STUDENT SCHOLAR SYMPOSIUM

SPRING SESSION

MAY 6-7, 2026

ABSTRACT VOLUME

CHAPMAN UNIVERSITY | Center for Undergraduate Excellence

Table of Contents

Message from the Director 5

Acknowledgements and Schedule of Events 6

Wednesday, May 7

Poster Session 1 Abstracts | Sandhu Conference Center | 9:30 – 11:00 am

Art 7
Biochemistry and Molecular Biology 8
Biological Sciences 10
Business 10
Chemistry 11
Communication Studies 14
Computer Science 15
Creative Cultural Industries – CCI 15
Dance 16
Data Analytics 17
English 17
Environmental Science and Policy 19
Film 20
Food Science 22
Health and Strategic Communication 22
Health Humanities 24
Health Sciences and Kinesiology 27
History 28
Honors 36
Mathematics 38
Physical Therapy 39
Political Science 39
Psychology 51
Religious Studies 62
Sociology 62
Strategic & Corporate Communication 62
World Languages and Cultures 64

Poster Session 2 Abstracts | Sandhu Conference Center | 1:00 – 2:30 pm

Biochemistry and Molecular Biology 66
Biological Sciences 70
Business 72
Chemistry 72
Communication Sciences and Disorders 74
Communication Studies 74
Computer Science 77
Dance 78
Data Analytics 79

Digital Arts	80
Electrical Engineering	80
English	81
Environmental Science and Policy	84
Film	85
Health & Strategic Communication	87
Health Humanities	91
Health Sciences and Kinesiology	92
History	93
Honors	95
Interdisciplinary	97
Physical Therapy	97
Physics	99
Political Science	99
Psychology	113
Sociology	122
World Languages and Cultures	124
Poster Session 3 Abstracts | Sandhu Conference Center | 3:30 – 5:00 pm	
Art	128
Athletic Training	128
Biochemistry and Molecular Biology	129
Biological Sciences	136
Chemistry	141
Communication Sciences and Disorders	145
Communication Studies	145
Computer Engineering	146
Data Analytics	147
Digital Arts	147
Electrical Engineering	148
English	149
Environmental Science and Policy	151
Film	152
Food Science	157
Health & Strategic Communication	158
Health Sciences and Kinesiology	159
Honors	160
Physics	162
Political Science	162
Psychology	172
World Languages and Cultures	177

Table of Contents

Thursday, May 7

Oral Session 1 | Argyros Forum 209 | 10:00 – 11:00 am

AF209A

Biochemistry and Molecular Biology 181
Biological Sciences 182
Computer Engineering 183

AF209B

Film 183
Political Science 184

AF209C

Psychology 185

Oral Session 2 | Argyros Forum 209 | 11:30 – 12:30 pm

AF209A

Art 188
Film 189

AF209B

History 190
Political Science 192
Psychology 192

AF209C

Psychology 193

Oral Session 3 | Argyros Forum 209 | 1:00 – 2:00 pm

AF209A

Computational Science 196
Environmental Science and Policy 196
Interdisciplinary 197
Philosophy 198

AF209B

Psychology 198

Oral Session 4 | Argyros Forum 209 | 2:30 – 3:30 pm

AF209A

Biochemistry and Molecular Biology 202
Biological Sciences 202
Chemistry 203

AF209B

Film 204
Interdisciplinary 204
Political Science 205
Psychology 205

Table of Contents

Performing Arts Session 1 | Salmon Recital Hall BH100 | 11:00 – 12:00 pm 207

Visual Arts Session 1 | Argyros Forum 209C | 1:00 – 2:00 pm 212
Visual Arts Session 2 | Argyros Forum 209C | 2:30 – 3:30 pm 217
Index 222

Message from the Director

Welcome to the Spring 2026 Chapman University Student Scholar Symposium!

This symposium serves as a distinguished showcase for undergraduate excellence. The students' poster and oral presentations, along with visual and performing arts showcases, 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 May 6th and 7th to explore the wide array of outstanding presentations and honor the remarkable achievements of these students. This event will be our largest ever with more than 300 participants! 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 would also like to thank our Assistant Director of Research and Creative Activity, Dr. Jeremy Hsu, and our Assistant Director of Fellowships, Dr. Renee Hudson, for their continued support of programming. 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

Acknowledgements and Schedule of Events

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

Oral Presentation Moderators:

Micol Hebron	Russel Schwartz	Dr. Adwoa Opong
Dr. Desiree Crevecoeur-MacPhail	Dr. Ana Palomar	Dr. Allison Fisher
Emily Carman	Dr. Vincent Berardi	Dr. Louise Thomas

Staff Volunteers:

Ashley Cosgrove	Nikki Olguin
Dana Dacier	Olivia Venegas
Hilary Anderson	Viviana Perez
Jackie Coyne	

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
Poster Session 3	Sandhu Conference Center	3:30 – 5:00 PM

Thursday, December 4

Oral Session 1	Argyros Forum 209ABC	10:00 – 11:00 AM
Oral Session 2	Argyros Forum 209ABC	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
Performing Arts Session 1	Salmon Recital Hal BH 100	11:00 – 12:00 PM
Visual Arts Session 1	Argyros Forum 209C	1:00 – 2:00 PM
Visual Arts Session 2	Argyros Forum 209C	2:30 – 3:30 PM

Art Exhibition	Student Union AF119 Hallway	May 1-August 14th

ART

1. **Building Identity con el arte Chicano**

Presenter(s): Valeria Evereth

Advisor(s): Dr. James Hirsch

This paper examines how the history and symbolism of Chicano art are incorporated into the contemporary art world through cultural identity, historical memory, and social experience within the context of the Chicano Movement in the United States. It argues that art should not be understood solely as aesthetic production, but as a social practice that functions as a tool of resistance, cultural affirmation, and identity formation as one. To support this claim, the paper explores the Chicano historical context of the 1960s and 1970s and analyzes the role of various artistic media in representing the lived experiences of Chicano communities. The analysis focuses on the work processes of various artists as they emphasize their collaboration with the movement through art as a collective, educational, and political process. Through this case study, the paper demonstrates that Chicano art not only preserves cultural memory through visual symbols, narratives, and historical references but also creates participatory spaces that strengthen community belonging and push against harmful stereotypes. Ultimately, the paper shows that, despite their differences, these artistic practices can collectively serve as active ways to embrace heritage, enabling Chicano communities to navigate their personal identity and make their experiences visible through different lenses within broader social and political contexts.

2. **A Methodical Dismantling: Manet's Olympia and the Rupture of the Western Reclining Nude**

Presenter(s): Abigail Van Hoak

Advisor(s): Dr. Justin Walsh

The question is whether Manet was shaped by his era or doing the shaping, and Olympia answers it. It was not an accident but a methodical dismantling of a centuries-old tradition, and by refusing to look away from modern life he forced everyone else to reckon with it too. The reclining nude has never recovered. For centuries, artists from Titian to Ingres constructed a genre around idealized bodies, mythological distance, and an uncontested male gaze that rendered real women into timeless passive objects. Manet inherited that tradition and refused to perpetuate it. Through the theoretical frameworks of Berger and Mulvey on the male gaze, Clark and Nead on idealized form, and Nochlin on Realism, this thesis conducts a close formal analysis of every deliberate choice Manet made in Olympia, the confrontational gaze, the foreshortened hand, the Black maid, the black cat, the iconographies, demonstrating how each decision systematically dismantled the conventions that preceded it. That analysis is anchored in the social and political volatility of Second Empire Paris: the revolutions of 1848, Haussmann's gutting of the city, the sharpening visibility of class and the sex trade. All of it made Olympia possible, but Manet is the one who actually painted her. The reception history stretches from the explosive 1865 Salon response through Cezanne, Duchamp, and modern ad campaigns, tracing how Manet fundamentally destabilized what the reclining nude could represent. Nobody could put it back.

3. **Fertile Ground: Feminist Ecologies and Artificiality**

Presenter(s): Cameryn Krauss

Advisor(s): Micol Hebron

Fertile Ground: Feminist Ecologies and Artificiality is an art installation and research project that examines how systems of power influence the development of plants and humans. The installation brings together ceramic sculpture, painting, and artificial materials to create an environment where growth is portrayed as active and structured. This project draws from plant physiology, ceramic processes, and ecofeminist history to investigate how external pressures shape organic forms. The stress response of plants, including chlorophyll loss, discoloration, and leaf drooping, serves as a research foundation. These changes in plant appearance are indicators of environmental strain and reduced biological functioning. Similarly, research in environmental psychology shows that reduced exposure to natural environments increases stress, anxiety, and depressive symptoms in humans, whereas interaction with plants can improve mood and support recovery. Fertile Ground converts these findings into visual imagery. The ceramic plant forms are produced using an extruder, which forces clay sourced from the earth through a confined opening, creating repeated forms. These standardized structures display a physical constraint. The forms are finished with crystal glazes, creating a speckled surface mimicking the stress-induced discoloration in plant leaves. Within the installation, artificial turf replaces natural ground, highlighting the substitution of natural systems with controlled environments. The paintings extend this concept into a perceptual space. Blue light reveals the shadow of a woman, her hair blowing in the wind. This composition emphasizes symbolic and psychological interpretations of constraint, perception, and human and natural connection, as well as feminist perspectives on the body, observed and regulated in ways similar to those of our natural world. By translating theoretical research and scientific observations into material and visual language, Fertile Ground highlights how growth and identity are shaped under systems of power.

Biochemistry and Molecular Biology

4. **Defining Alcohol-Induced Stress Effects on BAG3 Arginine Methylation and HSP70 Binding**

Presenter(s): Berenice Gonzalez

Advisor(s): Dr. Cecilia Lopez

Cells are continuously exposed to environmental and chemical stressors, and their survival depends on protein quality control systems that maintain proteostasis. Disruption of these systems leads to the accumulation of misfolded and damaged proteins, a process particularly detrimental in long-lived, contractile tissues such as cardiac and skeletal muscle, where impaired proteostasis contributes to cardiomyopathy. BAG3 (Bcl-2–associated athanogene 3) is a critical regulator of proteome integrity and cardiomyocyte structure. As a co-chaperone, BAG3 interacts with HSP70 to direct stress-damaged proteins toward refolding or degradation pathways. Alcohol (ethanol) is a well-established cellular stressor that disrupts protein homeostasis, especially in

muscle cells. Although BAG3 plays an essential protective role under stress conditions, the molecular mechanisms regulating its activity remain poorly understood. Emerging evidence suggests that post-translational modifications, such as arginine methylation, are key regulators of stress-response proteins. Preliminary computational analyses from our laboratory indicate that BAG3 contains multiple arginine methylation sites; however, the functional significance of these modifications is unknown. This project tests the hypothesis that alcohol-induced stress promotes arginine methylation of BAG3, thereby modulating its interaction with HSP70. Using C2C12 muscle cells as a model system, ethanol exposure will be employed to induce cellular stress. Subsequent biochemical analyses will assess changes in BAG3 arginine methylation and its binding affinity to HSP70. By identifying a specific post-translational mechanism regulating BAG3 function under stress, this study will advance our understanding of proteostasis control and may provide new insights into how alcohol-associated stress contributes to muscle and cardiac disease.

