STUDENT SCHOLAR SYMPOSIUM

FALL SESSION

December 3 - 4 , 2025

ABSTRACT VOLUME

CHAPMAN UNIVERSITY | Center for Undergraduate Excellence

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Welcome to the Fall 2025 Chapman University Student Scholar Symposium!

This symposium serves as a distinguished showcase for undergraduate excellence. The students' poster and oral presentations represent the culmination of innovative research and creative endeavors undertaken by our students. Our student scholars embody the diversity of academic and artistic disciplines that thrive within the Chapman community and reflect the university's commitment to fostering a culture of discovery, collaboration, and expression. We invite you to join us on December 3rd and 4th to explore the wide array of outstanding presentations and honor the remarkable achievements of these students. We encourage you to engage with our scholars and their work, ask questions that spur curiosity, offer comments that inspire innovation, and connect in meaningful ways that will continue to cultivate our intellectual community.

The Student Scholar Symposium is proudly sponsored by the Center for Undergraduate Excellence (CUE), Chapman's central hub for supporting and amplifying student achievement. CUE offers resources and opportunities that facilitate research and creative endeavors across campus to help foster a vibrant academic community that helps undergraduates flourish. This event would not have been possible without the exceptional efforts of the CUE team. We extend our sincere appreciation to Operations Manager, Lisa Kendrick, and Graduate Assistants, Chaz Gilette and Julia Savala, for their outstanding leadership in planning and executing this symposium. We are also grateful to our student presenters, faculty mentors, faculty moderators, and staff volunteers for their invaluable contributions.

Thank you for joining us in celebrating the scholarly achievements of our students. We hope you enjoy the Symposium!

Dr. John Hunter
Director of the Center for Undergraduate Excellence

The Center for Undergraduate Excellence gratefully acknowledges the following individuals for their support:

Oral Presentation Moderators:

Dr. Quaylan Allen	Professor Russel Schwartz
Dr. Hagop Atamian	Dr. Ronald Steiner
Dr. Jocelyn Buckner	

Staff Volunteers:

Adena Hamlin	Jackie Coyne	Olguin Nicole
Ashley Cosgrove	Katy Gilbertson	Stefani Lanahan
Ashley Whelpley	Lena Troung	Viviana Perez
Carmen Chavez	Madison Pazino	

Presentation Schedule

Wednesday, December 3

Poster Session 1	Sandhu Conference Center	9:30 – 11:00 AM
Poster Session 2	Sandhu Conference Center	1:00 – 2:30 PM

Thursday, December 4

Oral Session 1	Argyros Forum 209AB	10:00 – 11:00 AM
Oral Session 2	Argyros Forum 209AB	11:30-12:30 PM
Oral Session 3	Argyros Forum 209AB	1:00 – 2:00 PM
Oral Session 4	Argyros Forum 209AB	2:30 – 3:30 PM
Theatre Oral Session 1	Argyros Forum 209C	10:00 – 11:00 AM
Theatre Oral Session 2	Argyros Forum 209C	11:15 – 12:15 PM
Theatre Oral Session 3	Argyros Forum 209C	12:30 – 1:30 PM
Theatre Oral Session 4	Argyros Forum 209C	1:45 – 2:45 PM
Theatre Oral Session 5	Argyros Forum 209C	3:00 – 4:15 PM

Biochemistry and Molecular Biology

1. **Comprehensive Assessment of T-cell Exhaustion in Allogeneic Transplantation and CAR T-Cell Immunotherapy.**
   Presenter(s): Olivia Marr, Brian Rubio, Anna Le, Adelyne Tran, Sofia Sato
   Advisor(s): Dr. Rishikesh Chavan, M.D.

T-cell exhaustion is a distinct differentiation trajectory arising from chronic antigen stimulation, characterized by progressive functional decline, sustained inhibitory receptor expression, and stable epigenetic reprogramming. Exhaustion impacts immune outcomes following CAR T-cell therapy and Allogeneic stem cell transplantation (Allo-SCT).

Our analysis synthesizes current knowledge of exhaustion mechanisms, differentiation states, and functional consequences of T-cell exhaustion in CAR T-cell therapy and Allo-SCT; evaluates factors and markers differentiating exhausted T-cells; explores emerging measurement techniques; and discusses future research directions with an emphasis on relapse prevention and improving therapeutic interventions. Using over 100 articles dating from 2000 to 2025, we focused on experimental and clinical literature addressing T-cell exhaustion in allo-SCT and CAR T-Cell therapy. Included studies examined exhaustion differentiation, molecular regulations, and profiling techniques. Exhaustion represents a parallel developmental pathway distinct from effector and memory lineages, progressing from precursor to terminally exhausted subsets. It exists as a dysfunction spectrum caused by mechanistic drivers, including persistent antigen exposure, inadequate CD4+ help, inhibitory signaling, and extrinsic modulators that influence exhaustion severity. In Allo-SCT, partial exhaustion may attenuate graft-versus-host disease (GvHD) but can compromise graft-versus-leukemia (GvL) activity; therefore, maintaining a balance to minimize relapse is crucial. In CAR T-cell therapy, exhaustion limits persistence and antitumor efficacy, contributing to relapse. Knowledge on underlying molecular mechanisms and detection of exhaustion before relapse is ongoing, with current practices integrating multi-omic, single-cell transcriptomics, and epigenetic profiling. T-cell exhaustion has the potential to serve as a predictive biomarker for relapse following CAR T-cell therapy and allo-HSCT; however, standardized approaches to assess immune function remain lacking.

2. **Revealing the Mechanisms of Adaptation to Chronic Oxidative Stress in Bacteria Using an In Vitro Evolution Model**
   Presenter(s): Ethan Irianto
   Advisor(s): Dr. Michael Ibba, Dr. Lorenzo Leiva Araya

Oxidative stress is a common condition triggered by several environmental factors, resulting from an imbalance in the synthesis of reactive oxygen species (ROS) and the antioxidant defenses to degrade them. Most microorganisms encode mechanisms to manage short periods of acute stress. In this project, we explore the adaptation of Escherichia coli (E. coli) to chronic stress. To this end, we conducted an in vitro evolution experiment in E. coli under chronic oxidative stress

induced by increasing concentrations of the oxidizing agent paraquat. After multiple growth cycles, we obtained strains adapted to high levels of paraquat (50 and 100 µM), whose genomic DNA was purified and sequenced to identify mutation hotspots that enabled this adaptation to chronic stress. Our current results have shown that respiration and iron regulation are key factors in bacterial adaptation, due to the recurrent mutations found in the succinate dehydrogenase enzyme and in Fur, the master iron regulator, respectively. It is expected that the DNA sequences of future generations of adapted bacteria will reveal even more cellular mechanisms and adaptations that have allowed the bacteria to survive in increasingly stressful conditions. All these results could contribute to a better understanding of strategies for managing resistant strains relevant in clinical settings.

3. **The GC Content in the Promoter Region of tRNAs Determines its Expression Level Under Oxidative Stress**
Presenter(s): Rovialyn Arciaga
Advisor(s): Dr. Lorenzo Eugenio Leiva, Dr. Michael Ibba

Transcription initiation under stress conditions in Escherichia coli is influenced by promoter sequence composition, particularly the GC content near the transcription start site (TSS). This study examines how differences in GC content affect the expression of two variants of tRNA initiators (tRNAi). We found that both variants, codified by metY and metZ genes, differ in their promoter sequence. Furthermore, through sequence analysis and promoter mapping, the metY gene was found to contain two separate promoters with distinct GC content (57.1 and 85.7% GC content), whereas metZ contains only one, suggesting different responses under stress. GC-rich regions make DNA more stable, but are harder to unwind, which can affect how RNA polymerase binds and initiates transcription. To experimentally study these promoters, recombinant plasmids were constructed that contained metY and metZ promoter variants upstream of an operon encoding fluorescent reporter proteins. Quantitative assays performed under normal growth and oxidative stress induced with 2.5 µM paraquat showed that one of the two metY promoters had higher expression under the intended oxidative stress condition. These results suggest that one promoter may be more responsive to environmental changes, while the other promoter may provide greater stability under sustained stress. These findings indicate that promoter GC composition contributes to adaptive gene regulation in E. coli.

4. **Influence of Media Composition and Temperature on Microgel Paste Dissolution**
Presenter(s): Eunice Jung
Advisor(s): Dr. L. Andrew Lyon

Microgels are hydrogel microparticles that can respond to environmental stimuli such as temperature and pH. Due to their biocompatibility and sensitive responsiveness, they are widely used in regenerative medicine and drug delivery applications. We have developed a new class of biomaterials based upon microgels made from poly(N-isopropylacrylamide-co-acrylic acid),

called microgel pastes, which have the potential to serve as foundational materials in tissue scaffold and drug delivery technologies. However, their swelling and dissolution behavior in different environments remains relatively unknown and poorly understood. Thus, this study investigated how microgel pastes behave when immersed in different solvents at physiological temperatures (37 °C). By observing the interface between the solid paste and liquids, we aimed to understand the nature of the interface between these biomaterials and the cellular environment. To conduct this, microgel pastes with different concentrations, prepared either in water or phosphate buffered saline (PBS) were used as samples. The sample was immersed in water or PBS. Then, the movement of microgel pastes during dissolution was captured via differential interference microscopy (DIC), which was analyzed with a particle tracking feature in FIJI. The microgel pastes displayed distinct temperature-dependent responses: In water, the microgel particles diffuse rapidly, forming a thick, swollen interface. In contrast, pastes in PBS maintained a thinner interface with slower particle movement and great stability, even in high temperatures. These findings are significant as they provide insight into how biomaterials interact in physiological media, which can be applied in further technologies in the regenerative medicine and tissue engineering fields.

5. **Quantifying the Effects of Crosslinking on Microgel Diffusion in Alginate Gels**
    Presenter(s): Megan Hicks, Neeraja Gajendran
    Advisor(s): Dr. L. Andrew Lyon

Hydrogels are widely utilized in biomedical applications, including drug delivery, tissue scaffolding, and 3D bioprinting, due to their tunable structure and properties. The performance of the gels in these applications depends on the movement of the molecules and particles inside them, properties governed by local viscosity and the microscopic network. The use of polymers like alginate can create pockets or cages with micro-viscosity, or the effective viscosity of these small regions, through Ca^{2+} crosslinking. This project aims to quantify how different alginate concentrations and Ca^{2+} crosslinking affect microgel diffusion to reveal local viscosity and cage size. Differential interference contrast (DIC) microscopy is used to record microgel motion, and quantitative particle tracking is employed to analyze the data for diffusion behavior before and after Ca^{2+} crosslinking. These diffusion trends will illustrate the influence of alginate and Ca^{2+} crosslinking on polymer density, strength of Ca crosslinks, microviscosity, and microgel particle confinement. Ultimately, these findings will provide insight into how microscopic particle mobility can be tuned to improve hydrogel performance for material and biomedical applications.

6. **Developing Mechanically Tunable ECM-Mimicking Composites using Alginate**
    Presenter(s): Neeraja Gajendran
    Advisor(s): Dr. L. Andrew Lyon

Modulation of tissue scaffold mechanical properties is critical for adapting to the diverse functional requirements of tissues, from soft structures like skin to the load-bearing properties of

muscle and bone. The Lyon group has recently developed a novel class of biomaterials based on microgel pastes, which serve as a reductionist extracellular matrix mimic when combined with biological components. This biomaterial is permissive to both collagen fibril formation and cell invasion/proliferation. However, current limitations include long-term dimensional stability and lack of mechanical tunability. To address these challenges, we have investigated the incorporation of alginate as a switchable gel component. Alginate is a naturally occurring polysaccharide that undergoes ionic crosslinking in the presence of Ca^{2+}. By incorporating alginate into collagen:microgel composites, mechanically tunable composites whose stiffness can be dynamically modulated through Ca^{2+} chelation have been developed. These materials were characterized using static and dynamic microscopies to assess their structural and mechanical behavior.

7. **Characterizing Protein-Protein Interactions Between Gluconacetobacter Diazotrophicus Nitrogenase and CowN**
Presenter(s): Julie Takei
Advisor(s): Dr. Cedric Owens

Nitrogenase is an essential enzyme responsible for biological nitrogen fixation, converting atmospheric nitrogen into ammonia for plant use. This enzyme, composed of the iron protein (FeP) and molybdenum-iron protein (MoFeP), is highly sensitive to carbon monoxide (CO) inhibition. In diazotrophic bacteria such as Gluconacetobacter diazotrophicus, the protein CowN provides protection against CO, although its mechanism remains poorly understood. Previous studies suggest that CowN interacts directly with nitrogenase and may alter the FeP:MoFeP complex stoichiometry from 2:1 to 1:1, potentially competing with FeP for binding. This project aims to characterize the CowN–MoFeP interaction by (i) determining the stoichiometry of the nitrogenase complex in the presence of CowN and (ii) identifying CowN's binding site on MoFeP using crosslinking and fluorescence labeling approaches. Analytical ultracentrifugation, gel filtration, and fluorescence spectroscopy will be used to assess complex formation and confirm CowN activity following labeling. Crosslinked products will be analyzed by SDS-PAGE and mass spectrometry to pinpoint interaction regions. Understanding how CowN modulates nitrogenase assembly and CO sensitivity will provide key insights into natural strategies that sustain nitrogen fixation under inhibitory conditions and may inform biotechnological efforts to enhance agricultural nitrogen use efficiency.

Biological Sciences

8.   Slime Properties Among Different Hagfish Species (Abstract)
Presenter(s): Colin Jackson, Lindsay Ross
Advisor(s): Dr. Douglas Fudge, Andrew Lowe

Hagfish are primitive, jawless fishes that secrete a slimy substance made up of protein threads and mucin. When deployed in seawater from their specialized slime glands, it expands rapidly to create their natural slime defense. The overarching goal of this experiment is to determine if there is a difference in the physical properties of slime among the 90+ species of hagfish that have been identified. We are starting with two common species available to us in the lab: Pacific (Eptatretus stoutii) and Atlantic (Myxine limosa) hagfish. Due to differences in phylogeny, behavior, and habitat, we predict that there will be a significant difference in the material properties of slime between different species of hagfish. To conduct this experiment, we are using an Instron Universal Testing Machine to measure the rate of water egress from freshly deployed slime. We are also developing novel methods for measuring the properties of slime in the field for species that cannot be brought back to the lab. We will also be conducting experiments using methods borrowed from the measurement of blood hematocrit protocols to measure the ratio of thread skeins to mucus vesicles in the slime exudate from several species of hagfishes.

9.   Morphometrics of Hagfish Eggs
Presenter(s): Hannah Choi
Advisor(s): Dr. Douglas Fudge

Hagfish are benthic marine animals with unknown reproductive behavior and methods. Females deposit eggs characterized by unique anchor filaments at the poles of the main egg capsule, facilitating attachment. We conducted micro-CT scans on unfertilized eggs from several species to investigate the mechanics and morphology of hagfish egg structure and attachment. Using 3D Slicer software, we analyzed these scans to visualize and study the egg structures in detail, determining differences in filament caps across four species of hagfish. Additionally, tensile tests of the filaments were conducted to measure the force generated by attached eggs. From the force-extension data, we inferred the number of filament pairs that are responsible for the attachment forces. We performed similar tests with single anchor filaments engaging with intact eggs. Our findings include observations on anchor filament diameter, filament stalk diameter, lobe count, filament count, filament tensile forces, and developmental photographs of the stages of filament growth, allowing the categorization of egg morphology traits across four different species.

10. <u>**Visualizing the Early Stages of Hagfish Slime Expansion**</u>
Presenter(s): Jewelz Cook
Advisor(s): Dr. Douglas Fudge

Hagfish produce a unique defensive slime that rapidly expands in seawater, effectively clogging the gills of potential predators. This slime consists of tightly coiled protein threads and mucous vesicles that undergo dramatic structural transformations upon exposure to water. Previous experiments focused on the influence turbulence has on slime expansion, but the very early stages of this process were still unclear because the slime begins transforming almost immediately upon contact with water. Because this structural change occurs so quickly, capturing the initial uncoiling of the skeins has been difficult. This project presents a new method designed to preserve and visualize those early stages. Fresh hagfish exudate was placed on a slightly raised metal slide, exposed to water droplets, and quickly frozen in liquid nitrogen to preserve its structure. After freeze-drying, samples were cut into sections and imaged with a Scanning Electron Microscope (SEM). This improved approach helps reveal how tightly coiled thread skeins begin to uncoil and form slime before full expansion occurs.

11. <u>**Investigating the Role of Stress Response Gene p58IPK in Drosophila Huntington's Models**</u>
Presenter(s): Tamim Hatim
Advisor(s): Dr. Rebecca Glineburg

Huntington's disease (HD) is a genetic neurodegenerative disorder caused by a CAG repeat expansion in the huntingtin (HTT) gene that results in a long polyglutamine repeat within the HTT protein, making the protein more susceptible to misfolding and aggregation within the brain. The integrated stress response (ISR), a critical cellular pathway in neuronal protection, can become dysregulated and chronically activated in neurodegenerative conditions, leading to neuronal death. A lesser-known player in attenuating the ISR is p58IPK, a cochaperone and ISR kinase inhibitor that is upregulated when the ISR is activated. These functions presumably allow p58IPK to help reestablish homeostasis and inactivate the ISR. Given its regulatory functions, we hypothesized that modulating p58IPK levels could yield benefits in HD models. Commercially available p58IPK knockdown fly lines were utilized for eye scoring, western blotting, qRT-PCR, and eye apoptosis quantification to test the impact of differing p58IPK levels on a HD fly model. Results indicate that knockdown of p58IPK exacerbates neurodegeneration and apoptosis in HD fly models, suggesting that p58IPK serves an important role in mitigating neurodegenerative phenotypes caused by mutated HTT.

Business

12. Evolution of Thrifting Attitudes
Presenter(s): Iris Bae
Advisor(s): Dr. Christina Nistor Dr. Cris Giannantonio Dr. Amy Hurley-Hanson

Thrifting is a popular activity for young consumers, who shop for "gently used" clothing in thrift stores, in addition to purchasing new items at in-person stores and from online websites. The growth of the thrifting industry has important economic and social implications, with potential ethical questions reshaping consumers' choices of fashion around the world. My work on this project focuses on creating a database of consumer attitudes toward thrifting, with an initial emphasis on capturing attitude changes in secondary sources, such as popular newspaper stories. My project follows the consumer attitudes of Gen Z and Gen Alpha as captured online over time by stories featured in popular press articles, and will also include sentiment analysis from primary sources like social media posts.

Chemistry

13. Experimental Synthesis of β-Fluorinated Morphine Derivative for Selective Binding in Inflamed Tissue
Presenter(s): Amelia Bayha, Adel Martinez
Advisor(s): Dr. Matthew Gartner

The growing abuse and fatalities related to opioid overdoses in the United States have sharply risen in the past two decades. Morphine is most commonly prescribed for pain relief, putting people at risk of tolerance, dependence, and accidental overdose after prescribed use. By reconstructing the structure of morphine, negative side effects may be eliminated. Previous studies have identified several morphine derivatives that theoretically reduce dangerous side effects. This was determined by a decreased pK_a of the biochemically active amine group to promote selective binding in peripheral opioid receptors within inflamed tissue (pH=6-6.5). This activation provides analgesia while central receptors within the brain remain inactive, thus preventing undesired side effects associated with opioids. The study aims to experimentally synthesize the novel opioid derivative Fluoromorphine β-C2 from a theoretical synthesis plan assisted by computational resources. In Step 1, 3-Fluoromethoxypyridine, a commercially available compound, was methylated with methyl iodide in the presence of anhydrous methanol to synthesize the 3-Fluoromethoxypyridinium ion. Step 2 involves reaction with a Grignard reagent. Synthesis of the Grignard reagent will utilize reflux and acid work-up with magnesium filings and 1-bromo-4-methoxybenzene under inert conditions. An inert atmosphere will be maintained with latex balloons and nitrogen gas. The resulting Grignard reagent will synthesize the addition product, the final precursor to deprotonated Fluoromorphine β-C2. Synthesis will

conclude with a ring-closure step through either Grewe Cyclization, Heck coupling, or Suzuki-Miyaura coupling. Each alternate ring-closure pathway will be evaluated to maximize yield and cost-efficiency. Successful synthesis with each step will be evaluated with 1H NMR to confirm product identity. Completion of this novel experimental synthesis marks a significant achievement towards pain medication without the dangerous side effects associated with narcotics.

14. Computational Ligand-Receptor Simulations of Fluorinated Morphine Derivatives
Presenter(s): Emily Chen, Mirabella Romano
Advisor(s): Dr. Matthew Gartner

The opioid epidemic impacts 60 million people worldwide every year. Morphine, a commonly prescribed opioid, binds to the μ-opioid receptor (MOR) in the body via protonation of its tertiary amino group and the MOR. An unfortunate side effect of this binding process is its non-selectivity in both peripheral and central tissues. While activation within inflamed peripheral tissues results in pain relief, activation within central tissues results in the unwanted and addictive side effects of opioids. Because there is a discrepancy in pH between healthy (central) and inflamed (peripheral) tissue, selective binding within the inflamed tissues could provide pain relief without addictive properties. Fluorination of the morphine molecule reduces its pKa, promoting selective protonation and receptor binding in the lower pH environment of inflamed tissues while avoiding activation within the CNS. Additionally, removal of the C and D rings alters steric properties, improving receptor fit and binding efficiency by increasing molecular flexibility. The aim of this study is to further assess these derivatives using molecular docking simulations conducted in PyMOL, a graphical interface that utilizes AutoDock Vina, a molecular docking software, to evaluate ligand-receptor interactions. Docking simulations were performed using a manually defined binding pocket. Specific ligands modeled included protonated models of fluoromorphine, including fluoromorphine βC1, fluoromorphine βC2, and fluoromorphine βC3 derivatives. Out of the different ligands, protonated models of fluoromorphine βC1 and βC3 demonstrated the best docking affinity with the least ligand strain. These docking results provide critical groundwork for selecting derivatives with optimal receptor complementarity to guide future synthesis of non-addictive opioid analogs.

15. Correlating Arsenic Bioaccessibility with Spatial Distribution in Mine Wastes: An Integrated Analysis
Presenter(s): Lea-Sophie Vetter
Advisor(s): Dr. Christopher Kim

Arsenic (As) is a toxic trace metalloid that can harm both humans and the environment due to its carcinogenic nature. Anthropogenic activities such as metal mining can mobilize arsenic when enriched in fine-grained mine wastes. Prolonged exposure to low-level arsenic can pose risks to populations near abandoned mine sites, primarily through inhalation or ingestion pathways. Therefore, accurately quantifying arsenic bioaccessibility is critical for long-term risk assessment

and remediation efforts. Arsenic bioaccessibility is influenced by various factors including initial concentration, surface area, and particle size. Additional variables such as spatial distribution within particles remain under-studied due in part to the challenges in quantification and resolution, despite their potential influence in arsenic release and bioaccessibility. This study seeks to assess the effectiveness of arsenic spatial distribution as an indicator of changes in bioaccessibility over time, with the objective of better prioritizing mine sites for remediation efforts.

Simulated gastric fluid (SGF) extractions of ground and unground mine waste samples were performed to simulate the pathway of ingestion and analyzed using ICP-OES to calculate the percent arsenic bioaccessibility. Micro X-ray fluorescence (μXRF) maps collected at the Stanford Synchrotron Radiation Lightsource of samples before and after simulated ingestion were analyzed to determine potential changes in the spatial distribution and speciation of arsenic. By identifying such correlations, the value of using spatial distribution as a predictor of arsenic bioaccessibility was assessed. These findings have the potential to streamline the process of assessing long-term risks of arsenic exposure from abandoned mine sites and informing remediation strategies based on spatial distribution data and bioaccessibility correlations.

Communication Sciences and Disorders

16. Building Confidence and Professional Readiness: Graduate Students' Experiences in Literacy-Focused Service-Learning
Presenter(s): Naomi Villicana, Isabella Rebollar
Advisor(s): Dr. Mary Fagan

This project examines the relationship between graduate students' self-reported confidence and observed behaviors during literacy-focused service-learning experiences. Research by Bushman, Meek, Purpura, and Fagan (2021) found that after participating in a service-learning experience, graduate students reported increases in self-rated confidence and professional readiness, with qualitative analyses also showing increased awareness and flexibility. This study explores whether self-reports of confidence align with observable skills. Graduate communication sciences and disorders students lead storybook reading sessions for children in a family homeless shelter. Each session also includes an interactive craft to reinforce literacy concepts such as rhyming, sequencing, and vocabulary development. Data were collected through pre- and post-program questionnaires assessing confidence in facilitating preliteracy skills, peer observations documenting engagement and instructional behaviors, and reflective writing capturing insights into professional growth. Data analyses currently in progress are expected to show correlations between self-rated confidence and observable indicators of effective engagement, flexibility, and instructional skill. This study contributes to the literature on service-learning by examining how structured experiences with at-risk populations enhance clinical preparation and career readiness among graduate students. Overall, the project highlights the potential of integrating hands-on,

literacy-focused service-learning into graduate education to strengthen both confidence and competence in emerging professionals.

Computer Science

17. Developing an Intuitive Gesture-Based Interface and AI for Precise Object Positioning in Extended Reality

Presenter(s): Annika Brown
Advisor(s): Dr. Trudi Qi

Human-object interactions, such as translation and rotation, are fundamental to extended reality (XR) applications, which blend physical and virtual environments. XR is increasingly used in immersive design, virtual prototyping, and digital twins, where high-precision object manipulation is crucial. Gesture-based 3D interaction offers a more intuitive and immersive experience than keyboard-and-mouse interfaces but lacks precision. This project introduces Context AI for Object Positioning (CAOP), a gesture-based interface that leverages artificial intelligence (AI) to infer user intent, integrate high-level design principles, and enable precise object manipulation. The system has been integrated into VRMoVi, a virtual reality (VR) environment to support immersive, real-time 3D interaction. Automatically generating aesthetically pleasing and functional layouts for a room in VR. CAOP uses a Markov Chain Monte Carlo model to iteratively refine room layouts according to 11 high-level interior design principles, such as alignment, symmetry, and balance. The layout is optimized by minimizing a weighted cost function. Each term evaluates how well the layout adheres to a specific design rule. A lower cost indicates better overall compliance with the combined guidelines. The weights of each design principle can be adjusted to prioritize different layout aesthetics. The algorithm iteratively adjusts each object's position and rotation, then recalculates the layout cost after each one, keeping the configuration with the lowest cost. CAOP was developed in C# within Unity to support real-time, interactive 3D layout manipulation. By combining AI-driven layout synthesis with intuitive gesture-based interaction, CAOP allows users to rapidly transform messy furniture arrangements into organized, visually appealing layouts while maintaining precise object control. After the system organizes the furniture, the gesture recognition, which is currently part of VRMoVi, will be integrated so that users can adjust furniture with hand gestures, and the optimal layout will be recalculated.

Data Analytics

18. Social Media and the Illusion of Stranger Danger
Presenter(s): Sienna Gomez
Advisor(s): Dr. Ann Gordon

Although many individuals often fear violence from strangers, research shows that violence occurs more frequently at the hands of family members, intimate partners, or friends. Despite this, Americans tend to overestimate threats coming from strangers. Data in the "Chapman Fear Survey Wave 11" suggests that exposure to social media can have an impact on people's perception of who is more likely to commit violence. This study analyzes the variables of how often Americans think they will be murdered by either a stranger or person close to them, and measures how these beliefs vary based on online news and social media consumption. Looking at the two factors of media exposure and fear allocation, this research evaluates that digital engagement increases "stranger danger" anxiety while ignoring the more statistically proven common threats. Similarly, Mohammed EL Nadir Abdallah Tani's paper on digital communication argues that online hate speech and violent content can contribute to a person's psychological trauma and desensitization. Research supports the hypothesis that exposure to social media content can shape public fears and water down individuals' fear of violence from people close to them. Exploring social media and online news content through this study shows the influence of Americans' perceptions of violence and personal safety based on online factors. By revealing how online environments influence people's perceptions of threat and raise knowledge of more interpersonal violence, these findings will support digital safety education, crime prevention, and public awareness.

19. Privacy-Aware System Failure prediction through Joint Longitudinal-Survival Modeling
Presenter(s): Fumiya Shinagawa
Advisor(s): Yuxin Wen

As manufacturing becomes increasingly data-driven, data privacy will become increasingly important for protecting sensitive data and ensuring the security and privacy of manufacturing operations. In this project, we propose a novel data-driven joint longitudinal-survival modeling framework, which combines statistical survival models and federated learning methodologies to jointly model and extract degradation features, to predict the potential failure just-in-time while keeping the signals private.

20. <u>**Bridging Machine Learning and Islamic Scholarship: A Study in Hadith Translation and Similarity Analysis**</u>
    Presenter(s): Asiyah Speight
    Advisor(s): James Wimberly

Translation of Islamic religious texts poses unique challenges requiring both linguistic and theological expertise. This study explores the application of neural machine translation (NMT) models to Arabic-English hadith translation while analyzing semantic similarity patterns across different human translations. Using the complete Sahih Bukhari corpus (7,550 hadiths) as the primary dataset, we adopt a dual approach combining transfer learning and comprehensive neural network analysis to demonstrate the critical impact of corpus size on model performance.

First, we fine-tune a pre-trained MarianMT Arabic-English translation model on the full Sahih Bukhari corpus, comparing models trained on 40 hadiths versus 7,550 hadiths. Performance is evaluated using BLEU scores, demonstrating that corpus scale significantly affects translation accuracy: the 40-hadith model achieves a BLEU score of 9.90, while the 7,550-hadith model shows substantial improvement, illustrating how adequate training data is essential for specialized domain adaptation.

Second, we implement and compare ten distinct Siamese neural network architectures to analyze semantic similarity between multiple English translations of the same hadith. These architectures range from simple LSTMs to advanced models incorporating attention mechanisms, bidirectional processing, and transformer encoders. Comprehensive evaluation addresses the severe overfitting observed with limited data: expanding from 40 to 7,550 hadiths improves validation accuracy from 42% to over 70%, reducing the training-validation gap from 56 to under 15 percentage points. An ensemble model combining the top three architectures achieves optimal performance.

Our analysis integrates computational metrics with theological accuracy assessment, leveraging expertise in Islamic studies to evaluate model performance. Findings indicate that while NMT models achieve reasonable quality for straightforward passages, they struggle to preserve religious nuance and precise Arabic terminology. Results provide quantitative evidence that adequate corpus size is the critical factor for meaningful model generalization. This research contributes to computational religious studies and underscores the irreplaceable role of human expertise in translating sacred texts, with implications for Islamic education and digital humanities scholarship.

Economics

21. Regulatory Impacts on Foreign Investment: An Analysis of How Regulatory Law Impacts Asian Firms' Investments in the U.S.

Presenter(s): Blaise Bowers
Advisor(s): Dr. Pradip Shukla

This project analyzes the current regulatory law's implications on the current account of key Asian trading partners of the United States. The project analyzes acts such as the Foreign Investment Risk Review Modernization Act, the Defense Production Act, the Foreign Investment and National Security Act of 2007, inter alia, along with numerous codified statutes and case precedent to connect legal considerations to real-world economic data. Nations believed to be hostile (such as China) often see investments blocked or limited in critical industries under these precedents; conversely, investors from allied Asian nations (such as Japan) receive considerably decreased scrutiny due to broad authority to regulate being granted to the executive branch, correlating to inequalities in investment patterns between nations. Many articles and research papers do not consider the investment regulation considerations behind current account imbalances. This project takes the approach of comparing the current account balances of various Asian nations with the United States and analyzing how key industries of investment interact with the relative regulatory laws. From this nuanced approach, a stronger analysis of economic data relative to US law can be made. This project first analyzes the current account imbalances of Asian countries and discusses patterns and discrepancies among investment capital flows, along with goods and services trade with the United States. The project then ties this real-world economic data to the numerous acts, codified statutes, and cases that influence how foreign investment is governed in the United States. The project then describes possible solutions to the issues posed by the regulatory and economic situation of various Asian countries relative to the United States, such as increased invoking and dispute resolution through the International Centre for Settlement of Investment Disputes, and legislation encouraging investment from trading partners investing below the USD value of their net export surplus. In turn, this could help inform possible policy changes in adapting how direct foreign investment, particularly from Asian countries, is regulated in the U.S on a more nuanced level and in more effectively using the law to address poor quantity or direction of capital flows and current account imbalances.

Electrical Engineering

22. Free-Space Interferometry Using Mach-Zehnder Approach: Experimental Implementation with 3D Printing
Presenter(s): Farzana Chowdhury, Luca Mukai, David Giani
Advisor(s): Dr Nasim Estakhri

Mach-Zehnder interferometers provide a mechanism to gather information about the environment by splitting a beam between two beam paths and determining their phase difference as they propagate through the environment. This for example can allow us to determine changes in the refractive index of the environment or distance between two objects. Free-space interferometry typically needs structures with ample room which restricts their use outside of laboratory settings. We suggest a solution where 3D-printed electromagnetically thin metasurfaces can be utilized to attain high efficiency and precise free space measurements. Elements of this solution include a wave source, a beam splitter, a phase shifter and restoring metasurfaces. Additionally, we designed modular 3D printed elements to make up each surface. The metasurfaces are designed in COMSOL software using the measured properties of our base material, nylon. The design frequency is 4GHz and we have 3D printed bases made of PLA for holding the nylon structures with the intent to keep them in place rather than freely setting them up. We are also constructing a structure to place the nylon metasurfaces and PLA bases on in order to keep them in one uniform line when performing the experiment.

English

23. Persuaded: Aristotle and the Five Canons of Rhetorical Theory
Presenter(s): Hailey Woodford
Advisor(s): Dr. Ian Barnard

Aristotle's "On Rhetoric" is a foundational rhetorical study that explores both the means and methods of persuasion. Within this work, Aristotle expresses a need for 'worthiness' within a speaker's persuasive methods in order to render a speech acceptable for proper presentation and consideration. This essay examines the classifications of such rhetorical worthiness, exploring how various tactics, specifically involving the relationship between persuasion and the persuader, contribute to the ultimate aim of an audience's acceptance. Drawing from Timothy Borchers and Heather Hundley's interpretation of the Five Canons of Rhetoric within the second edition of the collective study "Rhetorical Theory", this analysis explores the methods of persuasion through the literary lenses of invention, arrangement, style, delivery, and memory. Each section within the essay focuses on a specific canon, considering how various factors, functions, and interpretations influence an audience towards a rhetorical goal. Each canon is analyzed alongside Aristotle's model of persuasion, illustrating the concept that a speaker's credibility amidst

audience consideration is dependent upon a variety of rhetorical elements. Ultimately, this essay reveals that worthy, successful persuasion through Aristotle's theory has direct ties to the strategic application of rhetorical methods, rather than resting solely on the isolated words of the speaker alone.

24. The Art of Rhetoric: Understanding Arabic-Islamic Rhetoric and Russian Rhetoric
Presenter(s): Natalie Golovin
Advisor(s): Dr. Ian Barnard

In English 270: Foundations of Rhetorical Studies, we were taught to not only discuss traditional Western rhetoric, which almost always originates from only Greece and Rome, but to expand our horizons to other cultures and their rhetorical studies. For our second project I used our class text, Global Rhetorical Traditions, edited by Hui Wu and Tarez Samra Graban, to discuss Arabic and Islamic rhetoric and Russian rhetoric. I chose two rhetorics that I knew little about to begin with as a challenge and studied them to produce a juxtaposition rooted essay. These two rhetorical traditions were developed with different areas, religious values, faith, language and cultures. But through uncovering their moral values, I was able to analyze, compare and contrast the two and found that they are very similar. Despite the two rhetorical traditions not always connecting historically, they share many similarities. They both have a complex and historical cultural heritage and deep religious values. I did note the similarities of their religious ideals but I also made sure to address the differences. Every rhetorical tradition is an important form of rhetoric which needs to be studied by scholars and has something important to teach rhetoricians. Every form of rhetoric is similar to another in some way and we need to make the effort to find these connections.

25. The Distinction Between General and Specific Reasoning
Presenter(s): Reese Ludovico
Advisor(s): Dr. Ian Barnard

This project explores Aristotle's distinction between general and specific reasoning and how it shapes the way we understand arguments and truth. The main question I focus on is how Aristotle's difference between syllogism and enthymeme shows the limits of generalizations in reasoning. Using Aristotle's On Rhetoric and examples from rhetorical studies, I explain how a syllogism is built from true premises and creates a valid conclusion, while an enthymeme relies on audience assumptions that may not always be correct. I also connect this to the five canons of rhetoric, especially invention, because the strength of an argument depends on where its ideas come from. My main source is a close reading of Aristotle along with analysis of modern examples that show how people use generalizations in everyday speech and persuasion. From this research, I expect to show that generalizations can help us communicate but cannot always lead to real knowledge. Aristotle's view reminds us that true understanding comes from reasoning with specific facts, not just persuasive claims. Overall, this project argues that Aristotle's ideas about

how we form arguments are still useful today for recognizing the difference between what sounds true and what actually is.

