and freshwater snails such as *Biomphalaria glabrata*. One important area of research focuses on understanding why some strains of *B. glabrata* are naturally resistant to *S. mansoni* while others are susceptible. Snail immune cells called hemocytes play a major role in this defense by recognizing, encapsulating, and destroying *S. mansoni* larvae before they can establish infection. Hemocytes express a variety of immune-related proteins, including thioester-containing proteins (TEPs). Previous studies suggest that TEPs are involved in the snail's capacity to recognize and bind *S. mansoni* parasites. This project investigates the expression of TEP genes in two strains of *B. glabrata*: BS90 (resistant) and BB02 (susceptible). RNAscope, an in situ hybridization technique that visualizes specific RNA molecules within cells is being used to identify and compare the expression of TEP genes between resistant and susceptible snails. In addition, snail hemocytes will be exposed to *S. mansoni* larval transformation products (LTPs) to test the modulation of TEPs in each of these snail strains. We hypothesize that the hemocytes of resistant BS90 snails will exhibit higher expression of TEPs upon exposure to parasite LTPs than the susceptible BB02 snail hemocytes. Identifying TEPs expression patterns will improve understanding of resistance mechanisms and may support future strategies to reduce schistosomiasis transmission.

Ramirez-Sierra, Gabriela - Major: Social Services and Psychology, Central

Washington University

Mentor: Dr. Claudia Mendez Wright, Assistant Professor, Department of Sociology

Oral Presentation Session #11, Room: Fiesta A

Title: *Parental Practices and Educational Motivation: Perceptions of Latine First-Generation Post-Secondary Students*

Abstract:

Several studies discuss the experiences of first-generation Latine students in the context of higher education. However, the relationship between perceptions of parenting practices and educational attainment among first-generation Latine students is an area yet to explore. Using a qualitative approach, I in-depth interviewed first generation post-secondary students between the ages of 18 and 24, whose parents were/are migrant agricultural workers. At the time of the interview, participants were attending or had

recently graduated from universities, community colleges, or vocational schools in rural Washington State. The interviews examined educational motivations, parental and family support, perceptions of parental sacrifice, and the role of cultural and familial values in students' educational journeys. This study highlights the unique experiences of first-generation Latine postsecondary students, opening discussions on how parenting practices influence academic motivations. This research is an opportunity to inform institutions on how to better support students from this background through empowerment. It also highlights the role of migrant agricultural working parenting practices in the educational achievement of their children.

Soto, Valeria - Major: Psychology and Communication, University of Idaho

Mentor: Dr. Diane Carter, Clinical Associate Professor, Communication

Oral Presentation Session #11, Room: Fiesta B

Title: *Between Prayer and Professional Care: Latino Parishioner and Priest Perspectives on Mental Health in Catholic Church Settings*

Abstract:

Mental health is a challenging topic in many Latino communities due to stigma, cultural expectations, and limited access to care. For many Latinos, Catholicism is a central religious tradition, and churches often function as a trusted community where individuals seek guidance, emotional support, and informal counseling. Because of this, parish priests and lay leaders may play an important role in shaping mental health help-seeking behaviors, yet there is limited research on how church environments can influence these pathways. The purpose of this study is to investigate the connection(s) between Catholic church community practices and professional mental health services. This exploratory pilot study will gather qualitative data through surveys distributed to parishioners across multiple Catholic churches and through one-on-one interviews with local Catholic priests. These methods will provide insight into how mental health support is currently understood and practiced within church settings, as well as the needs and preferences of both parishioners and clergy. By identifying opportunities for collaboration and culturally responsive support, this study aims to reveal potential mental health pathways to better support Latino parishioners and strengthen the role of faith-based settings in promoting accessible, culturally grounded care.