5. **Thermal Properties of Microgels - Analyzing VPTTs of Microgels as a Function of Concentration and pH**

Presenter(s): Ethan Ly
Advisor(s): Dr. L. Andrew Lyon

Creating a biosynthetic material that mimics the extracellular matrix (ECM) is a significant challenge in the fields of tissue engineering and biomaterials. The ECM's conditions are particularly hard to mimic because of its specific energetics, hierarchical structure, and mechanics. Nanostructured microgel pastes (NMPs), formed from ultralow crosslinked (ULC) microgels, present as a suitable biomaterial to emulate the ECM because of their demonstrated biocompatibility. Poly(N-isopropylacrylamide) (pNIPAM)-based ULC microgels have attracted significant interest due to their thermoresponsivity. At their volume phase transition temperature (VPTT) of 32°C, pNIPAM polymers transition from a solvated state to a compact, hydrophobically collapsed state. This characteristic VPTT is sensitive to crowding effects induced by high microgel concentrations, as the confined environment restricts swelling. In addition, the impact of pH on the energetics of microgel collapse can be analyzed by synthesizing NMPs containing acrylic acid (AAc) as a co-monomer, which provides pH sensitivity to thermoresponsive pNIPAM polymers. Accordingly, this project aims to determine the volume phase transition temperatures (VPTTs) of pNIPAM microgels as a function of both concentration and pH. To accomplish VPTT analysis, temperature-dependent turbidity studies were conducted on microgels with varying concentrations and pH values using a plate reader. VPTTs were determined by analyzing the specific temperature at which optical density (OD) dramatically increased. NMPs prepared at higher concentrations and lower pH values demonstrated lower VPTTs, reflecting a shift in the thermodynamics of polymer solvation. Analyzing VPTTs with concentration and pH parameters is vital to understanding how macromolecular crowding influences the thermodynamics of polymer phase transitions and, consequently, how water partitions in dense tissue scaffolds. Thus,

understanding water partitioning enables insights regarding protein and cell interactions within NMPs for future applications in tissue engineering.

Biological Sciences

6. Morphology of Hagfish Eggs

Presenter(s): Hannah Choi

Advisor(s): Dr. Douglas Fudge

Hagfish are benthic marine animals with enigmatic reproductive behaviors. Females deposit eggs characterized by unique anchor filament growth at poles of the main egg capsule, facilitating attachment to other eggs. 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 of a single species. Both in-water and in-air tests were conducted using an Instron Materials Testing machine to compare the strength of attachment. From the in-water 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 whole eggs. Our findings include observations on anchor filament diameter, filament stalk diameter, lobe count, filament count, filament tensile forces, and developmental stages of filament growth, allowing the categorization of egg morphology traits across four different species.

Business

7. A Model of Athlete Sponsorships

Presenter(s): Alejandro Noriega

Advisor(s): Dr. Cristina Nistor

This research will examine how public attention translates into financial opportunity for athletes. I will be focusing only on U.S. athletes in the Winter Olympic Games. This research looks at whether athletes gain endorsement deals after receiving more fan attention. Fan attention will be measured by increases in their social media followers after the Games. Although Olympic participation can create visibility almost overnight, the financial rewards of that exposure are uneven and not well understood. To address this gap, the project will build an original, well documented database linking athlete attention trajectories before and after the Olympics to publicly observable endorsement outcomes. Attention will be measured through follower counts and growth rates across major social media platforms. Endorsement outcomes will be identified through brand partnership announcements, press releases, paid partnership disclosures, and other verifiable sponsorship's. A key feature of the study is its distinction between short-term

spikes in visibility and sustained audience growth, allowing for a clearer evaluation of which forms of attention are most commercially meaningful. The analysis will begin with descriptive comparisons across sports, athlete popularity, and Olympic performance, then apply regression based models to estimate how changes in fan attention relate to endorsement opportunities. It will also test whether these relationships differ for medalists versus non medalists, across winter sports, and among athletes with different pre existing fan bases. By integrating finance, sports economics, and marketing analytics, the project offers a transparent framework for understanding how visibility is converted into economic value. The findings will provide insight for researchers, brands, and athletes seeking to better understand when public attention becomes financially significant.

Chemistry

8. **Facilitating Photocatalysis: Characterizing and Optimizing Gold Core-Shell Nanoparticles for Hot Electron Chemistry**

Presenter(s): Melia Hernandez
Advisor(s): Dr. Jerry LaRue

Being in a world where transportation is crucial, catalysts are essential for speeding up chemical reactions, including reactions required to produce fuels. There are many different categories of catalysts ranging from organic to inorganic that can involve expensive materials and extreme chemical environment conditions to initiate the catalyst activity. In the place of expending higher temperatures and pressures to synthesize this outside energy source, a natural source, like solar energy, can be used to initiate the catalytic activity of these photocatalysts. More specifically, using a photocatalyst composed of plasmonic gold core nanoparticles would be beneficial due to the presence of a collection of oscillating electrons in the core, which allow it to absorb light more efficiently compared to other materials. However, to tune the electronic structure of the gold to suit a wider variety of reactions and alter the antibonding states, a gold core-transition metal shell structure can be used. To determine the most efficient core-shell ratio and transition metal type, starting with a well-known reaction, such as CO Oxidation, and progressing to more complex reactions, such as the Fischer-Tropsch and Haber Bosch processes, would allow the characterization of different shell variations to create a more effective photocatalyst for a wide range of reactions. This research project focuses on combining photochemistry with the catalyst's plasmonic ability, to accomplish selective bond activation to aid reactions with a nonreactive species. We hope further exploration of this category of plasmonic bimetallic catalysts can be used to synthesize a more energy efficient class of photocatalysts to be utilized in industrial and green processes.

9. **Characterizing Bimetallic Core-Shell Nanoparticles for Sustainable Photocatalysis**

Presenter(s): Kevin Tejeda

Advisor(s): Dr. Jerry LaRue

Catalysts play an important role in facilitating chemical reactions that occur in biological and industrial applications. They are commonly used in a wide range of processes from fuel conversion to material synthesis. Catalysts establish an alternative reaction pathway that requires a lower activation energy, resulting in a faster chemical reaction. Because conventional catalysts are often inefficient as they operate under high pressures and temperatures, bimetallic nanoparticles are promising and cheaper alternatives. They can operate at lower pressures and temperatures, reducing the energy required. Our project investigates how these catalysts can be optimized for use in light-driven catalysis, which is known as photocatalysis. When light energy is harnessed from solar radiation, the process offers a more sustainable pathway for chemical transformation using a renewable energy source. The photocatalysts will consist of a plasmonic gold core with a shell composed of a transition metal such as ruthenium. The plasmonic properties of gold enable excited electrons to be transferred to higher electronic states at the reactant interface, while the ruthenium shell can be tailored to modulate the energy gap. Our research focuses on the characterization of nanoparticles and uses a wide range of instruments, including UV-Vis, SEM, DLS, and ICP. Understanding how to characterize nanoparticle properties, such as shape, size, and elemental composition, is fundamental to optimizing them for facilitating desired reactions, such as the Fischer-Tropsch and Haber-Bosch processes. By deepening our understanding of bimetallic nanoparticles as effective photocatalysts, our research contributes to sustainable energy solutions that lower costs and can reduce greenhouse gas emissions.

10. **Esterase Treatment Improvement of Color and Alteration of Phenolic Composition and antioxidant capacity in Muffins made with Sunflower Flour**

Presenter(s): Melanie Quan

Advisor(s): Dr. Lilian Were Senger

Sunflower flour (SFF) is a potential protein substitute for conventional baking flours. However, after baking, SFF causes excessive browning. This browning occurs from the Maillard reaction between amino acids and reducing sugars. Hexose oxidase (EC 1.1.3.5) is an enzyme dough conditioner that lowers browning by oxidizing glucose, thereby decreasing sugar availability and sometimes acidifying the system, thereby slowing early Maillard reactions. Chlorogenic acid, a phenolic acid in SFF, can also react with itself, proteins, and other components during thermal processing, contributing to browning. Although the addition of chlorogenic acid/CGA esterase (EC 3.1.1.42) under alkaline conditions has been shown to favor browning over greening, the effect of CGA esterase under acidic or neutral pH conditions on color has not been explored. Muffins were prepared with 0-50% SFF and 0-0.62 mol CGA esterase/SFF in the SFF-containing dough. The water activity and color of the muffins were recorded. The antioxidant capacity, glycation, and pH of lyophilized muffin powders were determined. The pH of muffins with esterase was 6.83-7.24 compared to muffins without esterase at 6.83-7.32 pH. Lower sunflower flour

concentration and added CGA esterase decreased browning in sunflower flour baked muffins. This is likely because lower SFF-containing muffins had less protein available for Maillard reactions. The addition of esterase lowered chlorogenic acid by 33-46%. This hydrolysis was accompanied by a 28-46% increase in caffeic acid. The esterase resulted in muffins with a lighter color and lower browning, likely because of altering phenolic oxidation pathways during baking; higher antioxidant capacity was detected in muffins with lower CGA. The pH, height, and weight of muffins remained unchanged with esterase and SFF. These results highlight that, as with enzymes used in baking, such as glucose oxidase, chlorogenic acid esterase offers another path to control browning through phenolic transformation, supporting its potential application in sunflower-flour-containing baked products.

11. **Computational Ligand-Receptor Simulations of Fluorinated Morphine Derivatives using PyMOL**

Presenter(s): Mirabella Romano, Emily Chen
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 pH discrepancy between healthy (central) and inflamed (peripheral) tissues, selective binding in 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 for AutoDock Vina that allows visualization and evaluation of ligand-receptor interactions. Docking simulations were performed using a manually defined binding pocket. Specific ligands modeled included protonated models of morphine, morphine BC1, morphine BC2, and morphine BC3 derivatives. Out of the different ligands, a protonated model of morphine BC2 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.

12. Fluorescence Lifetimes of Dissolved Organic Matter in a Washington State Estuary

Presenter(s): Janelle Jacques

Advisor(s): Dr. Warren de Bruyn

Fluorescence lifetimes of chromophoric dissolved organic matter (CDOM) were investigated using time-resolved fluorescence spectroscopy in water samples collected from Padilla Bay, a Washington State estuary. Lifetimes were measured in water samples collected over a 24-hour period, with triplicate analyses performed for each sample to assess reproducibility. Measurements were made at an excitation wavelength of 268 nm and across a range of emission wavelengths (300-500nm). In all cases, fluorescence decay data were best explained using a discrete three-component model. There was a short lifetime component of < 1ns, an intermediate lifetime component of 1-5 ns, and a long lifetime component of 5-12 ns. The amplitude of the short-lived component dominated all measurements. However, fractional contributions to steady-state fluorescence were dominated by the intermediate and long-lived components at most wavelengths. Lifetimes varied as a function of emission wavelength, location, and time of the day. Lifetimes increased from 300 nm to 450 nm and then decreased again to 500 nm. Lifetimes were also higher at the slough site, particularly at low tide. Observed changes in lifetimes are likely due to structural changes in dissolved organic matter. This suggests that time-resolved fluorescence measurements can potentially be used to track carbon flow and transformation in these important land-sea interface ecosystems.