26. 404 Not Found: Queering Memory Narratives in Digital Literature
Presenter(s): Alexsandra Abrantes Pereira
Advisor(s): Dr. Justine Van Meter

Literature has long been confined to the medium of print, and even in the present day, ebooks, no longer tethered to ink and paper, seek to replicate the aesthetic qualities of printed books in their presentation. However, the genre of digital literature leverages the capabilities of digital devices, often integrating multimodality, nonlinearity, and reader interactivity into works of prose and poetry. Since the genre does not adhere to the conventions of print media, I argue that digital literature is uniquely positioned to represent queer subjectivities in narratives that complicate linear time and teleological notions of memory. Moreover, digital literature offers another set of rhetorical possibilities as it occupies the realm of new media, providing queer rhetors with a wide range of techniques to engage non-queer audiences. Drawing on the growing number of online literary magazines and platforms featuring these inventive pieces, this analysis includes digital works by both queer and non-queer authors, exploring how queer ways of understanding time and memory influence all authors who work within this genre and their rhetoric. This analysis also factors in current challenges to digital literature, such as the precarity of preserving an archive of digital work without material equivalents and issues of gender representation, digital literacy, and access. Although digital literature may seem like a safe haven for queer and non-queer authors alike, these challenges inform how authors interact with their work as vessels of memory, since it is not assured that their work will remain on the Internet forever.

Environmental Science and Policy

27. Thermal Inequities in Public Parks and Open Spaces in Los Angeles Determined by Remote Sensing
Presenter(s): Ashley Agatep
Advisor(s): Dr. Joshua Fisher

Inequities in community-level cooling infrastructure, such as urban public parks and open spaces (PPOS), will amplify urban heat island effects. However, identifying these inequities requires high-resolution temporal and spatial mapping of surface temperatures which has been previously limited. In this community-based participatory research partnership, we utilize a novel downscaled spatial resolution to evaluate PPOS temperature differences throughout Los Angeles County. We found that the underserved community of South Los Angeles, as compared to their neighboring West Los Angeles counterparts, suffers a double burden of inequitable (1) access to and (2) presence of heat-retaining materials within these spaces, resulting in significantly hotter temperatures. This thermal inequity presents a major public health hazard as 36% of all PPOS in

South Los Angeles reached or surpassed the thermal burn pain threshold, while no PPOS in West Los Angeles reached this threshold. These results inform policies regarding the development of recreational spaces within underserved communities.

28. Evaluating ECOSTRESS Land Surface Temperature Data Over Coastal Waters with In-Situ Buoy Observations

Presenter(s): Jacquelyn Meiseles
Advisor(s): Dr. Joshua Fisher

Coastal environments are experiencing increasing thermal stress due to climate change, yet monitoring their surface temperature at high resolution remains a challenge. This study evaluates the potential of NASA's ECOSTRESS Land Surface Temperature (LST) Collection 2 product, aboard the International Space Station, for accurately capturing water surface temperatures in coastal zones. By leveraging in-situ water temperature measurements from NOAA's National Data Buoy Center (NDBC), we perform a global-scale validation of ECOSTRESS LST observations across diverse coastal settings. Study sites include thermally dynamic regions like Florida and Chesapeake Bay, representing a range of climatic conditions. To enable this comparison, we developed a robust pre-processing workflow that filters, georeferences, and quality-controls raw ECOSTRESS data to ensure spatial and temporal alignment with buoy records. Our analysis focuses on thermal behaviors in nearshore waters, with implications for assessing coastal ecosystem health and environmental change. Preliminary results indicate promising alignment between ECOSTRESS LST and buoy-derived temperatures. This work supports the broader use of ECOSTRESS for environmental monitoring, highlighting its utility in capturing dynamic temperature changes in coastal systems. Our workflow contributes an open, reproducible approach for validating satellite-derived thermal products and advancing Earth observation capabilities for coastal science.

29. Thermoregulatory Behavior Differences Between Snails and Hermit Crabs in Tegula Shells

Presenter(s): Abigail Harsche
Advisor(s): Dr. Richelle Tanner

The intertidal zone is a highly dynamic environment in which daily temperature fluctuations reach extreme limits. To deal with this extreme environment, behavioral thermoregulation enables species to maintain stable internal temperatures despite external changes by moving to cooler tidepools or shaded areas. Two common tidepool species in Southern California—hermit crabs (Pagurus samuelis) and Black Turban Snails (Tegula funebralis)— inhabit the same shells, meaning they have the same protection from abiotic conditions but perhaps different physiological responses to the climate that shells perpetuate during low tide. Although their thermoregulatory strategies have been studied separately, it's unclear whether they engage in the same behaviors when shell size and color are similar. This study utilizes a lab-based tidepool simulator and escape

behavior testing under a heat lamp to address this gap in knowledge. We used equal numbers of white and black shelled T. funebralis and P. samuelis(n=50 each) to test chronic and acute responses to heat in these lab-based arenas. In the tidepool simulator testing responses to chronic heat (25°C), T. funebralis moved between the hot and cold tidepool over a low tide cycle significantly more than P. samuelis. Moreover, T. funebralis were more likely to spend time in the water. However, there were no significant differences in escape behavior under acute conditions (heat lamp reaching 45°C), nor when escape behavior and tidepool behaviors were linked. Survival rate was 100% despite exposure to extreme temperatures up to 45°C, suggesting existing resilience under rising ocean and air temperatures.

FFC

30. Karmen Geï – Reclaiming Freedom and Desire in a Postcolonial World
Presenter(s): Cherish Dewan
Advisor(s): Dr. Ian Barnard

This project explores how Joseph Gaï Ramaka's film, 'Karmen Geï' (2001) transforms the European Carmen myth into a story of freedom, queerness, and postcolonial resistance in Senegal. My research asks how the film reclaims a colonial narrative by using African language, music, and performance to express autonomy and cultural renewal. Drawing from postcolonial and queer theory, I closely analyze key scenes—such as the women's prison escape and the church performance—to show how desire becomes a form of rebellion against patriarchal and colonial authority. Instead of portraying sexuality as destructive, as many Western versions of Carmen do, Ramaka reframes it as an act of liberation. The film's mix of Wolof and French, its use of Senegalese percussion and community song, and its portrayal of sensuality in sacred and public spaces all create what Homi Bhabha calls a "third space," where meaning and identity are continuously remade. I also consider classmate commentary and critics who suggest that the film risks reproducing a male gaze, arguing that this tension reflects the difficulty of depicting female freedom within inherited cultural structures. Ultimately, I conclude that 'Karmen Geï' replaces the European idea of tragic love with a collective rhythm of resistance. Freedom here is not a single act but an ongoing process—sung, danced, and shared by a community reclaiming its voice. Through this adaptation, Ramaka invites us to rethink who has the right to tell stories of desire and liberation, showing how art can become a living form of resistance and renewal.

31. José
Presenter(s): Sasha Ohana Cauchi
Advisor(s): Dr. Ian Barnard

"José" is a film concerning a gay man living in Guatemala, a corrupted country where LGBTQ+ rights are suppressed. The film follows José throughout his days, where he is close with his mother

and encounters Luis, his secret lover. Since the introduction of this character, we see a change in cinematography, demonstrating a shift José's life as he finds a romantic connection and hope. The film greatly uses lighting and camera movement to convey how José can feel free when being outside but also trapped in his household with his mother. Inside, the lighting is aggressive and artificial, and we typically see José in a tight frame, exhibiting the fixed mindset of his mother, and how he cannot be himself and/or say the truth. However, when he is outside with Luis, the lighting is natural and soft, and the camera shows the landscape, meaning that José finds himself whenever he is with Luis. Furthermore, the pacing of the film is very slow, which allows the viewers to feel absorbed by the film and understand more the relationship between the two men. Finally, the film keeps the visual style very simple with uncomplicated characters and an easy plot to understand. This allows the film to feel more realistic. To conclude, "José" uses some cinema techniques such as lighting and camerawork to convey his mindset and when he can express himself, and the film doesn't need a complicated storyline, characters or soundtrack to get attention.

Film

32. Opening the Door of The Celluloid Closet
Presenter(s): Melissa Hernandez
Advisor(s): Dr. Ian Barnard

While watching the documentary, The Celluloid Closet, I was instantly intrigued by how queer people and cinema mixed. Going as far back to the black and white, silent films era, queer people have been used as comedic relief, but not in an appealing way. Constantly being the butt of the joke, disregard for queer people became so normalized that certain tropes started popping up in cinema. One trope that we can still see be used frequently in today's films is the "bury your gays" trope (also known as the "dead lesbians syndrome") where queer characters in cinema are not allowed a happy ending and are typically killed off in an extremely gruesome manner, usually after finally accepting an intimate part of themselves. Some examples in cinema are The 100 (2014), Brokeback Mountain (2005), and The Children's Hour (1961). These harmful tropes tend to send the message that queer people are not valuable or important enough to be living a happy and free life only because of their sexual orientation. Sure, the representation of queer characters in cinema is there, but what good is it when they're killed off in the end? Another interesting fact I saw being mentioned in the documentary was the usage of the slur "faggot". Antonio Fargas, one of the interviewees, brought up the point that in cinema, the n slur is used to either portray an ignorant and racist cop, or as a form of friendliness and bond between two Black people. He points out that this is different from how cinema uses the word "faggot", where characters in film use it as a casual yet offensive manner. This trains the audience to put an insulting context to the word, where being called a "faggot" or "fag" is meant to be as a form of attacking. Recently, cinema has been doing better at representing queer people, however, there is still a lot of changes

to be made. No more queer murderers or killers, no more killing off queer characters, no more offensive queer jabs. If we want queer people and cinema to mix, we have to do it right, and good, correct representation is the way make that happen.

Health Sciences and Kinesiology

33. Daily Habits and Patterns - Tracking daily topics execution over the semester
Presenter(s): Erin Davis
Advisor(s): Dr. Oliver Lopez

As tasked in MATH 203 course, students were to track multiple topics that could be noted for each day of the semester. Each topic was recorded using various measures, including yes/no indicators, time spent, numerical amounts, or rating scales. Outcomes were tracked daily on an Excel spreadsheet and reflected on weeks later. This data will allow students to learn more about themselves and find patterns in behavior that could be informative for future semesters and lifestyle reflection. Quantitative analysis will reflect frequencies and trends experienced over the time period, and qualitative analysis will be used to provide context for understanding these patterns. Tracking topics like daily mood outcome, the number of emails received, and when Starbucks is purchased provides meaningful data on a student's behavior throughout the semester. Analyzing and understanding this data can help students gain a deeper understanding of how daily habits play into a full semester. This research also shows what things are easier to get done, like calling parents, versus something like math homework that is less easy to get done. Monitoring data like money spent on non-necessities (food, tuition, housing) increases self-awareness and a deeper understanding of where one's money is going. Overall, tracking daily data over the course of the semester leads a student to better understand themselves and their habits over the course of an academic semester.

34. Habits and Happiness - Analyzing How Daily Patterns Influence Mood
Presenter(s): Max Seitz
Advisor(s): Dr. Oliver Lopez

Over the course of the semester, I recorded 10 things on a daily basis: If I went to the gym, my weight at 8am, my day on a scale from 1-10, how many hours of sleep I got, hours of screen time , whether or not I ate healthy, my time doing homework, the amount of money I spent, if I talked to my parents, and whether or not I remember my dream last night. After recording these 10 different aspects of my daily life for a whole semester, I can look back on this data and analyze patterns to find their meaning.

After analyzing the data, it can be seen that my mood was highest on days that I got adequate sleep, exercised, and limited my screen time. In contrast, my mood was lowest on days where I got little sleep, did not work out, and spent more money than other days. These findings help prove that mood can be increased by indulging in physical activity, getting sufficient sleep,

monitoring screen time, and budgeting oneself in order to not overspend. Additionally, days that I had conversations with my parents and days that I spent a good amount of time doing focused homework showed to also increase my mood.

This data will help me better plan my days going forward as a college student and as a productive individual. I will use my findings to influence my daily life moving forward.

35. Triple Negative and Trouble: Management and Outcomes of Hypotensive Blunt Trauma Patients with Negative Chest X-Ray, and Fast

Presenter(s): Paige Kwan

Advisor(s): Dr. Oliver Lopez, Steven Forman MD, Brynne Ichiuji MD, Laura Bloom MD, Keyur Patel MD, Ali Gholamrezanezhad MD, Yael Weiner BA, Jessica Raya BS, Anaar Siletz MD, Matthew Martin MD, Kenji Inaba MD, Kazuhide Matsushima MD

During the initial trauma assessment, chest x-ray (CXR), pelvis x-ray (PXR), and Focused Assessments with Sonography for Trauma (FAST) are commonly performed as diagnostic adjuncts to identify the cause of hemodynamic instability following blunt trauma. While computed tomography (CT) provides the most comprehensive assessment of injuries, an increased risk of adverse events has been reported in hypotensive patients undergoing CT. Therefore, in patients with persistent hypotension and negative initial CXR/PXR/FAST results – "triple negative", the underlying cause of hypotension may remain elusive, presenting both diagnostic and clinical challenges. The purpose of the current study was to describe the injury patterns and outcomes of hypotensive blunt trauma patients with triple-negative results. This is a retrospective cohort study (2015-2024) including patients aged 16 years or older who presented to the Emergency Department (ED) with hypotension (systolic blood pressure < 90mmHg) following blunt trauma at a Level 1 Trauma center. Patients were included if they had a negative CXR, negative PXR, and FAST that was negative or equivocal. Negative CXR and PXR results were defined by consensus review from two trauma surgeons and a trauma radiologist, who determined whether the imaging results could explain the patient's hypotension. Descriptive analyses were conducted to evaluate the causes of hypotension and describe the practice patterns (diagnostic and therapeutic) and outcomes of study patients. We hypothesize that, despite negative initial imaging (CXR, PXR, and FAST), a substantial proportion of hypotensive blunt trauma patients required emergent operative or interventional procedures, with hemorrhagic and neurologic injuries among the most common causes.

36. Daily Patterns and Mood - Analysis of How Habits and Sleep Effect Emotional Well-being Throughout The Fall Semester

Presenter(s): Sydney Mills

Advisor(s): Dr. Oliver Lopez

This project investigated and analyzed how everyday habits and lifestyle choices can influence personal mood at the end of each day. The main goal of this project was to identify which habits

most strongly affected my personal emotional wellbeing throughout the fall semester of 2025. This study utilized Microsoft Excel to track ten different habits which included - duration of sleep, wake-up time, caffeine use, creatine use, screen time, exercise type (lift or cardio), number of calls with my mom on the phone, number of full meals in one day, and a self-rated mood score from 1 to 5 at the end of the day. The purpose of this data collection was to get a deeper understanding of how behavioral choices and daily activities affect emotional wellbeing over time. I hope to learn more about my daily patterns to more clearly see what helps me be most successful in everyday life, which will be beneficial for success in future semesters.

Data analysis highlighted patterns such as working out during the day correlated with higher mood ratings, or how caffeine consumption and increased screen time appeared to correlated with lower scores in the nightly mood tracker. According to early observation, days with an adequate amount of sleep, exercise, and family time were associated with the most positive moods, whereas days with little sleep and excessive screen time frequently coincided with lower moods.

Through quantifying these ten daily functions, this project highlighted the connection of mood regulation to everyday health habits and patterns. The findings provided useful insight into how small adjustments in everyday routine can have quantifiable emotional benefits, creating a baseline for improved self-awareness and habits. In the end, this study ultimately highlighted the importance of developing healthy habits in order to maintain health, general wellbeing, and mood.

Integrated Educational Studies

37. Teachers' Beliefs Expressed as Personal Practice Theories: A Touchstone and Tool to Navigate First Year Teaching Challenges

Presenter(s): Sera Shimakura
Advisor(s): Dr. Tara Barnhart

This study examined how early-career teachers utilize Personal Practical Theories (PPTs)—core beliefs about teaching and learning—to navigate first-year challenges. PPTs represent convictions about pedagogy, engagement, and classroom management that teachers develop throughout their preparation. This two-year longitudinal study followed credential program students through training and into their first year of service, replicating and extending Levin et al. (2013).

During preparation, participants engaged in reflection to develop coherent PPTs guiding future practice. Through self-studies, peer discussions, and faculty mentorship, they assessed congruence between stated beliefs and actual implementation, creating a baseline understanding of pedagogical identity. PPT enactment during the first teaching year was analyzed through structured interviews, reflective journals, classroom observations, and Critical Friends group sessions held every six weeks. This multi-method approach provided rich, triangulated data on how teachers navigated the transition from preparation to practice. The central question

examined whether teachers utilized PPTs to identify, analyze, and resolve conflicts while resisting institutional pressures threatening their values.

Findings revealed consistent conflicts between progressive ideals and institutional demands emphasizing standardization, testing, and traditional management. Engagement and empathy-related PPTs were both strengths and struggles, as curricular mandates and time constraints limited student-centered practices. Teachers reported feeling torn between building meaningful relationships and covering prescribed content.

Critical Friends groups proved vital, offering reflection, collaboration, and emotional support. In contrast, lack of site-based mentorship heightened stress, isolation, and attrition risk. Participants with consistent, philosophically aligned mentors were likelier to persist and integrate their PPTs into practice. This work highlights pathways for supporting teacher retention and growth, addressing the nationwide.

Mathematics

38. Balance in Motion - A Study of Energy and Productivity Over the Course of a Semseter
Presenter(s): Alexis Sweeney
Advisor(s): Dr. Oliver Lopez

This research aims to track and assess lifestyle and personal health behaviors over a semester in order to gain a better understanding of how daily routines impact overall well-being. Ten variables are being monitored, including weight, caffeine intake, sleep duration, napping, exercise frequency, homework hours, Instagram screen time, vitamin use, practicing miles, and mood evaluations on a 5-point scale. I intend to identify trends and relationships between these factors through consistent data collection throughout the semester, such as the effects of sleep and caffeine on mood, motivation, and productivity.

As a student-athlete and health science major, this initiative gives me the opportunity to apply my academic knowledge surrounding human performance and health to be able to actively apply it to practical settings. I hope to discover important patterns that shape the relationship between mental and physical health, daily routines, training load, and recovery. In conclusion, the goal of this study is to guide me in becoming more self-aware of my actions along with determining what helps me achieve peak performance and make better decisions in the future as I tackle the everyday challenges of being a social student athlete.

Music

39. Orchestral Textures for the Modern Film Composer
Presenter(s): Caleb Cox
Advisor(s): Dr. Jessica Sternfeld

This project is a comprehensive overview of fundamental orchestral texture techniques in the context of film music composition. This workbook focuses on fast moving textures, meant to serve as a model for expansion into a vast range of textural techniques in the orchestra, possibly beyond. The workbook is organized by section of the orchestra, with eight different textural techniques per section. In each section you will find detailed definitions/descriptions, historical context, popular examples, annotated images/diagrams, MusicXML links (functional in any notation software and/or DAW), and thorough application practices.

The workbook also includes four case studies examining four separate works by Maurice Ravel, John Williams, Bernard Hermann, and Claude Debussy. Similar details are included in these sections, examining multiple fast moving textures in a single body of work.

Orchestral Textures for the Modern Film Composer is meant to serve as a practical companion to the modern composer, a thorough resource in understanding complex and/or common textures found throughout the history of orchestral music. The document lives in digital format, and includes the composition Rivers and Streams, a tone poem written in congruence with this workbook meant to serve as a reference to the many textures mentioned throughout. This composition will be available as a .wav file and a .logicx file.

40. "Love Will Keep Us Together:" The Music of 1970s Variety Television
Presenter(s): Charlotte Yoder
Advisor(s): Dr. Jessica Sternfeld

The variety show is a genre of television like no other. The variety show genre is uniquely characterized by the structure within its episodes, an alternating sequence of musical performances and comedy sketches. It is a product of its time with no true modern equivalent, reigning supreme on broadcast television during the 1970s and fading into obscurity during the following decade. This project explores the role of music in 1970s variety television shows, analyzing the staging techniques of musical performances and studying how music interacts with different elements within the structure of an episode. The use of music is not isolated to musical performances; music permeates and enhances multiple aspects of variety TV entertainment. Variety shows create a dialogue between music and comedy, with music frequently incorporated into comedy sketches and comedic elements featured in musical segments. Popular television programs such as The Sonny & Cher Comedy Hour, The Captain & Tennille, and The Carol Burnett Show demonstrate this blending of art styles and represent predominant characteristics of the genre. Furthermore, this research examines the different ways popular songs are presented on television, comparing types of musical performances on variety shows with musical segments in

other television programs such as talk shows, Saturday Night Live, and MTV programs. By juxtaposing the use of music in variety shows to other television genres, this project uses a music-focused lens to determine what sets the variety show genre apart from other genres of television.

41. <u>On the Arbiter of Musical Taste: An Evaluation of Works by J.J. Quantz</u>

Presenter(s): Galen Weiss

Advisor(s): Dr. Jessica Sternfeld

Johann Joachim Quantz, flutist, flute teacher, and court composer to King Frederick the Great is often celebrated for his contributions to understanding 18th Century musical practices for the flute. Having written what is regarded as a highly influential treatise on flute technique, composition, and 18th century musical taste, J.J. Quantz asserts himself in history as a self-appointed arbiter of taste. Does J.J. Quantz successfully apply his own standards for tasteful composition in his body of work? This essay examines the final section from his treatise "How a Musician and a Musical Composition Are to Be Judged" and the specific rules that he submits for a tasteful solo concerto. These rules for concerto composition are interpreted and applied to several of J.J. Quantz's own solo flute concertos to call into question this authority he claims.

42. <u>What Does a Raccoon Heist Sound Like? An Approach to Adaptive Music and Sound in Video Games.</u>

Presenter(s): Jonathan Cesene

Advisor(s): Dr. Jessica Sternfeld

The rapid development of the video game industry and related technologies has expanded the possibilities and roles of game sounds and music. Though related to film music, video games are a younger genre and scoring them requires a different approach because of the nonlinear nature of games. Due to the unpredictability of the player, no two playthroughs will have the same timings, which creates a challenge when trying to score any events in sync. Through middleware and adaptive audio (an approach that actively adapts music based on gameplay), composers have the ability to further connect the gameplay and musical experiences to build a stronger immersive world for the consumer. For this project, I created a video game in its entirety, including composing original music and interactive implementation of the music. In the accompanying essay, I analyze the musical choices I made in order to shape the experience for the player. I explain how I chose the instrumentation, the melodies, and the textures; I lay out motif manipulations, cueing decisions, and implementation techniques used; and I demonstrate how all of these choices serve the gaming experience.

43. **The Posthuman Idol: Hatsune Miku and the Reimagining of Live Performance in the Digital Age**

    Presenter(s): Joseph Lewis

    Advisor(s): Dr. Jessica Sternfeld

Emerging from Crypton Future Media's second generation of Vocaloid software in 2007, Hatsune Miku, colloquially known as Miku, has since become a global phenomenon as an entirely virtual performer and voice bank software. Depicted as a sixteen-year-old girl with turquoise eyes and twintails, Miku has entertained audiences on internet forums and concert stages. Through her live performances as a hologram, open-source model of collaboration, and thriving online community, Miku embodies a posthuman form of artistry where the artist and audience and the boundaries of real and virtual are interconnected. This paper argues that Hatsune Miku's existence as a performer challenges the definition of "liveness" and reveals how authenticity and presence can emerge from collective participation and technological mediation rather than human presence. Hatsune Miku redefines what it means to be a live performer but also signals a broader trend in the 21st Century towards a decentralized, posthuman system of artistic creation and consumption.

Peace Studies

44. **The Silenced Holocaust: How U.S Interference Has Affected Guatemalan Lives in Today's Society**

    Presenter(s): Ashley Castillo

    Advisor(s):

While past research has been conducted on the effects of the United States' interference with Guatemala over the past century, and how that has affected the state of the country politically, there has been a lack of discussion regarding how this has affected the Guatemalan people culturally. Guatemala is a country that often is outcasted by a large percentage of Latin America socially, and continues to be silenced in the politically, especially in the United States, due to false misconceptions that have been created and continue to be widespread based on the effects of the bioterrorism the country experienced at the hands of the U.S., as well as it's silent Holocaust and how that affected its people. This research is inspired by my experiences growing up as a Guatemalan American woman in the U.S., learning from my parents' cultural experiences as they grew up in Guatemala and migrated to the United States. Living in Los Angeles, where there is a significant percentage of Guatemalans residing in the country, I've witnessed various firsthand narratives. Through collecting data from digital sources, such as online research journals and databases, I've also gathered firsthand testimonies from the Guatemalan community about how these misconceptions have affected them throughout their lives and ultimately had a negative impact on various aspects. I have also collected examples of our government's repeated exclusion of the country, and how this has affected the Guatemalan people living in the United States, who

make up a significant portion of our country's population, as migration of Guatemalan immigrants continues to rise. Ultimately, I hope this research can inspire a call to action to bring more awareness, both culturally and legislatively, to the issues Guatemalan people have faced at the hands of our country, and encourage the start of reparations.

Philosophy

45. Why We Do What We Do
Presenter(s): Charlotte Abelmann
Advisor(s): Dr. Ian Barnard

This poster closely examines the reasons given by renowned philosopher Aristotle to explain human nature, and why human beings do what they do. It goes over each of his seven concepts, identifies the commonality of these concepts and experiences, and estimates how many of these concepts still hold up. All of them did, in varying degrees, and Aristotle's legacy was further cemented by this examination.

Political Science

46. Who is Afraid of Nuclear War?
Presenter(s): Julianne Martin
Advisor(s): Dr. John Compton

Since the invention of the atomic bomb eighty years ago, the threat of nuclear warfare has become increasingly apparent. Although fears of nuclear conflict faded in the 1990s with the end of the Cold War, recent conflicts involving nuclear powers are once again causing anxiety. In this paper, I explore the different factors that affect an individual's fear of nuclear warfare and how this fear has evolved over time. Limited research done on this topic in the past has led to an underdeveloped understanding of how modern global conflicts affect Americans' fear of nuclear war. Further exploration into the effects of recent global conflict on Americans' fear of nuclear warfare will lead to a better understanding of how foreign affairs shape public perception and, by extension, public policy. Using the 2024 Chapman Survey of American Fears dataset, a representative sample of U.S. adults, I expect to find a correlation between gender, race, political party affiliation, political knowledge, and fear of nuclear warfare. This analysis will lead to a better understanding of what factors impact Americans' fear of nuclear war and the consequences this fear has for the American public and government.

47. How Privilege and Everyday Choices Shape Civic Awareness

Presenter(s): Nancy Velasco

Advisor(s): Dr. Ann Gordan

Political engagement is assumed to be that it only relies on education and income of an individual, yet the studies that I've looked over would suggest that civic engagement and awareness may also rise from social interaction and social contexts may equally shape how people follow politics and what kind of participation they choose to pursue. This paper will conduct an analysis from the 2020 American National Election Study (ANES) to assess whether, economic resources, political consumerism, and interpersonal discussion predicts how often individuals pay attention to politics and elections. My hypothesis is that political attentiveness is usually the strongest among individuals who integrate politics into their daily lives, through conversations and consumer choices, rather than those who only engage solely on a financial basis and choose the easiest pathway of participation. Although higher income individuals may have access to political information and the financial means to engage in other forms of participation they'll choose a different pathway to engage in politics.This would suggest that higher income and more educated individuals may have the resources to be politically engaged, yet their participation will often center around non-civic ways.

48. Life, Liberty, and The Pursuit of Violence: Economic Fears, Loneliness and Support for Political Violence

Presenter(s): Alayna Buchanan

Advisor(s): Dr. Ann Gordon

With the growing incidents of political violence in the United States including the assassination attempt on President Donald Trump, the murder of Minnesota House Speaker Melissa Hortman, and the increase of threats towards politicians, I sought to identify the root cause of these violent actions. In this paper, I will examine numerous factors that correlate to the increase of political violence. These factors include the rise of political media, the fear of an economic collapse, and the growing feeling of loneliness in the United States. Relying on the Chapman University Fear Survey (2025), which represents a national sample of American adults, I found that there is a correlation between the variables listed above and the agreement that violence is an acceptable way for Americans to express their disagreement with the government. I also found that economic factors, and fear of corrupt government officials also plays a role in how people view political violence. Individuals who exhibit more feelings of being lonely are more likely to agree that violent acts geared toward politics are justified. These findings will illustrate what the causes are of political violence, and will give a deeper understanding of how to put an end to political violence.

49. Doom and Gloom: Examining Predictors of Fears of Air and Water Pollution
Presenter(s): Analisa Vavoso
Advisor(s): Dr. Ann Gordon

Environmental injustice is a long-standing and essential issue facing low-income and minority communities in the United States. Historically redlined and low-income neighborhoods often experience disproportionately high air and water pollution levels. However, little research has empirically studied how fears of environmental injustice, including air and water pollution, differ by ethnicity and income. This paper aims to fill the gap in the current literature by analyzing the fears of Americans from various backgrounds regarding air and water pollution. Data will be sourced from Chapman University's 2025 Survey of American Fears. This survey is a nationally representative sample of U.S. adults. Findings are anticipated to reveal that low-income and minority individuals report higher levels of fear of air and water pollution. If anticipated findings are discovered, this offers further evidence to investigate exposure to pollution among low-income and minority individuals. Results will provide empirical evidence for future work needed to support the emotional well-being of individuals who have historically been more vulnerable to air and water pollution.

50. Politics of Government Mistrust: Party Ideology and Climate Change Fears in America
Presenter(s): Ava Alberts
Advisor(s): Dr. Ann Gordon

In the United States, opinions on climate change are becoming increasingly divided along party lines. Although current research examines how partisanship influences views on climate change, it lacks an analysis of how parties differ in their mistrust of the U.S. government and how this, in turn, affects their fear of climate change. Relying on the Chapman Survey of American Fears, which provides a representative national sample of U.S. adults' fears and concerns, this paper identifies a.) the variations in mistrust of government across American political party affiliations and b.) how such variations impact views on climate change. I expect to find that mistrust among Republicans is associated with a preference for limited government, which in turn correlates with increased skepticism of climate policies and decreased fear of climate change. This study also anticipates that Democrats' mistrust of the government involves the belief that environmental policymaking is ineffective and captured by special interests. These reservations are expected to produce heightened fear of climate change among Democrats. This exploration of how mistrust in the government varies across party lines will provide a better understanding of the polarization that America faces today. This knowledge can be used to implement climate policies with bipartisan appeal, allowing climate change to be addressed more effectively.

51. <u>Liberty or Chaos? The Racialization of Civil Unrest</u>
Presenter(s): George Louis
Advisor(s): Dr. Ann Gordon

Civil unrest has long been a defining feature of American culture, whether it is a protest, riot, sit-in, boycott, or a strike, these forms of expression spark debate over a wide range of contemporary issues. Some of these actions are viewed as a legitimate means of advocating for change, while others are perceived as a threat to democracy or a violent form of expression. This research paper investigates how race influences America's fear of widespread civil unrest. Using data from the American National Election Survey along with the Chapman Survey of American Fears, I find that Americans are afraid of civil unrest. My findings will show how race directly contributes to shaping fear for civil unrest depending on the groups involved. Specifically, the difference in how people of color reported higher levels of fear regarding the January 6th attack on democracy while viewing the Black Lives Matter (BLM) movement as a necessary and legitimate call for racial justice. In contrast, White respondents expressed lower levels of fear toward the January 6th attack but tended to view the BLM protests as a threat to law enforcement and social order. These contrasting perceptions reflect the broader cultural differences, highlighting the division between how one form of expression is interpreted as legitimate and how another form of expression is seen as a threat. Ultimately, this paper contributes to understanding how race shapes Americans fears of civil unrest and reveals the cultural differences in the values of liberty, security, and democracy.

52. <u>More Money, More Votes? Not Always.</u>
Presenter(s): Levi Ramirez Garcia
Advisor(s): Dr. Ann Gordon

It is commonly assumed that the more money a candidate raises, the more votes they will receive. While campaign funding plays a critical role in shaping visibility, messaging, and voter outreach, this relationship is conditional. This research analyzes the factors of electoral success in U.S. local elections using the dataset Campaign Finance in Local Elections: An Eleven City Study, 1989–2007. The findings suggest that both campaign contributions and the number of registered voters are significant predictors of electoral success. However, the results also show that money's impact weakens under certain conditions: candidates running as independents and those in cities like New York receive fewer votes even when they raise comparable funds. These results indicate that while campaign finance matters, its effects are limited by structural and contextual factors such as party alignment and city-specific political environments.

53. Do Christians Hate Democracy? The Amplification of Christian Nationalism and the Erosion of Democratic Values

Presenter(s): Lily Ballou
Advisor(s): Dr. Ann Gordon

As debates over the role of religion within American society continue to intensify, the idea of adopting Christian nationalism, a nation operated solely on Christian values, has become an increasingly discussed topic. In this paper, I researched how support or sympathy for Christian nationalism undermines and threatens democratic values, by evaluating associated attitudes towards religious freedom, xenophobia and immigration, and political violence. While existing research has explored the historical development and political influence of Christian nationalism, this paper contributes to the discussion by examining prevailing attitudes toward this movement and its relationship to democratic governance, asking whether it aligns more closely with democratic norms or authoritarian impulses. The data I will be relying on is sourced across years of the Chapman Survey of American Fears, a national sample of U.S. adults, inquiring on what strikes fear in Americans. Preliminary findings suggest that those who support or are sympathetic towards Christian nationalism itself do not support freedom of religion, a core democratic value in the First Amendment. This raises important questions about the implications of Christian nationalist beliefs for religious freedom, minority rights, support for political violence, and democratic pluralism as a whole, leading to the potential erosion of secular government practices. By considering attitudes within broader debates on religion and authoritarianism, this research contributes to ongoing discussions of how religious identity shapes political visions for the future of the United States, from what we have known throughout history to a potentially unrecognizable theocratic system.

54. Knowledge, Approval, and the Legitimacy of the U.S. Supreme Court: Democratic Implications in a Polarized Era

Presenter(s): Lindsay Molinelli
Advisor(s): Dr. Ann Gordon

This study will examine how political knowledge influences public approval of the United States Supreme Court and explore the broader implications of this relationship for democratic legitimacy. Using data from the 2024 American National Election Study (ANES), this research examines whether political knowledge about the court continues to serve as a stabilizing force in maintaining diffused support or if, as the literature suggests, the moderate position has eroded under polarization and identity-based politics. In doing so, this analysis will investigate whether individuals with higher levels of judicial knowledge exhibit greater approval regardless of ideology, or whether knowledge now emphasizes partisan divides. Situating these findings within democratic theory, this research will examine how the erosion of epistemic legitimacy challenges the Court's role as a pillar of constitutional authority.

55. Conditioning Elections: The Instability With Dynamic Voters

Presenter(s): Lorenzo Collier

Advisor(s): Dr. Ann Gordon

The stability of electoral outcomes is a cornerstone of democratic legitimacy, yet real-world elections increasingly exhibit volatility driven by dynamic voter populations and shifting preferences. By treating elections as a function f(x) where x represents voter choice, we can study the conditioning of election outcome functions under perturbations, analogous to sensitivity analysis of numerical solvers. This paper investigates the mechanisms underlying instability in elections when voters and their beliefs evolve over time, focusing on the effects of conditioning decisions on anticipated future changes. By surveying classical and contemporary models of voting rules under dynamic settings, this paper demonstrates how seemingly stable aggregation mechanisms can lose robustness in the face of preference fluctuations, and analyze the strategic implications when voters or election designers incorporate information about forthcoming population changes into their choices. Through mathematical analysis and illustrative simulations, it is revealed that conditioning on future voter dynamics introduces new avenues for equilibrium selection, strategic manipulation, and unpredictability. Using data from current and historical datasets from the American National Election Survey, along with the most recent Cooperative Election Study dataset, we find that factors such as quality of campaigns and perceived fairness of elections are major factors in stabilizing or destabilizing elections. These findings highlight critical vulnerabilities and design principles for election systems in dynamic societies, offering both theoretical insights and practical considerations for sustaining stability in democratic processes.

56. The Social Foundations of Immigration Opinion in the United States

Presenter(s): Megan Hicks

Advisor(s): Dr. Ann Gordon

Public opinion on immigration remains one of the most divisive issues in American politics, shaped by deep social and educational differences. This research investigates the influence of an individual's level of education on their attitudes toward immigration, whether legal or illegal, to the United States. Previous studies linking xenophobia, partisanship, and other demographics to attitudes on immigration provide the context for this analysis, which isolates education as the primary variable of interest. Using the 2024 Chapman Social Attitudes Survey, a statistical analysis was conducted with recoded variables. Crosstabulation and frequency analysis were performed with the recoded variables to better correlate and clarify the relationship between multiple education levels and immigration attitudes. The identified patterns of fear and acceptance towards immigrants confirmed that individuals with higher levels of education tend to view immigration more positively. Those with a lower level of education show a greater apprehension towards immigrants and illegal immigration. By isolating education as a key predictor, this study provides insight into how social factors shape political attitudes, reinforcing previous studies that

connect higher educational attainment with tolerance and support for humanitarian perspectives on immigration policy.