Oral Presentation Abstracts Session #12

3:30 to 3:50 p.m. Friday, September 11, 2026

Location: SUB Top Floor Rooms

These abstracts were published unedited to reflect the author's original submission

Alexander, Charles - Major: psychology, University of Central Oklahoma

Mentor: Dr. Mickie Vanhoy, Professor, Department of Psychology

Oral Presentation Session #12, Room: Santa Ana A

Title: *Feature Integration Theory and Visual Search Dynamics: Behavioral Performance and Temporal Organization*

Abstract:

Visual search is often studied using average reaction time and accuracy, but these measures can hide how performance changes from trial to trial. This study examined whether the classic difference between feature and conjunction search also appeared in

the temporal organization of behavior. Undergraduate students completed a computer-based visual-search task in either a feature-search or conjunction-search condition. Standard analyses examined reaction time, accuracy, signal-detection measures, and set-size effects. Recurrence quantification analysis was also used to examine patterns in each participant's ordered reaction-time series.

The behavioral results followed the expected pattern. Reaction time increased more sharply with set size during conjunction search, especially when the target was absent. The recurrence analysis also showed differences between the two search conditions. Across the task, determinism decreased during feature search but increased during conjunction search, suggesting that the two conditions developed different patterns of temporal organization. Laminarity did not show the same clear condition difference.

These findings suggest that feature and conjunction search may differ not only in average performance, but also in how behavior is organized over time. The results support the value of combining traditional behavioral measures with nonlinear analyses that preserve trial order. Because the findings are preliminary, they should be tested in a larger and more balanced replication

Berehnie, Elijah - Major: Physics and Mathematics, Central Washington University
Mentor: Dr. Benjamin White, Associate Professor, Department of Physics
Oral Presentation Session #12, Room: Acoma A

Title: *Measuring flux pinning strength in superconductors with different defect densities*

Abstract:

Some materials enter a superconducting state when cooled below a critical temperature, T_C . Superconductivity is characterized by two primary traits: zero electrical resistance and the expulsion of magnetic field from inside the material (called the Meissner effect). The Meissner effect causes a permanent magnet that is set on top of the material to levitate once the material is cooled below T_C . In type-II superconductors, not all the magnetic field lines (magnetic flux) are expelled from within the superconductor. Any flux that remains can snag on microscopic defects inside the material. This interaction is known as flux pinning. In this research project, we measured the strength of this flux pinning interaction in the type-II superconductor, $\text{YBa}_2\text{Cu}_3\text{O}_7$, and related alloys. We synthesized $\text{Y}_{1-x}\text{R}_x\text{Ba}_2\text{Cu}_3\text{O}_7$ ($\text{R} = \text{Nd}, \text{Gd}$) samples with different defect densities, x , and measured how the flux-pinning strength depended on x . To measure the flux pinning strength, we exerted a torque on a levitating permanent magnet using an applied magnetic field from a Helmholtz coil. The rotational response of the magnet is governed by torques from both the applied magnetic field and flux pinning. Observations of the magnet's motion using a high-speed camera and video analysis software were used to measure the strength of flux pinning for each of our superconducting samples. The results of these measurements, which could be useful in applications requiring fine control of superconductor-magnet systems, will be discussed in this presentation.

Beshay, Keroles - Major: Computer engineering & computer science & mathematics, Cleveland State University

Mentor: Dr. Zhiqiang Gao, Associate Professor & Director of the Center for Advanced Control Technologies, Department of Control Systems

Oral Presentation Session #12, Room: Lobo B

Title: *AI-Supervised Generic PID: A Model-Free Control Deployment Framework for Industrial PLCs*

Abstract:

Engineers commissioning control systems across diverse, poorly modeled plants face a scaling problem: PID requires manual per-plant tuning, whereas model-based methods resist deployment on legacy hardware. This paper presents a deployment framework built on Generic PID (G-PID), a frequency-domain realization of active disturbance rejection control in which the plant dynamics are inverted model-free and replaced by an integrator chain, so that the engineer tunes a normalized plant rather than a physical one. The inversion is first verified by reproducing the published G-PID design on the two-mass system benchmark in simulation. A first-order G-PID law is then deployed natively on a Rockwell Automation programmable logic controller (PLC) without closed-source instruction blocks, so that the control law remains auditable. A Python bridge over EtherNet/IP exposes the two free parameters of the design, the loop-gain crossover frequency and the input-gain estimate, to a large language model (LLM) supervisor that interprets plain-language operator goals and tunes the loop online, while hardcoded ladder-logic clamps ensure that no value it writes can drive the actuator outside a safe bound. A physical torsional rig commissions the framework, and closed-loop experiments then run controller-in-the-loop on emulated ControlLogix firmware against software plant models over the identical interface, making trials repeatable across plants. On a first-order plant of unity input gain, the supervisor recovered the correct input-gain estimate from an uninformed start in five of six replications ($b_0 \approx 1.00$, settling 0.85–0.97 s) and produced goal-dependent tunings: a request for maximum speed yielded $\omega_c = 5.0$ rad/s, whereas one for smooth actuation yielded $\omega_c = 1.0$ rad/s.

Estrada Rivera, Alma Estela - Major: Economics/Spanish, University of New Mexico

Mentor: Dr. Matías Fontenla, Professor, Chair, Department of Economics

Oral Presentation Session #12, Room: Fiesta A

Title: *The Impact of Financial Aid on Educational Outcomes among Underrepresented Students in New Mexico.*

Abstract:

Educational disparities continue to affect college persistence and degree completion among low-income and underrepresented students in the United States. Programs such as the College Assistance Migrant Program (CAMP) are designed to improve academic success by providing financial, academic, and social support to students from migrant and seasonal farmworker backgrounds. However, there is limited research on how CAMP affects students' long-term academic outcomes. This study examines the effect of CAMP participation on cumulative grade point average (GPA) and time to graduation among undergraduate students at the University of New Mexico. The analysis uses student-level administrative data obtained by the University of New Mexico's Office of Institutional Analytics and El Centro de la Raza. A Difference-in-Differences (DiD) model to estimate the causal effect of CAMP participation by comparing outcomes between program participants and a comparable group of nonparticipants while controlling for

relevant student characteristics. The findings will contribute to the literature on higher education, educational equity, and public policy by providing evidence on the effectiveness of institutional support programs for underrepresented students.

Gomez, Fatima - Major: Biology-Pre Vet, West Texas A&M University

Mentor: Dr. Dale Stevens, Assistant Professor of Biology, Life, Earth and Environmental Sciences

Oral Presentation Session #12, Room: Luminaria

Title: *The affects of artificial light at night on black widow spider mortality*

Abstract:

Artificial light at night (ALAN) is an increasingly widespread environmental stressor that disrupts biological processes across various species. The effects of ALAN on physiology and behavior have been studied in many different vertebrates and insects, but little is known about its influence on arachnids. This study will investigate how ALAN affects the mortality of the western black widow spider (*Latrodectus Hesperus*), a species found in both natural and urban environments. In this study, thirty-six gravid female western black widows were captured from both urban and desert environments and then maintained under controlled laboratory conditions while being kept on a standard feeding schedule as they produced an egg sac. Using the offspring retrieved from these egg sacs, they were separated into three different light treatments to create a survivorship curve based on the treatments and environment that the mother came from. Data collection and statistical analyses are currently ongoing. This research aims to improve our understanding of how artificial nighttime lighting influences physiological processes and behaviors in the arachnid species. Furthermore, as urbanization and light pollution continue to expand globally, it has become increasingly important to understand their effects on wildlife to help predict ecological change. The findings from this study will help provide a foundation for future investigations regarding environmental changes and their influence on spider biology, behavior, and population dynamics.

Herrera, Erick - Major: Geology, Sul Ross University

Mentor: Dr. Elizabeth Measures, Professor, Department of Geology

Oral Presentation Session #12, Room: Lobo A

Title: *Evaluation of Environmental and Pest Impact on Paleontological Samples*

Abstract:

Collections of natural science specimens are a valuable resource for many entities, ranging from museums to university science departments. They are essential to research and offer the public opportunities to view unique material and also inspire future generations to become scientists.