Communication Studies

13. Moral Violations Theory And Celebrity Parasocial Relationships

Presenter(s): Michael Tate, Jason Alam, Yness Riedel, Xitlalli Salgado, Karim Hassan

Advisor(s): Dr. Rebecca Forester

This study examines how types of moral violations a celebrity commits influences audiences' parasocial relationships, including perceived severity, forgiveness, and willingness to support the celebrity. Audiences develop parasocial relationships (PSRs), or one-sided psychological bonds characterized by emotional attachment, perceived intimacy, and a sense of personal familiarity with media figures through their consumption of products or interactions on social media (Rosenbaum-Andre et al., 2020). When a celebrity continues to support a cause that commits a moral violation, people with strong parasocial relationships may experience cognitive dissonance between their parasocial relationship and their moral evaluation of the celebrity. Using Moral Foundations Theory, which identifies six moral violations, including care/harm, fairness/cheating, and sanctity/purity, this study investigates whether different types of moral violations produce different patterns of emotional and behavioral response among fans (Clifford et al., 2015). The violations in this study were adapted from a 2015 study and rated as similarly high in severity by participants to ensure equal perceived severity. Participants' parasocial relationship with Taylor Swift is measured as a covariate before they are randomly assigned to one of four conditions: a care/harm violation, a fairness/cheating violation, a sanctity/purity violation, or a no-violation

control. Each condition is presented through a fabricated scenario involving Taylor Swift using a TMZ post on social media. Participants report parasocial relationships, perceived severity, forgiveness, and willingness to continue supporting. We hypothesize that the violation type will significantly predict the dependent variables, with different moral violations affecting perceived severity, forgiveness, and willingness to continue supporting the target in the control condition. A manipulation check assessing recall and perceived severity of the violation is included to verify the effectiveness of the experimental manipulation. Demographic variables

Computer Science

14. Developing Narrative-Based STEM Learning Tool for K-6 Visually Impaired Students

Presenter(s): Daniel Tsivkovski, Dylan Ravel, Brandon Foley, Jeffrey Kraskouskas

Advisor(s): Dr Maryam Etezad, Dr. Franceli Cibrian, Dr. Rajeev Joshi, Dr. Ariel Han

This research develops a free, accessible web application that enables K-6 students who are blind or visually impaired (BVI) to learn STEM concepts using refreshable braille displays. Currently, most online learning tools are not designed for BVI students, creating a significant educational barrier. The application interfaces with commercial braille displays and uses narrative-based learning to make STEM content approachable and engaging. By presenting material as personalized interactive stories generated with the help of Artificial Intellligence (AI), students can connect with concepts while developing braille reading skills. The curriculum design prioritizes accessibility through the Accessible Rich Internet Applications (ARIA) standards and screen reader support. The goal is to provide BVI students with learning experiences comparable to their sighted peers, including fun, personalization, and independent exploration.

Creative Cultural Industries - CCI

15. Reviving Space, Reviving Art: A Proposal for Transforming a Historic Inn into a Hub for Dance, Art, and Creative Industry Collaboration

Presenter(s): Celia Rammel

Advisor(s): Dr. Patrick Fuery

This project explores the strategies and mechanisms for transforming an historic building into a year-round, multidisciplinary center for dance, performance, and creative industry collaboration. Inspired by models like Jacob's Pillow and Kaatsbaan Cultural Park, the project aims to build a sustainable arts ecosystem in a rural setting—merging dance education, cultural tourism, hospitality, and community engagement. Research gathered through vital conversations with executives at similar institutions, arts consultants, architectural experts, state representatives, and those most intimately involved with an historic renovation process investigates the architectural, financial, and programming strategies needed to revitalize an existing space and redefine its role in a cultural and economic landscape. The capstone will focus on a hypothetical

project with real-world planning and application. The project commences with a geographical space that reveals some key aspects in CCI and performing arts research on non-urban environments. Maine has been selected as an exemplar; the region's rural landscape presents a surprisingly nurturing context for the proposed interdisciplinary arts venue, thriving off of recently reported arts and cultural participation data by the National Endowment for the Arts, US Census Bureau, and Cultural Alliance of Maine. More vitally, as explored in the research, Maine's environment serves as a bridge between artists, residents, tourists, and all citizens alike in grounding Maine's rural uniqueness in the creative ways it knows best, spurring creative and cultural industry growth--a cornerstone to a community's vibrancy and overall health. In exposing this narrative and the need for a venue of the sort in a small rural town, the purpose of the research in examining the method for remodeling and redefining a landmark building into an interdisciplinary arts center comes to fruition.

Dance

16. Dance Training as a Potential Neutralizer Against Trauma-Induced Neural Dysregulation

Presenter(s): Liberty Smith
Advisor(s): Robin Kish

The neural consequences of trauma and the neuroplastic effects of sustained dance training affect the same brain systems, yet their interaction remains largely unexplored. This project examines whether sustained dance training during development has any neutralizing effects on the neural impact of trauma on limbic-prefrontal networks responsible for emotional regulation and processing. Trauma-related disorders, including PTSD and CPTSD, are consistently associated with reduced hippocampal volume, reduced medial prefrontal cortex function, and heightened amygdala reactivity, resulting in impaired regulation of emotion and processing. In contrast, evidence from movement neuroscience demonstrates that long-term dance training induces widespread neuroplasticity extending beyond motor systems, including increased gray matter volume, decreased white matter anisotropy (suggesting more efficient/specialized communication pathways rather than degeneration), increased hippocampal volume, and structural expansion of the cerebellum in the right hemisphere and vermian lobules VI-VII. Dance has been shown to engage limbic and paralimbic regions, including the amygdala, insula, and cingulate cortex, while strengthening functional connectivity with prefrontal regions implicated in emotional regulation. Despite these parallel findings, the potential for dance training to directly influence trauma-affected neural systems remains underexamined. Through a comparative analysis of existing literature across neuroscience, psychology, and movement studies, this project argues that developmental dance training may actively reinforce prefrontal-limbic connectivity, counteracting patterns of dysregulation associated with trauma. It is therefore proposed that individuals with trauma exposure and sustained dance training will demonstrate improved emotional regulation relative to non-dancers. This work positions dance not only as an

artistic practice but as a biological intervention, advancing an interdisciplinary field and identifying a critical gap for future research.

Data Analytics

17. Finding the Determinants of Progress with Speedruns

Presenter(s): Alexis Reeves
Advisor(s): Dr. Seth Benzell

Using data science and visualization techniques, we analyzed thousands of records of speedrun data from multiple sources to ask several questions about what determines progress. Is it money? Is it attention or the popularity of an issue? We studied the effects of events like Games Done Quick and computer-based TAS runs on human-based Speedruns. We include visualizations of the games studied and combined graphs showing the average of the log of all games and categories to show a combined trend.

English

18. More Than a Spectacle: Dreams, Labor, and Resilience in Paris is Burning

Presenter(s): Dylan Magic
Advisor(s): Dr. Ian Barnard

This project explores how the documentary Paris is Burning represents the queer-of-color ballroom community. Since its release, one of the most prevalent debates has centered around whether the ballroom community was empowered or exploited by its white director as a spectacle for the audience. Directed by Jennie Livingston, the 1990 documentary highlights the 1980s New York City ballroom scene and follows the lives of various performers as they compete in these elaborate “balls” and how they navigate issues of racism, poverty, homophobia, transphobia, and the AIDS crisis. Through intimate interviews with housemothers, queens, and other performers, the documentary organically captures a community inventing its own system of care, kinship, and ambition in the face of adversity. By shaping this analysis through the lens of queer theory and film studies, this project critiques cultural extraction while simultaneously arguing that the documentary sheds light on voices rarely acknowledged in mainstream media. This project focuses on two main scenes: Venus Xtraviganza’s interview about her dreams for the future, and Dorian Corey’s monologue on survival and aspirations. By incorporating the work of scholars such as Daniel Conteras, Christian A. Gregory, and Philip Brian Harper, the analysis interprets ballroom performances as both acts of aspiration and labor. Venus’s desires are interpreted not as a longing for whiteness but as a collective yearning for equality and security denied by society. Additionally, Corey’s refusal to meet the camera's gaze reframes the documentary as testimony, rather than a spectacle for its audience. Ultimately, this project argues

that while authorship concerns remain significant, Paris is Burning lives on as a record of resilience, voicing the knowledge, dreams, and voices of queer people of color.

19. On the Wikipedia Page for Venus Xtravaganza, it says "See Also: List of people killed for being transgender"

Presenter(s): Finnegan Marquis

Advisor(s): Dr. Ian Barnard

Paris Is Burning is a 1990 documentary about queer ballroom culture in New York City. While the film is renowned for its representation of Black, Latinx, transgender, and queer communities, it's considered to be controversial for its portrayal of said communities. My project centers around one of the stars of the film, Venus Extravaganza, a Latina trans woman and performer who was brutally murdered during the editing process of the film. Through an analysis of different critics' use of Venus in their commentary and criticism of the film, my project discusses the mischaracterization of Venus in the media, as well as an example of how we should be discussing Venus's death in the context of the history of transgender homicides in America.

20. Tangerine: Does it Pass the Disclosure Test?

Presenter(s): Jaclynn Campbell

Advisor(s): Dr. Ian Barnard

Tangerine by Sean Baker follows two transgender sex workers, Sin-Dee and Alexandra, on a chaotic Christmas Eve journey through Los Angeles. This paper examines Tangerine in comparison to Disclosure, a Netflix documentary on trans characters and narratives in media, and evaluates whether Sean Baker's film advances or complicates trans representation in Hollywood. Through its casting, narrative focus, and urban setting, Tangerine challenges dominant media norms. By omitting a 'before' story, the film resists common tropes and portrays the two women as complex individuals whose identities are not defined by their transition. However, Tangerine also includes problematic elements. The film relies on depictions of violence and trans trauma, reinforcing the idea that suffering is intrinsic to the trans experience. The portrayal of trans women as sex workers and the sexualization of Sin-Dee also perpetuates stereotypes surrounding transgender characters in the media. Scenes such as Alexandra's performance of "Toyland" further complicate the film's political impact by presenting inconsistent expressions of female identity and empowerment. This paper argues that Tangerine occupies a nuanced position within transgender media representation: it marks significant progress in authenticity and visibility while simultaneously upholding stereotypical tropes.

21. To Be a "Rich White Girl": Race, Class, and Survival in Paris Is Burning

Presenter(s): Diana Montiel Guzmán

Advisor(s): Dr. Ian Barnard

This project examines how Jennie Livingston's Paris Is Burning represents desire, race, and class within the ballroom community, challenging prevailing critical interpretations of the film.

Focusing on Black and Latino queer and trans participants navigating poverty, housing insecurity, and gendered violence, the project situates desire within the conditions that shape their everyday lives. While bell hooks argues that Paris Is Burning reinforces whiteness as an ideal, the project asks whether such desires should instead be understood as responses to racial and economic inequality rather than evidence of internalized oppression. Engaging hooks alongside scholars such as Daniel T. Contreras and John Champagne, the analysis reconsiders how desire functions in relation to whiteness and wealth. Through close analysis of key scenes, including Venus Xtravaganza's desire to become a "rich white girl" and Pepper LaBeija's reflections on media influence, Paris Is Burning shows how ideals of wealth and whiteness are shaped by systemic exclusion. Rather than presenting these aspirations as imitation or failure, the film reveals them as closely tied to survival within a racially and economically unequal society. By focusing on what participants say about their experiences and how "realness" operates within the ballroom community, this project argues that Paris Is Burning exposes the structures that produce these desires. Ultimately, the film shows that these desires emerge from racial and economic inequality rather than from a desire to align with dominant culture, complicating hooks's interpretation that these aspirations are imitative of whiteness.