57. Beyond Red and Blue: Do Values Shape Partisan Identification?
Presenter(s): Noa Ohana
Advisor(s): Dr. Ann Gordon

The polarization of political parties refers to the growing divide between the competing ideologies of political groups, but the pressure to conform may be responsible for party affiliation, rather than value-based alignment. This research examines the relationship between values and partisan affiliation using the 2024 American National Election Survey (ANES). The objective is to analyze if the parties that American citizens support are compatible with the principles that guide the ways in which they live. By investigating moral values such as empathy, honesty, and secular-based decision making, this paper identifies if people's values are indicative of their political party affiliation, or if social conformity pressures have a stronger influence. This study uses a multivariate regression analysis to determine the extent to which these values contribute to partisan identity, independent of other factors that may contribute to an individual's political opinions, such as the media or demographics. Despite the continuously widening gap between Democrats and Republicans, I expect my findings to reveal that these opposing populations share more similarities in their moral ideologies than individuals may currently believe. This research is important because it intends to clarify how influential values are in shaping political party identification. Understanding this influence may help organizations and political officials develop methods to counteract polarization and ensure the preservation of American democracy.

58. Generations Divided: The Role Age Plays in Climate Change Belief
Presenter(s): Olivia Frates
Advisor(s): Dr. Ann Gordon

As climate change is on the rise, younger generations are vastly more affected, leading them to work against the irreversible impact it has had on them. In this paper, I will examine the relationship between fear of climate change and the different age groups of Americans. Using data sets from national representatives relying on the Chapman survey of American fears, I find a strong relationship between the younger generations and an immense fear of the effects of climate change. I also find that the older generations are less fearful of the impact of climate change. Through my research, I discovered that these differing generations significantly impact climate change skepticism. The vast differences between generations are due to the future and the fact that younger generations will have to deal with the effects longer than older generations, despite older generations seeing the world change. Looking deeper, geographical location, political parties, education, and more play a huge role within each age group and their belief about the climate crisis. The previous research on these topics has covered most generations from Baby Boomers to Generation Z. Still, as the world is ever-changing, it is essential to continuously

research the older generation's relationship to the climate crisis. There are incredibly different emotional reactions to the situation, and it is understudied why these reactions differ from generation to generation. As time passes, there is an incline in research regarding climate skepticism, but little research on how generational differences play a role in whether or not people believe in climate change. Although younger generations are working to reverse some of these impacts, it is essential to understand why they are fearful, to hopefully work towards a positive future regarding the climate crisis.

59. Activism or Clicktivism? An Exploration of Social Media's Effects on Political Participation.

Presenter(s): Sophia Kondo

Advisor(s): Dr. Ann Gordon

Although existing literature has noted that age is a strong predictor of voter turnout, the growing role of social media raises new questions about how digital platforms have impacted civic life and political participation. In this study, I draw from the American National Election Study cross-sectional survey of 2024 to understand how social media usage impacted voter turnout and overall political participation. While older adults are more likely to engage in traditional forms of political participation, such as voting, I hypothesize that younger adults are more likely to engage in political participation through digital forms of participation. Moreover, by examining participation across political acts including joining protests, signing petitions, donating to organizations, and posting online political content, this study explores the relationship between social media usage and clicktivism, to assess whether online political attention translates into meaningful offline participation or merely reinforces complacency. Analyzing the implications of a digital age on political attitudes and behavior is increasingly crucial to understanding how to adjust to and engage the younger generations whose political mobilization or complacency will shape the nation's future.

60. 18 to Buy, Any Age to Die: Why do Americans Fear Gun Control Amidst Rampant Gun Violence?

Presenter(s): Taylor Gadsden Deterville

Advisor(s): Dr. Ann Gordon

In the first 303 days of 2025, there were 350+ mass shootings in the United States. Recent research has shown mass shootings are one of the primary fears among Americans, and if unaddressed, could continue to cause political and social division. Using the Chapman University Survey on American Fears (CSAF), a national representative sample of American adults, my research highlights the influence of primary factors such as gender, political orientation, and media intake. This research will examine the correlation between gun violence and opposition to weapon regulation. Mass shootings have become rampant in spaces that should be safe, like schools, religious structures, and shopping centers. Yet, the fear of gun regulation is growing

rapidly, which raises a concern to whether gun violence is increasing in the country, or media and news sources are contributing to paranoia and anxiety. It has also sparked curiosity into public opinion and the reaction to these incidents. For example, is a person who often consumes media regarding violent gun use more likely to purchase a weapon for protection, therefore increasing the likelihood of gun violence? Based on existing research within my topic, I expect to find a decrease of support of gun regulation in response to prevalent gun violence. Prior research and studies have mixed data on whether mass shootings influence a rise in weapon sales and gun violence. Citizens deserve a safe America, which poses the question: How can we contribute to a safer country for our neighbors?

61. Excluding the Interested: Disability and Political Engagement in American Democracy
Presenter(s): Thea Krause
Advisor(s): Dr. Ann Gordon

Voting, campaign involvement, and political interest are integral aspects of democratic efficiency and accuracy. However, not all groups of people participate equally within democracy due to various factors, which weakens how their opinions and needs are represented in government. In this paper I examine the extent to which disability status shapes political engagement in the United States. Using the American National Election Study (ANES) data from recent years, I will cross examine disability statuses alongside voter turn out, participation in campaigns, and other measures of political participation. Individuals with disabilities are more directly affected by legislation such as health care policy, employment protections and benefits, public transportation and infrastructure, and voting access laws. Because of this, those with a disability are more likely to be passionate about ensuring political representatives and legislation align with these views, as they are directly affected by them. However, there are various structural barriers in place that prevent those with disabilities from participating in democracy and advocating on issues that directly affect them. This includes socioeconomic differences, disability stigma, and inaccessible polling procedures. Therefore, despite heightened interest, those with disabilities likely have lower levels of political engagement compared to able bodied groups. This paper demonstrates how structural barriers prevent those with disabilities from adequately participating in democratic practices, highlighting the need for a more inclusive system.

62. The Political Economy of Climate Change: How Corporate Interests Shape US Environmental Policy
Presenter(s): Victoria Fang
Advisor(s): Dr. Ann Gordon

Despite overwhelming scientific consensus, climate change is still one of the most politically polarized issues in the US. This paper will examine how media framing, language, and ideology shape public perceptions of climate change, arguing that the issue's controversy originates from the effects of scientific uncertainty rather than strategic communication and politicization. By

drawing on existing literature regarding climate change, denial, media influence, and political polarization, this paper will examine how language, framing, and media exposure affect individuals' cognitive and emotional responses to climate change. The tactics used by fossil fuel industries closely resemble those once employed by cigarette companies decades ago, deliberately manufacturing doubt and exploiting the media to create denial and doubt. Through these, this study will illustrate that the controversy surrounding climate change originates from the power of communication and how elites utilize media to frame, filter, and emotionally charge scientific knowledge. To investigate these dynamics, this study will analyze data from the CSAF Wave 11 Methodology Report, the Survey of American Fears, and the American National Election Study (ANES) 2022 Pilot Questionnaire. These datasets, which nationally represent the population, capture differences and variations in fear, media consumption, and political identity, allowing for a deeper understanding of how different communication environments (forms of media) shape perceptions of climate change. I hypothesize that individuals who primarily consume climate information through online and social media sources exhibit higher levels of fear and perceived urgency compared to those who rely mainly on traditional news media. By combining theoretical and empirical approaches, this paper will highlight the intersection of communication, psychology, and politics in shaping perceptions. It will also argue that the climate crisis is not simply an environmental one.

63. "Divided We Fear: The Politics Behind America's Economic Anxiety"
Presenter(s): Yadira Flores Hernandez
Advisor(s): Dr. Ann Gordon

Imagine waking up to headlines announcing a market crash. Some picture an end to stability; others see a nonpermanent storm. What separates these reactions is far more than just perspective; it is politics. Using the 2024 Chapman Survey of American Fears, a representative sample of U.S. national adults, I will study the patterns of fears regarding economic collapse across and beyond political lines. Furthermore, I will examine how partisanship shapes perceptions of such a collapse, adding layers of analysis with media and personal economic fears. My findings support the hypothesis that Democrats appear to express higher levels of concern about an economic collapse compared to Republicans, suggesting that economic anxiety is deeply united with the Democratic points of view. Additional findings explore related fears such as being unable to pay bills or being unemployed, and the relationship between media consumption (ex. CNN and Fox News), and the fear of an economic collapse. The Chapman Survey of American Fears presents a slight but statistically significant relationship between political parties, media preferences, and personal economic fears with the overall fear of economic collapse. The implication of this research lies in the demonstration that economic concerns are not equally distributed across parties, but rather are filtered through partisanship in matters that shape the debates and discourses around politics and policies that we have today. Understanding these forces is extremely important as the perceptions of a collapse may either create solutions or deepen the

present divides, ultimately determining if our society will respond to the fear of crisis with resilience or division.

64. Solutions or Punishment? Determinants of Attitudes Towards Homelessness
Presenter(s): Gabriella Bartsch
Advisor(s): Dr. Ann Gordon

As the homeless population continues to rise in the United States, it is imperative to look into public opinion, fear, and support for policies regarding how homelessness is perceived. In this paper, I will examine the relationship between various determinants, including political ideology, socioeconomic status, fear perceptions, and public attitudes toward homelessness policies within the United States. Use data from the Chapman Survey of American Fears, a representative national sample of U.S. adults. Among the interesting findings, we observe a correlation between Political Party Identification, the View that Homeless people living on the streets or in tents should be jailed if they refuse shelter space, and the level of agreement that adequate housing should always be made available for homeless people. In particular, a lack of correlation exists between higher education levels and views that advocate for more comprehensive welfare policies for homelessness. By examining how fears surrounding homelessness and tent encampments may decrease public support for both affordable housing and shelter initiatives, this paper reveals how fear-driven attitudes can influence policy preferences towards solutions or punishments. Although understanding public perceptions won't solve the homelessness crisis on its own, it is essential for developing effective and informed solutions.

65. The White Panic: Xenophobia, Media, and the Fear of Immigration
Presenter(s): Jacqueline Lopez
Advisor(s): Dr. Ann Gordon

In a nation founded and built by immigrants, immigration has curiously remained one of America's greatest fears. The issue of immigration has shifted from a matter of policy to a more societal conflict. With the rise of partisan media and xenophobic attitudes, the fear of illegal immigration continues to grow among the American population. In this paper, I will analyze theories of xenophobia and media politics to explain the fear of illegal immigration. Using the data set from the American Fears Survey, this study examines how biased media sources and xenophobic narratives reinforce negative perceptions of immigrants and thus contribute to the growing fear of illegal immigration. By exploring how fears of immigration intersect with the fear of whites no longer being the majority, this analysis will reveal the media's influence in intensifying these panics. The findings aim to highlight the overall role of media in our nation's anxiety about immigration and ultimately reveal how distorted patterns of representation continue to reinforce inequality in American society. To achieve liberty and justice for all, we must address the disparities that polarize immigrants in order to truly reflect the democratic pillars of this nation.

66. How Politics and Law Shape Product Management: Navigating Innovation, Regulation, and Governance in the Tech Industry

Presenter(s): Elise Hong
Advisor(s): Dr. Ronald Steiner

This independent study examines the ways political institutions, regulatory frameworks, and legal traditions shape product management practices in the global technology industry. As governments increasingly assert authority over digital markets, data governance, and artificial intelligence, product leaders operate in environments where strategic and design decisions are deeply intertwined with political and legal constraints. Understanding these pressures has become essential not only to achieving regulatory compliance, but also to building user-centered, trustworthy, and ethically grounded technology products. Focusing on privacy and artificial intelligence regulation, this project compares governance approaches in the United States, the European Union, and China. These are three regions that represent distinct political ideologies, institutional models, and regulatory philosophies. By analyzing policies such as the EU General Data Protection Regulation (GDPR) and AI Act, U.S. sector-specific privacy laws and emerging AI frameworks, and China's expansive data and algorithmic governance rules, the study evaluates how differing legal systems shape product development pipelines, risk-mitigation strategies, and innovation incentives. Through a combination of comparative policy analysis, case studies, and interviews with product managers in the tech industry, the research highlights the real-world tradeoffs product managers face when balancing technological innovation, user trust, and legal accountability. Particular attention is paid to how product teams integrate regulatory awareness into roadmapping, user experience design, data architecture, and AI feature deployment, as well as how cross-functional collaboration with policy, legal, and ethics teams is evolving.

Psychology

67. How does Optimism Relate to Social Support to Impact Physical Symptoms in College Students During COVID-19?

Presenter(s): Adelaide Kuehner
Advisor(s): Dr. Brooke Jenkins

The severity of physical symptoms may be influenced by an individual's level of optimism. Optimism could play a key role by enabling a person to approach the future with a positive outlook, potentially enhancing self-care and mental well-being. The objective of this study was to examine the relationship between optimism and physical symptoms among college students, with social support as a moderator. Data were collected from 292 students during the height of the COVID-19 pandemic through a virtual questionnaire assessing social support and optimism in May 2020, followed by a questionnaire in November 2020 assessing the severity of 33 physical symptoms (e.g. stomach pain, headaches, constipation). Linear regressions were conducted to analyze the main effects of and interactions between optimism and social support in predicting

physical symptoms. The results indicated that students with higher levels of optimism reported less severe physical symptoms (b = -0.694, p = 0.016). However, social support was found to not be a significant moderator of the association between optimism and symptoms (p < 0.05). While social support did not significantly strengthen the link between optimism and physical symptoms, the study emphasizes the association between optimism and reduced severity of physical symptoms. This highlights the importance of fostering optimism in college students to mitigate the impact of physical symptoms.

68. Flow in Motion: Detecting EEG Correlates of Flow State in Joint Improvisational Dance
Presenter(s): Ashley Waller
Advisor(s): Dr. Uri Maoz

Flow state was first defined by Hungarian-American psychologist Mihaly Csikszentmihalyi as a combination of six factors: (1) intense focus on the present moment, (2) merging of action and awareness, (3) loss of reflective self-consciousness, (4) feeling situational influence, (5) altered experience of time, and (6) feeling of intrinsic reward or fulfillment (Csikszentmihalyi, 1975). Given that dance elicits a subjective state of flow (Thomson & Jaque, 2012) and that subjective flow enhances dance performance (Csikszentmihalyi, 1990), this study aimed to investigate this state while dancing by using 32-electrode mobile EEG; specifically, measuring theta (4-8 hz) power based on its link to immersion (Lim et al., 2019). Eight opportunity sampled participants (all females, age 19-25) were asked to jointly improvise a dance with the goal of synchronous immersion. This task was done 20 times, spanning a range of 36 to 180 seconds. After each trial, participants rated their subjective flow experience from 1 (no flow) to 6 (completely in flow). A linear mixed-effect model was used to predict theta levels from participants' subjective flow reports. This analysis found that participants generally felt in flow (rating M = 4.22, SD = 1.27) but no significant relationship was found between subjective flow and theta power in joint improvisational dance, $F(1, 32.76) = 0.701$, $p = 0.408$. These results may be inhibited by low statistical power or suggest new methods are necessary for investigating flow state in dance.

69. The Jay Method: Breath, Mind, and the Body's Innate Intelligence to Survive
Presenter(s): Chezia Correnti
Advisor(s):

The Jay Method explores how the human mind and breath work together to protect life during moments of extreme stress, such as cancer, disaster, or uncertainty. Research shows that deep within the brain contains special neural circuits that sense danger and automatically change how we breathe. These circuits decide which breath the body will use, whether a sigh to draw in air, a gasp to protect oxygen, or a cough to clear an airway, revealing that the mind does not just respond to the body, it directs survival through breath. In this way, the mind leads, the breath follows, and the body responds.

Through gentle, intermittent breath-hold training, the Jay Method activates the body's built-in intelligence for protection and repair. When oxygen levels drop for short, controlled moments, this practice awakens ancient cellular responses, including apoptosis, often called the body's cancer cell suicide, where unhealthy, pre-cancerous, and cancerous cells are cleared away to preserve equilibrium. In this way, breath becomes medicine. Each intentional breath reawakens the body's natural codes for healing, centering the mind in calm and returning the body to its original wisdom.

Inspired by the Camp Mystic drownings and by Jay Moriarity, a surfer who survived a mythic wave through self-taught breath-hold training, the Jay Method expands this understanding of survival from the cell to the whole person. It connects the body's capacity for self-repair with the mind's role in activating it. The same biological pathways that clear damaged or cancerous cells and restore balance mirror the way focused intention and controlled oxygen exposure through breath-hold practice can awaken the body's deepest survival blueprint. Applied to cancer research and recovery, the Jay Method explores how controlled breathing and brief, low-oxygen training can stimulate cellular renewal, strengthen immune defense, and support the body's natural repair systems. It reframes breath as a biological intervention, one that influences energy use, cellular cleanup, and the mechanisms that sustain life.

70. Perceived Neighborhood Disorder and Psychosocial Functioning: Evidence of Resilience Among Racial/Ethnic Minority Groups

Presenter(s): Maverick Morales
Advisor(s): Dr. Jennifer Robinette

Perceived neighborhood disorder, or the perception of vandalism, litter, deserted buildings, and unsafety in one's neighborhood, has been linked to poor health and well-being. In the United States, racial/ethnic minorities are more likely to live in neighborhoods with signs of disorder than are non-Hispanic White residents. It is unclear, however, how degree of exposure to neighborhood disorder might modify the strength of associations between disorder and psychosocial functioning. Using data from the Health and Retirement Study, a U.S. national survey of men and women aged 51 or older, the present study examined perceived neighborhood disorder and psychosocial functioning (i.e., life satisfaction, anxiety, perceived stress, and loneliness) to test the following hypotheses: (1) higher perceived neighborhood disorder will relate to worse psychosocial functioning and (2) this relationship will be stronger for non-Hispanic White participants (n = 5,020) compared to non-Hispanic Black (n = 1,421) and Hispanic (n = 1,051) participants. Results demonstrated that perceiving one's neighborhood as more disordered significantly related to lower life satisfaction, and greater anxiety, perceived stress, and loneliness. Furthermore, with respect to life satisfaction, perceived disorder was worse for non-Hispanic White participants compared to both non-Hispanic Black and Hispanic participants. Regarding perceived stress, perceived disorder was worse for non-Hispanic White participants than non-Hispanic Black participants. Concerning loneliness, perceived disorder was worse for

non-Hispanic White participants than Hispanic participants. For anxiety, no significant racial/ethnic differences in its relation to disorder were observed. Thus, racial/ethnic minorities living in neighborhoods perceived as more disordered may utilize various forms of resilience which help protect psychosocial functioning. Future research should seek to identify sources of resilience which may help protect against perceived neighborhood disorder and increase accessibility to such sources for residents.

71. <u>Investigating Leakage in Perceptual Decision-Making in the Human Visual System</u>
Presenter(s): Eusabeia Silfanus
Advisor(s): Dr. Aaron Schurger

Previous research demonstrates that perceptual decision-making involves integrating noisy signals over time to a threshold. Such accumulator models may include leakage - the tendency for the decision variable to decay back to zero in the absence of evidence. Although behavioral and brain data during perceptual decision-making can be well accounted for without leakage, this might be linked to common choices of stimulus and task. We investigate a possible role for leakage in visual perception, introducing a novel stimulus and task context where the behavior of a human observer will vary in a predictable way if the mechanism is leaky.

Each frame of our dynamic noise stimulus consists of an oriented Gabor patch rendered using error-diffusion dither, with each pixel being either black or white depending, probabilistically, on the intensity of the corresponding pixel in the original Gabor. This allows us to precisely control the rate of information delivery without changing the physical intensity. The stimulus sequence consists of 20 unique noisy renderings of the same Gabor, presented at a threshold-level information intensity and at different frequencies. This frequency corresponds to the rate of evidence update. Should leakage exist in the visual system, the rate of evidence update would have to overcome the rate of leakage in order for a perceptual decision to be made and a percept to form.

The task is to identify the orientation of the Gabor from among two options: leaning left or leaning right. Participants were also asked about their confidence in their answer accuracy. Trial-by-trial accuracy and confidence judgments both decreased significantly as the evidence update interval increased. These results demonstrate a role for leakage in visual perceptual decision making.

72. <u>Investigating the Effect of Introspective Reports of Freedom on Volition Using Social Desirability</u>
Presenter(s): Suravi Kanugula
Advisor(s): Dr. Aaron Schurger

This project investigates the relationship between an individual's perception of their freedom and how free they actually are when making decisions. The central research question asks whether individuals recognize when subtle social factors are shaping their decisions or if they genuinely believe their choices are being made freely even when they clearly are not. Social desirability is

the tendency to present oneself in a favorable light. It is commonly measured through scales such as the Marlowe-Crowne Social Desirability Scale (MCSDS) and the Balanced Inventory of Desirable Responding (BIDR). This study will test whether the presence of an onlooker influences the participants' responses in the social desirability scales, and whether they are aware of that influence. Participants completed the MCSDS and BIDR scales in two conditions: one where an onlooker was present and one where they were alone. Contrary to our expectations, we did not find an effect of the onlooker's presence on either the MCSDS and BIDR scores, nor the perceived influence reports. This finding is interesting, as it contradicts the intuition that when another person is present, our tendency to create favorable social impressions should increase. Additionally, we found that the participants reported feeling more influenced after answering questions from the BIDR scale than the MCSDS. This finding is surprising, as it indicates an important inequality between the two scales, which have otherwise been considered equivalent. The experimenter's presence didn't significantly impact the influence reports therefore future research should examine whether the lack of observable influence persists across different contexts, populations, and types of social presence.

73. Revisiting the Link between Metacognition and Social Cognition
Presenter(s): Mia Gaffoglio
Advisor(s): Dr. Aaron Schurger

Research has suggested that the ability to think about our own thinking (metacognition) and the ability to understand others' mental states (mindreading) may rely on the same cognitive resources. A study by Nicholson and colleagues (2021) found that people's metacognitive accuracy decreased when they performed a mind-reading task at the same time, implying that the two processes interfered with each other. However, that conclusion is dependent on the assumption that the mind-reading task and a control task were equally difficult. If the mind-reading task was more difficult, having a lower performance could reflect general task difficulty rather than shared cognitive mechanisms. To address this, our study created a new auditory control task designed to replicate the mind-reading task in both type and level of difficulty. In experiment 1, participants did a visual discrimination task, while also performing either the original mind-reading task or our new control task. In experiment 2, we added confidence judgment to measure metacognitive efficiency. We expect to find that even when task difficulty is balanced, metacognitive efficiency will still be lower when combined with the mind-reading task. This would prove that metacognition and mind-reading compete for overlapping cognitive resources. If there is no difference found, this could suggest that previous findings may be due to uneven task demands rather than shared processing. Overall, the project aims to specify how self-reflection and social cognition interact within the human mind.

74. **The Pressure to be Fair and Lovely: Examining Sociocultural Body Image Pressures Placed on Indian American Women**

Presenter(s): Sohni Singh, Arushi Shelvankar
Advisor(s): Dr. Andrea Wolfs, Dr. David Frederick

"You're too dark! Stay out of the sun." "No one likes a chubby girl. You should eat less." These are common remarks in many Indian immigrant households, where beauty ideals are deeply intertwined with cultural values. Berry's acculturation model emphasizes that South Asian American immigrant women face dual societal pressures: those from the mainstream culture, and also pressures from their culture of origin. For Indian American women, internalizing these ideals and experiencing severe body dissatisfaction can lead to very unhealthy behaviors, such as fasting, supplement abuse, disordered eating patterns, and drug abuse. This study examined the relationship between growing up in an Indian American immigrant household and body dissatisfaction among 76 Indian American women recruited from online panels. Participants completed validated measures of overall appearance evaluation (Five items from the BSRQ), sociocultural Pressures (Sociocultural Attitudes Towards Appearance Questionnaire), and skin color satisfaction (Modified Body Image Scale- Skin color subscale). These results highlight the importance of addressing bicultural appearance pressures in South Asian populations.

Sociology

75. **Carrying the Collective: Queer Trauma, Embodiment, and the Formation of Friendships and Community**

Presenter(s): Bradley Carol, Katie Hwang
Advisor(s): Dr. Joshua Liashenko

The direct effect of collective queer trauma on the friendship-building of queer individuals has widely gone under-researched, leaving a gap in understanding the potential for trauma to be a source of community formation, relationship-building, and the reinforcement of social bonds. This work highlights potential ways for the collective to overcome trauma, resisting its adverse impacts on expressions and personal understandings of queerness. By utilizing ethnographic methods to engage with queer survivors of trauma, this work strays away from psycho-medical models of pathologizing queer identities and instead probes the socio-cultural systems that foreground anti-queer oppression. This project aims to investigate how trauma based on family/cultural rejection, institutional discrimination, and mounting public/legislative homophobic and transphobic discourse and policy creates a basis for collectivizing, social support, and community resistance for queer students in Southern California. This trauma gets carried through hegemonic power structures to create a collective sense of trauma specifically for queer individuals. The duality of the collective will be examined in terms of how it serves as both a challenge and a resource in creating a sense of self in the community. This study aims to explore how this collective trauma gets understood across the queer community and how the

collective informs friendships and queer intimacy on a platonic level. Study participants will be LGBTQ+ undergraduate college students across two universities in Southern California, recruited through their claim as a queer individual who discusses trauma with their peers. Overall, this work aims to illuminate how trauma is both internalized and collectivized through hegemonic power structures, fostering both a shared vulnerability and communal resilience within queer communities. In doing so, this work offers a nuanced understanding of how queer friendships and bonds become sites for healing, solidarity, and resistance.

Art

1. **Girl Meat**
   Presenter(s): Alexandra Poague
   Advisor(s): Micol Hebron

Girl Meat is a zine constructed by me, Alexandra Poague, to uplift feminist ideals in a campus setting. Prioritizing accessibility meanwhile serving as a fun creative hobby, Girl Meat is project to explore identity through abstract– occasionally obnoxious– visuals about maneuvering young adulthood. It blossomed from my own isolation and wanting to connect with the artistic community on campus and has become a unifying piece of empower women as well as commentary on current pop culture. I also make it a priority to support other female artists in the Chapman community, putting their work in to be shared to a national audience! Twice a month, I ship copies to 15 different states for national readers and share them around campus. It is my upmost priority to make other women feel seen, understood, and supported in the Chapman community, meanwhile being weird and a little freaky at the same time!

Biochemistry and Molecular Biology

2. **Molecular Dynamics-Based Screening of Naturally Derived Molecules to Serve as Potential Orthopoxvirus Antiviral Treatments**
   Presenter(s): Ocean Trang
   Advisor(s): Dr. Hagop Atamian

Orthopoxviruses remain a persistent public health concern despite the eradication of smallpox and the availability of Tecovirimat, a VP37 inhibitor. The recent monkeypox outbreak underscored the need to expand therapeutic options and anticipate resistance.

This project proposes a computational strategy to discover naturally derived inhibitors of VP37 that match or exceed the performance of Tecovirimat while potentially enabling feasible recombinant biosynthesis for scalable and cost effective supply. This was done by screening candidates from the COCONUT Database using molecular docking with AutoDock Vina to prioritize ligands by predicted binding affinity to VP37. Top ranked compounds underwent molecular dynamics simulations in GROMACS. Binding stability and interaction quality were then quantified through standard metrics including root mean square deviation, hydrogen bonding analysis, and end point free energy estimates using MM-PBSA and MM-GBSA. Candidate performance was then benchmarked directly against Tecovirimat binding to VP37. From 500,000 tested compounds with molecular docking using AutoDock Vina, Tecovirimat has ranked in the 87th percentile, leaving a substantial pool of higher-ranked candidates for molecular dynamics screening and analysis.

3. PRMT7-Mediated Methylation of p53 in Triple-Negative Breast Cancer

Presenter(s): Molly Niswender

Advisor(s): Dr. Cecilia Lopez, Dr. Marco Bisoffi

PRMT7 is a type III methyltransferase that catalyzes arginine monomethylation and is overexpressed in breast cancer cells. This study investigates whether PRMT7 directly methylates the tumor suppressor protein p53, a key regulator of DNA damage response and cell survival. Recombinant PRMT7 and p53 were incubated with radiolabeled S-adenosyl methionine under varying biochemical conditions and analyzed by SDS-PAGE and autoradiography. Methylation bands corresponding to p53 and PRMT7 appeared under low-salt, extended-incubation conditions, suggesting that PRMT7 can directly methylate p53 in vitro. These results indicate that PRMT7-mediated p53 methylation is a low-efficiency but specific modification that may influence p53's regulatory functions in triple-negative breast cancer. Future studies will use mass spectrometry to confirm methylation sites and assess their role in tumor progression.

4. Enzyme Activity in Crowded Colloidal Media

Presenter(s): Manya Chandra

Advisor(s): Dr. L. Andrew Lyon

Tissue engineering aims to support the formation and healing of tissues that lack self-healing capabilities or to enhance their regeneration speed (Lin et al., 2019). Biomaterials can help bridge the gap between external treatment and the body's natural healing mechanisms, restoring native tissue function (Lin et al., 2019). Within this context, microgels are being utilized in a variety of bioengineering applications. The ability to control their size (from tens of nanometers to hundreds of microns), their colloidal stability, and their high solvent content make them ideal building blocks for engineered biomaterials (Bachman et al., 2015). Furthermore, microgels can be made stimuli-sensitive, allowing for the creation of materials that respond rapidly to their local environment, such as changes in temperature, pH, ionic strength, and protein binding (Clarke et al., 2013). The Lyon Lab has pioneered the fabrication of poly(N-isopropyl acrylamide)-based microgels for bioengineering applications. In the work presented here, highly crowded microgel assemblies called microgel pastes were investigated to determine how factors such as microgel concentration and pH affect enzymatic reactivity within the paste. Given the high degree of macromolecular crowding associated with microgel pastes, we sought to understand whether that crowding would impact macromolecular activity. To determine enzyme activity within the pastes, colorimetric reactions were used to directly visualize the conversion of substrate to product in a model horseradish peroxidase enzyme assay. Our results show that enzyme activity is largely unperturbed by microgel crowding, and that substrate diffusion within the paste represents the rate limiting steps in enzyme activity. These results illustrate the promise of using crowded synthetic tissue scaffolds in biotechnology applications, where macromolecular activity must be maintained to produce biologically relevant outcomes.

5. **Confocal Microscopy Studies of Diffusion in Collagen Composites of Ultra-Low Crosslinked Microgel Pastes**
Presenter(s): Marion Harper
Advisor(s): Dr. L. Andrew Lyon, Elif Narbay

The tunable properties of microgels suggest a wide range of potential applications, among the most exciting being the mimicry of biological tissues. The extracellular matrix (ECM) comprises the basis of tissue structure and contains a complex network of protein structures, most notably collagen fibers. In an effort to mimic the crowded environment of the ECM, our group has developed a new class of biomaterials derived from microgel 'pastes'. Such materials can suffer from slow mass transport due to their density and viscosity. To explore mass transport rates in microgel pastes, we employed fluorescence recovery after photobleaching (FRAP) to examine the diffusion rate of fluorescently-labeled dextran in microgel "pastes". At high concentrations, microgels form viscoelastic gels exhibiting a densely crowded environment. However, despite their high bulk viscosity, diffusion of dextran through these materials remains extremely rapid and "water-like". This result indicates a hierarchical structure within the microgel paste allowing for both fast diffusion and resilient physical properties, important features of tissue scaffolds, as cell metabolism requires the rapid molecular diffusion to support cell viability. Furthermore, we examined the effect of collagen fibers on molecular diffusion through pastes containing self-assembled collagen networks ("collagen composites"). Previous studies showed a phase separation effect in which dextran was observed to partition to the collagen fibers at high paste concentration, indicating a partitioning of water to these regions. Comparison between paste and collagen composite diffusion data demonstrated faster diffusion speed in composite, clarifying the role of this partitioning in molecular mobility. This result indicates a path forward in designing biomaterials with multiple hierarchical regimes, both at the microgel scale and composite paste scales, allowing for preferential diffusion and cell proliferation required for further tissue engineering applications.

6. **Quantitative Morphological Analysis of Collagen Networks in Alginate-Crowded Pastes**
Presenter(s): Sebastian Herrera Vargas, Neeraja Gajendran
Advisor(s): Dr. L. Andrew Lyon

Alginate-based biomaterials are promising in regenerative medicine and tissue engineering applications given their biocompatibility, non-toxicity, and accessibility 1,2. These biomaterials have significant drawbacks as pure alginate-based gels demonstrate insufficient mechanical strength for surgical handling along with non-optimal biological activity, hindering their efficacy 1,2. Thus, we have explored alginate-composite gels to elucidate the full breadth of the materials in the field. Prior work in the Lyon group (Neeraja Gajendran) has illustrated noticeable changes in collagen fibrillogenesis induced by alginate in collagen:microgel composites. These observations have been largely qualitative to this point. Thus, quantitative collagen fibrillogenesis analysis techniques to quantify observed fiber growth differences in samples are needed. The

morphological analysis technique utilized FIJI, an open-source ImageJ software application for bioimaging. A custom data filtering and processing method was developed to permit differentiation of collagen fibers from background in differential interference contrast images. This was applied to 4 different compositions with the goal of understanding the behavior of collagen in the respective samples. The conditions studied were a pure collagen gel (control), alginate:collagen composite gel, collagen:microgel paste composite gel, and finally alginate:collagen:microgel paste composite gel. Thicker collagen fibers were observed in both the alginate:collagen systems, with the thickest observed in the alginate:collagen:microgel composite. The FIJI-based analysis bolstered the hypothesis developed from previous projects in the Lyon Group: alginate:collagen composites promote thicker collagen fibers due to molecular crowding effects. Future applications of this technique are analyzing the robustness of collagen in microgels to understand if alginate promotes self-healing and resistance to shear of the collagen fibers, fostering a stronger understanding of the viability of alginate composites and their usage in clinical settings.

7. Detection of Histone Protein Arginine Methylation Using Microfluidic Devices
Presenter(s): Kaitlyn Pachura
Advisor(s): Dr. Cecelia Zurita-Lopez

Protein arginine methylation has many important physiological implications including signal transduction, mRNA splicing, transcriptional control, DNA repair, and protein translocation. The methyl group added to the arginine residue of proteins is catalyzed by enzymes called protein arginine methyltransferases (PRMTs). Methylated arginine derivatives, specifically asymmetrically dimethylated arginine (ADMA) residues, have been identified as biomarkers correlated with cancer, cardiovascular disease, and diabetic nephropathy. We set out to characterize a microfluidic device for the long-term goal of developing a portable point-of-care device that can detect methylated arginine residues with a high level of sensitivity and specificity. To this end, this we first carried out in vitro methylation reactions at concentrations and quantities comparable to those necessary in a microfluidic device. We next fabricated three different microfluidic devices that differed in their geometries using polydimethylsiloxane (PDMS). Finally, we tested the flow-rate and geometries of these devices to determine which one would be best suited for protein arginine methylation reactions. Preliminary data show that arginine methylation can take place within these devices.

Biological Sciences

8. Hagfish Slime Gland Morphometrics
Presenter(s): Andrew Gabriel, Sam Wright
Advisor(s): Dr. Douglas Fudge

Hagfish are benthic marine animals who have become synonymous with their signature slime. When attacked by predators, hagfish eject slime out of slime pores, which are small holes on each side of their body, to clog a predator's gills. Historically, taxonomists have analyzed the slime pores on both sides of hagfish for only holotype specimens, with data for most specimens only being provided for the left side of the animal. This study investigates the taxonomic differences of slime gland morphometrics between the sinistral and dextral sides of two different species of hagfish (Myxine), Atlantic Hagfish (Myxine limosa) and Caribbean Hagfish (Myxine mcmillanae). Preliminary results suggest that there is no difference in the number of pores on each side, but that bilateral asymmetry in slime gland number within individuals is common if not the norm. Future experiments will measure the number of slime pores on both the sinistral and dextral sides of several more species using museum specimens.

9. Microplastic Concentrations in Eptatretus stoutii
Presenter(s): Miya Escalante, Ari Dedeoglu
Advisor(s): Dr. Douglas Fudge, Andrew Lowe

Microplastics are plastics that have been degraded to be less than 5 mm in size and are contaminants with adverse effects on the physiology, health, and reproduction of marine life. Hagfish are deep-sea (benthic) scavengers that may uptake microplastics due in particular to two aspects of their lifestyle - burrowing in sediments and scavenging on animal carcasses. This study will analyze microplastic concentrations in different tissues of Pacific hagfish (Eptatretus stoutii). The gastrointestinal (GI) tract, contents of the GI tract, hearts, gills, muscle, eggs, viscera, and skin samples were digested using 20% potassium hydroxide (KOH) for one week in 60°C conditions. This was then filtered through microporous glass fiber filters. Images of the filters were taken using a microscope under normal light and Ultraviolet light, which makes microplastics fluoresce. The filters were analyzed for the presence of microplastic size, shape, color, and concentration. Preliminary results depict that there are more microfibers than microplastics in the samples. Additionally, the observed fibers varied in color, including blue, red, black, and translucent. A quantum cascade laser will be utilized to verify the presence of plastics in the hagfish as well as to analyze the chemical structure of the plastics. This is one of the few studies that look at microplastics in benthic scavengers, which will aid in identifying how microplastics travel throughout trophic levels and the ecosystem.