Most people are familiar with specimens on display in museums and university science buildings, but the majority of samples in a collection are housed in a storage area. At times, the entire collections are moved to a different locality during renovations. If the storage area is not used often or cleaned regularly, this allows pests (bugs, roaches, and rodents) to inhabit the collection. Pests can damage boxes, labels, samples and can be carriers of diseases such as hantavirus. Collection materials that have become a

habitat for pests have to be evaluated for salvage (remediation and preservation) or for removal and destruction.

The purpose of this project is to evaluate some of the fossils in the Geology Program's collection that were placed in off-campus storage during the most recent renovation (early 2000's) of the Warnock Science Building. Samples in the collection are dusty, have evidence of pest habitation along with damage. Dusty fossils are going to be used to evaluate different cleaning methods (dusting, soap and water, vinegar, disinfectant). Fossils with rodent damage or nests will be evaluated to see if they can be handled safely without disturbing dust/fecal material that could harbor hantavirus.

Miranda, Nathan - Major: Political Science, University of Arizona

Mentor: Dr. Shelby Smith, Assistant Professor of Practice, Department of Geography

Oral Presentation Session #12, Room: Isleta

Title: *Empire's Workshop: An Analysis of U.S. Policy in Puerto Rico.*

Abstract:

This research examines Puerto Rico's U.S. territorial status within the broader context of U.S.-Latin American Relations. Specifically, it compares U.S. policy in Cuba and Puerto Rico following the Spanish American War using Grandin's Empire's Workshop framework to investigate differences in U.S. policy. It employs a qualitative approach in a case study using sixty archival government document files to analyze U.S. policy in Cuba and Puerto Rico. These files were gathered from both government and private archival databases and analyzed in accordance with Braun and Clarke's reflexive thematic analysis (RTA) process. Three distinct themes emerged during the process: concern with U.S. interests being threatened by progressive movements, prioritization of U.S. interests, and intent to distance Puerto Rico from Latin America. In this research, I highlight the underlying interests of U.S. policy and the approaches used to achieve these goals. These findings may contribute to conversations regarding Puerto Rico's inclusion in Latin America, the U.S.-Puerto Rico relationship, sovereignty in Latin America, and Puerto Rican self-determination.

Montelongo, Jose - Major: History, The University of Idaho

Mentor: Dr. Alyssa Kreikemeier, Assistant Professor, Department of History

Oral Presentation Session #12, Room: Fiesta B

Title: *Camp Easter Seal: A Hidden Oasis on Lake Coeur d'Alene*

Abstract:

As one of the earliest, if not first, of its kind to do so, Camp Larson, a summer camp established on Lake Coeur d'Alene in the 1950's, championed the civil rights of Americans living with disabilities long before the grassroots activism that advocated for the landmark passage of the United States Rehabilitation Act (USRA) of 1973 and subsequent Americans with Disabilities Act (ADA) of 1990. Roger Larson, the camp's founder and a physical education instructor at Washington State University, designed Camp Larson to eliminate the physical, social and architectural barriers Americans with disabilities often faced. Before USRA and ADA, Americans with disabilities whether physical, cognitive, or sensory were often excluded, stigmatized and discriminated against in all political, economic, and social sectors of civic life. With no direct

opportunity to participate in the world around them, a majority of Americans with disabilities faced social isolation and lacked any “real” community or friendship. Yet for the Idahoans and Washingtonians living with disabilities who were lucky enough to be near its proximity, Camp Larson served as their social oasis. Camp Larson provides an opportunity to further our understanding of the larger disability rights movement both across the nation and within the state of Idaho between the 1950s-1980s. Moreover, this history is focused on uncovering the broader social role’s geographical location and recreation have for Americans living with disabilities.