Environmental Science and Policy

22. **Mismatch in Monitoring: Toxic Release Inventory Facilities and PurpleAir Sensor Coverage Across Los Angeles Neighborhoods**

Presenter(s): Sophia Spiegleman, Sophie Matuch

Advisor(s): Dr. Joshua Fisher

This study examines environmental and health disparities in air pollution exposure and monitoring coverage across Southeast Los Angeles (SELA) and West Los Angeles (West LA). We analyzed the spatial distribution of Toxic Release Inventory (TRI) facilities and PurpleAir (PA) sensors alongside pollution and health indicators. SELA contained 164 TRI facilities and 15 PurpleAir sensors, compared to 7 TRI facilities and 137 sensors in West LA. SELA had substantially higher industrial density, with TRI facility density approximately 17 times greater than in West LA. Despite this, PurpleAir sensor coverage was significantly greater in West LA, with sensor density approximately 11 times higher than in SELA. SELA also exhibited higher diesel particulate matter exposure and higher asthma and cardiovascular emergency department visit rates. These results reveal a mismatch between pollution burden and monitoring availability, where communities with greater industrial activity and health risks have fewer monitoring resources. Expanding air quality monitoring in high-burden communities is essential to improve pollution assessment and support environmental justice and public health decision-making.

Film

23. Transcending the Auteur's Gaze in "Tangerine"

Presenter(s): Celine Schuneman

Advisor(s): Dr. Ian Barnard

Traditional transgender representation on film is riddled with a troubled history. With cisgender actors, writers, and directors appropriating trans narratives, simply being seen on screen doesn't always lead to positive representation. While films like "Emilia Pérez" (dir. Audiard, 2024) and "The Danish Girl" (dir. Hooper, 2016) received some critical appraisal, critiques from within the trans community have highlighted the regressive nature of fetishizing transness or connotating the identity with suffering. Yet, underneath all of this, the independent film scene contains a tapestry of diverse and productive trans representation. Films like "Tangerine" (dir. Baker, 2015) prioritize the lived experiences of two trans women as guiding agents in the film's construction. While the film is written and directed by Sean Baker, a white cis man, the two Black trans women leading the film, Kitana Kiki Rodriguez and Mya Taylor, strip away the traditional authorial gaze in favor of a fluid narrative. "Tangerine" is shot on an iPhone 5 and grounded in an extreme sense of realism; Rodriguez and Taylor's improvisation and involvement in the production produce a heightened reflection of trans experiences. Despite its attempts at progressive representation, "Tangerine" was met with controversy upon release. Especially with Baker behind the camera, many questioned how his involvement and focus on trans women as sex workers potentially played into harmful stereotypes often applied to the community. Nevertheless, these stereotypes called out by critics are the exact themes confronted and revised through the realism of "Tangerine." Without flashy aesthetics or overt filmic gazes, the film revises how we construct representation on film. By decentering the voices behind the camera, "Tangerine" prioritizes the agency of its on-screen leads in constructing their reality through understandings of identity and community.

24. Cross-Media Auteurism in Look Back

Presenter(s): Ding Ding Bai

Advisor(s): Emily Carman

When a manga is adapted into a film, who is really the author of the final work? My essay focuses on Look Back, the anime film adaptation of Tatsuki Fujimoto's one-shot manga, and I argue that the movie still is authored by Fujimoto even though he did not direct or animate it. The purpose of this essay is to challenge the usual version of auteur theory, which often assumes that authorship belongs mainly to the film director. In this case, that model does not fully work. Instead, I argue that Look Back shows a form of cross-media auteurism, where the original creator's style and emotional structure remain dominant after adaptation. To make this argument, I use close formal analysis of both the manga and the film, especially moments involving negative space, repetition, silence, and sudden emotional shifts. I also compare Look Back to the movie Scott Pilgrim vs. the World to show that not every comic adaptation preserves

source authorship in the same way. I also bring in adaptation studies, comics studies, and fan studies to show that authorship is not just about credits or production roles, but also how audiences recognize and talk about a creator's voice across media. My main conclusion is that Look Back does not simply try to retell Fujimoto's story, it instead preserves the formal and emotional structure of his original work so strongly that the film feels like an extension of his authorship rather than a separate directorial vision.

25. Queer Visibility Versus Queer Representation

Presenter(s): Mel Brisky
Advisor(s): Emily Carman

Soon after the New Queer Cinema movement began in the 1990s, a series of films that will be referred to as the Unofficial Drag Trilogy came out: The Adventures of Priscilla, Queen of the Desert (Elliot, 1994), To Wong Foo, Thanks for Everything! Julie Newmar (Kidron, 1995), and The Birdcage (Nichols, 1996). Each of these films each gained more popularity than the last ending with The Birdcage, which signifies the shift from queer visibility to queer representation happened in mainstream films. This paper analyzes how stereotypes are utilized, depictions of hate crimes, and how queerness is discussed within the films in the Unofficial Drag Trilogy to show how The Birdcage stands apart from the previous two films. Priscilla and Too Wong Foo present uncomplicated views of stereotypical queens and the characters are subjected to sexualized hate crimes in both films. The Birdcage utilizes stereotypes satirically to show that there is a person inside the "screaming queen," has no hate crimes, and depicts a healthy long term queer relationship. Thus, The Birdcage signified the future prospects for representation and the contemporary shift into television for queer representation.

26. How Integration of Hollywood Techniques Benefits Filmmakers and Improves Viewership: Application of Bong Joon Ho's Work

Presenter(s): Lucy Cronin
Advisor(s): Emily Carman

Bong Joon Ho utilizes techniques derived from Hollywood cinema to transcend borders globally, informing viewers about the socio-politics in South Korea while engaging them as well. Based on Film Scholar Andrew Higson's theory that Hollywood is everywhere, I argue that by analyzing three of Bong Joon Ho's films, Memories of Murder (2003), Mother (2009), and Parasite (2019), it is understood that through the language of imagery, South Korean socio-politics can be understood. Comprehensive literature reviews of the film's commentary on socio-political circumstances that reflect South Korea's past or current struggles, and comparisons of the cinematography of critical scenes in the films that parallel famous Hollywood scenes, allow proper deduction of how incorporating Hollywood can be achieved. Therefore, by understanding the mechanics of the relationship of how global cinema can complement one another, Hollywood integration can bridge the gap between foreign film and audiences, resulting in benefits for global cinema holistically.

Food Science

27. Sunflower Flour and Tryptophan as a Source of Natural Red Food Colorant: Production, Characterization, and Application

Presenter(s): Spencer Nguyen, Marissa Wong

Advisor(s): Dr. Lilian Were Senger

The upcoming FDA ban of synthetic Red 3 and growing consumer preference for natural colorants have created demand for a natural colorant that can replicate Red 3's distinctive pink hue and stability. The objective was to produce and characterize a red colorant resulting from the interaction of sunflower-derived chlorogenic acid with L-tryptophan/Trp and to evaluate its applications. Yield, protein, metal content, redness intensity, solubility, heat, pH and light stability, of colorants from pH 9 and pH 11 lyophilized sunflower flour- Trp colorants followed by acidification were measured. Red color formation took >3 h with alkalization and subsequent acidification. The sunflower flour: Trp mixture ratio that produced the greatest redness was 10:2. The highest red pigment was in supernatants and not the precipitates. The red colorant intensity and solubility were highest at neutral pH when compared to acidic pH solutions. The color stability of the new red colorant in icing and refrigerated whole milk matrices, when assessed weekly for a month, showed no color change in refrigerated milk. After 30 min of incubation at 63 °C, pinkness in milk remained unchanged or increased. The pink color, however, faded in icing over time due to exposure to light. The present study established a new natural red and pink colorant developed from sunflower protein-Trp mixtures at alkaline pH, as well as its application in icings and whole milk for commercial strawberry milk products. This colorant could serve as a replacement for the synthetic petroleum-based Red 3.

Health and Strategic Communication

28. Ignored Inequalities: How Media Attention Shapes Attitude on Women's Health Funding

Presenter(s): Juliette Bru

Advisor(s): Dr. Ann Gordon

The persistent imbalance between women's and men's health studies remains a critical yet underexamined issue in public policy and medical science. Prior studies suggest that gender discrimination in health research contributes to imbalanced medical knowledge and long-term health outcomes for women and adolescent girls in the U.S. and globally. This paper examines whether perceptions of media attention to discrimination against women are associated with public attitudes toward government spending on health. Using survey data from the American National Election Studies, I analyze responses to questions measuring whether respondents believe the media pays too much, too little, or the appropriate amount of attention to discrimination against women, alongside attitudes about whether the government spends too much, too little, or the right amount on health. I hypothesize that individuals who perceive

insufficient media attention to discrimination against women will be more likely to believe that the government spends too little on health. I also expect gender differences in these attitudes, with women more likely than men to perceive both insufficient media attention and inadequate health spending. By focusing specifically on perceptions of media attention and general health spending attitudes, this study aims to clarify how awareness of gender inequality may shape policy preferences. These findings contribute to understanding how public opinion links gender issues in the media to support for health-related government spending.

29. **Freshman 15? Freshman 50?? The Reality of Daily Life Habits of a First-Year College Student**

Presenter(s): Greg Salgado

Advisor(s): Dr. Oliver Lopez

This project presents a personal data tracking study in which I collected daily self-reported metrics over the course of the Spring semester using Excel. The variables tracked include sleep duration, caloric intake, screen time, social media usage, phone checks per day, family communication, and personal spending. The goal of this project is to identify meaningful patterns and correlations between daily habits and personal well-being.

Data was collected through a combination of manual logging and smartphone-generated daily reports. This study explores potential relationships between variables such as sleep duration and social media usage, as well as the association between family communication and mood, and its downstream effects on screen time behavior. Ultimately, this dataset is intended to provide insight into my daily lifestyle throughout the semester and serve as a demonstration of structured self-evaluation and applied data analysis.

30. **The Hidden Power of Sleep Quality in Enhancing Students' Intrinsic Motivation**

Presenter(s): Kristy Riddle

Advisor(s): Dr. Oliver Lopez

In this project, I am tracking 10 of my daily statistics revolving around my routine. I am using an Oura Ring to help accomplish some of the statistics. These include: readiness score, sleep score, screen time on cell phone, time spent on social media, steps taken, stress levels, restorative time, pages read, homework time spent, and water in oz consumed. I will be utilizing excel for my data and will have around 3 months worth of statistics. I hope to learn more about my levels of efficient sleep and how I can better improve my motivation as a student. This project will help to establish if there is a correlation between higher quality sleep and the level of motivation the next day. I believe that this research will be relevant and applicable to both college students as well as others seeking to gain a greater understanding of the importance of sleep in one's life.

Health Humanities

31. The Ethics and Social Impact of Prenatal Screening

Presenter(s): Annikah Mae Carpio

Advisor(s): Dr. Stephanie Takaragawa

This project examines the ethical and social implications of prenatal screening, focusing on how advances in medical technology shape societal understandings of disability, normalcy, and reproductive choice. The central research question asks: how does the widespread use of prenatal screening influence perceptions and the valuing of differing kinds of disability? While prenatal screening is a tool for informed decision-making and family planning, some scholarship in health humanities and bioethics suggests it may carry deeper cultural and ethical consequences. Building on prior analysis of prenatal testing practices and narratives, this project contributes to ongoing discourses by examining how medical information is presented, how counseling practices and public health policies may guide reproductive decisions, and how these practices and policies may be shaped by broader social forces.