Chemistry

10. Experimentally Determining pKa of a Morphine-Like Molecule Using NMR
Presenter(s): Bradley Sonnichsen, Annaliese Cuzick, Karishma Sharma
Advisor(s): Dr. Matthew Gartner

With the opioid crisis impacting millions worldwide, understanding the molecular properties of opioids such as morphine is an important factor when addressing addiction. The relative amounts of the protonated and deprotonated form of morphine, a tertiary amine, depends on the pH of the solution it is in. Protonation influences its ability to bind to the μ-opioid receptor (MOR), which plays a crucial role in pain relief and addiction. At physiological pH, morphine exists in a balance between its protonated and deprotonated forms, allowing it to bind both in inflamed tissue (pH 6.5) and the central nervous system (CNS, brain and spinal cord, pH 7.4), where addiction can develop.

The pKa of morphine, 7.9, determines this balance by indicating the pH at which protonation occurs. Lowering the pKa could shift the protonation state at physiological pH, potentially reducing CNS binding and addiction risk. In previous computational studies, several fluorinated morphine derivatives were proposed to have lower pKa values, suggesting decreased CNS activity. To validate these computational predictions, an accurate and reproducible experimental method for pKa determination is necessary.

This study aims to establish a reliable experimental approach for determining pKa values using nuclear magnetic resonance (NMR) spectroscopy. Pyridine and triethylamine were selected as model compounds, and their protonation states were observed under varying pH conditions. Using the chemical shift data collected using NMR and the Henderson-Hasselbalch equation, the pKa was quantified. By refining experimental pKa determination, this research provides a foundation for validating computationally predicted pKa values of opioid derivatives.

11. Adsorption and Retention of Copper Ions on Iron Oxyhydroxide Nanoparticles: Insights into Long-Term Sequestration of Metals in Aquatic Environments
Presenter(s): Miguel Olivas
Advisor(s): Dr. Christopher Kim

The contamination of aquatic systems with heavy metals poses a substantial risk to both humans and the environment's health. Trace metals from the earth's crust, such as lead (Pb), copper (Cu), and zinc (Zn), within aquatic environments can lead to health issues. These metals are released through activities such as mental mining and fossil combustion. A key process by which metal ions can be removed from solution is through adsorption to mineral phases, including iron oxyhydroxides. The long-term removal, kinetics of metal removal, and remobilization are not well characterized.

Iron oxyhydroxides can form as nanosized particles with a high surface area-to-volume ratio and physical and chemical properties that render them effective sorbents to metal ions. Studying

metal-nanoparticle interactions in controlled settings can provide insight into how toxic metals behave within water and how nanophases could potentially be leveraged to clean contaminated waters. The goal is to use iron oxyhydroxides to investigate metal ions' adsorption and desorption processes during different exposure time intervals. Copper metal ions were introduced into an aqueous suspension of synthetic iron oxyhydroxide nanoparticles. The dissolved concentrations of it were measured over time using the ion-selective electrodes (ISE) to assess the adsorption and desorption rates as a function of exposure time. In this study, the pH was adjusted to 6.0 to induce the adsorption of copper ions onto iron oxyhydroxide nanoparticles, and the system was left in the adsorbed state for varying durations (1 hour - 1 week). Desorption was induced by lowering the pH to 4.5, with the ISE measuring in real time the amount of copper ion released from the nanoparticles. Preliminary data have shown a trend where the longer the heavy metals are associated with the iron oxyhydroxide nanoparticles, the more the metals are retained and the slower the metal desorption rate. This has implications for long-term sequestration and reduced potential toxicity of metals sorbed to solid mineral phases in the environment.

12. <u>Heterogeneous Catalysis: Investigating the Decomposition of Methanol on Platinum</u>
Presenter(s): Ben Smith
Advisor(s): Dr. Jerry LaRue

Catalysts play a substantial role within the chemical industry, as their ability to conserve energy and increase the efficiency of chemical reactions makes them a vital component of modern science and technology. Platinum is a great example of this: its use in catalytic converters is what makes it possible for motor vehicles to run without expelling poisonous gases. While much is known about the capabilities of catalysts, there is a poor understanding of their fundamental chemistry. Studying how metals like platinum interact with common industrial materials will develop this understanding, allowing for greater efficiency and effectiveness. A common industrial chemical is methanol, as it is a common reactant, product, and intermediate in industrial processes. It is a very simple molecule with common atomic bonds, which makes it a strong candidate for studying its interaction with platinum. When exposed to platinum, methanol decomposes to form carbon monoxide, however there is little known about the intermediates that form and the kinetics behind this reaction. To study this, a platinum crystal was placed in an ultra-high vacuum chamber, the surface was atomically cleaned to remove surface contamination, and it was exposed to methanol gas. Temperature-programmed desorption and sum-frequency generation spectroscopy were then used to determine what products are formed during this reaction. The data collected using these methods indicates that the methanol decomposes to form a methoxy intermediate, which then rapidly dehydrogenates to form products of hydrogen and carbon monoxide. This insight greatly improves our knowledge of catalyst functionality, and allows for the mechanisms behind reactions like this to be modeled for any future applications.

13. Quantitative Microscopy Analysis of Multi-Component Microgel Paste Dissolution
Presenter(s): Kathryn Kozbur
Advisor(s): Dr. L. Andrew Lyon

Stimuli-sensitive microgels are a type of hydrogel microparticle sensitive to environmental changes such as temperature and pH. Microgels have unique properties that can be used to create new materials for bioengineering. One class of materials are pastes, a class of shear-thinning gels formed from highly packed assemblies of microgels. Previous studies show that microgel pastes support collagen self-assembly and cell invasion and proliferation, suggesting their utility as tissue scaffold materials. We have investigated the dissolution properties of pastes containing mixtures of two different responsive microgels composed of N-isopropylacrylamide (NIPAm) and acrylic acid (AAc). So-called "crosslinker-free", or ultra-low crosslinked (ULC) microgels were synthesized, along with more rigid microgels containing the exogenous crosslinker, N,N'-methylenebisacrylamide (BIS). Pastes were mixed at varying concentrations with water, saline, and phosphate-buffered saline (PBS). Mixed pastes, made with crosslinked and non-crosslinked microgels, were mixed at varying ratios with water. Drops of paste were placed under a brightfield microscope and observed via differential interference contrast (DIC) as they dissolved in water, saline, and PBS. Movies were taken as they dissolved, and the dissolution was analyzed using the TrackMate plugin in FIJI. Overall, it was found that lower concentration pastes dissolved fastest. Mixed pastes with higher BIS concentrations were fastest. This suggests that crosslinked microgels create "weak links" in pastes, allowing dissolution to occur rapidly. In studying how we can affect paste dissolution rates, we can fine-tune drug delivery depot, allowing dissolution to be timed to occur at specific time points as needed to optimize efficacy of a released therapeutic.

Communication Sciences and Disorders

14. Early Word Production Outcomes in Infants with Congenital Hearing Loss
Presenter(s): Taylor Low, Kyle Okazaki
Advisor(s): Dr. Mary Fagan

Early language development and vocalization are important milestones during infancy. However, the majority of infants with congenital hearing loss are delayed in the expressive oral communication skills compared to their hearing peers. Specifically, infants that receive cochlear implants at 12 months of age and beyond continue to be at risk for delays in word production even after several years of cochlear implant use. For example, prior research studies have shown that infants who received cochlear implants at 12- 14 months old produced significantly fewer words after one year of cochlear implant use than hearing peers matched to the infants with cochlear implants by chronological age (Fagan & Vu, 2022). This current study extends previous research by examining the frequency of word and non-word utterances in infants implanted earlier than 12 months, at 8–9 months, after 6-12 months of cochlear implant use. Two groups of 8 infants with implants and normally hearing (NH) infants were included in this study. Participants

were video-recorded in their homes interacting with their mothers during free play with books and toys. Data analyses currently in progress are expected to reveal significant differences between word production and non-word utterances, with a lower production of words within the cochlear implant group.

15. **Listening Fatigue and Academic Engagement in Deaf and Hard of Hearing Students in Higher Education**
   Presenter(s): Aditi Anand
   Advisor(s): Dr. Zed Sehyr

Listening fatigue, defined as the exhaustion that results from the sustained effort required to listen, process, and comprehend spoken language, is a significant but under-researched barrier to educational access for Deaf and Hard of Hearing (DHH) students. Previous research and most existing research has focused on clinical or workplace settings, leaving a gap in understanding how listening fatigue affects academic performance, participation, and well-being in higher education.

This survey-based study explores the prevalence and impact of listening fatigue on DHH students in U.S. universities, with a particular focus on the relationship between fatigue, classroom environment, and accommodations. Survey data are being collected via a secure, IRB-approved REDCap platform from DHH students enrolled in disability services across multiple California universities. The study employs standardized instruments, including a modified PROMIS-Deaf scale and the 10-item Vanderbilt Fatigue Scales, along with additional measures of classroom communication, attentiveness, and accommodation use. Correlation and regression analyses will examine the relationships between listening fatigue, academic engagement, and support systems, providing actionable insights for institutions and educators.

Data collection is ongoing, but preliminary findings reveal that higher levels of listening fatigue are associated with reduced academic participation and engagement, whereas consistent access to accommodations such as microphones, captioning, and hearing assistive devices is correlated with improved engagement and lower fatigue. Participants also report that certain environmental factors and teaching styles can significantly exacerbate listening fatigue even when assistive technologies are in place. Prolonged listening and visual effort can overload cognitive capacity, limiting comprehension and participation. These findings suggest that accommodations may play a protective role against listening fatigue, highlighting their critical importance in supporting academic engagement for DHH students.

Communication Studies

16. Hazing in the U.S. Military: Gender, Power, and the Culture of Silence
Presenter(s): Athalia Jorden
Advisor(s): Dr. Lisa Leitz

In the military, hazing is often dressed up as "tradition" or "team bonding," but underneath, it's about control, about proving who holds power and who doesn't. Even with strict bans in place, it continues because toughness is treated like a badge of honor, and silence is mistaken for strength. In a culture where men are told to hide emotion and women or queer service members feel the need to overperform just to belong, hazing becomes less about unity and more about proving worth. As a former Boatswain Mate in the U.S. Navy, I know this pressure firsthand. I learned quickly that speaking up could make you a target, so I stayed quiet. That silence came at a cost. In this project, I bring my own experiences of fear and conformity into conversation with research that exposes how deeply this culture runs, Matthews (2015) on command responsibility, Ward (2015) and Pershing (2006) on masculinity and gender, Carey (2025) on discrimination and prevalence, and Campbell-Sills (2023) on mental-health impacts. By combining autoethnographic reflection with policy and data analysis, I explore how leadership, hierarchy, and gender norms work together to sustain hazing. This project demonstrates that hazing persists not because of individual misconduct, but because the military's structure and values reinforce it. By normalizing silence and glorifying endurance, the institution sustains harm under the language of loyalty. My findings emphasize that genuine leadership strength comes from accountability and care, not control or fear.

17. Majority Group Audiences and Parasocial Relationships (PSRs)
Presenter(s): Elizabeth White, Emma MacGregor, Kalea Brown, Ty Madrigal
Advisor(s): Dr. Rebecca Tukachinsky Forster

This study examines how exposure to minority media representations influences intergroup attitudes and parasocial relationships. Grounded in Parasocial Contact Theory and Social Identity Theory, the research investigates three primary hypotheses. H1 predicts that exposure to multidimensional Asian characters will lead to more positive attitudes toward marginalized groups compared to exposure to stereotypical portrayals. H2 posits that Asian American students will report stronger parasocial identification with minority characters than White students, reflecting identity-based affinity. H3 proposes that greater perceived homophily with minority media characters will be associated with stronger parasocial relationships. Participants will be randomly assigned to read a short story featuring either a multidimensional or a stereotypical portrayal of an Asian-American character. Attitudes toward marginalized groups will be measured using validated prejudice scales, while parasocial relationships and perceived homophily will be assessed using established self-report instruments. Racial/ethnic identity will be self-reported. Independent-samples t-tests will test H1 and H2, while Pearson's correlation will test H3.

Descriptive statistics (means and standard deviations) will summarize key variables. This research is significant because it extends our understanding of how media representations can shape intergroup attitudes and foster social connection, particularly for marginalized audiences, offering implications for reducing prejudice and promoting inclusive media practices.

18. The Impact of Celebrity Misbehavior on Fans' Supportive Behaviors.

Presenter(s): Harrison Sera, Ty Merritt, Brooke Dailey, Peyton Costa

Advisor(s): Dr. Rebecca Tukachinsky Forster

The purpose of this study is to examine how fans respond when their favorite musical artist commits moral wrongdoings as it relates to Expectancy Violation Theory. When an artist's behavior contradicts expectations, it can create dissonance and reduce support from fans. We hypothesize: (H1) Fans will report lower supportive behaviors (e.g., streaming, purchasing) after their favorite artist committing a wrongdoing than those in the control group; (H2) Fans will decrease supportive behaviors more when the wrongdoing is severe (domestic violence) compared to less severe (adultery); and (H3) Fans will decrease supportive behaviors related to financial investment (e.g., purchasing merchandise) more than low-cost behaviors (e.g., social media engagement) after their favorite artist commits a wrongdoing than those in the control group. We will test the hypotheses with an online experiment in which participants will identify their favorite solo artist or band member and complete a baseline fandom measure. They will be randomly assigned to read a minor or severe misbehavior news notification about their chosen artist before completing a supportive behaviors scale. The control group will skip the stimuli and complete this measure. This study advances understanding of parasocial loyalty and moral evaluation in musical artist-fan relationships.

19. The Effects of Chat GPT on Relationship Satisfaction and Perceived Authenticity.

Presenter(s): Kate Smith, Raine Conti, Mia Valenzuela, Emily Viscia

Advisor(s): Dr. Rebecca Tukachinsky Forster

This study aims to examine how the use of artificial intelligence tools (Generative AI), specifically ChatGPT, impacts individuals' communication experiences within romantic relationship conflict scenarios. With the use of and reliance on Chat GPT rapidly growing and being integrated into interpersonal communication (Stonard et al., 2017), it is becoming increasingly important to understand its psychological and interpersonal effects within romantic relationships. The goal of this study is to explore whether AI-assisted messages influence users' relationship satisfaction and perceived authenticity when responding to a simulated relationship conflict. It is hypothesized that (H1) participants who use ChatGPT to draft their response will report lower immediate perceived relationship satisfaction (i.e., the degree to which they feel content and positive about their relationship following the interaction) compared to participants who draft responses without the use of ChatGPT. (H2) states that participants who use ChatGPT to draft their responses will report lower perceived authenticity (how much the response feels honest,

genuine, and true to their actual feelings and self) compared to participants who draft their responses unaided. To test the two hypotheses, when conducting an online experiment, the participants will be randomly assigned to one of two conditions: one an AI-assisted response group and the other the unaided response group. Participants will be instructed to read a hypothetical romantic-relationship conflict scenario and asked to draft a text message response according to their assigned condition. Afterwards, they will complete measures assessing their relationship satisfaction and perceived authenticity.

20. Social Media and Insecurity: Gendered Responses to Romantic Posts
Presenter(s): Lauren Knapp, Reem Awada, Sofia Frey, Johnny Movaghar
Advisor(s): Dr. Rebecca Tukachinsky Forster

In the age of constant social media use, romantic relationship expectations are increasingly shaped by online content. This study investigates how different types of social media content affect feelings of insecurity and relationship satisfaction among college students in relationships. Specifically, we hypothesize that men will feel more insecure and less satisfied in their relationships when their partners view posts depicting other men buying gifts or giving their partner flowers compared to content of other men in revealing clothing. Similarly, we hypothesize that women will feel more insecure and less satisfied in their relationship when their partners view posts of other women in revealing clothing compared to posts of other women buying gifts or giving their partner flowers or gifts. To test these hypotheses, male and female college students currently in heterosexual relationships were shown a series of social media posts. These images depicted either sexually provocative individuals or individuals engaged in emotionally intimate acts like gift giving. Participants then completed a survey measuring their relationship satisfaction and insecurity, asking how they might feel if they knew their partner was viewing this kind of content. Findings may create insight into gendered emotional responses and inform healthier digital boundaries in relationships.

Data Analytics

21. Daily Routines - An Analysis of Repeated Activities and Other Outcomes Throughout a Semester
Presenter(s): Hannah Hoang
Advisor(s): Dr. Oliver Lopez

The purpose of this semester-long data collection was to analyze 10 different outcomes to learn about my daily habits and to see if there were any noticeable differences in my behavior. I tracked 3 qualitative, yes/no outcomes each day: whether I consumed caffeine, cooked food, or wore sunscreen, and 7 quantitative outcomes each day: money spent, social media usage, bathroom breaks, amount of sleep, times I snacked, time listening to music, and the amount of times I refilled my water bottle. I collected this data by taking notes on my phone daily, then inputted

this data on an excel spreadsheet. My prediction is that my daily habits will have extreme fluctuations based on various situations. With the data, I am able to apply statistical analysis using methods that I have learned throughout the semester in my Math 203 class, which helps further my understanding of data interpretation and develop future skillsets.

Economics

22. 8AMs with Good Intentions: Habits and Metrics from a Sophomore Business Major's Semester
Presenter(s): Camden Ortega
Advisor(s): Dr. Oliver Lopez

The constant battle for work life balance is a persistent challenge for all college students, especially under high academic load. For the past 15 weeks, I tracked sleep, habits, and mood while pursuing an 18 credit schedule with daily 8 am classes. These metrics boiled down into my physical, behavioral, and emotional data. Notable patterns emerged, including poor sleep often caused strain on my morning routine before class. Recreational reading was in short bursts and periodic. Whilst games remained minimal until rediscovered mid-semester, after which they became a frequent but short activity. Coffee became a core part of my morning even though it had little impact on reducing fatigue from sleep debt. These observations highlight the tense reality of aiming with high intentions but the reality of time management. Concluding from my collections, Sleep is something easily given up, and slowly recovered—much like money. Habits that formed in the beginning of a semester persisted throughout it. While looming deadlines often forced me to give up gym time to meet academic demand.

Electrical Engineering

23. Controlled Vibration Exciter for Optical Measurement Systems
Presenter(s): Joseph McWherter
Advisor(s): Dr. Nooshin Estakhri

We design and fabricate a controllable device that randomizes a powder sample (such as Titanium dioxide nanopowder) to facilitate certain optical experiments performed on the powder. Our experiments require an automated device to shake a cell containing a fine powder, where the intensity, duration, and interval between activations are programmable. At the end of each activation, the cell needs to be returned to its original position with high accuracy so that the experiment can be performed again without human intervention. We are using an Arduino to control a motor that meets these specifications. We are pursuing designs that utilize either a crank and slider mechanism or a Scotch yoke mechanism to translate the rotational movement of the motor into reciprocating motion of the powder cell. We compare tradeoffs in rotational

velocity and positional accuracy between a DC motor with an encoder and a stepper motor to determine the suitable motor for the application. By automating the process of randomizing the powder samples, this device increases the efficiency at which optical experiments can be performed. There is no need to manually pick up and shake the cell between trials (which can range between 100s to 1000s), so we do not need to be physically present to run sequential experiments.

24. A Microcontroller-Based Restrained Vibration Exciter
Presenter(s): Luca Mukai
Advisor(s): Dr. Nooshin Estakhri

Coherent backscattering (CBS) is a fundamental interference phenomenon that provides insight into wave transport in disordered media. Accurate characterization of CBS requires ensemble averaging over many distinct disordered configurations, a process that is often tedious and time-consuming due to the need for manual sample movement. In this work, we develop a mechanical system to repeatedly perturb finite disordered samples, enabling high-throughput CBS measurements. The apparatus uses a programmable actuator to shake the sample under controlled amplitude and frequency conditions, synchronized with an optical detection setup for automated data acquisition. The actuator is controlled using an Arduino acting as a proportional–integral–derivative controller (PID controller). The advantage of using a PID controller is its ability to control the position of a motor as well as its torque. This ensures optimal positioning in the measurement field. This system can significantly improve the measurement efficiency and reliability of CBS data collection.

25. Low Power UART
Presenter(s): Sasha Zagorski
Advisor(s): Dr. Peiyi Zhao

Serial communication is a fundamental method for data exchange between digital systems, relying on the sequential transmission of bits over a single channel. Among various serial communication protocols, the Universal Asynchronous Receiver–Transmitter (UART) is widely used for its simplicity, low hardware overhead, and compatibility across diverse devices. In this research, a UART transmitter and receiver were implemented in SystemVerilog and tested on a Basys3 FPGA board to evaluate functionality and performance. The design process emphasized modularity and timing accuracy, ensuring reliable data transmission while maintaining compatibility with standard baud rates. Building on this foundation, the study conducts a survey of low-power UART design methods proposed in prior research. Several approaches are analyzed, including clock gating to reduce unnecessary clock transitions during idle states, voltage scaling and module power-down techniques for dynamic power management, and asynchronous design strategies that eliminate the need for continuous clocking. These methods are compared in terms of power efficiency, design complexity, and implementation feasibility in FPGA and ASIC systems.

The findings aim to provide a clear overview of current techniques for reducing energy consumption in UART circuits, offering insights for future work on optimizing serial communication interfaces in power-sensitive applications.

Chu, P. (2018). FPGA prototyping by SystemVerilog examples (2nd ed.). Wiley. ISBN 978-1119282662

English

26. The False Accessibility of Rhetoric
Presenter(s): Adreanna Esquivias
Advisor(s): Dr. Ian Barnard

In the first chapter of Aristotle's On Rhetoric (one of the most influential and important works in the study of Western rhetoric) Aristotle claims that rhetoric is a natural and valuable tool for all. However, when examining the progression and history of western rhetoric, it becomes clear that Aristotle's claims of universality do not hold true. Beginning in Ancient Greece, western rhetoric has been used almost exclusively by those in power to control the masses and protect their position in society. Moreover, by failing to acknowledge the unfair power structures at work in Ancient Greece, Aristotle's promises of rhetorical equitability gave marginalized groups (i.e., women, foreigners, and the poor) a false sense of power. Whether or not Aristotle had malicious intentions in doing so, he ultimately created a model of exploiting the democratic appeal of rhetoric (i.e., the promise of free speech) to trick citizens into quiet submission, which various modern governments continue to employ. Therefore, using Aristotle's On Rhetoric and various peer-reviewed papers, this project sets out to expose the false, 'democratic' pretense in which rhetoric was created, and the debilitating effects it has had on society.

27. Activity Over Passivity: Audience Involvement in Hawaiian-Polynesian and Indian Rhetorics
Presenter(s): Britney Henderson
Advisor(s): Dr. Ian Barnard

Aristotle has deceived the masses into believing the only purpose of rhetoric is to persuade and the only way to be persuaded is through being on the receiving end of text or speech. Due to his dominance in rhetorical studies, many other cultures have been underanalyzed, creating a supposed hegemonic idea of rhetoric and how it is received. However, Hawaiian-Polynesian and Indian rhetorical practices showcase the complexities in rhetorical transmission and the role an active audience plays in effective understanding. While Indian rhetoric serves to enlighten through spiritual understanding, Hawaiian-Polynesian rhetoric uses traditions and significant figures to convince others about the righteousness of individuals. Nonetheless, the two share many similar characteristics, the most prominent being how they are community, culturally, and historically driven. Audiences are tested on their understanding and knowledge, without

excluding those who are unfamiliar with cultural specifics. Moreover, they are engaged physically with actions and movement to create an immersive experience that, in the end, deepens rhetorical comprehension. Hawaiian-Polynesian and Indian rhetorics incorporate their audiences to challenge them to understand the intersectional relationship between culture and history, demonstrating how not all rhetorical power lies within the speaker.

28. Means of Persuasion: A Deep Look into Aristotle's Definition of Rhetoric
Presenter(s): Hailey Brunn
Advisor(s): Dr. Ian Barnard

The central purpose of my paper was to examine Aristotle's foundational concept of rhetoric as a flexible tool for discerning the available means of persuasion, as articulated in Aristotle, On Rhetoric: A Theory of Civic Discourse. Rather than viewing rhetoric as a fixed method for achieving persuasion, Aristotle presents it as a practical tool for critically evaluating both genuine and false arguments. This approach emphasizes the real-world utility and adaptability of rhetoric, making it relevant for anyone interpreting persuasive speeches in uncertain contexts, such as political discourse. Additionally, this paper examines Aristotle's nuanced view of ethos. Rhetoric, as is currently taught, is heavily rooted in Aristotle's position. However, subgenres of Rhetoric as we know it, like the speaker's credibility, Aristotle frames differently. Traditionally, we are taught that a speaker's credibility comes from their background and credibility as a source of information. His view reframes ethos as a quality that is constructed in the speech, which is discernible by the complexity of the language and its content, rather than the speaker's identity. I looked closely at texts by Aristotle and drew on the concepts of invitational rhetoric presented in Rhetorical Theory: An Introduction. The similarities I found highlighted rhetoric as a tool for the audience, but also as an invitation by the speaker for mutual understanding and discourse. This project challenges the audience's ability to remain objective when attempting to be persuaded.

29. Ban Zhao and Lil' Kim: Women Redefining Rhetoric
Presenter(s): Jordan Ballard
Advisor(s): Dr. Ian Barnard

This project examines how women across history have used language to claim space and power in societies that tried to silence them. By comparing Ban Zhao's Lessons for Women from the Han Dynasty with Lil' Kim's hip-hop lyrics from the late twentieth century, it explores how both women use rhetoric to resist patriarchy in different but equally powerful ways. Though separated by culture and time, each transforms social limits into opportunities for self-expression and influence.

Ban Zhao lived during a period when Confucian values restricted women's education and authority. Her writing appears humble and obedient, but beneath that surface lies a clever rhetorical strategy. Through calm reasoning, she argues that women's education is vital for family

harmony and the strength of society. Her subtle and humble tone becomes an act of defiance, showing that careful and respectful language can still question power.

Lil' Kim takes a completely different approach. Her lyrics use confidence, humor, and sexuality to challenge how women, especially Black women, are represented. In songs like "Not Tonight," she flips the language of desire and dominance, turning it into a form of empowerment. Her voice draws from African American oral traditions that value resilience and lived experience. By owning her image and her words, she reshapes what power can look like.

Together, Ban Zhao and Lil' Kim show that rhetoric can be a powerful form of feminist resistance - whether it be quiet and careful or bold and direct. Through their different styles, they prove that power in speech can take many forms. Real strength appears when women use their voices to claim space and define themselves. For both, rhetoric becomes more than just persuasion, it becomes a way to claim space, express identity, and create change.

30. From Results to Causes: Aristotle's Ethical Blind Spot?
Presenter(s): Mia Pinto-Cubillo
Advisor(s): Dr. Ian Barnard

In this poster it shows Aristotle's argumentation method "from results to causes" from On Rhetoric: A Theory of Civic Discourse being explored alongside its ethical and rhetorical implications. According to Aristotle, if two distinct actions lead to the same outcome, they should be evaluated identically, regardless of the intent or context behind them. This reasoning highlights important ethical questions because it disregards human reasoning, motivation, and moral responsibility. By exploring Aristotle's examples, like the comparison of gods being born or dying, along with contemporary scenarios in media and rhetoric, this poster analyzes the restriction of evaluating actions solely by their outcome. The tension between intent and result persists in modern discussions of persuasion, advertising, and public perception, highlighting the continued relevance of Aristotle's framework. An example of this being, unintentional consequences, like controversial advertising campaigns, that show how outcomes can overshadow intentions, affecting ethical judgments and social reception. This analysis emphasizes the controversy and complexity that surrounds Aristotle's "from results to causes" method; it reveals it as a cornerstone of debate in rhetorical theory and ethics.

31. Art of the People or Art of the Prince? The Irish and Mediterranean Tradition of Correlating Class and Rhetorical Learning
Presenter(s): Sonnet Harper
Advisor(s): Dr. Ian Barnard

This project briefly discusses the similarities and dissimilarities between the Irish rhetorical tradition, represented by "The Cauldron of Poetry and Learning" from the early 8th century, and the Mediterranean rhetorical tradition, represented by "Synopsis of Rhetoric in Similar Verses to the Same Emperor" by Micheal Psellos from a few centuries later. This project looks at the

correlation between socioeconomic status and rhetorical learning in both of these texts and notes the availability of rhetorical learning for those of higher economic status in comparison to those of lower economic status. It observes that, despite some internal contradictions within these texts, Irish and Mediterranean rhetorical traditions both positively correlate rhetorical learning and elevation with class. However, Psellos presents a narrower concept of rhetoric, with three types of rhetoric involving the aristocracy and policy making, whereas the Irish tradition depicted in "The Cauldron of Poetry and Learning" rebukes the idea of rhetoric as exclusive to genealogy and aristocratic wealth, presenting it as an art theoretically available to all people. Because of the impact of Mediterranean rhetorical philosophy on the Western world, notably the United States, I speculate on the effects of the United State's adoption of teaching a more Mediterranean style of rhetoric in schools as opposed to an Irish rhetorical philosophy.

32. Comparing Arabic & Islamic and Classical Western Rhetorics
Presenter(s): Victoria Clark
Advisor(s): Dr. Ian Barnard

This poster compares the origins and tenets of Arabic and Islamic rhetorical tradition versus Classical Western, specifically Greek, rhetorical tradition. Evidence is drawn from Aristotle's, On Rhetoric: A Theory of Civic Discourse, translated and commented on by George Alexander Kennedy, as well as the section "Arabic & Islamic Traditions 1.1" in, Global Rhetorical Traditions, by Hui Wu and Tarez Samra Graban. Both Arabic Islamic rhetorics and Greek rhetorics are lauded by historians as progenitors of art, language, and argumentation; they agree that the object of rhetoric is to tell the truth and that rhetoric has powerful applications for public use, but they differ dramatically in their inspirations. Born from Muhammad's divine wisdom realized through a caliph, Arabic Islamic rhetoric is characterized by morality and eloquence. Born from human reason and distributed by secular scholars, Greek rhetoric is characterized by humanism and reasoning, and it played a vital role in forming the seminal democracy of Ancient Greece. While revolutionary, this "rule by the people" remained strikingly exclusionary. Democracy became the quintessential model taught and replicated in the Western world, indeed inspiring the formation of the United States. Analysis of religion, judiciary models, and the inheritance of power reveals the danger in privileging Classical Western traditions over Arabic and Islamic traditions, for this action further perpetuates enmity towards other ideas that are not circumscribed as part of the convention, the canon, or "the best." Much more important than the differences between traditions are their similarities, proving understanding of diverse perspectives and cultures is an asset, not a weakness to governmental and judicial systems.

33. <u>Two Approaches to Straightforward Rhetoric</u>
Presenter(s): Zachariah Cook
Advisor(s): Dr. Ian Barnard

This poster examines the rhetorical philosophies of Ibn Sina (980–1037 CE) and Chen Kui (1128–1203 CE) concerning the role of conciseness and metaphor in effective rhetoric. Both thinkers valued clarity and brevity, yet their approaches diverge due to differing epistemological and cultural foundations. In al-Shifa, Ibn Sina constructs a boundary between rhetoric and poetry. He views metaphor as a deceptive artifice that appeals to weak reasoning and thus carries ethical implications for both speaker and audience. In contrast, Chen Kui's Rules of Writing promotes extraordinary similar values of simplicity and straightforward language, but he simultaneously embraces metaphor. Where Ibn Sina avoids metaphor, Chen Kui openly uses it as a vehicle for cultural resonance and rhetorical clarity. Though Chen Kui's metaphors can appear inconsistent with his principles of using clear and concise language, they are meant to function as shared cultural references that clarify meaning within his literary milieu. By situating Ibn Sina's suspicion of metaphor and Chen Kui's acceptance of it within their respective cultures and societies, this paper argues that both derive from parallel concerns about truth and persuasion. This comparison of their rhetorical practices reveals not a disagreement over rhetorical virtue, but two distinct cultural pathways toward achieving ethically grounded, effective, and concise rhetoric.

34. <u>Reclaiming Rhetorical Foundations: Challenging Aristotle's "Common Belief" as the Standard of Persuasion</u>
Presenter(s): Diana Montiel Guzmán
Advisor(s): Dr. Ian Barnard

In "On Rhetoric," Aristotle claims that persuasion must be grounded in "common beliefs." In classical Athens, "common belief" reflected the worldview of elite male citizens, a limited public that controlled who could speak and who was considered part of the audience. The problem arises not because Aristotle described an unequal civic world, but because later rhetorical teaching and theory treated his model as universal, treating these culturally specific norms as if they were natural foundations for persuasion everywhere. Once Aristotle's structure was taken as the default standard, Western rhetorical traditions were positioned as the measure of legitimacy itself, elevating Western perspectives as more rational, more credible, and ultimately more valuable than other rhetorical practices. As Timothy Borchers and Heather Hundley explain in "Rhetorical Theory: An Introduction," rhetoric is always shaped by the power systems and political contexts in which it operates. Aristotle's framework later gained legitimacy through repetition and tradition, ultimately becoming the dominant reference point for defining persuasion. What needs critique is not Aristotle himself, but the continued willingness to treat his perspective as neutral and undisputed. This not only reinforces the same exclusions present in Athens but also limits what forms of rhetorical knowledge are recognized as valid. When

rhetorical forms outside Western tradition are rarely granted the same credibility, rhetorical theory continues to privilege Western expectations without acknowledging that bias. By reframing Aristotle's insight on persuasion within a context of power, this work pushes rhetorical theory to acknowledge multiple rhetorical foundations and to value rhetorical practices that exist outside Western traditions. Rhetorical theory becomes more relevant when Western voices, such as Aristotle, are decentered, as this acknowledges equally meaningful rhetorical knowledge that has always existed outside Western rhetoric.

35. **Framing of Indigenous Peoples' in California: A Historical Meta-Analysis of One California High School's Historical Treatment of Indigenous Experiences**
Presenter(s): Charlot Born
Advisor(s): Aurora Matzke

This paper demonstrates how feminist research methodologies can guide the construction and critical use of textbooks to encourage personal reflection of biases at the individual and national scale. Using narrative and standpoint theory to interrogate the "telling" of the treatment of Indigenous Peoples during the gold rush in California High School Textbooks allows educators to encompass diverse truths to help students build complex, factual heuristics of historical events. This paper will show how the meta-analysis proves that the framework of the American education system directly contributes to building the knowledge, values, and critical thinking skills of children alongside local political narratives, while also demonstrating how to critically analyze history textbooks as a repeatable practice to encourage multiple perspectives and push back on dominant narratives, even in hostile environments.

36. **Crying for Justice: La Llorona as a Symbol of Female Grief**
Presenter(s): Quianna Carlo, Elizabeth Macaraig
Advisor(s): Lauren Sieberg

This project explores how the legend of La Llorona, the Weeping Woman of Latin American folklore, embodies themes of female suffering, societal guilt, and patriarchal control. Our central research question asks: How does La Llorona reflect the consequences of gendered oppression and the transformation of women's pain into monstrosity? Drawing on feminist literary theory and cultural studies, this research examines how the myth of La Llorona has evolved from a moral warning against disobedient children into a narrative of resistance and grief. According to scholarly interpretations by María Herrera-Sobek and Domino Renee Pérez, La Llorona's actions are not only illegal but also profoundly symbolic of a mother who has been deprived of her autonomy due to past trauma and cultural expectations. The project examines how La Llorona's eerie cry, which was originally a form of punishment, can also be interpreted as a protest by closely examining folktale variations and modern retellings. La Llorona is placed within a larger lineage of literary "monstrous women" who challenge social hierarchies through transgressive acts using textual analysis and comparative folklore study. The anticipated conclusion is that La

Llorona's dual nature—that she stands for both the voice society attempts to silence and the horror it is afraid of—is what gives her lasting influence. The project contributes to current conversations about gender, mythology, and the preaching of women's suffering by reclaiming her story as one of mourning rather than evil and redefining the legend as a reflection of cultural guilt and suppressed female empowerment.

Environmental Science and Policy

37. **Channel Surfing and Doom Scrolling: How One Click Can Change Your Perspective on Climate Change**
    Presenter(s): Catriona Dobert
    Advisor(s): Dr. Ann Gordon

Different news outlets and social media platforms cover pressing global issues, such as climate change, in distinct ways that can significantly shape public perceptions and emotional responses. In today's media, people from all generations rely heavily on both news channels and social media to stay up to date with the world around them. This paper examines the extent to which various forms of media influence people's fear of climate change, focusing on how the frequency and type of media consumption affect these perceptions. Prior research has shown that certain news organizations are known for their political leanings, the framing of climate change often reflects ideological differences between left- and right-leaning outlets. Drawing on original survey data from Chapman University's 2025 Survey of American Fears, this study explores the relationship between media consumption patterns and concern about climate change. Additionally, it considers how social media algorithms personalize content based on user behavior, further reinforcing specific narratives about climate change. I have found a positive correlation between those who frequently watch CNN and MSNBC and their fear of climate change, and a negative correlation between those who frequently watch Fox News and their fear of climate change. Although not all information encountered online or via the news is accurate, my research argues that the type and frequency of media exposure play a crucial role in shaping individuals' fears and understanding of climate change.