Pinckard, Joshua - Major: Robotics Engineering, University of California, Riverside
Mentor: Dr. Maziar Raissi, Associate Professor of Mathematics, Mathematics

Oral Presentation Session #12, Room: Acoma B

Title: *LEAN-Bench: Evaluating LLM Performance in Algorithmic Trading Strategy Generation*

Abstract:

Generative AI, a description given to Large-Language models, has demonstrated remarkable capability across a growing range of technical domains. This paper introduces a factorial benchmark for evaluating generative AI on the task of generating algorithmic trading strategies (rules-based trading systems), specifically in the trading software LEAN. The factorial design is implemented to allow quantitative measurements of the success of the generative AI, specifically on a baseline with no tools, with the tools enabled individually, and finally with both tools simultaneously enabled. The tools provided to the generative AI are intended to improve the output and include both a documentation retrieval system and a compiler feedback loop. Since multiple outputs can correctly implement the request of a user we use a five-stage evaluation design for output validation. On each iteration (or output) from the generative AI we assess the code as follows: did it compile (was the code written grammatically correct), did it produce any run-time errors (was there a failure in the codes logic), did it place any trades, did the dates and symbols traded match the users request, and does the generative AI judge (implemented as a pair of large language models) agree that the final code matches the user's intent. LEAN software is a leader in algorithmic trading and this paper aims to help practitioners deploy strategies using generative AI more efficiently and addresses a gap in research on generative AI for algorithmic trading with LEAN software, directly identified by previous work in the field.

Rael, Gabrielle - Major: Biology, University of New Mexico

Mentor: Dr. Lee Taylor, Professor, Department of Biology

Oral Presentation Session #12, Room: Trailblazer/Spirit

Title: *Are Coralroot Orchids Partners or Parasites?*

Abstract:

All orchids, including those that photosynthesize, rely on associations with fungi to germinate. Obligate mycoheterotrophic orchids, do not photosynthesize and depend entirely on fungal associations for their energetic needs. Many mycoheterotrophic orchids, including members of the genus *Corallorhiza*, make use of the symbiosis between mycorrhizae and photosynthetic plants. *Corallorhiza* fungal associations are sustained and extremely specific, indicating epiparasitic patterns. Genetic control by the

orchid and cospeciation between the orchid and fungi have been shown to influence specificity. From previous studies, we know the orchids do not provide any fixed carbon to the fungi. It has also been documented that the roots of other species of orchids are associated with bacteria that improve mycorrhizal mediated processes and fix nitrogen. Corallorhiza fungal associations have been well documented although many aspects remain enigmatic. There has been no investigation into the bacteria associated with Corallorhiza's rhizome. Here we investigate the bacteria that are associated with coralloid rhizomes of genetically distinct lineages of Corallorhiza. Using Corallorhiza rhizome samples collected across New Mexico, California and Florida we performed DNA extraction, PCR amplification of bacterial 16s and chloroplast trnH-psba, gel electrophoresis, bacterial culturing, and sequence analysis. We predict coralloid rhizomes are associated with nitrogen fixing bacteria. Our predicted results may conflict with the epiparasitic narrative but further studies are needed to confirm nitrogen exchange between Corallorhiza and their fungal associates and assimilation into fungal cell walls.

Romero, Florence - Major: Art History, University of Minnesota Morris
Mentor: Priyanka Basu, Associate Professor, Art History
Discipline Coordinator, Art History, Department of Art History
Oral Presentation Session #12, Room: Santa Ana B

Title: *Tradition and Representation in the Work of Contemporary Native American Artists*

Abstract:

There are many Native American artists who are very prominent in the contemporary art world. I argue that historical contexts shaped these pathways for Native artists. This presentation investigates the origins of these developments in contemporary Native American art in the mid-to late twentieth century. The goal of this project is also to gain a deeper understanding of the broader contours of the field of contemporary art by Native Americans, to understand some of the key issues that these artists are interested in, and research the work of select contemporary Indigenous artists. This presentation will examine the ways in which these artists deal with themes of tradition and modernity and how they respond to how Native Americans have been represented in past culture and media and how these representations have impacted Indigenous people. The methodologies that will be employed for this research are literature review and comparative analysis of case studies of six contemporary Indigenous artists. I contend that the contemporary Indigenous artists challenge traditional western art and previously dominant historical narratives about Native American art. These contemporary artists reclaim authority over images of Native Americans and create art by using cultural insights, critique, and by reclaiming their cultural heritage.