The methodology involves qualitative, text-based analysis of literature, narrative accounts, and public health discourse, while incorporating frameworks from disability studies, narrative medicine, and psychology. These frameworks allow for an exploration of how language, risk framing, and practices shape patient experiences and societal attitudes. Expected findings suggest that while prenatal screening can empower individuals with knowledge, it may also reinforce narrow definitions of "normal" and contribute to the marginalization of disability. The project concludes that ethical implementation of prenatal screening requires not only access to accurate medical information, but also a commitment to presenting diverse perspectives and supporting inclusive understandings of human life.

32. Abstract

Presenter(s): Emily Tapay

Advisor(s): Dr. Stephanie Takaragawa

Social connection is a social determinant of health that is gaining recognition for impacting a person's physical, emotional, and mental wellbeing. Strong and consistent social relationships have been associated with improved overall wellbeing and a decreased risk of chronic diseases and early mortality. Quantitative research documents the connection between this social determinant of health and its outcomes, but there is a lack of research exploring the actual experiences and sense of belonging. A Health Humanities framework is applied to analyze how social connection can shape a person's health outcomes via health indicators and lived experiences. Existing research in public health, sociology and the humanities all play a part in examining social connection as a social determinant of health. Health humanities emphasizes lived experiences and social context to truly understand illness and overall wellbeing. Preliminary findings imply that loneliness is associated with various negative health outcomes such as a higher risk of cardiovascular disease, poor mental health, and mortality. Strong social connections have

been associated with higher emotional support, improved health outcomes, and a stronger overall wellbeing. Despite the health risks of loneliness, it has historically been viewed as a personal problem instead of a structural health issue. Health is not simply biological. It is simultaneously influenced by social connection and reaching a sense of belonging. By combining scientific findings with human centered investigations, the importance of significant social connection is highlighted as a way to boost community health outcomes.

33. Caregiver Burden of Alzheimer's Disease

Presenter(s): Joshua Cantwell-Nahrung

Advisor(s): Dr. Stephanie Takaragawa

Around the globe, around 24 million people are affected by dementia. Dementia is an umbrella term for an illness that results in progressive cognitive decline, and there are many conditions that lead to dementia. At around 50-70% of all cases, Alzheimer's disease results in the most instances of dementia (Ballard et al., 2011). While Alzheimer's disease is predominantly studied in the context of being a neurodegenerative condition, its broader social impact, particularly on caregivers, has not been well examined. This poster will examine how socioeconomic and cultural factors influence caregiver burden, as well as what barriers to care people face with the current healthcare system. Caregiver burden has been researched in the framework of psychological distress and financial hardship, however less extensively studied is how caregiver burden is unevenly distributed across class, gender, and more (Shultz & Sherwood, 2008). A 2006 study found that the responsibilities of family caregiving fall disproportionately on women, and are also influenced by race, income, and different cultural expectations surrounding family duty (Pinquart & Sörensen, 2006). This poster will conduct a thorough literature review which will draw from medical research and social science to better analyze caregiver experiences for those looking after individuals with Alzheimer's. Caregiver burden is not a necessary byproduct of disease, but something that has been produced through the failures and inequities of healthcare access.

34. Adolescent Idiopathic Scoliosis and Eating Disorders: A Health Humanities Perspective

Presenter(s): Alyssa Hernandez

Advisor(s): Dr. Stephanie Takaragawa

This project analyzes the link between adolescent scoliosis and eating disorders. Doctors often focus on the physical curve of the spine; this study uses a Health Humanities lens to examine teenagers' actual experiences. It explores how spinal deformity and invasive treatments, such as wearing a back brace or being consistently monitored by doctors, act as a "provoking factor" that hinders the development of a stable body image during a critical developmental window.

This lack of control experienced by adolescents is backed up by a study showing that teenagers with scoliosis are much more likely to develop an eating disorder than their peers (Alborghetti et al, 2008). Specifically, 9.2% of girls with scoliosis struggle with Anorexia, compared to only 0.3% of the general population. There is also a correlation between spinal

curvature and body weight: the more severe the spinal curvature, the more likely the patient is to
have a lower body weight. Indicating that when a teenager feels they cannot “fix” their spine, they may try to gain a sense of control by strictly limiting what they eat.
This project applies Narrative Medicine to explore the medical gaze and the cultural obsession with symmetry. This obsession with being “straight” and “symmetrical” is often tied to being “perfect”, putting an immense amount of pressure on a teenager whose spine is changing against their will. Therefore, developing a dysfunctional system where an adolescent's self-worth depends entirely on their ability to control their physical shape. Ultimately, this project argues for an integrated care model that prioritizes the patient's psychological well-being alongside orthopedic correction.
Cited Sources
Alborghetti, A., Scimeca, G., Costanzo, G., & Boca, S. (2008). The prevalence of eating disorders in adolescents with idiopathic scoliosis. Eating Disorders, 16(1), 85–93. https://doi.org/10.1080/1064026070177366

35. Time as Care: Rethinking Patient Experience in an Efficiency-Driven Healthcare System

Presenter(s): Chelsee Sawai
Advisor(s): Dr. Stephanie Takaragawa

During my internship in the emergency department, I witnessed a stark dichotomy between the physicians’ need for efficiency and the other providers’ focus on building a relationship with the patient. This dichotomy led me to consider the role of time in the patient experience. The question that this project attempts to answer is: how does time impact the patient experience in the healthcare system?
The purpose of this project is to consider time not simply as a logistical construct but rather as a constituent part of the healthcare system. Through the lens of the emergency department as a symbol of the importance of time and primary care as a symbol of the importance of relationships, this project explores the role of time with patients in the healthcare system and the impact that time has on the patient experience. The project argues that while increased wait times have a direct correlation with decreased patient satisfaction, the perception of time with the provider is a more significant factor than the time itself. The Health Humanities framework provides a lens through which time is explored as a form of care that not only impacts the quality of healthcare but also the quality of the patient’s dignity and identity.
As a future physician with a focus on the field of allergy and immunology, this project is a reflection on the role that time plays in my practice. As a specialist in the field of respiratory immunology, time is a critical component of the patient-provider relationship.

36. Race and Class Discrepancies of Patients with PCOS related infertility

Presenter(s): Nalani Young

Advisor(s): Dr. Stephanie Takaragawa

Polycystic ovary syndrome (PCOS) is an endocrine disorder that affects women, especially after puberty, yet its relationship to infertility remains disproportionately understudied and inequitably managed across patient populations. PCOS is due to a hormonal imbalance that occurs when the ovaries overproduce sex hormones, causing an imbalance in the body. Many women who get diagnosed are seen just as hormonally and metabolically dysfunctional, however this can have a negative impact on the people who get diagnosed and treated. Through a health humanities lens there can be intersectional theories to help those struggling with PCOS related infertility. Being an ethnic minority or of a lower socioeconomic status can have a direct effect on the medical experience with PCOS. Through critical analysis of medical literature, along with clinical guidelines, the discrepancies regarding infertility in PCOS patients can be recognized. In the context of race, patients are faced with discrimination regarding proper diagnosis recognition and referral, which is rooted in the history of medical neglect and racial bias. Through looking at class, those of lower socioeconomic standing face barriers to assisted reproductive technologies like IVF due to their financial situations. Looking at PCOS related infertility there are many challenges regarding reproductive medicine to move beyond symptom management, however, there needs to be more reproductive health systems accessible and reliable to all.

Health Sciences and Kinesiology

37. The Influence of Temperature on Composite Structure

Presenter(s): Michaella Cox

Advisor(s): Dr. 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, custom Python code, and composite fabrication. Throughout our experiment, we have observed the effects of temperature (37°C, 38°C, 39°C, 40°C) on the collagen biocomposite structure. Observations made throughout our experiments are correlated with thermal transitions that occur within the microgel phase, where the microgel phase elasticity increases at higher temperatures. From these observations, 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.

38. **Objective Measurement of Post-Stroke Activity Levels: A Longitudinal Evaluation Using the McRoberts Monitoring Belt.**

Presenter(s): Pasant Moanes

Advisor(s): Dr. Rahul Soangra

The McRoberts Stroke Monitoring Belt is an innovative wearable device that functions to monitor and enhance the rehabilitation process of stroke survivors by continuously tracking their daily activities as well as their living habits. Given that approximately 15 million individuals worldwide suffer a stroke every year, stroke survivors frequently face difficulties with mobility and daily functioning, having a substantial negative impact on their independence and quality of life. Accurate monitoring of physical activity is essential for evaluating the results of rehabilitation and pinpointing areas that require focused interventions. The McRoberts Stroke Monitoring Belt collects data continuously through a survivor's day over a 15-day period, providing comprehensive insights into various aspects of their daily routine, including sleep patterns, daily step count, and total energy expenditure. This review aimed to measure the rehabilitation outcomes in stroke survivors through analysis of activity patterns captured by the belt. Preliminary findings suggest that participants exhibit significantly lower step counts in comparison to other activities, which suggests a decrease in ambulatory activity. Information gathered on sleep and overall activity patterns provides important context for understanding the functional difficulties encountered during the healing process. By integrating continuous monitoring into the rehabilitation process, the monitoring belt offers valuable information on patient performance to offer opportunities to optimize recovery strategies that may ultimately optimize the overall quality of life for stroke survivors. By bridging the gap between clinical evaluations and practical functionality, this continuous monitoring strategy provides a more comprehensive understanding of survivor recovery.

History

39. **Proper Women, Improper Politics: Women in the IRA and the Escalation of Activism to Terrorism**

Presenter(s): Vanessa Lopez

Advisor(s): Dr. Jeffery Koerber

This research examines the role of women between years of 1969 to 1998, where armed combat between the British Security Forces and the Provisional Irish Republican Army overtook Northern Ireland, a territory remaining under British rule that was split from the rest of Ireland. This research raises the question of where the line gets blurred between "terrorism" and "activism" and how overtime historians are able to destabilize the categories of what "terrorism" looks like.

The Irish fight to leave British rule and to join the independent country of Ireland, was rooted in the systemic discrimination and prejudice by the British parliament and protestants in Northern Ireland. In 1919, the Original Irish Republican Army was founded, but in 1969 the Provisional Irish Republican Army carried more extreme and violence forward methods of protest through robberies, bombings, and on the ground guerrilla warfare with British occupation services. Extreme forms of protest became the dominant form of resistance and were mapped out and executed by women. They were not just passive auxiliaries, but rather intelligence gatherers, bomb-makers, and political organizers. My research analyzes women's roles in the IRA during its clear shift in the militarization of Irish republicanism and how the boundary between activism and terrorism becomes destabilized. While the PIRA became branded as a terrorist organization, the term "terrorism" is a contested political classification rather than a self-evident fact. This study of the participation of women in the IRA not only expands the historical perspectives of the Troubles but also destabilizes the categories in which political violence is understood. Labels ultimately holding the power to shift the way something is perceived shows how crucial the labeling process is. If activism can become terrorism, it raises the question not whether the IRA were activist or terrorist, but rather who possesses the authority to decide that.