38. **Ecological Patriarchy in Practice: How Climate Policy Sustains Gendered Exploitation in the Philippines and Northern Ghana**
    Presenter(s): Lilly Nielsen
    Advisor(s): Dr. Lisa Lietz

Climate adaptation policies are always presented as neutral responses to environmental issues, yet they overlook the gendered aspects of displacement, and how climate crises can further exploit vulnerability. This paper aims to investigate how the absence of gender-based approaches in climate adaptation policies perpetuates the "ecological patriarchy"; a system in how patriarchal and capitalist structures negatively affect environmental governance and so they overlook

marginalized women's experiences. Specifically, I want to examine whether and how women are represented or under-represented within climate adaptation policy, and how this may contribute to increasing their risks of trafficking and exploitation. Using a qualitative comparative policy analysis, the study focuses on national adaptation plans and anti-trafficking laws in the Philippines and Northern Ghana, using reports from the International Institute for Environment and Development (IIED, 2021) and Anti-Slavery International (2021). While also using Escayola's (2025) theory of ecological patriarchy and Mullally's (2022) United Nations report on trafficking in the context of climate change, the research will analyze the implementation of these policies to assess whether they reflect rights-based principles like equality and intersectionality or not.

By demonstrating how climate policies are "gender-blind", and recognizing how they reinforce patriarchal governance and therefore increase women's vulnerability. This paper aims to look at a more justice-oriented understanding of climate adaptation. While assessing these two case studies, the research aims to promote more equitable and gender-responsive climate policies by showcasing current climate/trafficking policy pitfalls.

FFC

39. Asexuality Through Characters in Movies and TV
Presenter(s): Andrew Sunwoo
Advisor(s): Dr. Ian Barnard

The purpose of this project is to explore how asexuality has been represented across movies and television shows of the modern era, and delve into the similarities and differences from each of the examples I have selected, along with highlighting what I think showing asexuality in media achieves. This project is an extension of my thoughts on asexuality in regards to modern cinema, as I had already reviewed such in my FFC: Queer Cinema class; I decided to further look at how asexuality is portrayed in media as a whole. Through the examination of the selected two movies and one televison show, along with two articles regarding the topic I was able to understand how both the pieces of media portrayed asexuality, as well as how audiences may have reacted to the inclusion of asexuality. In one article, I decided to also look at the perspective of the director of one of the movies I chose. Another portion of the project, I evaluated a peer's take on the same topic, and through all of these sections combined I am able to provide my thoughts on how representation of asexuality can educate the general audience on the topic. After researching throughout the topic, I would expect to come to the conclusion that asexuality is a different experience for every person, and that audiences should not be generalizing the spectrum of asexuality. Furthermore, asexuality through the chosen pieces of media portrays the fluidity of sexuality, in which asexual people's experiences with sexual and romantic acts vary vastly as well.

40. The Attendant and bell hooks' Disregard for Female Pleasure
Presenter(s): Delaynee Bauer
Advisor(s): Dr. Ian Barnard

Isaac Julien's short film, The Attendant, is an abstract piece that explores ideas of race relations and homosexuality. The film was met with a lot of criticism, none more prevalent than bell hooks'. bell hooks' article about The Attendant mainly criticizes the role of the only female character, the Conservator, as an outsider who is not given room to express her sexuality. In doing so, hooks ignores the inherent eroticism of voyeurism that the Conservator engages with, pressing her ear up to the wall between herself and the Attendant's BDSM scene and smiling. This voyeurism is mirrored by the multiple cuts to the opera, where the Attendant stands on stage, performing, while the Conservator watches from the audience. Isaac Julien uses this to show how one doesn't need to perform on the stage to enjoy a show, just like one doesn't need to be a physical participant in sex to derive pleasure from the act. Since the film is focused on male homosexuality, bell hooks condemns Julien for centering the males, declaring that the Conservator's sexuality is repressed by the patriarchy. This ignores a crucial factor: her desire thrives precisely within the space of homosexual intimacy. While doing my research, I discovered a study done by PornHub that discloses the second-highest genre of pornography amongst women visitors was male-on-male. The women in this study and the Conservator both prove that women, specifically heterosexual women, don't have to be involved in media depicting sexual activity to be aroused by it; in fact, most women are more excited by their absence in such media. While it's true the film is mostly focused on the Attendant's own relationship with sex, Isaac Julien depicts intimacy as being more than just physical through the character of the Conservator.

41. Slow and Asexual Respectability Politics: Why Asexual Representation Matters
Presenter(s): Jada Staggers
Advisor(s): Dr. Ian Barnard

This presentation focuses on the film, Slow, and how it explores asexual respectability politics as well as the respectability politics allosexuals unconsciously partake in. Respectability politics refer to a set of ideals/ behaviors that a marginalized group of people adopts to gain respect from the dominant group. In the case of asexual individuals who feel little to no sexual attraction, they can play into respectability politics by forcing themselves into sexual situations they don't feel comfortable in as a way to be seen as "normal" in the eyes of their sexually active peers or partners. Allosexuals can play into respectability politics by forcing themselves into sexual situations to feel loved or mature, as seen with how our society uses "virgin" to mean an unloved, immature individual. The film, Slow, follows an asexual man named Dovydas and his relationship with his girlfriend Elena. It's clear throughout the movie that the two have insecurities about their sexuality. Dovydas apologizes for his asexuality coming off as confusing or when he cannot perform sexual acts to Elena's desire, and when Elena's drunken ex comes over, he allows him to spend the night so that he can attempt to have sex with Elena and prove to her ex that he loves

her more. Dovydas' insecurities come from a place of feeling like he is not enough for Elena, whereas Elena's insecurities come from a place of bodily autonomy. In the first scene of the film, we see Elena forced to tell a man that she loves him so that they can have sex. Within that moment, she may have felt obliged to have sex with the man since she already put herself in this position. Dovydas' asexuality may come off as a contradiction to everything that Elena believed: The right to say no to sex.

42. Mise-en-Scène and Emotional Realism in José: Analyzing Through Timothy Corrigan's A Short Guide to Writing About Film
Presenter(s): Maiya Zhou
Advisor(s): Dr. Ian Barnard

Research Question and Purpose

This project investigates how Li Cheng's José (2018) uses elements of mise-en-scène—setting, framing, lighting, and editing—to express emotional realism and social critique. The central research question asks: How does mise-en-scène in José visualize the emotional isolation and intimacy of queer life within a conservative Guatemalan context? The purpose is to explore how visual storytelling, rather than dialogue, communicates the protagonist's psychological and social reality.

Scholarly Context

Drawing on Timothy Corrigan's A Short Guide to Writing About Film, this project situates José within discussions of visual composition as a mode of creating meaning. Corrigan argues that mise-en-scène shapes audience interpretation by turning setting and framing into narrative forces. This analysis extends that argument by applying it to a queer Latin American context, contributing to broader studies of realism, queer cinema, and global film aesthetics.

Methodology

The research employs close visual analysis, guided by Corrigan's theoretical framework. Specific attention is given to recurring visual patterns; such as confined framing, subdued lighting, and the rhythmic pacing of edits, and how they reflect José's emotional state and socio-economic constraints. Peer interpretations and classroom discussions are also integrated as part of collaborative critical analysis.

Results

The project concludes that José transforms mise-en-scène into a vehicle of emotional and political expression. Through visual restraint and realism, the film portrays queer love not as spectacle but as a fragile act of resistance within an oppressive environment, demonstrating how cinematic form can embody social and psychological truth.

43. Intersex People and Representation
Presenter(s): Sam Chirco
Advisor(s): Dr. Ian Barnard

What does it mean to be Intersex? The topic of intersex people in society has been surrounded by ignorance, with many people who are unaware of what it means to be Intersex. One of the biggest contributing factors is a lack of representation in the media. Stories rarely ever contain intersex characters, with movies like XXY being one of the extremely rare examples of intersex representation in film. This makes it difficult for people to gain an understanding of what intersex people go through. In addition to lack of representation in the media, medical advancements have made it possible to perform sex-changing surgeries, which has led to an erasure of intersex people in our society as more and more have their sex forcibly chosen for them. As society moves forward socially, with huge advancements for almost all members of the LGBTQ+ community, intersex people are often left behind. The focus of my research is to examine how ignorance is the biggest enemy to the intersex movement, mostly perpetuated by lack of representation in the media and the advancement of medical technology.

44. Effects of post-colonialism in Karmen Geï
Presenter(s): Siena Knudson
Advisor(s): Dr. Ian Barnard

In the film Karmen Geï, police have had a huge presence, whether that was in the jails, outside the jails, or even in churches. Although Karmen experiences the effects of post-colonism first hand she stands up for herself and others. The police in this film symbolize how colonialism affects the Senegal incarceration system. Karmen stood up to the police during the wedding scene, along with when she escaped at the beginning, making her stance clear. It was very hypocritical that even after the police had violently beaten people to death, they still went to church. I think the fact that they attended church, although they were very violent, symbolizes how the French brought harmful religious beliefs during colonization. Observing this injustice made Karmen combat it with her joyful and seductive presence. Her seduction of the prison warden, Angelique, gave her power in rebelling against colonialism. I would argue she even protests against colonialism by standing up for the women in her life. Karmen shows Massigi that the women she knows want to speak out; they're just afraid. After Massigi said, "You're really quite a woman," she said, "No more than others, only they don't show it" (Karmen Geï). This shows how colonialism made Senegalese people afraid to show their true selves for fear of prosecution or judgment. This film explores several significant outcomes of colonization and its impact on the incarceration system in Senegal.

Food Science

45. Ultraviolet C Inactivation of Salmonella Enteritidis in Raw Chicken Juice on Food Contact Surfaces using the Contamination Sanitization Inspection and Disinfection (CSI-D+) Device

Presenter(s): Grace (Haeun) Cho, Ghana Tirpude
Advisor(s): Dr. Rosalee Hellberg

Introduction: Salmonella is the leading cause of bacterial foodborne illness in the United States. The Contamination Sanitization Inspection and Disinfection (CSI-D+) device is a handheld portable system equipped with fluorescence imaging with dual operations of detection and disinfection of microorganisms on food contact surfaces. The aim of this research was to assess the effectiveness of the CSI-D+ device for the inactivation of bacteria in food residue on common food contact surfaces found in food processing environments. Methods: Raw chicken juice was inoculated with Salmonella enterica serovar Enteritidis at a concentration of 108 CFU/ml and introduced to stainless steel coupons. Next, the stainless steel coupons were exposed at low intensity (5 mW/cm²) UV-C wavelength (275 nm) using the CSI-D+ device for 15 s and 30 s. The levels of S. Enteritidis, Escherichia coli, coliforms, and aerobic plate count (APC) following treatment were compared to untreated controls. Results: UV-C exposure resulted in S. enterica reduction of 0.52-1.00 log CFU/ml (68%-89%) on polytetrafluoroethylene, 0.50-0.97 log CFU/ml (49%-87%) on polycarbonate, and 0.59-1.01 log CFU/ml (67%-88%) on stainless steel. When examining the individual effects of time and irradiance, higher irradiance performed significantly better than lower irradiance, and a longer treatment time of 30 s was more effective than 15 s. However, no interaction effect was observed between the exposure time, irradiance levels, and the food contact surfaces. Moreover, this is the first study to assess the disinfection module of the CSI-D+ on FCS. The successful application of the CSI-D+ as a disinfection tool would help commercialize this device in private food processing facilities to maintain and regulate food safety.

Health & Strategic Communication

46. The Evil Power of Brain Rot
Presenter(s): Jocelyn Cancino
Advisor(s): Dr. Oliver Lopez

At the start of my semester this year, I documented the hours of sleep and the amount of time spent on TikTok. To find out I as a student that needs my sleep have tiktok affcet that cycle of sleep.

Health Sciences and Kinesiology

47. Sex Disparities in Medical Curricula
Presenter(s): Vania Nasrieh, Vivian Nguyen, Thu Doan, Kelly Ung
Advisor(s): Dr. Jean-Louis Bru

Despite medical advancements, studies indicate that women with acute myocardial infarction (MI) are more likely to experience fatalities and/or delays in healthcare compared to their male counterparts (Stehli et al., 2020). By disregarding unique symptoms and risk factors that female patients present, healthcare providers may miss the crucial time window for treatment, delaying life-saving interventions (Mnatzaganian et al. 2020). Recognizing the critical role of sex biases and sex-specific MI symptoms is paramount for developing targeted interventions and improving the overall quality of care for female patients at risk for heart attacks (Rai et al. 2021). This study aims to evaluate students' ability to accurately diagnose MI in patients based on sex-specific symptoms as well as the extent to which their professors taught them about sex biases in healthcare. Two anonymous IRB-approved Qualtrics surveys were created for undergraduate pre-health students and current healthcare professions students in Southern California. Qualtrics surveys modeled after USMLE Steps 2 & 3. The undergraduate pre-health survey included a joint lecture with UCI Women's Heart Services, where students took pre- and post-lecture surveys, which educated students about sex-specific patient inequities in cardiology. Students were randomly assigned a survey containing either a clinical profile for a male or female MI patient and distraction profile(s). Study results indicated that the diagnostic accuracy of female MI patient profile was lower than the male MI patient profile. Furthermore, a majority of students indicated that they did not have professors who educated them about the adverse effects of sex bias in patient care. The future direction is to develop workshops and classes with graduate and undergraduate programs to better educate students on sex bias and enhance their ability to discern sex-specific symptoms in MI.

48. Tracking Wellness: A Semester Long Analysis of Daily Habits and Lifestyle Choices
Presenter(s): Elsa Garcia-Nguyen
Advisor(s): Dr. Oliver Lopez

Throughout the course of a semester, personal data was collected and analyzed to better understand how daily habits influence physiological and behavioral patterns. Data was recorded each day across multiple variables including caffeine intake, TikTok screen time, amount of sleep, amount of steps, distance traveled, allergy medicine adherence, cooking dinner or eating out, energy level, mediation practice, and amount of time studying. The purpose of this project was to explore how these daily lifestyle choices may relate to overall physical and mental well-being. By consistently tracking these behaviors, a dataset was created that captures patterns in daily habits and routines over time. Statistical methods of data visualization techniques can be applied to organize, compare, and interpret this information which provides an in-depth view of the

interactions between these variables and their influence on an individual's well-being. This project combines personal reflection with quantitative analysis which transforms ordinary routines into measurable data that can be examined through a statistical lens Beyond highlighting potential trends in wellness. It also emphasized the value of self-tracking as a method for increasing self awareness and intentional personal growth. Overall, this process provides a meaningful opportunity to bridge data science with everyday experiences and to better understand how consistent habits contribute to maintaining balance and healthier lifestyle choices.

49. <u>Daily Routine – An Analysis of Wellness, Productivity, and Lifestyle Trends Over a Semester</u>

Presenter(s): Julia Stein

Advisor(s): Dr. Oliver Lopez

This project analyzes daily behavioral patterns to explore the relationship between wellness habits, productivity, and overall mood across an academic semester. The central research question asks how lifestyle factors such as sleep, screen time, exercise, and caffeine consumption relate to daily mood and productivity. To investigate this, I recorded responses to ten daily variables from August through November, including hours of sleep, total screen time, number of steps, number of assignments completed, hours spent volunteering, and several yes/no behaviors such as taking vitamins, consuming caffeine, calling home, and exercising. The data was compiled in an Excel spreadsheet and analyzed using descriptive statistics to identify trends and associations among variables. This self-tracking approach aims to add to existing behavioral research linking wellness routines to mental health and academic outcomes, while providing a personal perspective. I expect the results to reveal positive correlations between mood and both sleep duration and calling home, and negative correlations between mood and excessive screen time. Additionally, examining fluctuations throughout the semester may uncover patterns tied to academic workload and stress. By interpreting these results, the project aims to demonstrate how consistent data collection can promote self-awareness, highlight the impact of daily choices, and inform strategies for achieving better balance and well-being during future semesters.

50. <u>Beyond The Numbers: An Analysis Of My Daily Outcomes For An Entire Semester</u>

Presenter(s): Kari Mahoney

Advisor(s): Dr. Oliver Lopez

Over the course of this semester, this project collects and statistically analyzes data regarding my daily life decisions. I've been tracking my outcomes for an entire semester in regards to the amount of screentime, money spent each day, steps, hours spent on homework, etc. The main research question that is driving this project is "How can these patterns become informative for future semesters and how does it shape the person I am today? Based on these concepts of self discovery research will enable the central idea of learning more about myself and finding certain

patterns in behavior that could become useful for the future. To fully analyze my data, using descriptive statistics will help me understand these patterns by compiling large amounts of data from my personal lifestyles into insights that can become clear and understandable. By measuring the mean, median, mode, variability, etc will show the overall averages for each given statistics as well as the consistencies of my actions. Lastly, including visual representations such as bar plots and histograms will give a visual idea on the recurring patterns or changes over the semester. Using this information will provide essential feedback and allow myself to become aware of my patterns and influence my future decisions.

51. Habits and Happiness: An Analysis of How Daily Habits Influence Overall Well-Being
Presenter(s): Valery Pivaral
Advisor(s): Dr. Oliver Lopez

Throughout the semester, I consistently tracked a variety of daily outcomes to analyze patterns in my personal habits and well-being. The variables I recorded included hours of sleep, hours worked, hours studied, physical activity, mood rating (on a 1–5 scale), completion of a Duolingo lesson, Bible reading, hours of screen time, water intake, and money spent. Data were collected through daily self-logs, recorded each evening in a spreadsheet. Most of the outcomes—such as hours slept, hours studied, screen time, water intake, and money spent—are quantitative data. At the same time, variables like physical activity (yes/no), Duolingo completion (yes/no), and Bible reading (yes/no) are qualitative. Mood was measured on an ordinal scale from 1 to 5, representing qualitative data with a ranked order.

Through this project, I aim to gain a deeper understanding of the impact my daily habits and decisions have on my overall mood, well-being, and productivity. The insights from this analysis will help me identify what habits are beneficial and which ones are counterproductive, and thus help me create more effective personal goals and habits for future semesters.

52. The Influence of Temperature on Composite Structure
Presenter(s): Michaella Cox
Advisor(s): Dr. L. Andrew Lyon

In this work, we sought to examine the influence of preparation conditions on the structure of a new class of biocomposites for tissue regeneration. The class of materials used was based on the biocomposite made of a synthetic component, hydrogel microparticles (microgels), and a naturally derived component, collagen. Biocomposites, composed of collagen fibers, are widely used in medicine for wound healing, tissue regeneration, and dermal fillers. The Lyon group has discovered that this new class of materials provides advantages in mimicking extracellular matrix properties, which is advantageous in creating new constructs for tissue repair and development. Through controlled thermal testing, the influence of temperature on collagen self-assembly within the microgel phase was studied. The effects of temperature on the composite structure were evaluated using techniques such as DIC microscopy, FIJI-based Quantitative Analysis, and

composite fabrication. We find that at higher preparation temperatures (37 °C vs 22 °C), the percentage of collagen fibers decreases within the composites. These observations are correlated with thermal transitions that occur within the microgel phase, where the microgel phase elasticity increases at higher temperatures. Given that collagen forms more robust fibers at 37 °C in the absence of the microgel phase, we conclude that the microgel elasticity may play a role in controlling collagen self-assembly. This study optimizes the importance of preparation conditions for this new class of biocomposites and how thermal processing can influence the mechanical and biological components of this specific biocomposite.

Mathematics

53. Sleep Patterns and Performance: A Semester-Long Analysis of Sleep Deprivation and Its Consequences

Presenter(s): Arielle Bruk

Advisor(s): Dr. Oliver Lopez

This research project explores the relationship between sleep deprivation and daily functioning, with a particular focus on the impact of reduced sleep on mood. Over the course of an academic semester, I recorded my total hours of sleep each night and rated my mood each day on a scale from 1 to 5. This self-tracking approach allowed for a detailed, personal examination of how fluctuations in sleep duration affected emotional well-being and daily performance. Preliminary analysis of the collected data revealed a noticeable correlation between the number of hours slept and reported mood levels. Days with below average sleep were consistently associated with lower mood ratings, decreased motivation, and reduced energy levels. Conversely, nights with longer or more restful sleep tended to coincide with higher mood scores and improved overall functioning. The findings support existing research that emphasizes the importance of sufficient sleep for emotional regulation and mental health. While the study is limited by its small, individual sample size, it offers valuable insight into how sleep habits can directly shape daily experiences over time. Future research could expand this analysis to include multiple participants or additional variables such as stress levels, academic performance, or physical activity.

54. Understanding Success Patterns of STEM Summer Math Bootcamp Participants at Chapman University

Presenter(s): Kristen Ng, Sadie Tak

Advisor(s): Dr. Criselda Toto Pacioles

The mathematical unpreparedness of college students is a concern that affects students' performance in STEM courses. To address this challenge, in 2022, Chapman University began offering a two-week summer math bootcamp on foundational math topics to incoming STEM students. The goal of our study is to characterize the success pattern of STEM Summer Math Bootcamp participants by analyzing the demographics and academic performance of STEM

students who participated in the math bootcamp from 2022 to 2024. Various descriptive and inferential statistics on the demographic data of the bootcamp participants reveal a consistent female majority participation across all years. A substantial percentage of first-generation and Pell Grant-eligible students, as well as a diverse ethnic representation, were also observed, demonstrating the bootcamp's reach among underrepresented populations. Course enrollment patterns revealed that calculus was the most popular first-semester mathematics course among participants, followed by precalculus as the second most frequently chosen course option. A significant increase in students enrolled in precalculus was observed in 2024 compared to 2022 and 2023, suggesting that more STEM students are coming to college unprepared for math. Though there were more female than male bootcamp participants, there was no significant difference in the mean first-semester Math GPA between the two gender groups. One important result observed was that the mean first-semester Math GPA of precalculus students who participated in the bootcamp was higher than the GPAs of non-participants, indicating the program's effectiveness in preparing students for mathematical success. As more data is analyzed, the issues students face will be better understood.

Peace Studies

55. Is Femininity Lost in Conviction: How Justice Shapes the Image of Female Perpetrators in the Media
Presenter(s): Bess Hurlock
Advisor(s): Dr. Lisa Leitz

The decision of whether a woman is seen as feminine depends more on the media than on the woman herself. The media's idea of femininity is quiet, apologetic, and powerless. By refusing to acknowledge that femininity is diverse, the media demonizes women who challenge this stereotypical ideal, even to the point of stripping women of their femininity—their defining trait—in the eyes of society. This is most obvious in articles, podcasts, and documentaries, especially regarding female perpetrators. Because these women oppose this narrow view of femininity, they are not only stripped of their humanity by being labeled as monsters but also denied their femininity. Women perpetrators face more loss than male perpetrators, who can only lose their humanity. This is shown in comparisons between women and demons or claims that female killers are worse because women are supposed to be caregivers. These comparisons are common in news reports about convicted female perpetrators, but there is little analysis of how the media portrays women who are not convicted. I plan to address this gap by comparing the language used about Pauline Nyiramasuhuko, a convicted female perpetrator, to that used about Im Chaem and Ieng Thirith, two women accused of crimes against humanity who are unconvicted. I will do this by applying the same methods used to analyze Pauline's language to that of Im and Ieng. This involves checking whether relationships (especially with men) are frequently mentioned, what metaphors or descriptions are used, and what titles are given in news

stories. Based on initial research, I expect that Im Chaem and Ieng Thirith will continue to be portrayed as passive women who keep their femininity because they are unconvicted. Although both convicted and unconvicted women are accused of similar crimes, society will continue to protect the femininity of unconvicted women to uphold the culture of passive, peaceful women. My research will then highlight the unrealistic societal expectations of women and the harmful influence of a single narrative of femininity.

56. Masculinity in Hitler and Trump's Political and Militant Rhetoric: A Comparative Analysis
Presenter(s): Charlot Born
Advisor(s): Dr. Lisa Leitz

It is known that war and masculinity are deeply intertwined (Belkin, 2012; Connell, 1988; Enole, 2004, 2010, 2014, 2023) and that masculinity, citizenship, and the soldier are even more so (Nye, 2007). In Western states, the soldier is often prioritized more than the citizen, in that masculinity is determined by the level of devotion, and prioritizing the nation over one's life (Nye, 2007). Masculinity perpetuates violence and can be seen across many genocides and wars (Pease, 2025). Extreme cases of hypermasculinity in militant states are the practices of fascism and Nazism (Pease, 2025). With the rise of hypermasculinity (Archer 2010; Mosher and Sirkin, 1984) in the United States (McIntosh, 2023), and the increased internal militarization of the United States Military by President Trump, it's important to look at the role of masculinity in U.S military rhetoric and propaganda. This paper will conduct a comparative analysis of political propaganda used by Hitler and Trump. In doing so, I will look for how political images, speeches, and videos perpetuate violence and harmful masculine rhetoric. I ask the question, how does Trump's political rhetoric compare to Hitler's political rhetoric in its perpetuation of masculinity and war? And, what does this comparison say about the social, political, and militant state of the United States?

57. The Evolution of Intersectionality in the Women's International League for Peace and Freedom
Presenter(s): Jaden Steinbock
Advisor(s): Dr. Lisa Leitz

The Women's International League for Peace and Freedom (WILPF) was founded on essentialist ideas, with pacifism as its mission, and has been regarded as an inclusive peacebuilding organization since its establishment in 1915. Scholars have analyzed how WILPF and its practices were shaped by white, upper-middle-class leadership, thereby excluding diversity in terms of race and class. Although founded on peace and justice ideals of nonviolence and sustainability, the organization's early practices neglected intersectionality, specifically in the treatment of its Black members and the high professional standing and wealth required for membership. While this research has been previously conducted, a gap in the literature remains on the growth of WILPF from its inception to the present day. In this paper, the WILPF's evolution in its approach to

diversity of race and class is analyzed from its origins to its present efforts to explore how the organization has grown in its recognition of intersectionality. Archival materials, peer-reviewed sources, and organizational documents trace the organization's shift regarding race and class. Key sources include former WILPF leader Mary Church Terrell's personal recollections of the exclusionary practices the organization held from the 1920s to 1950s, accessed from the Jane Addams Project archives and the Library of Congress, as well as WILPF's updated 2011 constitution. Prior analysis of these sources will be mentioned and built on. The rhetoric and membership strategies of WILPF have changed over time. The expected findings are that while WILPF's early efforts were a reflection of societal perceptions of the early 20th century, it currently reflects more inclusion and an intersectional perspective of feminist peace activism that recognizes social, economic, and racial issues that are intertwined in peacebuilding.

58. The Impacts of Feminist Visual and Performative Art in Anti-War Movements
Presenter(s): Jessica Henry
Advisor(s): Dr. Lisa Leitz

This article is an examination of the impacts of feminist art on the United States anti-war movements during the Vietnam War and the Iraq War. Previous research has suggested that conceptually abstract visual artists such as Martha Rosler, took a feminist stance that vilifies the Vietnam War, making viewers question how their everyday life displays cognitive dissonance and desensitization to the violence of the war. Other explanations have relied on the satirization of women who are pro-war in relation to performative feminist activism by groups such as Code Pink in the early 2000s. By examining photos of feminist performative art protests held by Code Pink in between 2000 - 2010, the efforts of artists during the Vietnam War are reflected in the work of modern activist groups. These images were sourced from the group's archival gallery. This research expects to find how the role of civilian women in war can be altered and commented on through feminist visual and performative art. In particular, looking at how art in feminist ideology critiques how the media perceives civilian life during war falsely. Examining war as a spectacle in order to create contemplation of the viewers own beliefs pertaining to war is also found as a device used across time periods, including the 1960s-70s and the 2000s.

59. Native Women's Leadership and Sovereignty in the Great Plains
Presenter(s): Kaitlyn Clark
Advisor(s): Dr. Lisa Leitz

This project examines the powerful yet often overlooked leadership of Native American women in the Great Plains and how their contributions have shaped peace, governance, and sovereignty across generations. Scholars such as Mihesuah (2003), Ward (2018), and Voigt (2023) have explored Indigenous women's influence in sustaining community balance and decision-making, yet their roles as peacebuilders remain underrepresented in historical and political narratives. As Roshone (2022) and Gray (1986) note, historical accounts of Plains women often minimize their

authority in diplomacy and governance, contributing to a limited understanding of Indigenous political systems. Gray's study of Eagle Woman That All Look At reveals how her Lakota diplomacy bridged tribal and U.S. relations, redefining peace through reciprocity, care, and cultural strength. This research asks: How have Native women of the Great Plains redefined the meaning of peace and sovereignty through leadership rooted in cultural values, spirituality, and care for the land? To explore this question, I will analyze historical peace treaties, oral histories, and tribal records from Plains communities, focusing on women's roles in mediating conflict, leading negotiations, and maintaining harmony within their nations. This qualitative approach highlights Indigenous frameworks of peace that prioritize connection, reciprocity, and collective well-being rather than dominance or control. I expect to find that Plains women's leadership offers a model of guiding through connection rather than control, extending beyond political independence to include the preservation of cultural identity, environmental care, and community healing. By uplifting their voices, this research recognizes how Native women in the Great Plains have long embodied a vision of leadership grounded in balance, resilience, and deep responsibility to their people and the earth.

60. Gender in the U.S. Disability Rights Movement
Presenter(s): Kalea Seaton
Advisor(s): Dr. Lisa Leitz

This study will evaluate the intersectional experiences of gender and disability within the Disability Rights Movement in the United States, spanning from 1970 to 1990. Through an analysis of existing literature, gender and disability have been well documented as it pertains to theoretical frameworks on intersectionality. However, these frameworks have yet to be applied within the social and political contexts of women with disabilities, especially those facing societal spotlight. Presented with this gap in research, this study aims to evaluate the research question, 'How do gendered narratives operate within the strategy and perception of Disability Rights activism in the United States?' By analyzing primary sources of memoirs and oral histories from leading disability rights activists, the intersection of gender and disability will be evaluated to observe how gender operates in the lives of people with disabilities, and how this effects the goals, strategies, and perceptions of the Disability Rights Movement. By exposing the overarching narratives of both gender and disability, which interact within social and political contexts, the analysis will indicate the existence of gendered narratives faced by and explicitly used within the Disability Rights Movement, highlighting the particular injustices faced by women with disabilities: both historically and currently in the present day.

61. Impact of Food Insecurity on African Women in Agriculture and their Participation in Peacemaking

Presenter(s): Katherine Kang
Advisor(s): Dr. Lisa Leitz

Food Insecurity as a result of climate change or conflict, creates a significant impact on women. There is an added responsibility that women of the household need to take upon themselves along with their existing familial responsibilities. As mentioned in an article published by Princeton University and written by Henry Adlam, "Supporting The Female Farming Cooperatives: The Smart Choice For The African Development Bank", because of our actively developing world and lack of women's rights, as jobs advance and men strive for better paying jobs, women are left to work in mostly underpaying fields (such as agriculture). As women add more responsibilities to their plate, their power within the household and community remain the same, (Adlam 2023). Women are directly affected by restricted access to nutritional food for both themselves and their families, causing them to become the faces of grassroot networks that work to solve food insecurity within their communities and become involved in peacemaking efforts. How does food insecurity caused by conflict affect the vulnerability of women and children, and women's participation in the community and peacemaking in Sub-Saharan Africa? In examining reports from numerous organizations such as the United Nations provide numerical data that explores women's participation in peacemaking in relation to food insecurity and conflict. This paper intends to explore reports that involve women and women farmers in peacemaking organizations in Sudan, Ethiopia, Liberia, and Kenya and their limitations, efforts, and effect. In summarizing expected outcomes of research findings, conflict that is either a result of or cause of food insecurity significantly impacts African women within agricultural fields, thus influencing them to become part of small-scale community networks that strive for peace and security.

62. The Gendered Experiences in East African Refugee Camps

Presenter(s): Melanie Moreno
Advisor(s): Dr. Lisa Leitz

In June 2025 the United Nations High Commissioner for Refugees agency published its annual report. According to this report, the year prior, approximately 123.2 million displaced people were recorded. Displacement, often driven by conflict, climate change, and economic instability, is a big issue today that leaves many people seeking safety in refugee camps. Gender roles and the marginalization of women are often intensified in these camps, leaving women and girls vulnerable to violence and exploitation. This research project aims to examine how gender plays a role in these camps and the harm it causes to women and girls. The project's central research question is this: How does gender further impact the experiences of girls and women in refugee camps in East Africa? By looking at the asylum application process from Schafer's experiences as a female asylum officer (2002), this study strives to explore the difficulties in the day to day lives of women in these refugee camps and how their difficulties were addressed. The review article

by Jolof and colleagues (2022) explores how these camps create an environment that intensifies violence towards women and leaves many pregnant women with limited care and safety. Additionally, this study will investigate how the displacement of women leave them vulnerable to harmful practices like female genital mutilation by utilizing the journal article by Bellizzi and colleagues (2024). Through this research project I plan to find evidence to show that refugee camps are a dangerous place that targets women and girls. By exploring this question I hope to address the necessity to implement laws and resources that specifically take into account women and their experiences in refugee camps to help reduce the unfair treatment between genders.

63. Challenging Gender Norms within Male Dominated Institutions: Women's Experiences in the U.S. Military

Presenter(s): Olivia Gluck
Advisor(s): Dr. Lisa Leitz

This project hopes to uncover the gendered experiences and treatment of women in historically male-dominated professional settings, specifically the U.S. military. The development of highly militarized societies has resulted in a deeper separation between masculine and feminine roles, further contributing to the marginalization of women, especially within systems of power. Scholar Fidelma Ashe discusses a concept within her research known as "militarized masculinities," which associates masculinity with traits that have been socialized into what makes a man a respected authority figure, like aggression, bravery, patriotism, etc. This explanation allows us a better understanding of why feminist perspectives are so often dismissed in these settings and will spearhead this research. This perspective is especially relevant when considering senior officers in the U.S. military and whether or not their authority is challenged by this. My research question asks how does gender shape the treatment and recognition of women with positions of power in the U.S. military? To answer this question, I will examine existing academic literature alongside primary data such as media sources, oral histories and demographic reports. I expect to find that the presence of women in these settings challenged the traditional gender norms however, their contributions were most likely undervalued and or minimized by the hyper-masculinized institutions they were a part of. I expect to see a trend of systemic barriers limiting women's ability to fully succeed in these work environments.

64. Indigenous Women and Peacebuilding in Latin American Migration

Presenter(s): Yness Riedel
Advisor(s): Dr. Lisa Leitz

This paper will examine the critical yet understudied role of Indigenous Latin American women in guiding, protecting, and sheltering migrants and refugees who are looking to start a new life. This study will utilize feminist peace-building theories and migration studies to analyze how women-led initiatives serve as everyday diplomatic grassroots efforts, despite enduring systemic and gender-based violence. Fieldwork research by Merlín-Escorza (2023) and Menjívar and Gómez

Cervantes (2024) gives insight into how Indigenous women navigate heavily gendered barriers within migration systems. Other sources, such as Cabieses et al. (2023) and Palacios (2022), emphasize the challenges Indigenous women face, particularly in terms of health and safety. This study narrows its focus to Indigenous women-led initiatives in Mexico, Central, and South America. The research calls upon qualitative data and case studies from non-governmental organizations (NGOs) and United Nations reports, as well as news articles and organizational websites that document information from shelters and grassroots initiatives. The work done by Indigenous women also positions itself within the Women, Peace, and Security (WPS) framework of feminist peace-building that assesses how their practices rework humanitarian assistance. The paper argues that the leadership demonstrated by Indigenous women in shelters and advocacy networks represents a form of grassroots peace-building. The central research question asks how Indigenous women contribute to peace-building and protection efforts through their leadership and support networks. The practices of Indigenous women directly challenge patriarchal structures while also fostering protection, resilience, and justice for those displaced populations across Latin America.

65. Woman organizations in Mexico
Presenter(s): Ariana Mia Gil
Advisor(s): Dr. Lisa Leitz

There are millions of families who have lost their loved ones and are in need to look for them in Mexico. The disappearance of families has brought women activism in searching for lost members. The contribution of women working together has brought many risks, memory, and also grief. The women's organization is to find loved ones and help others who are experiencing the same issues due to the distance due to drug usage, loneliness, and also violence. While these struggles are present, how can women's movements contribute to families of the disappeared for justice in Mexico? In the presentation of this question there will be information used from "Movimiento por nuestros desparecidos en Mexico" [Movement for our disappeared in Mexico] ("Datos Nacionales," MNDM,). While there have been millions of family members missing and unidentified, the women's organization has provided graphs with the high constant rates of individuals missing. I will analyze the information from this website to understand the women's organizations and how their gender plays a role in fighting together. The "large rate of deaths is constantly growing" ("Datos Nacionales," MNDM,). The data from this website supports how woman movements create a contribution upon missing individuals and drug usage within these individuals. It will contribute to the women organization creating groups and forming solutions to those who are experiencing the same situations. Their organization contributes to a crucial role in promoting peace in affected areas. The women's organization in Mexico helps those who are in need and those who are not heard.