40. Armed Resistance and Repression: Kurdish Struggle in Turkey, Iraq, and Syria

Presenter(s): Ethan Porter

Advisor(s): Dr. Jeffrey Koerber

This thesis examines how Kurdish insurgencies emerged in Turkey, Iraq, and Syria from the 1970s until the Arab Spring of 2011, and investigates why insurgency became perceived as the most viable means of pursuing autonomy. With a population of over thirty million and yet lacking a sovereign state, the Kurds are often described as the largest stateless nation in the world. In the late 20th century, Kurdish communities across the three different countries faced oppressive state policies that sought to suppress Kurdish identity through assimilation policies, political exclusion, and extensive surveillance. This research builds on existing scholarship on Kurdish militancy and nationalism by exemplifying how the systematic closures of non-violent political participation and access culminated in insurgency being viewed as the most viable pursuit of respective goals. This project analyzes Kurdish movements in Turkey, Iraq, and Syria through a comparative history of shared repression under different regimes that ultimately shaped armed resistance. Drawing on primary sources such as the founder of the PKK, Abdullah Ocalan's, Prison Writings, Fuad Hussein's 1983 speech to a Kurdish conference in Amsterdam, and various U.S. State Department documents, this assessment looks at how distinct systems of repression shaped Kurdish identity, militant insurgency, and the emergence of new ideologies related to Kurdish political autonomy. With the aid of scholarly frameworks such as Francis O'Connor's Understanding Insurgency, the comparison of these respective Kurdish cases illuminates the divergent paths that shaped militant mobilization and eventually led to the emergence of new, yet limited political autonomy in the early 21st century.

41. The Spectacle of Suspicion: McCarthyism, Political Theater, and the Silencing of Dissent

Presenter(s): Hannah Rice
Advisor(s): Dr. Jeffrey Koerber

In the mid-twentieth century, Hollywood's most influential actors, writers, and journalists were summoned before Congress and publicly asked: "Are you now or have you ever been a member of the Communist Party?" During the McCarthy era, named for the champion of the "red scare," Senator Joseph McCarthy of Wisconsin, the House Un-American Activities Committee (HUAC) hearings could, and often did, destroy reputations that had taken years or decades to build. My research examines how McCarthyism and HUAC members used propaganda to reshape America's public opinion. It explores how fears of communism and expanding federal agencies allowed individual members of Congress to gain significant political power. Historians have contentiously debated Cold War politics, particularly whether or not the federal government acted in a justified manner in response to communism. Traditionalist historians argue that the federal government was completely justified in events like the Venona Project, which uncovered Soviet espionage activities in the United States. Revisionists argue the opposite, asserting that this era demonstrates government overreach through agencies like the FBI. Over the years, post-revisionist historians have emerged, stating that this era of politics is a deeply nuanced period of history and that while there was general national anxiety, the government completely overstepped its position. Using congressional hearing transcripts, memoirs, news articles, cultural response, plays, and a plethora of other historical documents of the events in question, this thesis analyzes how fears surrounding communism were systematically implanted by the government to ensure the public feels that the House Un-American Activities Committee was justified. Ultimately, the hearings not only reshaped public opinions but also the public's opinion on the federal government itself.

42. Turkish-American Ties: Analyzing Diplomatic & Population Ties During the Reign of Mustafa Kemal Atatürk

Presenter(s): Luke Schamber
Advisor(s): Dr. Jeffrey Koerber

This paper examines the early stages of diplomatic ties between the United States of America and the Republic of Turkey, specifically under the reign of its founder, Mustafa Kemal Atatürk. This will be explored through newspapers, diplomatic figures, and general public opinion about the newly independent Republic, amid a rapidly changing United States society and international world. After the collapse of the Ottoman Empire, Atatürk sought to transform the new Turkish state into a Western-style nation, incorporating elements of secularization and modernization. Through an analysis of American newspaper coverage, specifically from the New York Times and the Christian Science Monitor, this study explores how these reforms were presented to the American public and how they shaped subsequent Turkish-American relations. American journalists and United States diplomats portrayed the new republic and Atatürk himself as an extraordinary leader who led a declining empire toward the foundation of a new state. Despite this admiration, US

commentary and public opinion did not uniformly support his developments. Broader American opinion remained inconsistent, with lingering stereotypes and negative perceptions of Turks persisting across public circles. This paper will ultimately argue that Atatürk is viewed through a pragmatic lens. American elites and the US government pushed for Turkey's support, despite public opinion to the contrary.

43. Changing the Narrative: The Impact of Grassroots Environmental Organizations on Public Perception

Presenter(s): Matthew Chin
Advisor(s): Dr. Jeffrey Koerber

The 1970s were known as the "Environmental Decade," as the U.S. government passed multiple environmental regulations in an attempt to clean up the environment, such as the Clean Air Act of 1970 and the Clean Water Act of 1972. These regulations were successful in reducing pollution in the U.S. and in drastically improving public health, such as the visible reduction in smog in Southern California. However, pockets of these environmental hazards have persisted for decades in African American and Latino minority communities in the Los Angeles area. In response, several grassroots environmental movements make it their mission not only to shed light on these hazardous pockets but also to eliminate them. Following in the footsteps of environmental groups of the 1960s, these present-day movements play an important role in making information about environmental hazards accessible to affected communities while also pressuring local officials to implement the policy changes needed to address them. This paper explores whether environmental grassroots movements today have the same impact on public perception of environmental hazards as those in the past. Compared to past environmental movements, which addressed pollution as a public health concern, similar groups today view environmental hazards as a social justice issue, as data from both federal and state entities show that poorer minority communities are disproportionately exposed to pollution. Ultimately, this paper finds that contemporary environmental grassroots movements have less impact than past movements because of their limited presence in policymaking, which prevents them from driving long-lasting regulatory change.

44. Fog of War: How History and Recollection Clash and Give Perspective

Presenter(s): Daniel Chueh
Advisor(s): Dr. Jeffrey Koerber

The Second World War saw the rise of the United States in terms of technology and production. This in turn had given US Army weaponry of the era a strong reputation of being better than that of their contemporaries. Even the so-called "wonder weapons" that Nazi Germany began deploying in the late stages of the war have done little to challenge the perceived supremacy of American armaments. Yet the heavier armor of German tanks, to cite just one of the Wehrmacht's battlefield advancements, put a damper on the morale of American tank crews – commonly known as "tankers" – and provided a counterargument to the claims of US invincibility.

This case highlights how the heavy focus on technological might ignores the narratives of the tankers themselves, reflecting how the human element is often poorly considered in interpretations of history. In this project I aim to discuss both the technological aspects of tanks utilized by the US army during World War II as well as discuss the memories and stories of those who served in and around tanks to analyze the tactical and human aspects of warfare through the narrow scope of armored combat in the European Theater. I will be doing this through the analysis of historical works, field manuals, specification sheets, and either the written accounts or oral histories of the soldiers known as "tankers." To aid in interpreting oral histories, I will use the work of scholar Alessandro Portelli (his article "What Makes Oral History Different") to explain the deeper meanings behind individual narratives.

45. **Black Pedagogy And Praxis: The Transformation of Black Education Responding To Segregation**

Presenter(s): Dave Downs

Advisor(s): Dr. Jeffrey Koerber

This study explores how Black educators responded to segregation as a profession and in their classroom teaching during the years between 1896 (Plessy v. Ferguson) and 1919 (WWI). This project evaluates the new boundaries and limitations of the segregated Black school, how these restrictions were overcome as Black scholars created new curricula to best serve the youth of the day, and how a new class of teachers emerged to raise the standards of the profession, creating better student outcomes. Through analysis of newspapers, government and census reports, as well as scholarly articles, this work questions how segregation shaped the views of educators and the Black response that education would be the path to a prosperous future for the race. This study also illuminates ways in which our education system can be used as a means of empowerment for oppressed peoples. Ultimately, this project aims to showcase how education has historically served as a tool for liberation and to highlight how Black communities used to challenge hegemonic oppression to create a system by and for themselves.

46. **War on Walls: The Role of Political Murals in Northern Ireland**

Presenter(s): Julianne Martin

Advisor(s): Dr. Jeffrey Koerber

Since the early 1900s, muralism has played an important role in Northern Ireland's culture, especially during times of conflict. In Northern Ireland, murals are more than art; they serve as cultural landmarks that are battlegrounds of politics, identity, and remembrance. My research examines how the political landscape shaped muralism during the era of the Troubles in Northern Ireland (1968-1998). More specifically, how did Loyalist and Republican murals differ and how did their differences shape their role in society and the conflict? I hypothesize that the murals have played an important role in Northern Ireland's culture because they functioned not only as tools of propaganda, but as a lasting symbol of identity and memory. Early British Loyalist murals appeared in Northern Ireland in 1908 as a part of celebrations for the Twelfth of July, the

anniversary of Protestant victory at the Battle of the Boyne in 1690. The Irish Republican mural tradition differs as it did not gain popularity until the 1980s, although murals had existed in major cities as early as the 1970s. It was the Troubles that brought the Republican struggle to light, muralism serving as a visual foil to violent conflict. The murals in Northern Ireland demonstrate how history becomes memory as images from the past and those who were lost are displayed in bright colors. Members of the community, tourists, and future generations who walk the streets are witnesses not only to the art, but to the legacy of Northern Ireland, its conflict, and its survival.

47. How Rhetoric in Digital Spaces has Contributed to Changes in Online Social Norms

Presenter(s): Kai Kawafuchi

Advisor(s): Dr. Jeffrey Koerber

The rhetoric that the far-right uses online is subtly changing the social norms we experience online. This is not only intentional, but highly effective in influencing racially motivated violence. Anxieties in demographic shifts that threaten white hegemony are rooted in the "Great Replacement" theory, among other conspiracy theories. These movements embraced technology long before others. This often helps them stay ahead of attempts to anticipate violence. From early adoption of computers to encrypted message boards to intricate injections of their rhetoric in mainstream media, far-right movements utilize a variety of methods to recruit members and inspire people to violence. Using a case study methodology, this project analyzes several events, including racially motivated mass shootings in 2011, 2018, and 2019, along with the 2017 "Unite the Right" rally in Charlottesville, Virginia, to identify the rhetoric and how it influenced collective thought and actions among far-right members. Linguistic changes on platforms like Gab and Reddit are explored to understand how shared grievances turned into action. This project concludes that these events served as catalysts, shifting far-right discourse from concern for public perceptions of their movement towards martyrdom rhetoric. This rhetoric solidifies the shared identity centered on perceived threats to the white race and its hegemony. This paper addresses the gap in the historiography of online activity in far-right groups in the 2010s.

48. Strategic Silence: The Nixon Doctrine and the Rise of Authoritarianism in the Philippines

Presenter(s): Landon Matson

Advisor(s): Dr. Jeffrey Koerber

This project will examine the impact of the Nixon Doctrine on the Republic of the Philippines during the 1970s. Its focus in particular will be what strategic ramifications it had for the local administration as well as how the stated principle altered the political dynamic in the short term. On that note, historians who specialize in U.S.-Southeast Asian relations have argued that this shift in approach permitted friendly governments to obtain increased backing from the United States. This was done by highlighting the issue of domestic instability in nations such as Indonesia and South Vietnam amid the Cold War. Additionally, scholarship on this topic also explains how this change in policy concurred with the declaration of martial law by President Marcos in 1972. Washington in turn would then implicitly get behind this power grab in order to safeguard its

interests abroad. However, my thesis expands and builds off this previous research by demonstrating how this initiative not only reshaped wider objectives in the region but also transformed the geopolitical landscape on the archipelago. This will be illustrated primarily by analyzing White House correspondence, cables sent by the State Department, and National Security Council memorandums from the era. Collectively these can provide a glimpse into both American intentions and reactions by state officials at the time. Therefore, after pursuing this academic endeavor, I will arrive to the conclusion that the Nixon Doctrine contributed to the rise of authoritarianism in the Philippines.