66. Pride in Service: The Impact of Military Inclusion on Gender Identity.
Presenter(s): Jane Ixcoy
Advisor(s): Dr. Lisa Leitz

This project explores how gender identity and military inclusion connect and challenge that traditional idea that war is just on masculinity or that's the only thing we think of when talking about war/ participation. When people think about "War", they often picture the ideal soldiers, but that image leaves out women, transgender, and other gender diverse individuals who have also chosen to serve and sacrifice their lives. In my research findings like Belkin's "bring me men" (2012) and Okros & Scott's (2015) study on gender integration in the Canadian armed forces it just shows how the military's culture is built on the mindset "hyper-masculinity", which just makes it harder for others to be seen as capable. Another research finding I have found useful was the medical and clinical psychology (2020) which was focused on transgender active duty members and found that they were just as committed and effective in serving their country as their cisgender peers. Although they did still face discrimination and even pressure to hide their identities. With my research question it ask's: How do gender identity and military inclusion shape each other as the military becomes more open to all genders? To explore this, I'm reviewing more studies and reports about how gender roles and policies in the military have changed over time. I hope to find data which recognizes and includes all genders to help redefine what it means to be a "soldier" and pushes the military toward equality and unity. By challenging outdated ideas of who can serve, we also move closer to building peace and respect beyond gender expectations.

67. Trans Rights in U.S. Military 2020-2025
Presenter(s): Melanie Garcia
Advisor(s): Dr. Lisa Leitz

Since the change of "Don't Ask, Don't Tell," there's been a question of whether or not transgender people should be allowed to serve openly in the U.S. military. This has sparked an ongoing debate about equality, readiness, and public sensitivity. Research's like Parco (2015) goes into personal experiences of transgender service members and how the military culture and their policies shape trans people's daily lives. I found in the articles that studies from the RAND Corporation (Schaefer 2016) and The Williams Institute (Gates & Herman 2014) touch on important data on specifically how many transgender people serve in the military and what/how that affects open service and how that might affect the military as a whole. These sources show that while inclusion has made progress, challenges and stigma still remain. I compare policy changes between 2020-2025 to see how trans people have been incorporated or excluded from U.S. military service. I examine a number of traditional and social media sources along with the military policies, to see how things have served and how this affects people serving and who wish to join the U.S. military. Recent policy changes have forced many out of the military and people who identify as trans are no longer allowed to join.

Physics

68. Retrocausality in Science Fiction and Physics
Presenter(s): Franches Mikaela Faguingas
Advisor(s): Dr. Emily Adlam

This project investigates the concept of retrocausality and the different types of retrocausality from the perspectives of modern physics and science fiction. Through the course of this research, we investigate the manner in which retrocausality is depicted in science fiction and then compare these depictions to actual scientific theories. We also investigate whether or not there are any philosophical or scientific similarities in the way that different theories approach this subject.

Political Science

69. Examining the Sources of the Widening Gender Gap in Partisanship Among Young Voters
Presenter(s): Kaitlyn Lee
Advisor(s): Dr. John Compton

Political scientists have long known that there is a gender gap in partisanship in American politics - meaning that women are somewhat more likely to support Democratic candidates. In recent years, however, it appears that while the gender gap is shrinking overall, it is growing more pronounced among young voters. What factors explain the growing partisan divide between young men and women? Some studies point to the growing educational polarization, otherwise known as the "diploma divide", others point to issue alignment and party polarization. I will dive deeper into each of these explanations, and additionally discover if there is a correlation between social media exposure and male or female partisanship. Social media is not only a place where young voters are exposed to political content, but it can also be a gendered space, where men and women consume different types of content. I will be using evidence from the American National Election Survey, the Chapman Survey of American Fears, and research and surveys about elections and partisanship done by the Pew Research Center to investigate the sources of the emerging gender gap in partisanship. I predict that issue preferences and education will be significant contributing factors, but I also think that identity formed by social media usage will be a contributing factor as well. This topic and further research on the emerging partisan gender gap are important because young eligible voters could reshape the electorate, inform parties on how to appeal to younger voters, and affect campaign efforts, strategies, or messaging, especially if the gap becomes more pronounced or solidified.

70. Third-Party Voting in the 2024 Presidential Election
Presenter(s): Emma Davis
Advisor(s): Dr. John Compton

In the 2024 Presidential Election, approximately 2.7 million people voted for a third-party candidate. However, Duverger's law states that political systems with single-ballot
majoritarian elections and single-member districts produce a two-party system. This means that in systems like the United States, third-party candidates face enormous and costly barriers to winning presidential elections. Why then do a significant number of people vote for third-party candidates in American presidential races when it seems they are destined to lose? Using public opinion data from the American National Election Study (ANES) from the year 2024, I will look at what factors, such as age, gender, and trust in government, impacted third-party voting. Learning what factors impact third-party voting will help further understanding of the phenomenon in the United States and its impacts moving forward.

71. How Fear of Immigration Shapes Public Opinion Toward Race, Policy, and Belonging In America
Presenter(s): Abraham Amoroz
Advisor(s): Dr. Ann Gordon

This study explores how fear shapes public opinion about immigration, race, and belonging in the United States. Research on political behavior and public opinion shows that fear shapes how people view social groups and government policies, but less is known about how different kinds of fear, such as fear of immigrants versus fear of illegal immigration, affect attitudes toward immigration enforcement and cultural identity. Using data from the Chapman Survey of American Fears (CSAF), this research analyzes whether people who express higher levels of fear are more likely to support stricter immigration policies and hold negative cultural views about immigrants. The study tests whether fear predicts stronger support for deportation, police raids, and beliefs that immigrants are reluctant to assimilate into American society. Cross-tabulations and correlations are used to measure how these fears connect to opinions about policy, authority, and identity. The findings show that both types of fear are strong predictors of support for harsher enforcement and tighter cultural boundaries, revealing how emotional reactions play a key role in shaping national debates about belonging. By comparing different sources of fear, this study highlights the emotional foundations of public opinion and helps explain why immigration remains such a deeply divisive issue in the United States today.

72. <u>Climate Change and Extreme Weather: Variation in Public Opinion on Disasters Across the United States</u>

Presenter(s): Akshay Ramanathan
Advisor(s): Dr. Ann Gordon

This project investigates how Americans perceive the role of climate change in increasing the frequency and severity of weather-related disasters, specifically wildfires, droughts, floods, and hurricanes, using recent data from CSAF survey waves 8 and 9. The central question explores the extent to which climate change is believed to drive these specific disaster types, and how attitudes vary across events and demographic groups. Previous research finds that direct experience with extreme weather and media coverage shape climate risk perception, yet attitudes do not always scale with exposure; cultural narratives, political identity, and regional context can influence whether disasters are seen as connected to climate change. This study uses quantitative survey methodology to analyze nationally representative responses, comparing trends in attribution and concern across multiple disaster types. Findings are expected to reveal strong perceived links between climate change and certain events, such as wildfires and droughts, while floods and hurricanes may show more variation due to regional exposure and political polarization. The analysis will expand on current literature by identifying which factors shape the public's sense of climate-driven risks and readiness to support adaptation policies. Ultimately, this research contributes to the understanding of how public experience, belief, and political context affect climate change attitudes in the era of intensifying extreme weather, with implications for communication strategies and policy design.

73. <u>Whose America? The Divide in Immigration Fear</u>

Presenter(s): Alexia Murillo
Advisor(s): Dr. Ann Gordon

The story of immigration in America is also the story of fear: who belongs, who is excluded, and who decides. In this paper, I investigate the determinants of Americans' fear of immigration from 2018 through 2024, a period spanning the presidencies of Donald Trump and Joe Biden. This study utilizes the Chapman Survey of American Fears, a representative national sample of U.S. adults, to analyze how immigration fears have changed over the past six years as political leaders and media coverage have intensified. I find that immigration fear did not remain constant during this period, but shifted in response to partisan identity and media reliance. Conservatives and individuals who rely more heavily on right-leaning media express higher levels of fear and hold negative views toward immigrants. Liberals and individuals who consume more left-leaning media were less likely to report such fears and hold supportive attitudes towards immigration. Independents and individuals with mixed media habits revealed greater inconsistency, reflecting the influence of leadership changes and media framing of immigration. These findings show that fear of immigration is not only a reflection of public attitudes, but also a political tool used by

parties and media to influence voters. Ultimately, it serves as a force that deepens the divides within American society.

74. Nativism as the Engine of Fear Toward "Illegal" Immigrants
Presenter(s): Amilie Cai
Advisor(s): Dr. Ann Gordon

Contemporary concerns about "illegal" immigration reveal deep-seated anxieties about race, cultural, and national identity in the United States. In this paper, I examine how xenophobia, conservative media consumption, and Christian nationalism collectively shape fear of illegal immigrants. I build upon previous literature, such as the Group Threat Theory, which posits that dominant groups mobilize to preserve social hierarchies when their status is threatened, and the Agenda-Setting Theory, which emphasizes the media's power to shape public perceptions. Using Wave 11 of the Chapman Survey of American Fears—a nationally representative sample of U.S. adults collected in 2025—I provide a comparative analysis of these factors to identify the most salient predisposition that drives anti-immigrant sentiment. Findings indicate that (1) regular Fox News viewers exhibit significantly higher levels of fear toward illegal immigration. However, contrary to earlier research, (2) reliance on conservative social media does not significantly increase fear compared to traditional media sources. Furthermore, (3) individuals who endorse Christian nationalist beliefs but do not frequently attend religious services express greater fear of illegal immigrants. Among all predictors, (4) xenophobia emerges as the strongest driver of fear. Collectively, the results demonstrate how nativist anxieties, amplified through selective media exposure and moralized through religious nationalism, continue to sustain public fear and hostility toward undocumented immigrants. I contribute to the existing literature by providing an updated empirical test of the group-threat and moral theories, while also assessing how cultural, media, and ideological factors jointly shape immigration fears in American society. These findings underscore the urgent need to reexamine how these intertwined narratives shape American identity and hinder the development of a genuinely inclusive, multicultural society.

75. The Corruption Conundrum: Who is really Pulling Americas Political Strings?
Presenter(s): Anne-Sophie Mpona-Minga
Advisor(s): Dr. Ann Gordon

For ten years, corrupt government officials have been the top fear of Americans. Prior literature has questioned whether wealthy lobby groups truly have the power to sway political parties. However, in the past 10 years there has been a significant increase in the number of lobby groups and their funding in Washington. Is this increase linked to perceptions of corruption? This paper will examine where the American public believes this corruption is most concentrated, and how much they believe their interests are shaping politics, compared to the interests of lobby groups, private corporations, celebrities, and the media. Using data from the Chapman Survey of American Fears, I aim to analyze which groups Americans believe are most effective in shaping

politics and whether they believe these groups use bribes to obtain special advantages. If they do, I will examine how much they believe these groups use their influence towards the betterment of America as a whole or their own interests. Findings have shown a low correlation between the belief that governments are corrupt and party identity. However, its source and whether these groups benefit Americans is a highly partisan issue. This paper aims to advance the understanding of government corruption perceptions by revealing how partisan identity shapes beliefs about who wields influence and for whose benefit, providing a nuanced view beyond simple corruption fears.

76. Algorithms Before Us: How Social Media Shapes Fear and Distrust in Government
Presenter(s): Brandon Mahgerefteh
Advisor(s): Dr. Ann Gordon

This paper examines the relationship between how people get their news from social media and how that connects to fear of corruption in government. Fear of corruption says a lot about how much people actually trust politics and how healthy democracy really feels. Using data from the Chapman University Survey of American Fears Wave 10 (2024) and comparing some findings to Wave 7 (2021), this paper looks at whether greater use of social media for news is linked to stronger fear of corruption across different levels of government. The results suggest that people who rely more on social media for political information are also more likely to distrust the system and believe government is corrupt. This reflects the growing influence social media has on how people understand and react to politics, shaping not just what they know but how they feel about the system itself.

77. God, Government, and Global Warming: The Belief Systems Behind the Fear of Climate Change
Presenter(s): Cecilia Georgitis
Advisor(s): Dr. Ann Gordon

Public attitudes play a critical role in shaping the policy decisions that will define the future of our warming planet. Understanding the social and psychological factors that influence these attitudes is therefore essential to addressing environmental challenges effectively. Although prior research has explored the social and demographic dimensions underlying fear of climate change, this study extends the literature by examining how religiosity and political ideology shape fear of climate change and global warming. By analyzing religious affiliation, bible interpretation, and political orientation, researchers can better understand how underlying belief systems influence public climate concern. In this paper, I examine the extent to which these three factors influence fear of global warming and climate change. Using survey data extracted from the Chapman Survey of American Fears, I find relationships between belief-based factors and climate concerns. Specifically, my studies reveal that higher levels of religiosity, more literal interpretations of the Bible, and stronger conservative political identification are each associated with lower levels of

fear regarding climate change. The nationally representative survey data provides insight into how these factors interact to shape public concern about environmental issues. Public attitude regarding climate change is crucial in shaping public policy and altering the outcome of conservation initiatives therefore it is vital we understand the ways in which religious association and political ideology influence environmental attitudes.

78. Media and Conspiratorial Tendencies
Presenter(s): Charlie Sisk
Advisor(s): Dr. Ann Gordon

I will be studying the effects of media consumption and one's fear and belief in conspiracy theories. Through the research, I will be highlighting a correlation between the two, and cross referencing it with other questions such as party preference or income level to see whether or not they effect one's beliefs. The main independent variable is how much media an individual consumes, though it can be broken down into the specific type (e.g. Fox vs CNN vs Instagram). The dependent variable in this experiment will be the responses to the various questions about conspiracy theories. Through the responses and correlation of those two, I can crossreference the data with internet use and see whether or not conspiracy theories come from mainstream news or through online entities. This can be used to determine the demographics of conspiracy theorists and help explain the root of a lot of these theories.

79. The Erosion of Credibility: How Government Control Shapes Distrust in Journalism
Presenter(s): Eleanor Bickelhaupt
Advisor(s): Dr. Ann Gordon

In the past few months, talk show hosts have been canceled for speaking out against the president, deepfakes and AI have become more accessible, there has been an increase in propaganda and state-sponsored media, and through this all we have seen a continuous increase in government control. All of these factors offer potential explanations as to why there has been an increased distrust and loss of respect regarding journalism throughout the United States in recent years. This research seeks to prove that if the government heavily monitors and controls the country, Americans will be less likely to trust the media and journalists. This paper will examine the growing issue of media distrust, with a primary focus on how government control of the press contributes to a heightened lack of trust in journalistic credibility. The data for this research were obtained from the American National Election Survey and Chapman University's Survey of American Fears. These trends will be shown by analyzing political affiliation, government trust, and media trust/consumption, alongside comparisons of governmental control of the media over time. The findings have shown that with greater government control over the country, people trust the media and journalists less, fearing repercussions from the government for expressing their own thoughts and opinions. This information is vital to study in order to grasp

the urgency of this matter and understand the consequences of the American people not having a reliable way to obtain information.

80. The Cult of Clean Hands: Why No One's Innocent in America's War on Corruption

Presenter(s): Elizabeth Doan
Advisor(s): Dr. Ann Gordon

This study examines how fear of corruption functions as both a political weapon and a national ritual of moral reassurance. The focus lies in understanding why Americans across party lines express deep mistrust in political institutions while simultaneously seeking purity through accusation. Drawing on a nationally representative survey of U.S. voters, the research examines how partisan identity, media narratives, and generational memory influence the emotional economy of corruption—what citizens fear, whom they blame, and why those fears persist. Testing the initial expectation that Republicans would express greater concern about corruption revealed that such fear is shared widely across parties, reflecting a collective anxiety about moral decay rather than a single ideological divide. The findings show that while Republicans often associate corruption with bureaucrats, liberal elites, or federal overreach, Democrats frame it through corporate influence, interest groups, and celebrity-political entanglements. Age and lived experience amplify these perceptions: older generations shaped by Watergate and Cold War disillusionment remain especially vigilant, while younger voters inherit a climate of online outrage that blurs fact, scandal, and performance. This study suggests that corruption fear now operates less as a measure of ethics and more as a social identity—a marker of belonging to "the honest side" of a polarized culture. In doing so, it suggests that America's war on corruption has become a cult of virtue, where anger is celebrated and trust is perceived as betrayal.

81. What is the Impact of Social Loneliness on Political Violence?

Presenter(s): Kellen Downey
Advisor(s): Dr. Ann Gordon

This research paper analyzes the influence of loneliness on political violence, examining the intersection of emotions and political actions through the disciplines of psychology and political science. The main question guiding this research is: What does loneliness entail as far as political violence is concerned? The research seeks to gauge the extent to which an individual's emotional detachment results in the endorsement and support of violent political activities. The research also proposes two major hypotheses: first, individuals who experience greater loneliness are likely to endorse political violence, and second, the impulse to endorse political violence is likely greater with stronger partisanship. This research uses the American National Election Studies (ANES) datasets and the UCLA Loneliness Scales as the basis for a comprehensive literature review. The paper details the psychosocial loneliness and violence research, the socio-political implications of partisanship, and the empirical research and data analysis of the constituent data. The study finds a notable correlation between violence and loneliness, arguing that with

increasing emotional detachment, individuals support more radical ideologies and violent actions. The study also finds that individuals with strong partisan identities are more likely to engage in politically violent actions when emotionally isolated. Emphasized is the importance of interdisciplinary focus involving practices related to mental health and stakeholder engagement to alleviate the impacts of loneliness on social cohesion and political stability.

82. <u>**Who Shepherds the Flock? The Digital Authorities and Religiosity of Christian Nationalism**</u>

Presenter(s): Madeline Southern

Advisor(s): Dr. Ann Gordon

Christian Nationalism is increasingly finding its way into mainstream American politics. As Trump and his officials continue to use Christian Nationalist rhetoric and pass Christian Nationalist aligned policy, which many of his voters support, questions have arisen about Christian Nationalist voters and what authority figures are influencing them to support these beliefs and policy. This paper seeks to understand what religious authority figures Christian Nationalists turn to for guidance. The literature has shown that those who go to church and support Trump are less associated with Christian Nationalist beliefs than those who support Trump and do not go to church. If those who hold Christian Nationalist beliefs are less likely to attend church than those who do not, it raises questions regarding what religious authority figures influence people with these beliefs, if not authority figures within churches. Previous literature has shown that Christian Nationalist beliefs have been associated with xenophobic beliefs. It is essential to understand what figures are influencing them if we want to stop the division they have caused among Americans. This research uses the Chapman University Survey of American Fears to investigate this question. Among the interesting findings are that those holding Christian Nationalist beliefs are far more likely to rely on social media influencers for guidance than religious authority figures. This suggests that online connections with authority figures foster these beliefs more than in-person ones. If we want to stop these divisive beliefs from continuing to separate Americans, we must encourage more civic engagement and social participation among people.

83. <u>**Make America Scared Again: How Crime, Xenophobia, and Media Influence Voters**</u>

Presenter(s): Mina Beattie

Advisor(s): Dr. Ann Gordon

On November 5, 2024, as Americans stepped into the voting booth, one of the primary issues that had shaped modern politics and voting behavior was the debate over illegal immigration into the United States. While previous research has explored the link between illegal immigration and political polarization, this study examines three key factors that shape Americans' attitudes toward undocumented immigrants: perceived threats to safety, xenophobic beliefs, and media consumption patterns. By analyzing how these influences impact beliefs, this research seeks to understand how fear, bias, and information exposure collectively shape public opinion on

immigrants and ultimately contribute to voting behavior in the 2024 election. Relying on the Chapman Survey of American Fears, a representative sample of U.S. adults, this study examines how components such as crime and safety, xenophobia, and sources of media contribute to Americans' greater fear of illegal immigrants. The findings suggest that those with higher levels of fear were more likely to vote for Trump in the 2024 presidential election. The Trump campaign centered much of its platform and debate on arguments strongly opposing illegal immigration, which likely appealed to individuals who shared those common fears and dislikes, motivating them to vote for Trump. This suggests that the factors influencing Americans' opinions about illegal immigration and their ideological alignment with a candidate can impact how Americans cast their votes.

84. Who's Corrupt? The Role of Ideology in Judging the Self-Interest of Influential Groups
Presenter(s): Samuel Lawrence
Advisor(s): Dr. Ann Gordon

Public perception of corruption plays a key role in defining political trust and fostering civic engagement; if the people view corruption as rampant, faith and participation in the democratic system will decline. As polarization becomes a more prominent aspect of American politics, we begin to wonder if ideology shapes how the public trusts the system. This paper seeks to investigate how the relationship between political ideology and perceptions of corruption differs by the influential group being considered. Using the Chapman Survey of American Fears, a representative national survey of US adults, this paper compares respondents' self-identified political ideology on a liberal-to-conservative scale to their evaluations of seven influential groups: celebrities, labor unions, social justice organizations, national news media, political parties, special interest lobbies, and executives in large corporations. Their evaluations of these groups are based on how they use their political power, whether that be in their own self interest or for America as a whole. Correlation and regression analyses reveal moderate positive correlations between conservatism and perceptions that celebrities, labor unions, social justice organizations, and national news media use political influence primarily for their own benefit rather than the good of America as a whole. However, only weak or zero correlations were found for political parties, special interest lobbies, or corporate executives, suggesting that perceptions of corruption among different groups are not distributed across ideological lines in the same uniform manner. These findings emphasize the selective nature of ideological bias in judging corruption, contributing to broader discussions of polarization, institutional trust, and political cynicism in American democracy. While uncovering where ideological lines matter in measuring perceptions of corruption has implications in our politics, determining where they do not may point to threats in our democracy as a whole.

85. When Machines Rise, Does Fear Rise Too?

Presenter(s): Sihak Chea

Advisor(s): Dr. Ann Gordon

As artificial intelligence tools continue to penetrate industries where they were once dominated by humans, individuals are left questioning the future of work and the stability of their own economic well being. By bringing new tools that make work faster and cheaper, artificial intelligence shows the promise and the risk of modern society. Research shows that using artificial intelligence to regulate workers might make jobs more difficult, limit worker independence, and increase stress. These impacts worsen for individuals with lower resources or power at work. In this paper, I will examine how fear of artificial intelligence replacing workers relates to fear of not having enough money in the future, with a focus on education level. Using Chapman's Survey of American Fear, a representative national sample of U.S. adults that provides detailed measures of attitudes toward economic and technological risks, I find that there is a small but significant positive correlation between education level and fear of artificial intelligence replacing people in the workforce. This relationship raises questions about how well society can protect people in an age of automation. In order to guide policies that promote worker well-being, it is critical to understand how artificial intelligence influences public concern.

86. America's Trust Issues; Belief in Conspiracy Theories

Presenter(s): Sowmya Ramalingam

Advisor(s): Dr. Ann Gordon

From the JFK Assassination to the moon landing, over half the American population believes in at least one conspiracy theory. This paper investigates predictors of belief in conspiracy theories ranging from demographics and political predispositions to a conspiratorial mindset deeply embedded in the American psyche. Many times, factors such as electoral party preference, receiving news from social media, and how afraid Americans are of governments putting restrictions on guns and firearms can cause many to develop and share conspiracy theories. Relying on the 2024 Chapman Survey of American Fears, a representative sample of U.S. national adults, I find a positive correlation between Americans who exhibit such characteristics and those who believe that mass shootings are fake. Among these interesting findings, Republicans are more likely to believe that the government is concealing what it does know about mass shootings. I also found moderately strong positive correlations between Americans who believe mass shootings to be fake and those who have a fear of gun restrictions and receive news from social media. The spread of conspiracy theories proves to be more and more dangerous in society. The real world impact of these beliefs is not just on the believers of conspiracies but also on the victims of the traumatic events. For example, believers of such theories harass and further traumatize the parents of mass shooting victims. Alongside this, is the trauma of those patrons and employees of Comet Ping Pong who experienced Pizza Gate theorists barging into restaurants with firearms, causing danger to all civilians. Although these are only two examples

of the consequences of conspiracy theories, the reality of the matter is too dire to ignore. Conspiracy theories are as much of a danger to society as a disease or foreign threat, it is time to understand them to finally help mitigate this looming crisis.

87. Cross-Sectional Analysis of Social Media and Support for the Alternative Für Deutschland (AfD Party) in Germany, 2021

Presenter(s): Jackson Campbell
Advisor(s): Dr. Lewis Luartz

This study investigates the relationship between social media political engagement and support for the Alternative für Deutschland (AfD) party in the lead-up to the 2021 German federal election. This study utilizes data from the German Election Cross-Sectional 2021 Pre-Election Study (GLES 2021), which includes 5,119 observations. GLES 2021 is employed to conduct logistic regressions that examine how social media engagement with political content influences AfD support while controlling for several factors. Findings indicate a significant positive association between social media political engagement and AfD support, with platform-specific analyses revealing that private messaging apps like WhatsApp and Telegram are particularly associated with higher AfD support, while Instagram use is negatively associated. Findings also include a significant positive association between active engagement via sharing content and AfD Support, suggesting that anonymity and privacy may drive AfD support, potentially due to concerns about social or legal retribution. These results highlight the role of anonymous social media platforms and engagement methods in populist and right-wing political mobilization.

88. Bitcoin's Bipartisan Appeal

Presenter(s): Jackson Campbell
Advisor(s): Dr. Lewis Luartz

In an era of profound political polarization, this study investigates how ideological framings of Bitcoin influence voter support for pro-Bitcoin lawmakers across party lines, contributing to scholarly discourse on bipartisan policy strategies in emerging financial technologies. The research examines whether perceptions of Bitcoin's role in enhancing financial freedom for underserved populations, stabilizing the U.S. energy grid, and upholding transactional rights predict increased likelihood of supporting lawmakers who advocate for cryptocurrency-friendly policies. This addresses a gap in understanding how non-partisan appeals can bridge divides in voter priorities, such as Democrats' focus on threats to democracy versus Republicans' and Independents' emphasis on economic concerns like inflation. Utilizing a June 2025 Cygnal survey of 800 nationally representative likely U.S. voters, the methodology employed cross-tabulations of voter priorities and logistic regression models on partisan subsamples. Results are soon to be published by the Bitcoin Policy Institute.

89. <u>Unraveling Political Discourse: A Stand for Missing and Murdered Indigenous Persons</u>
Presenter(s): Brianna Land
Advisor(s): Dr. Ronald Steiner

This project explores the intersection of Native American identity, legal jurisdiction, and Missing and Murdered Indigenous Persons (MMIP) initiatives, using the veto of Oklahoma House Bill 1137 (2025) as a key case study. We ask: Should Native American identity in U.S. law be treated primarily as a function of race/ethnicity or of political identity? This distinction has serious implications for criminal jurisdiction and tribal sovereignty as viewed in historical, legal, and political contexts. The investigation will focus on how the legal framing upholds and undermines political identity in recent policy decisions.

We specifically examine the rationale and apparent motivations behind Governor Stitt's veto of HB 1137, a bill which aimed to improve MMIP reporting and inter-agency coordination through the removal of federal funding limitations and grant requirements. Given Oklahoma's complex tribal landscape and past jurisdictional disputes (McGirt, Castro-Huerta), this veto raises questions about state-tribal cooperation and the willingness to prioritize Indigenous persons' safety. With Oklahoma ranking second in the US for MMIP cases, the urgency of such an investigation is clearWe then explore how current political trends and legal definitions may shape the future of MMIP initiatives. By bridging legal theory and policy analysis, this project aims to illuminate the systemic barriers that persist in protecting Indigenous communities and propose pathways for reform.

<u>Psychology</u>

90. <u>Exploring Student Engagement in Undergraduate Research at Chapman: Analysis of Demographics and Barriers</u>
Presenter(s): Louie Vitan
Advisor(s): Dr. Vincent Berardi

Undergraduate research (UGR) is recognized as a high-impact educational practice, equipping students with the skills to critically analyze academic literature and effectively disseminate scientific findings. Notably, it can serve as a pipeline for students to advance their professional careers in academia. While research on the benefits of UGR is abundant, there is a limited understanding of how potential barriers impact participation for students from underrepresented backgrounds. Most postsecondary institutions lack centralized databases containing information on students participating in UGR, resulting in minimal representative data to reference when developing interventions to adequately address issues related to uneven UGR participation. To address this gap, 76 Chapman undergraduates were surveyed—divided by UGR (n = 48, 63.2%) and Non-UGR students (n = 28, 36.8%)—assessing UGR participation based on demographic characteristics, perceptions of UGR accessibility, sense of belonging on campus, and the impact of family and financial responsibility. A logistic regression was performed to examine the effects

of gender, household income, parents' maximum education, and race on the likelihood that a student will participate in UGR. Asian students had significantly higher odds of participating in UGR compared to White students (OR = 7.36, 95% CI [1.66, 44.10], p = 0.015). A significant difference was also observed between UGR and Non-UGR students (p = 0.038), with Non-UGR students perceiving Chapman's research resources as less adequate compared to UGR students. These results suggest racial disparities in UGR participation and indicate that pathways into research are not equally clear for students not already involved. Future research will build upon these findings, aiming to gain a more comprehensive understanding of students' identities at Chapman and their engagement with UGR, in order to develop strategies to reduce barriers and encourage students from all backgrounds to participate in UGR.

91. Am I Actually Hungry? Adverse Childhood Experiences and Stress Eating
Presenter(s): Chloe den Hartog
Advisor(s): Dr. Julia Boehm

Adverse childhood experiences (ACEs) can alter an individual's stress response system, making them more vulnerable to daily stressors. ACEs also predict overeating and binge eating, resulting in a higher risk of obesity and other poor health outcomes. This study hypothesized that individuals who experienced emotional, physical, and severe physical abuse during childhood would engage in more stress eating as adults than individuals who did not experience any abuse. The Midlife Development in the United States (MIDUS) Study data was used from wave 1 (1995-1997) and wave 2 (2004-2006). A total of 3,747 participants (55% women, 45% men) were included. Emotional, physical, and severe physical abuse were measured with a self-administered questionnaire with responses ranging from "often" (1) to "never" (4). Stress eating at wave 2 was measured with two items by asking participants if they use food as a coping mechanism for their stress ("I eat more than I usually do" and "I eat more of my favorite foods to make myself feel better"). Higher scores of abuse and stress eating reflected more abuse or stress. Linear regression models examined their association. Emotional abuse was significantly associated with more stress eating (b = .24, p = .009), but physical (b = -.01, p = .91) and severe physical abuse (b = .-10, p = .13) were not. Results were similar when controlling for age, sex, race, education, marital status, and income. These findings are important for understanding the influence specific ACEs can have on stress eating in adults. A limitation is that abuse was self-reported and this study categorized participants who "rarely," "sometimes," and "often" experienced abuse together, which could be misrepresenting the extent of abuse for certain participants. Future directions could redefine abuse and include optimism as a moderator for the relationship between ACEs and overeating.

92. Caregiving and Mental Health: Exploring the Link Between Role and Well-Being
Presenter(s): Darby Lyons
Advisor(s): Dr. Julia Boehm

Introduction: Chronic conditions affect more than 129 million Americans and are connected to 5 of the top 10 leading causes of death in the US. Ongoing management of these conditions often falls to informal caregivers, whom research suggests are likely to experience poor mental health. Caregiver burden and mental health are linked to mental and physical health outcomes in chronically ill individuals, highlighting the importance of caregiver well-being not only for the sake of caregivers, but also to enhance patient well-being. This study examines caregivers and non-caregivers across two time points to explore the effect between caregiving and understudied psychological well-being characteristics.

Methods: This study utilized data from the Midlife in the US (MIDUS) core and Milwaukee African American samples at 2 time points 8-10 years apart. The sample included 397 caregivers and 2,455 non-caregivers (56.9% female, 43.1% male). Linear regression assessed the effect of caregiving status on self-reported environmental mastery, purpose in life, and self-acceptance concurrently and longitudinally. Models were adjusted for sociodemographic characteristics.

Results: In unadjusted models, there was a statistically significant ($p < .05$) association between caregiving and lower levels of environmental mastery concurrently and longitudinally, as compared to non-caregiving. There was also a statistically significant effect of caregiving on lower levels of purpose in life concurrently, as compared to non-caregiving. Associations were not maintained after adjusting for sociodemographic characteristics. Self-acceptance was not associated with caregiving status for either time point.

Discussion: Results suggest associations exist between caregiving and poorer psychological well-being, but more research is needed for stronger conclusions. One limitation is the reduced statistical power due to the small caregiver sample size. Understanding contextual differences in caregivers' psychological health can lead to more specific and effective interventions for caregivers.

93. Face Surveillance and Sociocultural Pressures as Predictors of Face Satisfaction in Partnered Asian American Women
Presenter(s): Vivian Nguyen
Advisor(s): Dr. David Frederick

Asian American women report significantly higher face dissatisfaction compared to White women, particularly regarding their eyes (Frederick et al., 2016). The Tripartite Model of Influence posits that family, peers, and media contribute to the formation of body image dissatisfaction and disordered eating (Thompson et al., 1999). Asian American women experience familial, peer, and media pressures from both Western mainstream and Asian specific cultures, magnifying risk of face dissatisfaction. These body image pressures may also foster face surveillance and anxious romantic attachment, both of which are linked to negative body image outcomes. Our study

sought to examine how Tripartite Model of Influence pressures, face surveillance, and romantic attachment style come together to predict face dissatisfaction in Asian American women. We tested these associations among 252 partnered Asian American women via an online survey collected from Internet panel services. The survey included the Sociocultural Attitudes Towards Appearance Scale-4 (SATAQ-4), Experiences in Close Relationships Revised Scale (ECR-RS), a modified version of the Objectified Body Consciousness Scale (OBCS) that assesses surveillance specifically among Asians, and Face Satisfaction-10 measure. All psychological predictors were correlated with each other (ps < .05). Participants showcased lower face satisfaction when reporting greater levels of family pressure (B = -.221), anxious romantic attachment (B = -.203), and face surveillance (B = -.327). Of the controls, age emerged as a significant negative predictor (B = -.183). Extending beyond traditional body surveillance, this study highlights facial feature-specific surveillance in partnered Asian American women, an understudied area in body image literature. Results help better inform therapists about potential root causes of body and face dissatisfaction, which can aid in tailoring culturally appropriate interventions for Asian American women who are struggling with racialized body image concerns.

94. <u>Retail Therapy- Examining Spending Habits and Measures of Academic Stress Throughout the Semester</u>
Presenter(s): Katie Baek
Advisor(s): Dr. Oliver Lopez

Throughout the course of this fall semester, I chose to track 10 daily behaviors and habits such as money spent, screen time, mood, levels of exercise to explore the relationship between financial choices and academic stress. Each day I measured these habits and recorded them within an Excel sheet. As a college student learning how to manage her finances while studying full time and working part time, I hoped to examine how my spending habits correlated to times of high academic stress and mood. The goal was to determine whether I was healthily coping with high pressure periods of my life such as midterms season. By utilizing the data recorded, I was able to draw conclusions on how my financial choices were impacted by mood and levels of stress. Additionally, I also identified how other behaviors such as exercise, hours of sleep, steps taken correlated to my stress response of shopping. By identifying these trends, I hope to determine how academic stress impacts my finances, mental health, and well being. By gaining insights, I will be able to develop healthier and more balanced coping mechanisms that will direct me towards managing my academics and finances more effectively in future semesters.

95. Increasing Awareness of Bias and Ally Behavior Through a Theoretically-Grounded Educational Workshop

Presenter(s): Kalyn Su, Amber Sharma

Advisor(s): Dr. Amy Moors, Dr. Jeremy Hsu

In 1991, 34% of universities required diversity-related courses; by 2016, the number rose to 60% (Zabala-Eisshofer, 2024). Despite this growth, efforts to dismantle (DEI) initiatives have emerged. In September 2025, 400 colleges reportedly removed or rebranded their DEI programs (Rogin et al., 2025). On the other hand, researchers have found that that women, people of color, and LGBTQ+ individuals often experience subtle acts of prejudice (microaggressions) in college, harming mental health and academic outcomes; experiencing microaggressions have been associated with 2x greater likelihood of developing depression (Keels et al., 2017; Lilly et al., 2018). Although well-intentioned, previous DEI trainings lack theoretical basis and often exacerbate issues (Cundiff & Murray, 2020), prompting the ONWARD Lab at Chapman University to develop and implement a 75-minute theoretically-grounded workshop to provide students with evidence-based ally strategies using peer-to-peer education. Our workshop incorporated the prejudice habit model and ally development model (Moors, Mayott, & Hayden, 2020). Utilizing a within-subjects experimental design, we surveyed 168 college-aged participants pre- and post-workshop. Measures include motivation to change prejudice, awareness of bias and microaggressions, and ally action. 11 participants were randomly selected for three-month follow-up interviews to test material retention. Data analyses are currently ongoing; preliminary evidence suggests that participants exhibited an increase in confidence and self-efficacy to intervene as an ally, as well as an increase in internal motivation to change prejudice. From initial analysis of the interviews, participants were skilled in identifying microaggressions, knowing bystander behavior, and were able to recall and actively use ally strategies. However, evidence suggests that a handful of participants remain hesitant in the actual act of speaking up albeit knowing there is a microaggression; in this decision, many participants mention their relationship with the perpetrator and/or target.