49. A Weapon Waiting To Be Used: The Strategic Importance of the Women Airforce Service Pilots of World War II

Presenter(s): Piper Hanson

Advisor(s): Dr. Jeffrey Koerber

The Women Airforce Service Pilots, or WASP, were a group of women pilots who worked in a civilian capacity with the United States Army Air Force (USAAF) during World War II. The air war in both Europe and the Pacific Theaters was extremely deadly with high casualty rates, and the USAAF struggled to train new aircrews. Established in 1943, the WASP program aimed to free male pilots on the home front for combat duties by allowing women pilots to take over non-combat roles. WASPs ferried military planes from manufacturers to bases, test-piloted damaged or dangerous aircraft, and trained military personnel for combat. While often remembered for their defiance of traditional gender roles, the WASPs were also vitally important in supporting American airpower strategy. This thesis examines the aircraft the WASPs flew and how their roles in them contributed to the implementation of airpower strategy. This study uses oral histories, memoirs, personal records, and newspapers in combination with official military documents and scholarship on aviation strategy and its execution. WASPs' roles ferrying aircraft such as the P-51 Mustang and the B-17 Flying Fortress freed men for combat and ensured that crews overseas had the latest technology at their disposal. Their test-piloting of advanced aircraft, such as the B-29 Superfortress, reassured men of its safety. Despite the WASPs' strategic support of the U.S. Army Air Force and attempts at militarization, the program was disbanded in late 1944. Gender norms, political pressure, and changing manpower needs all contributed to the program's end. By performing non-combat aviation roles on the home front, WASPs supported the U.S. in establishing and maintaining air superiority across all theaters of World War II.

50. A Forgotten War: America's Stunning Defiance in North Africa

Presenter(s): James Lalin

Advisor(s): Dr. Jeffrey Koerber

The first war the United States ever fought after achieving independence is one that most Americans have never even heard of: the Barbary Wars of 1801–1805 and 1815. America fought alongside allies Sweden and the Kingdom of Sicily, against the Barbary States of North Africa, including Tunis, Algiers, and Tripoli, who were engaged in rampant piracy on the high seas and

slave trading. This paper examines the impact of the Barbary Wars on the United States, how it changed the perception of the newly created U.S. internationally, as well as how it changed American domestic politics. I will explore the preceding events of the war, why America chose to fight it, and the lasting impression it left on the United States. The war was fought over access to free trade and to legitimize the ideals of the United States and its Constitution to the world. As the newly independent country was pioneering a brand new form of government and thus faced much skepticism from many European countries, especially Britain. It bolstered American confidence greatly and elevated America in the eyes of the European powers. The war also was a proving ground for many of the ideals and foundations of law that have become of the utmost importance to this country, influencing the abandonment of the Articles of Confederation and the institution of the U.S. Constitution. My sources include writings of U.S. government and military leaders of the time. Their insights show a staunch dedication to American Constitutional ideals of free trade and the wish to expand America's military and international influence. Along with insightful secondary sources with useful contextual information and analysis.

51. Classifying Atrocity: Revenge, Genocide, and Politicide in Cambodia

Presenter(s): Tara Dunn

Advisor(s): Dr. Kyle Longley

On April 17th, 1975, the Khmer Rouge captured the capital city of Cambodia, Phnom Penh, defeating the Lon Nol regime. Violence ensued immediately. To celebrate their victory, one Khmer Rouge soldier and his cadre tied up 2,005 Lon Nol soldiers and beat them to death with sticks in Kampong Chhnang following the order of a superior (A Group of Cambodian Jurists, 3). Although the international community since 1979 has condemned the Khmer Rouge as perpetrators of genocide defined in 1949 by the “intent to destroy, in whole or in part, a national, ethnical, racial or religious group,” these Lon Nol soldiers were political victims and would not be included in the aforementioned definition (Convention on the Prevention and Punishment of the Crime of Genocide, 280). In fact, the majority of the 1.5-3 million dead were not targeted for their nationality, ethnicity, race, or religion, but for their class. So, if the Cambodian atrocity does not fall neatly into the definition of genocide, how should it be categorized? In 1988, political scientists Barbara Harff and Ted Gurr defined “politicide” as an act by the government which eliminates a large portion of the population wherein “the victim groups are defined primarily in terms of their hierarchical position or political opposition to the regime and dominant groups” (Harff and Gurr, 360). Politicide seems to describe Cambodia’s case more closely than genocide. Using Cambodian legal documents, Communist Party of Kampuchea party documents, and victim accounts, this research works to understand the nature of Khmer Rouge crimes in Cambodia. The popular consensus that the Khmer Rouge committed genocide against Cambodians is an historical misunderstanding. Instead, the Cambodian case was a complex amalgam of atrocity that comprised class-based revenge, genocide against minorities, and politicide.

Honors

52. The Closet on Display: Queer Desire in Isaac Julien's The Attendant

Presenter(s): Aiden Jones

Advisor(s): Dr. Ian Barnard

In this project, I analyze Isaac Julien's film The Attendant, focusing on the relationship between the museum attendant and the museum itself. The museum serves as a symbolic space for queer identity and desire. I argue that the museum functions as a metaphorical "closet," with each painting symbolizing the hidden desire of the museum attendant, preserved and concealed rather than openly expressed. The attendant is the only one in control of who enters and exits the space, suggesting that those entering the museum become part of his internal desires. Drawing on queer theory, particularly concepts of performativity and repression, this analysis explores how the attendant's role as a museum worker involves self-surveillance, as he becomes both the curator and observer of his concealed identity. In contrast, a recurring image of a Greek god introduces a more open and embodied version of himself, suggesting a tension between the attendant's controlled exterior and a more liberated identity. Unlike the attendant, other figures in the film, such as his wife, appear almost emotionally distant, almost disengaged, suggesting a passive awareness of his concealment rather than direct knowledge. The museum is presented as controlled and polished, thus mirroring the way the museum attendant maintains his outward life and appearance while suppressing his true desires and sexuality. The film is ultimately suggesting that this form of repression requires consistent surveillance, presenting the "closet" as not only a space of hiding, but one of continuous control and internal conflict.

53. Is She Too Real?: Bio-Queens and Defining the Subversive Nature of Drag

Presenter(s): Ashley Agatep

Advisor(s): Dr. Ian Barnard

In popular societal conceptions of drag, the image is as follows: a homosexual, gay man dressing up to fabulously embody a caricature of femininity. Through this imitation, drag becomes a site for subversion- deconstructing the gender binary through exposing the performative and imitative nature of gender itself. The deconstructive nature of drag is largely attributed to the performers performing a gender opposite to their "anatomical sex". However, can drag still be a site for gender subversion and deconstruction when a performer's "anatomical sex" matches the gender they perform? Taking on a plethora of names, Bio-Queens, Hyper Queens, AFAB (Assigned Female at Birth) Queens, and Faux Queens have represented an emergence of female-identifying performers in this largely male-dominated art form. Although emerging in the 1970s, these performers remain marginalized and highly controversial within the drag art world. This continually forces the community to ask- who belongs in drag, and who is drag for? In this poster, I will explore female Drag Queens whose gender performance aligns with their "anatomical sex" through the lens of Judith Butler's three dimensions of corporeality in their critical work, Gender Trouble (Butler, 2011). Using these three dimensions: anatomical sex, gender identity, and gender

performance, I will investigate how Bio-Queens may provide avenues for subversive performances and articulate the true constructed nature of gender. Furthermore, this project will explore popular cultural controversies and academic debates surrounding the existence and radical nature of Bio-Queens.

Citations:

Butler, J. (2011). Gender Trouble: Feminism and the Subversion of Identity. Routledge. https://doi.org/10.4324/9780203824979

54. The Fantasy of Gender: Drag, Pastiche, and the Imitation of Imitation

Presenter(s): Mckenzie MacPherson

Advisor(s): Dr. Ian Barnard

The purpose of this project is to showcase that drag does not imitate something original (authentic women) but rather a fantasy of women. Through attending a drag show at Hamburger Mary's, I found supporting evidence that in no way were any of the drag queens trying to be exactly like what some may deem the look and demeanor of “an authentic woman” but rather an imitation of an imitation, allowing each drag queen to express themselves however they pleased rather than cosplaying or making fun of any other woman walking down the street. It is becoming its own reality more than making fun of any constructed gender or “real woman,” with no part of the performance signifying this. Fredric Jameson introduces the idea of pastiche, a form of imitation that mimics something without the exaggerated, comedic undertones of parody. Drag is more closely related to pastiche than parody as it isn’t trying to mock but rather respect other forms of gender. In cases, though, drag may be performed for the wrong reasons, and it highly depends on the context in which it’s being performed. Judith Butler explains that true gender does not exist prior to the acts that create it. Drag acts as a subversion of the fantasy that creates gender norms, highlighting that everything is a constructed identity aided by societal norms. “...The various acts of gender create the idea of gender, and without those acts, there would be no gender at all” (Butler 178). Gender is an illusion created by the acts that pertain to pre-existing genders. These repeated acts instill what our society has now, a predetermined notion of strict binary norms that society is pushed to abide by. Drag serves as a way for people to express themselves outside of these gender norms rather than further contribute to gender norm narratives instilled in our society.

55. Imitation and Exaggeration: Drag Performance and the Construction of Femininity

Presenter(s): Ruby Beckerman

Advisor(s): Dr. Ian Barnard

This project looks at the question of whether drag performance is a form of mockery toward women or a critique of gender norms, using Judith Butler’s theory of gender performativity and a live drag show at Hamburger Mary’s as a case study. This project contributes to gender studies and queer theory by engaging with Butler’s writing in a contemporary performance context, focusing on the tension among parody, critique, and the potential reinforcement of stereotypes.

This project also focuses on specific examples from the case study, such as exaggerated gestures by the drag queens, sexualized movements, costuming, and interactions with the audience. The performances in combination with costume choices feature hyper-feminine traits such as provocative dancing, twerking, "busty" butt pads and cleavage, and overt sexuality, demonstrating how femininity can be constructed and amplified to the point of theatricality. Through Butler's work and the case study observations, this project shows that drag does not simply "make fun" of women. Drag can reveal how all gender expressions are imitative and culturally produced. However, the analysis also highlights a key tension of drag that reinforces narrow, hyper-sexualized representations of femininity. The project concludes that drag can challenge and reproduce stereotypical ideas about women while also underscoring the complexity of gender as performance rather than a fixed reality. The main takeaway being that these two arguments of drag can be true simultaneously.

Mathematics

56. Daily Lifestyle Habits and Their Impact on Weight Trends Over Time

Presenter(s): Arielle Hernandez
Advisor(s): Dr. Oliver Lopez

This study examines daily lifestyle habits over a three-month period to understand the correlation between behaviors such as sleep, physical activity, hydration fluctuations, and screen time and show correlation to the fluctuations of body weight. Everyday data was collected on total amount of phone usage, TikTok usage, hours of rest, workout duration, distance walked productivity level, water intake, caffeine, and say of the week.