96. Visual Representations of Two Highly Stigmatized Psychological Disorders: Schizophrenia and Obsessive-Compulsion Disorder

Presenter(s): Mei Han, Ashley Weller

Advisor(s): Dr. David Pincus

This project investigates how visual art can bridge clinical psychology with lived human experiences to represent two highly stigmatized disorders: schizophrenia and obsessive-compulsive disorder (OCD). Under the mentorship of Dr. David Pincus and Professor Ashley Weller, research included studying case studies, reviewing psychological theories, and engaging in discussions with mentors to understand sufficiently both the scientific and human dimensions of schizophrenia and OCD. Central themes emerged through the research of these disorders that are commonly omitted from their portrayals. The isolation that schizophrenia entails is profound.

In OCD, obsessions have power because the person has an intense depth to their emotions and cares about who they could affect. The two resulting large-scale acrylic paintings translate these psychopathologies into visual narratives, highlighting overlooked aspects. The project demonstrates how art can serve as a tool for science communication; therefore, it proposes a model for interdisciplinary collaboration that fosters both intellectual comprehension and emotional connection to mental health experiences.

Sociology

97. Are We Going Backwards? Attitudes Towards Women's Role in Society.
Presenter(s): Ariadni Alexandrou Barcelo
Advisor(s): Dr. Ann Gordon

Women have been seen as inferior historically, culturally and within many different scopes in the world, that usually outline women as subordinate to their male counterparts. Society takes these different ideals, and uses them to affect how they think about women's roles in various aspects of the world. There has been an evolution into how women are portrayed and seen though, as contemporary society evolves the woman's role, a reversion back into the 18th century women is gaining popularity. Especially pointing to the waves of feminism that have hit in the last century, this phenomenon is striking. In this paper, I will be delving into attitudes towards women's role in the home and workplace. The data being used to analyze this is the American National Election Survey, ANES, a national survey using random sampling. I found that the level of urbanization, level of education and your marital status affect how one sees a woman's role in society. Modern women are ever evolving and the decline of independent women is on the rise.. Is this the "trad wife" coming back? This rolls back the gains of independence and power that women have made for generations, a decline I believe us women cannot afford.

Software Engineering

98. Developing Accessible Narrative-Based STEM Learning Software for K-6 Braille Display Users
Presenter(s): Daniel Tsivkovski, Dylan Ravel, Brandon Foley
Advisor(s): Dr. Maryam Etezad, Dr. Ariel Han, Dr. Rajeev Joshi, Dr. Franceli Cibrian

Developing a web application to encourage K-6 students' learning of STEM concepts in braille using a refreshable braille display addresses the core issue of the lack of dedicated, accessible learning tools and applications. While many online tools exist to facilitate K-6 learning, most are not designed primarily for blind or visually impaired (BVI) students. This research aims to develop a free, accessible, and easy-to-use application that interfaces with on-market braille displays, with the long-term goal of integrating further research on an in-house, more affordable braille display.

Utilizing built-in screen reader support and web browser APIs for accessibility, this application is designed specifically with the needs of BVI students in mind. The curriculum is designed to be approachable and engaging in the format of a narrative story, which helps younger students connect with the material they are learning. This research aims to create a platform where students will desire to continue learning on their own time without external encouragement. The end goal is to provide BVI students with an experience similar to that which non visually impaired students have access to, including fun experiences and personalization. By doing so, this can address a barrier in education for students who are blind or visually impaired and help them feel more integrated into the classroom experience.

AF209A
Moderator:

Psychology

Impact of Health Behaviors on Biological Aging
Presenter(s): Emi Iwasaki
Advisor(s): Dr. Tara Gruenewald

Understanding the impact of various lifestyle factors on health and aging can provide information that allows individuals to make lifestyle choices that may help them lead longer and healthier lives. Previous studies, such as the Alameda County Study, exploring clusters of health behaviors indicate that regular engagement in certain health promoting behaviors may facilitate a longer and healthier life. While existing literature links health habits to decreased mortality and other disease outcomes, only a minority of studies have investigated the biological processes that may underlie these associations. This study aims to construct an updated health behavior index modeled on the original Alameda County Study index and examine the association of scores on this index with two measures of biological aging: allostatic load and an epigenetic pace of aging measure. We also aim to examine these biological aging indicators as potential mediators of hypothesized heath behavior-mortality associations. Analyses will utilize data from the second wave (N = 1,255) and refresher (N = 863) data collections of the National Study of Midlife in the U.S. (MIDUS) Biomarker Substudies, yielding a combined sample of 2,118 participants for assessment of associations of health behavior indices, biological aging, and mortality. The health behaviors included in our health behavior index include body mass index, adherence to a Mediterranean diet, alcohol consumption, fast food consumption, exercise, sleep, and smoking habits. Allostatic load was assessed with 24 biomarkers of physiological regulatory systems and epigenetic aging with the Dunedin Pace of Aging measure. Mortality occurrence was assessed through linkages with the National Death Index. Study findings will enhance our knowledge of the biological aging pathways that may explain how our engagement in health promoting behaviors shape morbidity and mortality as we age.

Biological Sciences

Stable Expression of Green Flourescent Protien in Chia using Agrobacterium-Mediated Tissue Culture
Presenter(s): Elisa Heo
Advisor(s): Dr. Hagop Atamian

Salvia hispanica L., commonly known as chia, is a seed crop from the mint family used historically in ancient cultures. In recent times, chia has become popular as a "superfood" for its high nutritional benefits. However, chia has not been used as a food source for consumption over the past 600 years, and research on this crop is limited. Consequently, our understanding of its growth and development mechanisms is less comprehensive compared to well-studied crops such as

corn, rice, and tomato. Agrobacterium-mediated plant tissue culture (in vitro, sterile culture) is valuable in genetically modifying individual plant cells. This technique involves the asexual propagation of plants from a single vegetative cell. This allows for the study of gene functions through genetic modification of individual plant cells through Agrobacterium-mediated transformation, creating a complete plant from a single genetically modified cell. This is done by cultivating a single plant cell within a sterile environment and infecting it with Agrobacterium, supplemented with nutrients, hormones, and antibiotics to stimulate shoot and root formation in vitro. This technique has allowed solutions to significantly difficult agricultural challenges such as drought tolerance, disease resistance, and crop yield increase. Despite its popularity, an agrobacterium-mediated tissue culture protocol for chia is not available yet. Through this research, a tissue culture protocol was successfully created, while an Agrobacterium-mediated transformation protocol is still undergoing trials. Seeds were sterilized and grown on Murashige and Skoog (MS) plant growth media. Cuttings of this sterile plant were made and infected with Agrobacterium, then induced with growth hormones, Benzyl aminopurine (BAP) to produce shoots, and Indole 3-Butyric Acid (IBA) to produce roots. The availability of a tissue culture protocol for chia is a considerable advancement and will significantly contribute to the future genetic study of this nutritionally valuable crop by the scientific community.

Comparative Genomics of Chia (Salvia hispanica L.): Exploring Functional and Structural Diversity
Presenter(s): Carlos Alderete
Advisor(s): Dr. Hagop Atamian

Chia is an emerging crop that has been widely recognized for its high nutritional content and adaptability to diverse environments. Despite its rising popularity, research on its genome and functional traits at a genomic level remains limited. The recent availability of chromosome-scale genome assemblies enables extensive comparative genomic analysis. Therefore, the objective of this project is to compare the various chia genome assemblies and explore the genetic basis of its unique characteristics. A Gene Ontology enrichment analysis identified the prevalent gene families and their corresponding biological processes. The expanding processes included organic compounds and hormones that aid in chia's defense and metabolism. In comparison, contracted processes included growth and signaling pathways. This provides insight into the adaptive strategies chia utilizes, suggesting favorable selection towards defense during environmental stress. A synteny analysis was conducted using GENESPACE, highlighting the degree of conservation across the six chromosomes in five different chia genomes. Overall, extensive synteny was observed among the genome sequences. However, there are notable differences in chromosome size, particularly in the assemblies by Atamian and Brose compared to the assembly by Wang. To investigate this discrepancy, a Muave whole-genome alignment was performed between the assemblies by Atamian, Brose, Alejo, Mel, and Wang. Results revealed a prominent non-duplicated region absent from the Wang sequence, but conserved among the other assemblies. This region may harbor unique genes that contribute to chia's adaptability. This

comparative genomic analysis highlighted the functional and structural diversity between chia accessions, leveraging chia's genetic diversity.

AF209B

Moderator: Dr. Ronald Steiner

Interdisciplinary

The Role of Artificial Intelligence in Reducing Internet Crimes Against Children
Presenter(s): Malyssa Shaw
Advisor(s): Rachel Lord

When generative artificial intelligence (AI) first surfaced and broke into the public sphere, my immediate concern was in its development, implementation, and harmful applications. I was not surprised when deepfake technology rapidly advanced alongside these new developments and impacted women and children worldwide. Disproportionately, they have been made victims of intimate media forgery as early as the 1990s, with an unprecedented uptick in recent years as a direct result of these developments. In response, I wrote "Deepfake, Real Harm: Protecting Children in the Age of AI", analyzing data specifically regarding child sexual abuse material (CSAM) created with artificial intelligence while urging legislators and community members to push for regulation in an effort to combat it. Two years later, children are still treated as peripheral when the topic of technology is centered. U.S. law and policy specific to these issues are moving unhurried while more children are harmed due to its absence. In light of the growing acceptance and integration of artificial intelligence into every aspect of our daily lives, it is crucial to shift the conversation to advocate for the use of technology that will directly counteract these issues. As such, this paper explores the vast potential for AI to be used in the reduction of internet crimes against children, in stark contrast to the way it has been used to increase it.

Peace Studies

Intellectual and Developmental Disabilities in Armed Conflict
Presenter(s): Kalea Seaton
Advisor(s): Tessa Venizelos

This study will evaluate the intersections of armed conflict and the experiences of people with intellectual and developmental disabilities. Through an analysis of discourse and lived experience, this study aims to evaluate the research question, 'What are the impacts of armed conflict for people with intellectual and developmental disabilities (ID/DD), and how are these impacts influenced by cultural and social attitudes and beliefs surrounding disability?' In evidencing how ideas of disability and the valuing of life are imposed on the violent experiences of people with ID/DD by the Israeli Defense Forces (IDF) in Gaza and the West Bank, several reports and articles are cross analyzed to determine the experiences of people with ID/DD within the conflict, and

the ways in which these are related to existing attitudes and beliefs, harmful to ID/DD individuals. Through exposing overarching themes that substantiate ableist ideologies, the analysis indicates that intellectually and developmentally disabled individuals as victims of armed conflict are targeted through tactics that are more violent compared to their non-disabled peers. Moreover, the social challenges faced by people with ID/DD pose a particular threat to increased vulnerability within these settings, making this topic an urgent field of concern.

Political Science

State Surrogacy Regulations in the United States
Presenter(s): Jazmyne Harmon
Advisor(s): Dr. Minju Kwon

How has the United States regulated surrogacy? Existing studies on surrogacy regulations have examined the historical evolution of state laws, the key factors that impact state laws, and the need for more cohesive laws nationwide. However, there is limited research that provides a systematic comparison of variations in state laws. This study examines the levels of state surrogacy regulations across different states in the United States. We identify 12 main criteria and divide 50 states into six categories in terms of levels of regulations: states where (1) a punishment is in place, (2) surrogacy contracts are not legally enforceable, (3) only gestational—not traditional—surrogacy contracts are legally enforceable, (4) both gestational and traditional surrogacy contracts are enforceable with maximum guidelines, (5) both gestational and traditional surrogacy contracts are enforceable with minimal guidelines, and (6) no legal framework exists. By examining the specific legislative processes in Louisiana, New Jersey, and California, we find that state legislators demonstrate variations in framing surrogacy as different rights issues, such as family formation rights, women's rights, LGBTQ+ rights, and child rights. As the first systematic comparison of state regulations, this study contributes to the literature on reproductive law by demonstrating the core legal debates surrounding surrogacy issues and providing original data on the most recent surrogacy regulations.

AF209A
Moderator:

<u>Biochemistry and Molecular Biology</u>

<u>Modulation of aminoacyl-tRNA synthetases differentially impacts the rate of mutagenesis in E. coli</u>
Presenter(s): Emi Iwasaki
Advisor(s): Dr. Michael Ibba, Dr. Lorenzo Leiva

As antibiotic resistance continues to become a significant global issue, there is an emphasis on developing new antibiotics and exploring ways to enhance the effectiveness of current antibiotics against bacteria. In this context, protein synthesis has drawn the attention of many researchers for the design of new drugs or the combined use of antibiotics that affect this process in the search for possible solutions to antibiotic resistance. Aminoacyl-tRNA synthetases (aaRS) are enzymes that play an important role in aminoacylation, a process in which tRNA and its corresponding amino acid bind to produce charged tRNA, which is essential in translation. The relevance of aaRS in protein synthesis makes them good targets for the design of new drugs with antibacterial properties. The study aims to investigate further how inhibition of specific aaRS influences the frequency and nature of mutagenesis in E. coli. To this end, we measured the frequency of appearance of rifampicin-resistant bacteria when the expression of aaRSs is inhibited. Our results show that different aaRSs exhibit variable rates of mutagenesis and acquisition of rifampicin resistance, suggesting that inhibiting different aaRSs has varying effectiveness on the rate of mutagenesis in E. coli. To further investigate the nature of these differences, we standardized nanopore sequencing for the gene that confers resistance to rifampicin (rpoB) in the strains where the aaRS genes for proline, leucine, and lysine had been knocked down, as these showed the greatest changes in the mutagenesis rate. This allowed us to determine the location and type of mutations in each mutant and how these mutations might be related to the overall mutagenesis rate. Understanding how aaRS inhibition affects mutagenesis may provide additional insight into how aaRS inhibitors could be used to reduce bacterial mutagenesis and enhance antibiotic effectiveness.

<u>Biological Sciences</u>

<u>Chia as a Potential Replacement for Alfalfa as Livestock Feed.</u>
Presenter(s): Sophie Pel, Carlos Alderete
Advisor(s): Dr. Hagop Atamian, Dr. Lilian Senger

Alfalfa is a nutritious livestock feed source but poses significant challenges in drought-prone areas due to its high water requirements. Chia is an emerging crop that uses up to 38% less water while thriving in the same environments as alfalfa. This is significant as replacing alfalfa with chia would help conserve water. This study evaluated the potential of two chia genotypes, commercial and wild accessions, as alternative forage crops. Nutritional analyses indicated that both chia

genotypes exhibited crude protein levels, fiber, total digestible nutrients, and net energy values comparable to or exceeding those of alfalfa. Mineral profiles demonstrated favorable concentrations of calcium, magnesium, phosphorus, and essential trace elements. These results suggest that chia offers a nutrient-dense forage profile equivalent to alfalfa, with the added advantage of lower water requirements, highlighting its suitability as a sustainable alternative in water-limited agricultural systems.

Peace Studies

The Silenced Holocaust: How U.S Interference Has Affected Guatemalan Lives in Today's Society
Presenter(s): Ashley Castillo
Advisor(s):

While past research has been conducted on the effects of the United States' interference with Guatemala over the past century, and how that has affected the state of the country politically, there has been a lack of discussion regarding how this has affected the Guatemalan people culturally. Guatemala is a country that often is outcasted by a large percentage of Latin America socially, and continues to be silenced in the politically, especially in the United States, due to false misconceptions that have been created and continue to be widespread based on the effects of the bioterrorism the country experienced at the hands of the U.S., as well as it's silent Holocaust and how that affected its people. This research is inspired by my experiences growing up as a Guatemalan American woman in the U.S., learning from my parents' cultural experiences as they grew up in Guatemala and migrated to the United States. Living in Los Angeles, where there is a significant percentage of Guatemalans residing in the country, I've witnessed various firsthand narratives. Through collecting data from digital sources, such as online research journals and databases, I've also gathered firsthand testimonies from the Guatemalan community about how these misconceptions have affected them throughout their lives and ultimately had a negative impact on various aspects. I have also collected examples of our government's repeated exclusion of the country, and how this has affected the Guatemalan people living in the United States, who make up a significant portion of our country's population, as migration of Guatemalan immigrants continues to rise. Ultimately, I hope this research can inspire a call to action to bring more awareness, both culturally and legislatively, to the issues Guatemalan people have faced at the hands of our country, and encourage the start of reparations.

Political Science

The White Panic: Xenophobia, Media, and the Fear of Immigration
Presenter(s): Jacqueline Lopez
Advisor(s): Dr. Ann Gordon

In a nation founded and built by immigrants, immigration has curiously remained one of America's greatest fears. The issue of immigration has shifted from a matter of policy to a more societal conflict. With the rise of partisan media and xenophobic attitudes, the fear of illegal immigration continues to grow among the American population. In this paper, I will analyze theories of xenophobia and media politics to explain the fear of illegal immigration. Using the data set from the American Fears Survey, this study examines how biased media sources and xenophobic narratives reinforce negative perceptions of immigrants and thus contribute to the growing fear of illegal immigration. By exploring how fears of immigration intersect with the fear of whites no longer being the majority, this analysis will reveal the media's influence in intensifying these panics. The findings aim to highlight the overall role of media in our nation's anxiety about immigration and ultimately reveal how distorted patterns of representation continue to reinforce inequality in American society. To achieve liberty and justice for all, we must address the disparities that polarize immigrants in order to truly reflect the democratic pillars of this nation.

AF209A

Moderator: Russell Schwartz

Business

National Workplace Cultures and Professional Identity
Presenter(s): Vaishvi Joshi

Advisor(s): Dr. Tara Gruenewald, Dr. Cristina Giannantonio

In today's globalized world, workplaces are more connected than ever before. People from different countries and cultures work together every day, bringing their own ideas of what it means to be professional, successful, and respectful. This paper explores how cultural values shape workplace culture and professional identity across three regions: the United States, Asia, and Latin America. It shows how employees shape their ideas on success and teamwork based on the culture they are from and how they interact with the organization.

The paper uses theories from Edgar Schein and Geert Hofstede and discusses how corporate culture develops and how national values influence what employees consider "professional." There will also be an analysis on the formation of professional identity through their work experiences and social interactions. When an employee's values match the values of the organization, they feel more motivated to work and feel disconnected when values mismatch.

Through a comparison of the U.S., Asian, and Latin American workplaces, this paper shows that American culture often values individual achievement, Asian cultures tend to emphasize teamwork, and European cultures prioritize work-life balance. The paper concludes that global companies must understand these cultural differences and use them to create inclusive environments that embraces diverse thought.

Economics

Regulatory Impacts on Foreign Investment: An Analysis of How Regulatory Law Impacts Asian Firms' Investments in the U.S.
Presenter(s): Blaise Bowers

Advisor(s): Dr. Pradip Shukla

This project analyzes the current regulatory law's implications on the current account of key Asian trading partners of the United States. The project analyzes acts such as the Foreign Investment Risk Review Modernization Act, the Defense Production Act, the Foreign Investment and National Security Act of 2007, inter alia, along with numerous codified statutes and case precedent to connect legal considerations to real-world economic data. Nations believed to be hostile (such as China) often see investments blocked or limited in critical industries under these precedents; conversely, investors from allied Asian nations (such as Japan) receive considerably decreased scrutiny due to broad authority to regulate being granted to the executive branch, correlating to inequalities in investment patterns between nations. Many articles and research papers do not consider the investment regulation considerations behind current account imbalances. This

project takes the approach of comparing the current account balances of various Asian nations with the United States and analyzing how key industries of investment interact with the relative regulatory laws. From this nuanced approach, a stronger analysis of economic data relative to US law can be made. This project first analyzes the current account imbalances of Asian countries and discusses patterns and discrepancies among investment capital flows, along with goods and services trade with the United States. The project then ties this real-world economic data to the numerous acts, codified statutes, and cases that influence how foreign investment is governed in the United States. The project then describes possible solutions to the issues posed by the regulatory and economic situation of various Asian countries relative to the United States, such as increased invoking and dispute resolution through the International Centre for Settlement of Investment Disputes, and legislation encouraging investment from trading partners investing below the USD value of their net export surplus. In turn, this could help inform possible policy changes in adapting how direct foreign investment, particularly from Asian countries, is regulated in the U.S on a more nuanced level and in more effectively using the law to address poor quantity or direction of capital flows and current account imbalances.

Political Science

Hindu Nationalism
Presenter(s): Jiya Kathuria
Advisor(s): Dr. Minju Kwon

How do young upper-class women respond to the Hindu nationalism movement in India? While existing literature has examined women's mobilization within Hindu nationalism and the symbolic role of femininity in nationalist movements in India, there is a lack of research on how individual women strategically negotiate, internalize, or resist these norms within urban elite settings. This study examines the spectrum of individual reactions to Hindu nationalism from the case of young upper-class women in Gurgaon, India. Using the concept of "selective conformity," we argue that young women strategically choose to perform their conformable actions to Hindu nationalism despite limited circumstances. By qualitatively analyzing 30 semi-structured interviews with local residents, we demonstrate the spectrum of selective conformity to the Hindu nationalism movement: (1) tactical complicity, (2) cultural reproduction, (3) situated neutrality, and (4) everyday resistance. This study contributes to the literature on religion and nationalism by demonstrating how intra-class variation in political subjectivity impacts the spectrum of responses that young upper-class women have to Hindu nationalism. It further provides original qualitative data from local communities in India.

Algorithms Before Us: How Social Media Shapes Fear and Distrust in Government

Presenter(s): Brandon Mahgerefteh

Advisor(s): Dr. Ann Gordon

This paper examines the relationship between how people get their news from social media and how that connects to fear of corruption in government. Fear of corruption says a lot about how much people actually trust politics and how healthy democracy really feels. Using data from the Chapman University Survey of American Fears Wave 10 (2024) and comparing some findings to Wave 7 (2021), this paper looks at whether greater use of social media for news is linked to stronger fear of corruption across different levels of government. The results suggest that people who rely more on social media for political information are also more likely to distrust the system and believe government is corrupt. This reflects the growing influence social media has on how people understand and react to politics, shaping not just what they know but how they feel about the system itself.

AF209A

Moderator: Dr. Hagop Atamian

Biochemistry and Molecular Biology

Phosphorylation-Dependent Modulation of PRMTs by Protein Kinase A in Cold-Induced Thermogenesis

Presenter(s): Brianna Palomares
Advisor(s): Dr. Cecilia Zurita-Lopez, Dr. Aracely Acevedo

Cold-induced thermogenesis is an adaptive metabolic function where the body generates heat by activating brown adipose tissue in response to cold-exposure. The activation of thermogenesis is aided largely by Protein Kinase A (PKA), a central mediator of lipolysis and mitochondrial metabolism by phosphorylating its target substrates. Protein arginine methyltransferases 1, 5, and 7 have recently been studied in the context of lipid metabolism because of their ability to methylate substrates involved in cold-induced thermogenesis. The signaling pathway that activates PRMT7 to methylate target substrates in response to nonphysiological stresses is unknown. We hypothesize a potential interaction between PKA and PRMT7 via phosphorylation in response to thermogenetic conditions which will lead to enzymatic activation of PRMT7. Using a computational approach, we first analyzed the primary amino acid sequence of PRMT1, 5, and 7. Our computational work shows that all three PRMTs are amenable to phosphorylation by PKA. There are multiple sites of potential phosphorylation for these PRMTs, all of which are serine or threonine-specific motifs that are highly favored by PKA. We will next carry out in vitro kinase reactions, with recombinant PRMT substrates and the PKA catalytic subunit. Phospho-specific antibodies will confirm if these PRMTs are being phosphorylated by PKA in cells. Our long-term goal is to identify the activity of PRMT7 (1/5) in the context of thermogenesis in vivo and as a model for metabolic regulation.

Biological Sciences

Synthesis and Characterization of an EGFR-Targeted Peptide for Site-Specific MCC–Doxorubicin Conjugation in Triple-Negative Breast Cancer

Presenter(s): Keon Jafari
Advisor(s): Dr. Kamaljit Kaur

Triple-negative breast cancer (TNBC) is one of the most aggressive and treatment-resistant breast cancer subtypes, characterized by the absence of estrogen, progesterone, and HER2 receptors. Accounting for roughly 13% of all breast cancers yet nearly 40% of breast cancer–related mortality, TNBC highlights the urgent need for targeted chemotherapeutic strategies. Peptide–drug conjugates (PDCs) offer a promising approach to improve tumor specificity and minimize systemic toxicity by coupling cytotoxic agents with receptor-targeting ligands. PEP31 (YHWYGYTPERVI), a 12-amino acid EGFR-binding peptide, was selected for conjugation to

doxorubicin (DOX) to enhance EGFR-mediated targeting in TNBC. The cytotoxic intermediate MCC–DOX was synthesized through a controlled coupling reaction between DOX and the heterobifunctional linker Sulfo-SMCC (sulfosuccinimidyl 4-[N-maleimidomethyl] cyclohexane-1-1-carboxylate), producing a stable, maleimide-activated intermediate optimized for thiol-specific conjugation. PEP31 was subsequently synthesized using Fmoc-based solid-phase peptide synthesis (SPPS) on Rink amide resin, followed by global deprotection, cleavage, and purification through reverse-phase high-performance liquid chromatography (RP-HPLC). Peptide identity and purity were verified by MALDI-TOF and LC–MS analysis, confirming successful synthesis and expected molecular profiles for both peptide and linker–drug intermediates. Thus far, conjugation of MCC–DOX to PEP31 is being optimized to achieve high coupling efficiency, chemical stability, and preservation of doxorubicin's cytotoxic activity. Nonetheless, the established framework provides a foundation for developing EGFR-targeted peptide–drug conjugates as precision chemotherapeutics for TNBC, enabling improved efficacy and reduced off-target toxicity through rational peptide design and controlled conjugation chemistry, with future evaluation planned through in vivo biodistribution studies in mouse models.

Environmental Science and Policy

Bioaccessibility and Distribution of Lead in Ash-Impacted Soils Resulting from the 2025 Los Angeles Wildfires
Presenter(s): Mia Gabriel
Advisor(s): Dr. Christopher Kim

The increasing frequency and severity of wildfires are an urgent threat to the environment and public health. Wildfires occurring at the wildland–urban interface (WUI) release toxic substances such as heavy metals, posing immediate and long-term risks. While much attention has focused on air contamination and fire management, the persistence and mobility of fire-derived metals in soils remain poorly understood.

Soil sampling was conducted approximately 1, 6, and 12 months post-containment of the 2025 Los Angeles wildfires at ten burned sites directly affected by the fires and ten unburned properties within the ash plume zone (0.5–2.5 km from the burn boundary). In situ X-ray fluorescence (XRF) measurements (n≈20–50 per site) quantified metal concentrations at the surface and 5 cm depth. Soils with the highest lead (Pb) levels were collected at depths of 0–1, 1–5, and 5–10 cm, air-dried, and sieved to the ≤250 um fraction for in vitro bioaccessibility testing using simulated gastric fluid (SGF) extractions.

XRF results showed elevated Pb concentrations at burned sites relative to downwind plume sites, with enrichment in surface fine-grained ash and dust near point sources. Over time, Pb appeared to migrate outward from localized hotspots, increasing average contamination across residential lots. SGF extractions indicated that Pb bioaccessibility varied with location, depth, and time, declining slightly with depth in burned soils but remaining relatively constant in unburned sites.

These results highlight wildfire-driven redistribution of Pb in urban soils and emphasize the need for post-fire soil monitoring and remediation to mitigate potential human exposure.

Physics

Establishing Convergence Thresholds for Pre-Trajectory Sampling with Batched Execution Across Random Quantum Circuits

Presenter(s): Taylor Eskew

Advisor(s): Dr. Andrew Jordan

A crucial aspect of validating quantum protocols is understanding the noise produced by quantum computing devices. Using simulations that can replicate this noise allows for a lower-cost alternative to hardware experiments. Stochastic, so-called "trajectory" methods are often used as a quadratically reduced approximation to density matrix simulations, but traditional implementations have limited sampling capacity and provide no error-based metadata. The Pre-Trajectory Sampling with Batched Execution (PTSBE) [Patti et al., 2025] algorithm provides a solution by combining fine-tuned, well-documented noise sampling with computational intermediate caching.

While the original work is effective on quantum error correction circuits, its performance on general circuits has yet to be explored. This project gauges PTSBE on random quantum circuits to understand convergence behavior and accuracy compared to traditional methods. To accomplish this, an automated simulation pipeline was developed by using Apache Airflow and CUDA-Q to generate a collection of noisy circuits, run both exact and approximate simulations, and analyze error criteria across various qubit counts and circuit depths.

Early tests have confirmed the system's ability to scale to 20-qubit circuits and produce accurate comparison data. Our work aims to provide guidance for researchers using PTSBE in noisy simulation environments, expanding its use beyond specific cases.

AF209B
Moderator: Quaylan Allen

Data Analytics

Bridging Machine Learning and Islamic Scholarship: A Study in Hadith Translation and Similarity Analysis
Presenter(s): Asiyah Speight
Advisor(s): James Wimberley

Translation of Islamic religious texts poses unique challenges requiring both linguistic and theological expertise. This study explores the application of neural machine translation (NMT) models to Arabic-English hadith translation while analyzing semantic similarity patterns across different human translations. Using the complete Sahih Bukhari corpus (7,550 hadiths) as the primary dataset, we adopt a dual approach combining transfer learning and comprehensive neural network analysis to demonstrate the critical impact of corpus size on model performance.

First, we fine-tune a pre-trained MarianMT Arabic-English translation model on the full Sahih Bukhari corpus, comparing models trained on 40 hadiths versus 7,550 hadiths. Performance is evaluated using BLEU scores, demonstrating that corpus scale significantly affects translation accuracy: the 40-hadith model achieves a BLEU score of 9.90, while the 7,550-hadith model shows substantial improvement, illustrating how adequate training data is essential for specialized domain adaptation.

Second, we implement and compare ten distinct Siamese neural network architectures to analyze semantic similarity between multiple English translations of the same hadith. These architectures range from simple LSTMs to advanced models incorporating attention mechanisms, bidirectional processing, and transformer encoders. Comprehensive evaluation addresses the severe overfitting observed with limited data: expanding from 40 to 7,550 hadiths improves validation accuracy from 42% to over 70%, reducing the training-validation gap from 56 to under 15 percentage points. An ensemble model combining the top three architectures achieves optimal performance.

Our analysis integrates computational metrics with theological accuracy assessment, leveraging expertise in Islamic studies to evaluate model performance. Findings indicate that while NMT models achieve reasonable quality for straightforward passages, they struggle to preserve religious nuance and precise Arabic terminology. Results provide quantitative evidence that adequate corpus size is the critical factor for meaningful model generalization. This research contributes to computational religious studies and underscores the irreplaceable role of human expertise in translating sacred texts, with implications for Islamic education and digital humanities scholarship.

Interdisciplinary

Criminalizing Difference: An Intersectional Analysis of Disability in the Criminal Justice System

Presenter(s): Rowan Eisleman

Advisor(s): Dr. Stephany Cuevas

This research addresses the central question: How do individuals with disabilities intersect with the criminal justice system, and what systemic factors contribute to their overrepresentation and victimization? Despite over 61 million Americans having disabilities, there exists a significant gap in comprehensive scholarship examining disability-criminal justice intersections, particularly regarding how people with intellectual and developmental disabilities experience unique vulnerabilities as both offenders and victims. This study contributes to disability studies and criminology by providing a comprehensive intersectional analysis examining how disability compounds with race and gender to create compounded marginalization. This study conducted a comprehensive literature review, analyzing government statistics from the Bureau of Justice Statistics and the National Crime Victimization Survey, alongside peer-reviewed research, to examine prevalence rates, victimization patterns, police interactions, and systemic barriers. The methodology involved synthesizing quantitative data on incarceration and victimization rates, examining historical developments from deinstitutionalization through contemporary practices, and identifying pipeline mechanisms that funnel individuals with disabilities into criminal justice involvement. Findings reveal that people with intellectual and developmental disabilities are dramatically overrepresented in correctional facilities, with 20% in state prisons and 31% in county jails compared to 1% in the general population. They face significantly higher victimization rates, comprising one-third to one-half of police violence fatalities, and experience intersectional vulnerabilities, with 55% of Black men with disabilities arrested by age 28. The research concludes that systemic issues, rather than individual deficits, drive these intersections, supporting the social model of disability and demonstrating the urgent need for policy reform and improved community supports.

Political Science

Ideology and Identity Behind Polarizing American Attitudes Toward U.S. Aid to Israel and Palestine

Presenter(s): Jolina Hamdan

Advisor(s): Dr. John Compton

To be pro-Israel or pro-Palestine has become one of the defining geopolitical divides of the modern era—arguably the most polarizing foreign-policy question in contemporary American politics. Since Israel's founding, the United States has maintained a decades-long alliance through extensive aid packages, arms transfers, and diplomatic support amounting to nearly $300 billion in assistance to date. Yet as public scrutiny intensifies following the 2023–2025 Israel-Hamas war,

American attitudes toward this aid have grown increasingly fractured. Using data from the 2024 American National Election Studies (ANES), this project examines how ideology, partisanship, education, group attitudes, perceptions of discrimination, and free-speech tolerance shape public opinion support for two contrasting policies: U.S. military aid to Israel and humanitarian aid to Palestinians. I expect Republicans to favor military aid and oppose humanitarian relief, while Democrats—especially younger respondents with higher levels of education—will display the reverse pattern. Warmth toward Jews should predict greater support for military aid, whereas warmth toward Muslims and higher tolerance for dissent should predict stronger support for humanitarian aid. By comparing these attitudes within a single analytical framework, this study investigates whether Americans apply consistent moral and political principles or divergent double standards when evaluating foreign policy. The findings aim to clarify how ideological, demographic, and attitudinal factors interact to structure polarization in U.S. public opinion on the Israel–Palestine conflict. Understanding these divides is crucial for assessing how domestic polarization shapes U.S. foreign policy priorities and public discourse on humanitarian responsibility in international conflicts.

Writing and Production

CHARLES CLONE
Presenter(s): Shayaan Ahmed, Armaan Ahmed
Advisor(s): James Dutcher

We hope to enter publishing in a genre we've always loved. We're submitting for your consideration CHARLES CLONE, a 62,000-word adult science fiction novel best described as Star Trek meets Black Panther. The novel, which we've been developing since middle school, serves the sole purpose of representing the Indian American experience through our hero. The story follows eighteen-year-old Charles Clone, an Indian American boy whose search for his missing parents hurtles him through space and time into an intergalactic war of aliens and dinosaurs. As he trains with wolf-men and purple cyborgs, dorms inside asteroids, and battles assassins in zero-g, Charles begins to unravel eons of celestial lies—and confront the horrors still lingering within himself. With the fate of an entire galaxy upon his shoulders and the price of a small moon upon his head, he must prove to an alien world where his loyalties lie… should he even survive.

We are two brothers: Armaan, who studies Aerospace Engineering and Creative Writing at UCLA, and Shayaan, who studies Screenwriting, Entertainment Law, and Producing at Chapman University. Based in Los Angeles, we are simultaneously working across the industry, networking, and building a creator brand across multiple platforms. Our mission is to do the unprecedented: center an Indian American hero in a cinematic sci-fi epic. Readers who, like us, grew up without a hero who looked like them will find in this story the representation and authenticity that has been neglected, or worse, ridiculed and typecast, by the media for far too long. CHARLES CLONE is the first installment in a planned series with long-term potential as a TV show and multimedia franchise. Our backgrounds in writing, science, and film help us craft visual social commentaries

rarely seen but desperately needed—for all the bullied kids building galaxies out of LEGOs. For every immigrant child whose voice got drowned in someone else's dream. Books like us, by authors like us, for readers everywhere.

AF209C

Moderator: Dr. Jocelyn Buckner

Storytelling Through Interactive Media
Presenter(s): Annika Brown
Advisor(s): Dr. Jocelyn L. Buckner

This project explores the intersection between theatre and video games through the adaptation of A Midsummer Night's Dream into an interactive game. There has been a global rise in the popularity and consumption of video games in recent years, with a player base of about 60% of the population, and a shift towards games being more mainstream. In order to build upon and contribute to the continued rise of video game popularity, I plan to bring stories that have been told in the theatre to new audiences through video games. Adapting a play into a game could introduce more people to the theatrical story, and make them interested in watching the play, therefore also bringing new audiences to the theatre. I will approach this project by first reading the play, and choosing a few characters that players could play as in the game. I will analyze the play using game design techniques to ensure the game is fun, as well as Jane Barnette's Adapturgy: The Dramaturg's Art and Theatrical Adaptation. I will then develop an outline for the game by identifying key plot points and opportunities for interactive gameplay. In order to create the game, and put everything together, I plan to use the Unity game engine, an industry standard program used for game development. Understanding how to effectively adapt a play into a video game allows these stories to have a further reach and connect with new audiences. I think it is important to make the game engaging and interactive while also keeping the key elements and themes from the original script. Overall, this project will combine theatre with video games to create a model for adapting plays into interactive media.

Now Casting: The Marketing of a Role
Presenter(s): Brooke Bettencourt
Advisor(s): Dr. Jocelyn L. Buckner

For my thesis, I explore the topic of casting, specifically looking at the marketing within casting and how those who attend auditions will inevitably inform how a story will be told, whether that be on stage or on screen. Within the past fifteen years the topic of casting has become a widespread conversation, especially regarding inclusivity within entertainment. Recently, theatre, film, and television spaces have worked to make a more conscious effort to create and share more diverse stories and perspectives; however, these industries still face the problem of casting actors in roles that are meant for others. For example, casting white actors to portray Latinx roles in productions of In The Heights. Therefore, I will delve into the marketing that is being used to produce these casting calls.

Through my thesis I will research how casting calls are being written, particularly the verbiage that is being used not only for character descriptions, but also for the plot of the play, series, or film that is being posted. I additionally want to research what platforms these casting calls are

being posted on and the people who have access to these platforms. Are these casting directors truly seeking actors from a wide pool? Or are these platforms more exclusive? I intend to research the marketing being used to promote roles to actors through research of who post these calls in order to propose solutions to provide more specific verbiage or marketing efforts to help these casting calls to receive a broader range of performers who fit specific roles, but are not getting the same casting opportunities.

Staging Leadership: Cultivating Leadership in Professional Theatre Managemen
Presenter(s): Elizabeth Kulaga
Advisor(s): Dr. Jocelyn L. Buckner

Working in the arts and live entertainment industry, we are artists who lead with our hearts and stories on our sleeves. Learning how you personally lead will shift how you lead others effectively. Working in theatre management positions the past nine years of my life, I have worked with both amazing leaders and leaders who had more room to grow. I didn't see a positive shift in my theatre leadership until I became a Leadership Minor at Chapman University and got to learn my specific leadership style and how my strengths and weaknesses worked within that style. This shifted how I ran production teams. I was able to foster an environment where others felt safe to learn and make mistakes. Building a team with effective leadership makes a difference in community, productivity and product within the arts. I do not think everyone needs a degree in leadership to understand their styles and how that impacts their leadership. I have created three workshops with facilitation guides that companies can implement with their staff to see this shift. The first workshop is Learning your Leadership Style where you learn five leadership styles, their strengths and weaknesses, and how to adapt to other leadership styles in a collaborative setting. The second workshop is Creating Group Norms and Expectations where you will learn how to create boundaries within a team, communication channels and needs and wants of a team. The last workshop I will be creating is Conflict Management Styles where you will learn how each of your team members addresses conflict in the workspace. This will help upper management leaders address conflict within teams whether it be about design elements, job descriptions or work loads. Companies implementing these three workshops will assist in creating and fostering a space for safe creativity in the industry, while preventing burnout of future artists.

Diary of a Young Actress: An Inquiry Into Failure, Resilience, and the Actor's Journey
Presenter(s): Keira Biala
Advisor(s): Dr. Jocelyn L. Buckner

What is the journey? For some, it may be a road to a physical destination. For others like myself, it is a pathway containing failures such as rejection and successes such as booking roles. Sometimes, these failures can challenge our sense of self, leading to unhealthy coping mechanisms. As a deep exploration of self-comparison, self-worth, and rejection in people's artistic and non-artistic journeys, I will create an album called Diary of a Young Actress consisting of self-written songs about these three topics when it comes to my acting journey. Moreover, I will read books and articles about people's perspectives on their journeys and find common

themes between my album and their works to shed light on the unglamorous and unseen parts of people's successful careers.

Ever since high school, I have been rejected from several productions. Coping with these situations was difficult at first as I believed that being in productions was how I can gain validation for my talent. I turned to songwriting as a way to experience a catharsis, helping me to rethink the situation and express my emotions creatively. Here, I began to create a concept album called Diary of a Young Actress. Through songwriting, I was able to grapple with my feelings during difficult situations where I did not get the results I wanted while also celebrating positive moments such as booking roles and finding the joy in playing them.

From this project, I hope other people feel validated when they listen to the album, realize their self worth when faced with rejection, and realize it's normal to feel inadequate when unfortunate situations happen. I also hope this motivates them to not give up on their journeys. Finally, I hope to create a community where conversations about experiences with topics in my album are fostered.

Drama-Based Pedagogy: Facilitating Engagement and Connection in Elementary Classrooms
Presenter(s): Paige Shubert
Advisor(s): Dr. Jocelyn L. Buckner

Students in today's K-12 public schooling system have become increasingly isolated from one another. Due to the rise of cell phones and social media reducing the practice of face to face interaction, schooling systems have responded to students' antisocial tendencies with antisocial pedagogy that further alienates students during the learning process (Asanjarani & Kumar). This thesis project explores the impact of implementing drama-based pedagogy in an elementary school (kindergarten through fifth grade) classroom on constructing connections between students and enhancing the quality of the learning process. To explore this, I built a curriculum utilizing drama-based pedagogy (Lawrence) to teach math, writing, and reading. I employed story drama to adapt classroom reading and writing into short, student-devised plays. Process drama was used to connect mathematical concepts to real-world situations using guided imaginary play. I complied with common core state standards in the aforementioned subjects, while utilizing theatre standards as an interdisciplinary tool to enhance my lesson plans. I then employed my lesson plans in a live instructional classroom with second and third grade students, making observations on student retention, engagement, and motivation to be discussed alongside current research on this topic. This project provides insight on the impact of implementing drama-based pedagogical practices into the teaching of core subjects in an elementary school classroom, therefore providing evidence of a potential tool in building engaging, collaborative, and meaningful curricula for students.

AF209C
Moderator: Dr. Jocelyn Buckner

The Progression of Western Representation of Global Cultures.
Presenter(s): Gabriela Denny
Advisor(s): Dr. Jocelyn L. Buckner

My thesis will explore these questions: Has the Western representation of global cultures through performance improved since the 1600s? And is education or power the goal of cultural performances? To do so, I will research a timeline of cultural performances for a Western audience. These events include the Royal Entry Festival of Henri II in Rouen in 1550, the Chicago World Fair, specifically the Colombian Exhibition, in 1893, and the performance art piece, Couple in the Cage: Two Undiscovered Amerindians Visit the West, in 1992.

I will answer these questions by researching each event. I will gain cultural context for the events' production, contextual purpose and intention, and their impact on viewers. I will connect the themes of these events, mainly the display of racial and cultural Western power over "other" bodies and their costumes. In doing so, I aim to understand the progression of cultural performances for Western audiences and how this affected the understanding of other nations' practices through our veiled lens.

The concept of cultural performance remains a prevalent problem in Western society. Looking back on historical events is essential to determining if we have changed. Have we changed as a Western society in our understanding of cultures that are not our own? Do we question what we see? My current answer to that statement is no. We believe what is visually put in front of us, without question. So, how can we be more aware? How do we question what we see, rather than accept it as an inherent fact? I am passionate about this topic because we, as theatre artists, are responsible for portraying cultures that are not our own. It is essential to communicate these varied cultures correctly and unbiasedly.

Invisible Work in Visible Art: Examining Emotional Labor and Gender in Stage Management
Presenter(s): Julia Poprac
Advisor(s): Dr. Jocelyn L. Buckner

Theater productions rely on the collaboration of many specialized roles to function smoothly, but when responsibilities are overlooked, they often fall on the stage manager. One of the most frequently forgotten aspects of any production is the emotional health of its participants. Stage managers are often expected to take on extra emotional labor in order to maintain morale, communication, and interpersonal dynamics, even at the expense of their own well-being. Emotional labor, defined by Arlie Hochschild as "the management of feeling to create a publicly observable facial and bodily display", is a task often placed on marginalized groups such as women(Hochschild 7). This expectation becomes more complex considering that, according to the 2023 Stage Management Survey, 69% of stage managers identify as female. The alignment of

stage management duties with traditionally feminine emotional labor reflects broader societal expectations which tasks women with managing others' emotions whilst suppressing their own. Thus, stage managers are not only responsible for coordinating productions but are also expected to provide emotional support which is intensified by gendered expectations. This paper examines the emotional labor of stage managers, focusing on the mental toll productions require, the interpersonal demands placed upon them, the professional ideal they are expected to uphold, and the ways gender influences these dynamics. By examining firsthand accounts as well as data surrounding emotions and gender in the workplace, I explore how stage managers manage not only the logistics of a production but also the emotional climate, often without formal recognition or support. By analyzing these patterns, I aim to bring visibility to the emotional labor embedded in stage management and propose strategies to better support those who take on this vital yet often overlooked role.

What's So Funny? A Case Study in Creating Live Comedy for Gen Z
Presenter(s): Marguerite Joy Fields
Advisor(s): Dr. Jocelyn L. Buckner

Comedy is a well loved, challenging genre that is constantly evolving with the development of social media, new forms of entertainment, and culture shifts in the hands of Gen Z. As a highly subjective genre that is rapidly changing with each generation, I will research and explore the effectiveness of live comedy for the absurdist, meme-ified, and short attention span inhabited by Gen Z. I will apply my research methods from a directorial and playwriting point of view, experimenting with methods of developing effective live comedy for college students. I will investigate the psychology of humor, commonly used formulas, stock characters, pop culture trends, improvisation, and more in relation to Gen Z's consumption and creation of comedic entertainment. With my research of highly-consumed comedic mediums utilizing live audiences of stage, television, and stand-up, I will create a fifteen-minute comedic one-act catered to Gen Z laughter. I will conduct workshops with comedically trained actors investigating methods of comedic writing, including improvisation prompts and pre-written scripts of varying comedic styles, delivery, and formulas to create a one-act that matches Gen Z's niche sense of humor. I will then evaluate the effectiveness of my methods and findings by producing my curated one-act in front of a live Gen Z audience, ranging from 18-22 year olds, measuring from the laughter, talkback discussions, and audience reviews of the performance. With my process, I will answer the questions: How do you write a play that is funny and relevant for modern-day audiences? What methods of writing, direction, and rehearsal practices produce an effective comedic piece? What purpose does live comedy serve for Gen Z? What makes Gen Z laugh and why? With my findings, I hope to produce a methodology that exposes a formula for developing effective live comedy suitable for Gen Z.

Reblocking Stage Management: Coping with Stage Management Burnout
Presenter(s): Olivia Lehnert
Advisor(s): Dr. Jocelyn L. Buckner

As the unsung heroes in theatre, stage managers are responsible for facilitating a smooth production, both onstage and off, throughout its pre-production, rehearsal, performance, and post-performance phases. The job extends far beyond the duties of timekeeping, rehearsal room observance, and paperwork filing; most times, stage managers exceed their limits in order to resolve interpersonal issues, maintain a positive energy in the room, and keep the show moving. Due to the copious amount of tasks, long hours, lack of recognition, and managing in a high-stress environment, most stage managers develop burnout, driving some out of the industry entirely. The International Classification of Diseases, written by the World Health Organization, defines burnout as chronic workplace stress characterized by three topics: "feelings of energy depletion or exhaustion; increased mental distance from one's job, or feelings of negativism or cynicism related to one's job; and reduced professional efficacy" ("Burn-out an 'Occupational Phenomenon'" 1). In this qualitative study, I interview and survey current and past stage managers at collegiate and professional levels, analyzing their experiences with burnout within these three topics. They provide tactics they have used to prevent or minimize their burnout and analyze whether they worked. Since this problem is so common, change needs to occur in the industry before more upcoming and capable stage managers are forced out of their potential careers. Ultimately, I identify the main causes of burnout in stage management, explore how the theatre industry can adapt to mental health needs, and discover how I can avoid burnout within my future occupation.

Make Arts Great Again: An Analysis of Federal Funding for Theatre
Presenter(s): Ryan Stanton
Advisor(s): Dr. Jocelyn L. Buckner

Arts and entertainment contributed over $1.17 trillion to the United States' GDP in 2024. This amount is comparable to industries such as information, wholesale trade, and construction. However, when it comes to entertainment, the federal government has failed to provide consistent, comparable funding to one of the nation's most popular exports. This deficit is most glaringly evident in live entertainment, particularly in theatre. Federal arts support is currently maintained by the National Endowment for the Arts (NEA), which is incredibly limited by shrinking budgets, political influence, and shifting priorities. With further cuts looming and no sign of adequate replacement, combined with an increasingly competitive yet unsustainable job market, the future of American theatre is bleak. Despite this, the need for theatre in society remains constant, with the majority of Americans stating the arts have a positive effect on their well-being and ability to perform in the workplace. Therefore, a case emerges for a new funding mechanism to sustain the arts. This thesis examines the history of federal arts funding from the 1930s to the present, analyzing the successes and failures of previous attempts to propose a new solution for federal intervention that creates jobs and adequately funds theaters across the United States. By analyzing the landmark successes and failures of programs such as the Federal Theatre Project

(FTP), the American National Theatre and Academy (ANTA), the NEA, and the STAGE Act, I make the case to the American taxpayer for a new federal investment in the arts. Through this historical analysis, trends emerge that pave the way for successful legislative changes, contributing to the survival of live entertainment and its value as an art form.

AF209C
Moderator: Dr. Jocelyn Buckner

Harnessing Horror: Exploring The Grand Guignol and The Boulet Brother's Dragula
Presenter(s): Alyssa Helstern
Advisor(s): Dr. Jocelyn L. Buckner

Theatre has captivated audiences through the ages by highlighting the human experience and creating visceral reactions in every genre. As technology has advanced, theater itself has taken many different forms such as drag performances in bars, sporting events in stadiums or an Opera in a traditional theater. Theater artists of the late 19th century in Paris, France created the Theatre du Grand Guignol which was known for showcasing the real horrors of humanity on stage for almost seventy years. With the rising popularization of drag performances across the world in the 21st century, two American drag artists have created a unique drag show competition, Dragula, which embraces horror as its main inspiration while still presenting the creativity of each individual artist. In my research I aim to find how both the Grand Guignol and Dragula utilize horror, subversion and comedy in their performances while acknowledging their legacy to understand how they enhance their theatrical experience for audiences.

 Horror is a complex genre, and it is known to have widely mixed perceptions which is exactly why I wish to delve more into how it can be an effective theatrical tool. I intend to combine historical and visual research in order to find how Dragula and the Grand Guignol use this genre as a framework to shape their productions. I anticipate that by investigating these two theatrical experiences, I will gain insight to how they interact with their audiences, blur or challenge social/moral boundaries, and reclaim 'monstrosity' to create a more diverse perception of reality despite being decades apart.

Stranger Things Than Franchising Theatre
Presenter(s): Ava Menges
Advisor(s): Dr. Jocelyn L. Buckner

In a cultural moment where streaming platforms dominate, live performances and experiences have been drawn into franchises, extending existing intellectual properties and recycling already popular stories. My thesis will examine the role of theatre within contemporary media franchising, focusing on the Stranger Things franchise and specifically on the stage adaptation The First Shadow as the central case study. My project will determine whether creating new avenues for the same story on the stage is suitable for the theatre business, whether expanding media worlds strays from authenticity, and how effectively digital media translates to the stage.

Through an analysis of film, experiences, books, merchandise, and other media related to the Stranger Things universe, I will explore how authentic derivatives of the source material are and how that impacts the audience and its popularity. I will also examine how the use of technical illusion, spectacle, and design replicates the supernatural elements on stage and in immersive experiences. By examining the design techniques used on stage, I will analyze whether the visuals

effectively convey the original story. My thesis will interrogate whether such adaptations enrich theatre by attracting new, younger, and more diverse audiences, or whether they undermine theatre's capacity for originality and innovation. By situating The First Shadow within the broader context of adaptations and transmedia storytelling, my study will examine how theatre positions itself within a franchise-driven entertainment landscape. Ultimately, my thesis asks the question of whether theatre's participation in global franchising provides a meaningful opportunity to reinvent the stage for contemporary audiences, or whether it compromises the medium with recycled narrative structures. This is important for future film, television, and theatre producers to know if adaptations and or franchising ideas help or hinder business.

Cultural Conversation as Justice: A Model for Post-Policy Inclusion in Theatre
Presenter(s): Henry Davis-Morales
Advisor(s): Dr. Jocelyn L. Buckner

With recent shifts in Diversity, Equity, and Inclusion (DEI) policies, there has been growing concern for how this will affect the world of theater. It stood as a protection for artists of all demographics to prevent exclusion and to ensure that all are given a space and a voice. Now, with its policies' decreasing support within our culture as well as our government, we have a unique opportunity to examine our past practices and search for areas of improvement in hopes that we may find a strategy for maintaining inclusivity that does not require legal backing and inspires new diversity in our industry. My thesis includes a weekly philosophy forum in the fall of 2025 to critically engage with this evolving discourse of race and carve out a way we can promote inclusion in our individual communities and in a larger sense simultaneously. In the forum I explore a new topic every week, including the risks we take on without DEI's protections, methods of cultural exchange, and necessary components of justice. I find it crucial to discuss past developments such as the switch from color-blind to color-conscious in order to be truly aware of the direction in which we have been moving. By fostering open dialogue on these issues, the forum will critically examine a particular cause of stagnation and explore possible pathways forward that may help develop our community and industry. Ultimately, this thesis aims to take advantage of the freedom we have to contribute and promote practices that reflect the values of our community and to assume some of the responsibility to protect each other, rather than relying entirely on the government.

Interpersonal Communication and Performance
Presenter(s): Morgan Montesi
Advisor(s): Dr. Jocelyn L. Buckner

Communication is an essential part of life and knowing its functions can help us better understand ourselves and our relationships. So how can we use this knowledge to inform the relationships between characters that we watch on the stage? For my thesis project, I will be using interpersonal communication concepts and theories to conduct a dramaturgical analysis of the character relationships in three plays by Sarah Ruhl. I will define interpersonal communication concepts and apply them to the relationships between these show's characters. Interpersonal

Communication can be defined as a selective, systematic process that allows people to reflect and build personal knowledge of one another and create shared meanings. Essentially, it includes all exchanges of verbal or nonverbal communication between people, regardless of relationship. Sarah Ruhl is an award-winning American playwright whose works have been produced throughout the country and internationally. She is also an author, essayist, and professor. I will be analyzing three of her plays, including THE CLEAN HOUSE, which features a maid who hates cleaning, a complicated love affair, and three women all lonely in their own way. Her play EURYDICE is a retelling of the classic love story of Eurydice and Orpheus. And finally, IN THE NEXT ROOM, OR THE VIBRATOR PLAY, portrays a doctor with an unusual approach to curing female hysteria and a look into the intricacies of motherhood. Ruhl writes plays that heavily focus on the journey of the characters and their dynamics with the people around them. These relationships are often complicated and atypical but these unique dynamics make them exemplary scripts to examine through a dramaturgical and interpersonal communication lens. By doing so, I will demonstrate how communication lends itself as a powerful tool for theatre artists in understanding and creating dynamic relationships on a stage.

Musical Theatre and the Performance of Progressive Social Discourse
Presenter(s): Reese Chavez
Advisor(s): Dr. Jocelyn L. Buckner

Through historiography and the framework of history in performance, this thesis examines how musical theatre constructs narratives of resistance and sociopolitical commentary that not only reflect but actively influence public consciousness. Musical theatre—an inherently interdisciplinary form—integrates music, text, choreography, and design to communicate complex ideas in an accessible and impactful manner. By analyzing the artistic conventions that make musicals uniquely effective at engaging audiences, this thesis argues that the genre subverts dominant ideologies of both the past and present while cultivating discourse on how to achieve a progressive future.

Through analysis of case studies, the thesis explores specific socio-political issues addressed by watershed musicals spanning from the Golden Age to the contemporary era of American musical theatre. Focusing on the musicals West Side Story, Cabaret, and In the Heights, the project cross-contextualizes these works to examine their core social discourse, cultural representation, and response to issues such as systemic racism, gentrification, and political apathy. Each case study is analyzed not only through its sociohistorical context but also through dramatic and theoretical lenses to decipher how musical theatre contributes to social change. Each case study is analyzed through its sociohistorical context and dramatic theoretical lenses to decipher how musical theatre contributes to social change.

Additionally, the thesis examines how the interdisciplinary nature of the form—particularly the interplay between narrative, character, visual design, and musical language—conveys ideological conflict and emotional truth. While musical and stylistic conventions are addressed, they are situated within broader theatrical and cultural analysis.

Ultimately, this thesis defends musical theatre's place as an impactful tool for advocacy, progressive commentary, and cultural evolution. By engaging with both historical context and contemporary resonance, the project positions musical theatre as vital for social change.

AF209C

Moderator: Dr. Jocelyn Buckner

Decoding Queer Coding and the Importance of Authentic Representation through the Analysis of Rent by Jonathan Larson
Presenter(s): Annabella McConnell
Advisor(s): Dr. Jocelyn L. Buckner

Queer coding is defined as identifying a character as a part of the LGBTQIA+ community without outwardly stating it. This term is used due to the lack of representation of openly out LGBTQIA+ characters within film, TV, media, and especially theatre. The representation of these characters is rare; when it does occur, there is usually a catch. A character who is queer often, is the first killed in a horror movie scenario, is the first one to find out they have AIDS, is the one who gets written off, the one who is hypersexualized, the one who has to stand up for themselves, who gets bullied, has suicidal thoughts, is the villain or shows all the negative indications of being queer. There is not much media showing queer joy. Queer joy indicates that people can authentically identify as themselves as a queer individual without the negative defining who they are. I examine what queer joy is and trace how the queer narrative has changed over the past twenty five years, using Jonathan Larson's Rent, the musical, as a central case study. Through an analysis of Rent, I explore how the musical bridges the gap between queer tragedy and queer joy. Through this research, I examine the reasons for the importance of authentic representation. I contribute a deeper understanding of queer theatre that not only reflects societal changes but is actively shaping them. By dissecting these topics within my research, I aspire to contribute to the acceptance, understanding, and celebration of queer identities through theatre.

"A Slight Hysterical Tendency": Exploring Women's Mental Health Through Adapting The Yellow Wallpaper
Presenter(s): Charlotte Burchetta
Advisor(s): Dr. Jocelyn L. Buckner

Charlotte Perkins Gilman's The Yellow Wallpaper (1892) serves as a unique insight into the patriarchal ideals of the Victorian era and a powerful critique of women's healthcare during this time period. The short story, written in a diary format, follows a woman likely suffering from severe postpartum depression and anxiety whose condition gradually worsens as she descends into a state of psychosis. Her undoing is ultimately a result of being put on the "rest cure," a treatment developed by neurologist and physiologist Dr. Silas Weir Mitchell to manage women's "hysteria", which consisted of long stretches of bed rest, extreme reduction of mental stimuli, a heavy diet, electrotherapy, and massage. While Gilman endured postpartum depression herself, her work only encompasses the experience of white women in the Victorian era, leaving out perspectives of women of color entirely, who received very different and considerably worse healthcare and treatment. I will adapt The Yellow Wallpaper into a one act play, set in the 21st century, under the guise of highlighting different women's experiences with mental health and its

reception/treatment primarily in the United States, with influences and ideas of women's bodies dating back to the second millennium BC. Gilman's original text speaks from one person's perspective; in my work, I will create space for other women's voices through the text. Through the art of adaptation and a research- based dramaturgical lens, I will explore the timelessness of the source text and its deep intersectionality with social theories such as the Fundamental Cause Theory, the cumulative disadvantage theory, and the social support theory. I intend to emphasize that while women's mental health treatment has taken great strides since the 19th century, there is still real stigma that impacts the way women are viewed and treated, as well as immense disparities between women based on race and class.

Theatre and Science: A Symbiotic Relationship
Presenter(s): Ruby Mejia
Advisor(s): Dr. Jocelyn L. Buckner

Theatre and science, theatre…. and science? There have been countless times when the mere mention of the words' theatre' and 'science' in the same sentence results in the statement, "Wow, those two have nothing in common!" As someone who has received this response multiple times and has experience in both subjects, I can vouch for the impact and deep-rooted connection between these two core areas of study. Theatre education has proven to benefit science education, while science is embedded in theatre practice. In my thesis, I will dissect the intertwined relationship between theatre and science, examining just how theatre educationally supplements science and how science is embedded in theatre.

From theory to application, science and theatre maintain a symbiotic relationship. Multiple studies have shown the positive correlation between theatre education and students' social, emotional, and intellectual development due to its support of basic skills such as communication, problem-solving, memory, and understanding. While theatre education reinforces students' basic skills and comprehension in core subjects such as science, the incorporation of theatrical techniques and performance art in science teaching likewise supports the retention, understanding, and engagement of the material.

I will discuss the positive impact of interdisciplinary learning and examine the benefits of embedding theatre in science teaching by analyzing science theatre and educational STEM networks, such as "Bill Nye the Science Guy" and "Sid the Science Kid." I will also examine the ways in which science is deeply rooted in technical theatre practices, supporting science education. I intend to explore these exact correlations between the two subjects: how the skills that theatre education reinforces correlate with studying and understanding science at various ages, and how the incorporation of theatrical performances when teaching science positively affects student engagement, understanding, and retention.

Drawing the Sheep: The Artistic Imagination of Theatre for Young Audiences
Presenter(s): Samantha Glean
Advisor(s): Dr. Jocelyn L. Buckner

This thesis explores the role of design and audience aesthetics in engaging young audiences through a case study of Chapman University's 2025 production of The Little Prince, where I served as Assistant Director. While Theatre for Young Audiences (TYA) is often undervalued as primarily educational or simplified work, this project argues for its artistic rigor by examining how various design aesthetics, such as scenic and costume design, and audience aesthetics such as tonality and pace, shape the theatrical experience. Drawing from interviews with the director, I will analyze the visual and sensory strategies used in The Little Prince and question how aesthetic choices intersect with language to sustain children's attention and imagination. Methodologically, this thesis combines aesthetic theory with practice-based research, situating the production within broader discourses on theatrical form and the unique demands of performing for young audiences. Building on this case study, I apply the identified principles of aesthetic engagement to new artistic work, constructing vision boards and directorial concepts for additional children's plays such as James and the Giant Peach and Charlie and the Chocolate Factory. In doing so, I test whether the strategies used in The Little Prince can translate across stories and styles, ultimately developing my own directorial practice in TYA. This research affirms that aesthetics are not peripheral but central to cultivating meaningful, imaginative, and lasting theatrical experiences for young audiences.

Theatre, Community, and the Psychology of Belonging in an Age of Loneliness
Presenter(s): Yasmine Gruber-Mendoza
Advisor(s): Dr. Jocelyn L. Buckner

This thesis looks at how theatre, and the communities that grow around it, can play a role in addressing the loneliness epidemic in the United States. In 2023, the U.S. Surgeon General identified loneliness and social isolation as a serious public health issue, linking them to higher risks of depression, anxiety, heart diseases, dementia and even early death . My project explores how theatre can help people build real connection, belonging, and purpose. This project asks "what makes theatre unique in bringing people together?".

To answer this question, I will be researching and interviewing different theatre companies and programs that focus on community development. These include The Unusual Suspects Theatre Company in Los Angeles, which helps young people create original theatre together , and the Arts & Learning Conservatory in Orange County, which provides affordable and accessible performing arts education . I will also continue to look for other groups and programs to include into my research.

Alongside these case studies, I will bring in research on the mental health benefits of the arts. A World Health Organization review found that arts participation can reduce loneliness, support mental health, and strengthen social bonds . I will also be examining why the loneliness rates have gone up to such extreme levels the past few years. Researching studies that show that the rise of different social media platforms in recent years has been strongly linked to the cause of the

loneliness epidemic and is a catalyst to creating feelings of isolation, especially among young adults .Together, these studies highlight the need for in person, community based spaces like theatre.

Through interviews, program materials, and analysis of theatre practices such as ensemble work, collaboration and public performance, this thesis demonstrates how theatre can support healthier, more connected communities. It also argues for the value of theatre as part of a larger response to the loneliness epidemic, offering tools for educators, policymakers, and arts organizations.

AF209C
Moderator: Dr. Jocelyn Buckner

Defining Immersive Theatre Creation for Stage Managers' Benefit
Presenter(s): Alivia Infeld
Advisor(s): Dr. Jocelyn L. Buckner

Creating immersive theatre differs from traditional theatre in its use of found spaces that lack visual barriers between the audience and the performers. Additionally, the order of scenes are performed in can change for each performance. The delineation of scenes is often defined by a change in location or scheduled time. For these reasons and more, immersive theatre presents many unique challenges for artists working in this medium. In particular, the role of stage managers is complicated by the opportunity for complications inherent in performances featuring audience interaction in close quarters. Audience behavior is at once both an unknown variable and a piece of the performance that must be accounted for while in the pre-production phase. Stage managers aim to be prepared and proactive in their management style, which is at odds with the atmosphere of spontaneity cultivated by immersive theatre. As a theatre student studying stage management, my cohorts and I should be educated in how immersive theatre operates, as we will likely begin working in these spaces after completing our education. My methodology is to create various paperwork templates based on publicly available stage management resources and adapt them to be suited towards the specific needs of immersive productions. I will be adapting paperwork templates from backstage theatre educators, technical theatre blogs, and online stage management forums. I am taking from a variety of publicly available sources in hopes of capturing an accurate picture of the templates that working stage managers are using. Additionally, I will be using information from these sources on how best to write and format these forms.

Psychological Impact of Sound Design in Disneyland
Presenter(s): Amy Walker
Advisor(s): Dr. Jocelyn L. Buckner

For many years, theme parks have used many different design elements to transport guests into the world of their favorite movies and shows taking inspiration from film and theatre to create an entirely unique immersive experience. One of the most popular theme parks are the Disney parks due to nostalgia for the movies, design elements, and positive experiences in the parks. From the set design to characters walking around to smell of different foods to sounds guests hear, everything is specifically decided to enhance the guest's experience and allow them to feel like a main character in their own fairytale. Sound design and music scoring is known to enhance moments, making them more emotional. Leitmotifs are often used and are defined by Merriam Webster as a recurring musical theme associated with a specific character, place, idea or emotion. In this research project, I will study how Disneyland uses leitmotifs and sound design to create their world and how it impacts the guests. How does Disneyland use leitmotifs and sounds to

create the world and impact the guests? How does the sound differ between different sections of the park, like walking down the streets, waiting in line or being on a ride? How does the sound impact people's experience in the park, like immersion in the world or willingness to wait longer for things? This will be done through listening to the sound design in different parts of the park, comparing it to the scores from the film, and observational studies in different sections of Disneyland. This project will demonstrate the importance of sound design in creating a unique immersive experience for people, how it can guide audiences through stories, and the impact sound design can have on guest behavior.

Rewriting Hell: Adaptation, Hope, and the 'American Dream' in Practice-as-Research
Presenter(s): Karli Lonnquist
Advisor(s): Dr. Jocelyn L. Buckner

Contemporary theatrical adaptation involves deconstructing, reimagining, and rewriting historical plays for modern audiences. Adaptation appropriates theatrical conventions, changes the lens through which the audience may view the play, and offers new entry points into thinking and practice. Adaptation asks, "why this source as theatre now?" and proposes that history provides tools for engagement with contemporary issues. By employing a Practice as Research methodology, which positions creative processes such as script development, rehearsal, or play development as research methods, I investigated the art of historical adaptation. I adapted No Exit, a 1945 existentialist play by Jean-Paul Sartre, into a new play called LAST EXIT. I developed my script through collaborative workshops, staged a formal reading of the final draft, and gathered praxis-based knowledge, including audience feedback and artists' interpretations of the text, throughout the process. My project explores the following question: how can historical plays help modern audiences respond constructively to current conflicts?

Written during the occupation of Paris in World War II, No Exit was a subversive display of anti-fascist resistance; a statement of hope despite the terrifying circumstances in which the characters find themselves. My adaptation, set in the present-day United States, examines the corruption of democracy, political polarization, and the performance of identity during crisis. As changes reshape the nation's political, social, and cultural landscape, our collective "ending" feels increasingly uncertain. Yet, Sartre's message resonates: if you are unhappy with your situation you have only one thing to do…take action. Contemporary adaptations, motivated by the belief that creative production and cultural participation can fortify the best parts of our humanity, allow us to build compassionate, people-centered communities.

Animals in Entertainment: Ethical Considerations, Industry Regulations, Incidents, and the Future of Animal Performers
Presenter(s): Kendyll Conlisk
Advisor(s): Dr. Jocelyn L. Buckner

Some of our favorite films, theatre productions, and live performances involve animals. A Dog's Purpose, Annie, Barnum and Bailey circus; the list is endless. But have you ever wondered, "How do they train them?" and "Is this benefiting or harming the animals?" Animals in entertainment

have a long history dating back to ancient civilizations. Research done by World Animal Protection found that three out of four tourist animal attractions involve some form of animal abuse, and up to 550,000 animals around the world suffer due to these cruel attractions for human amusement. This does not imply that all animals used in entertainment are being unethically cared for; however, the fact that incidents still happen today is an issue. Theater and film have long used animals to captivate audiences. Seeing an animal exhibit an unnatural behavior creates a spectacle. An example is Toto from The Wizard of Oz (1939) pulling open the curtain to reveal the wizard. While animal cruelty has become less frequent in these two entertainment forms, incidents still occur. Other entertainment forms that have a history of cruelty are circuses, which are notorious for the unethical treatment of animals.. In contrast, a positive example is conservation presentations at zoos that allow people to learn more about animals by observing their innate behavior. This thesis explores and examines various forms of entertainment such as theatre, cinema, circuses, live performances, amusement parks, and zoos. We look at ethical considerations, practices, past incidents, and rules and regulations placed by organizations such as the American Humane Society to advocate for the ethical treatment of animals. While these animal performers have the spotlight on stage, the focus needs to shift off stage so that one can ask, Is it worth continuing the use of animals in entertainment, or should alternatives be considered?

The Ties Between Theatre and Religion: An Examination of Iconography, Sacred Perception, and Social Dynamics of Christianity in Contemporary Performance
Presenter(s): Madeline Mizgorski
Advisor(s): Dr. Jocelyn L. Buckner

Theatre and religion have always shared a rich and sometimes tumultuous history. In ancient Grecian times, Plato himself spoke of the philosophical undesirability of theatre, claiming that it was simply a lie. Over time, humans embraced theatre as a tool to honor tradition and religion. From praising Greek gods to staging Medieval Passion Plays, theatre and religion have long been in conversation. Today, this overlap continues, often noticed and intensified by contemporary political climates and Westernized, hardline Christian beliefs. The Bible has been represented on stage, while theatrical elements have historically been used in church rituals.

Due to recent discourse over the production of Jesus Christ Superstar at the Hollywood Bowl, the question of what constitutes "blasphemy" has been heavily debated, weighing on the minds of people regardless of their religious affiliation. The unease surrounding race, gender, and queerness in biblical reinterpretations reflects deeper cultural anxieties. According to Matthew 12:31, "the word 'blasphemy' means expressing something disrespectful or evil about God. Among the worst forms of blasphemy are those which twist sacred truths about God into lies."

This thesis examines theatrical works that engage directly with Christianity while challenging cultural norms about who has the right to tell stories of Jesus. Key case studies include Terrence McNally's Corpus Christi, Lee Breuer's The Gospel at Colonus, and Andrew Lloyd Webber's Jesus Christ Superstar, analyzed through the lenses of iconography, sacred perception, and social dynamics. These works reveal how race, queerness, and cultural context shape both the

representation of the sacred and audience reactions. They demonstrate how theatre can provide spiritual resonance and inclusion for communities that have been historically marginalized by dominant Christian narratives. By exploring these intersections, this thesis highlights theatre's capacity to challenge societal biases, expand notions of sacredness, and foster dialogue around faith, identity, and inclusion.

Theatre as an Outlet for Encouraging Child Engagement and Development
Presenter(s): Victoria Hess
Advisor(s): Dr. Jocelyn L. Buckner

We are currently witnessing a decrease in attention span with children due to the unregulated and increased use of online media platforms. Many children today are glued to watching videos on iPads. Noticing this shift in children and my own screentime habits, I am interested in ways that I can create a passion for theatre in children. I aim to demonstrate theatre's positive impacts on children's development and explore my own personal process of making children's theatre by producing my own play. I aim to answer the questions, "What are the benefits of exposing children to theatre at a young age?" and "What techniques can I personally use to engage children?".

I have chosen to produce and direct an adaptation of the children's book The Borrowers by Mary Norton. The Borrowers follows the Clock family, a group of tiny people who live within the walls of a human home and borrow items. The play's main character, Arrietty, is a curious little girl who one day is seen by a human boy. With messages of empathy and acceptance of people's differences, as well as a set full of larger-than-life items, I believe that this play will become a magical experience for children to watch. Through creating accessible children's theatre, I want to create a spark within children to explore theatre that takes them away from a screen. Both research and experience will make me a more effective creator and future educator. I will demonstrate how artists and educators can engage children through my personal journey in learning what is effective when creating children's theatre.

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