The results show that weight generally went down over time, with changes that seemed to match changes in activity level and time spent on a screen. Days with more physical activity and less screen time were often linked to a weight that was more stable or going down. Days with more screen time and less activity showed consistent results. Sleep and water intake also helped and linked to better trends in more regular sleep patterns and more water intake.

Overall, the data suggests that a combination of less screen time, consistent exercise, and healthy daily habits may help maintain weight stability. Even though the relationships we saw aren't strictly causal, they do show a strong link between daily behaviors and physical results.

Physical Therapy

57. Evaluating Paraspinal Muscle Fatigability and Recovery using Modified Biering-Sørensen Test

Presenter(s): Laura Le, Jackson Harvey

Advisor(s): Dr. Jo Armour Smith

The Biering-Sørensen test assesses fatiguability of lumbar paraspinal muscles, with fatiguability and recovery quantified by changes in median frequency of the electromyography (EMG) power spectrum. Widely used to study muscle impairment in those with low back pain (LBP) with mixed results, prior work suggests multiple repetitions are required to identify impairments in young adults with LBP. This study evaluated test-retest reliability, paraspinal fatigue rate, and recovery with a three-repetition modified Sorensen test (mBST). Data were collected twice, one week apart. Thoracic (TES) and Lumbar (LES) fatiguability (median frequency slope) and LES fatigue recovery rate (return to baseline median frequency) were assessed. Participants performed three 60-second mBST repetitions, with standardized positioning using tactile biofeedback, with 45-second rest intervals. Rating of Perceived Exertion (RPE) and Visual Analog Scale (VAS) scores were recorded. For recovery, median frequency was measured from baseline to 12 minutes post-mBST every 2 minutes during a 15-second submaximal isometric contraction. Paired t-tests and repeated measures ANOVA assessed fatiguability and recovery. Intraclass correlation coefficients (ICC) assessed test-retest reliability. All 21 participants completed the mBST (11 male and 10 female, 25 (+/-4) years). RPE increased across repetitions (4.0 to 5.1, p = 0.032) and had fair to excellent reliability (ICC 0.62-0.77). Reliability of LES fatiguability was excellent (ICC 0.79-0.83). LES fatiguability exceeded TES fatiguability (p < 0.05). Initial LES median frequency decreased over mBST repetitions (113.3Hz to 93.6Hz, p <= 0.005). LES median frequency remained lower at 2 minutes post-mBST (104Hz, p = 0.036) but returned to baseline by 5 minutes. The mBST induces progressive lumbar paraspinal fatigue and provides reliable fatiguability measurements in young adults. Recovery occurs within 5 minutes. The mBST is a feasible clinical tool to assess lumbar paraspinal fatigue with moderate exertion and rapid recovery.

Political Science

58. Harmony Over Liberty: How State-Religion Entanglements Legitimize Censorship in Asian Hybrid Regimes

Presenter(s): Jackson Campbell

Advisor(s): Dr. Alessandro Del Ponte

In Asian hybrid regimes, where religious and ethnic diversity intersects with political authority, governments often justify censorship through appeals to social harmony. This paper examines how state-religion entanglements shape public tolerance for such restrictions on speech. Drawing on theories of authoritarian resilience and Durkheimian collectivism, this study argues

that higher state-religion entanglements embed religious legitimacy in institutions, legitimize suppression of dissent under the precept of collective harmony, and prioritize collectivist norms over individual rights, thus increasing public acceptance of censorship. Employing a sequential mixed-methods design, the study analyzes Asian Barometer Survey Wave 6 data from Indonesia, Vietnam, Mongolia, and South Korea. Qualitative case studies trace historical legacies, institutional embedding, and modern applications of this. Findings demonstrate how entanglement sustains illiberal practices in conflicted settings, offering insights for understanding authoritarian adaptation and the erosion of expressive freedoms in Asia.

59. Who Deserves Help? Gaza as a mirror of American Attitudes Toward Foreign Aid

Presenter(s): Aisha Linette Andrade Zuniga

Advisor(s): Dr. Ann Gordon

This study investigates the factors that influence American public support for U.S. humanitarian and military aid in the context of the Israeli-Palestinian conflict. Using Gaza as a focal case, it analyzes attitudes toward humanitarian assistance to Palestinians and military assistance to Israel, examining how political identity, media exposure, institutional trust, and gender shape these preferences. The research hypothesizes that partisanship and ideology significantly affect support for aid, with Democrats more likely to favor humanitarian assistance and Republicans more likely to support military aid. Media exposure is expected to condition attitudes by shaping perceptions of Palestinians as victims or threats. Trust in U.S. institutions may increase support for aid by reinforcing beliefs in its effectiveness, while skepticism may lead to opposition. Gender is also considered, with prior studies suggesting that women may express greater empathy but diverge in their support for humanitarian versus military aid. Using data from the 2024 American National Election Studies (ANES), this paper employs analysis to assess how these factors predict support for aid to Palestinians and Israel. The findings will offer insight into how Americans navigate foreign aid preferences in other conflict zones, including Sudan, Ukraine, Afghanistan, and Iran. Therefore, advancing the literature by demonstrating that humanitarian attitudes are not merely policy preferences but politically structured dispositions that meaningfully shape support or opposition for foreign aid.

60. Beyond Clicktivism: Analyzing the Most Effective Forms of Civic Engagement

Presenter(s): Charlotte Iribarren

Advisor(s): Dr. Ann Gordon

Civic engagement is not only characterized by voting, it can take the form of protesting for a political cause or donating to campaigns. Today, a highly common form of political involvement is posting online or signing online petitions, also referred to as “clicktivism”. In this paper, I intend to examine the extent to which voting in general presidential elections correlates with individual engagement in protests, donations to campaigns, or engages in “clicktivism”. Using the American National Election Survey which measures voting behaviors, political participation and public opinion, I intend to find that there is a strong correlation between individual participation in

protests or contributing financially to campaigns and whether this relates to voter turnout. Conversely, I intend to find that there is not a strong correlation between participation in online political discussion or commentary with voting in the general presidential election. There is an ongoing discussion surrounding the relevance of "social media politics" and if the way in which Americans engage politically online is effective in increasing political participation. The conclusions found in this paper provide further evidence that classic forms of civic engagement, protesting and donating, are more effective in getting people to vote than "clicktivism". Either way, social media politics, or "clicktivism," has become a foundational aspect of political participation in the modern day; it is up to us, the American public, to ensure that we transform "clicktivism" into an effective mode of political communication and action.

61. Fear of the Other: Explaining Immigration Anxiety in the United States

Presenter(s): Ramon Arguelles
Advisor(s): Dr. Ann Gordon

From splitting families apart to protecting national security through deportation, under the current administration, the United States has cracked down on illegal immigration. Many citizens of the U.S. often fear the idea of illegal immigration and what it could do to the United States. This paper will examine some causes of these fears, such as income level, where one gets their news, and level of education. This paper will use the Chapman Survey of American Fears, a representative survey of the fears held by the U.S. population. To begin, this paper argues that those with lower incomes are more likely to fear immigration due to job insecurity. If one's job isn't secure, they would not want an undocumented immigrant possibly taking their job, and in turn, they would fear illegal immigration. In addition, those who consume media from conservative outlets are more often afraid of illegal immigration due to the bias presented in these networks. Finally, those with a high school degree or lower are more likely to be afraid due to not learning about the reasons for immigration. Often, undergrad or grad school does a good job of teaching students about international politics and the reasons for immigration, leading to more empathetic individuals. This paper will conclude that the fear of immigration stems from job security, low levels of education, or biased sources, which, in turn, lead to a skewed perception of immigration in the United States.

62. Gender and Grades: The Gap in How Women and Men Fear Economic Collapse

Presenter(s): Riley O'Connor
Advisor(s): Dr. Ann Gordon

Due to prescribed gender roles in society and wage gaps, historically, women have had to rely on spouses and family for economic survival. Now, with access to higher education and increased salaries, their economic fears are shifting. In this paper I analyze the extent of the gender gap in the fear of economic and financial collapse of Americans. Using the Chapman Survey of American Fear, an original data set surveying the degree to which American adults fear incidents collected in the Spring of 2025, men and women of the same education fear economic collapse differently,

demonstrating men fear economic collapse less than women. I also find this phenomenon is replicated with some respect to education level and men overall fear economic collapse less than women. While individuals living under the same economic conditions are exposed to the same fluctuations in the macro and micro economy, gender and education influence one's perception of their own financial situation vastly, allowing for differences in preference for policy and elections. Although the differences according to gender and education are moderately strong, the underlying causes of these discrepancies highlight the social and educational differences surrounding attitudes towards the economy between gender roles.

63. AI: The Way of the Future or Looming Problem for Workers?

Presenter(s): Robert Bents
Advisor(s): Dr. Ann Gordon

As artificial intelligence (AI) becomes increasingly integrated into workplaces across the United States, employers are seeking to enhance efficiency and reduce workloads through human-AI collaboration. However, this transition has intensified worker anxiety surrounding job security. Drawing on data analyzed using SPSS and findings from the Chapman Survey of American Fears, this study looks to correlate if the implementation of AI, while well intentioned, generates significant psychological strain among employees who fear displacement by the very technology designed to assist them. Additionally, the expansion of AI has the potential to widen wage disparities by displacing entry-level positions while increasing the value of experienced workers, further reinforcing resistance to its adoption. This fear also extends beyond employed individuals, suggesting broader societal concern about the impact of Artificial Intelligence on labor markets.Compounding this even more, as younger generations enter the workforce, skepticism and resistance toward AI adoption may increase, contributing to decreased morale not only within the workplace, but among younger generations as a whole, reduced productivity, and potential financial consequences for organizations. As a whole, the growing distrust of AI threatens to undermine its effectiveness as a collaborative tool, transforming it from a source of support into one of tension within the modern workplace.

64. Political Villains: America's Perception of Corrupt Politicians

Presenter(s): Robin Nakamura
Advisor(s): Dr. Ann Gordon

Online and social media sources have made political news more accessible and digestible than ever before. While beneficial, it raises questions regarding the truth and quality of political news being spread and the effects it may be having on the public. In this paper, I seek to expand on existing research regarding political corruption and online media sources. Previous research has highlighted the rise of disinformation in online news sources, noting that social media reporting does not necessarily hold government officials accountable. Using the Chapman University Survey of American Fears Wave 10 (2024), the correlation between fears of political corruption and the intake of political content will be analyzed to examine the extent to which exposure to news

online and via social media influences these fears. Upon conducting research, it became clear that all parties fear political corruption, believing that government officials are easily swayed by the demands of special interests. Most people who do not feel that federal politicians commonly accept payments or favors in exchange for giving special advantages to businesses, organizations, or groups watch Fox News, whereas people who frequently use social media to get news information feel it is common. People who frequently use social media to get news information are also more likely to believe that executives in large organizations push policies that benefit themselves more than they benefit America. It is now more important than ever to question whether the media is acting as a check on corruption or, in fact, eroding trust in government and exacerbating polarization by functioning in a partisan manner. By analyzing the relationship between fears of corruption and news intake, the steps needed to ensure democracy's survival become clearer.

65. Political Identity over Demographics: Explaining Variation in Abortion Attitudes in the United States

Presenter(s): Josiah Soto
Advisor(s): Dr. Ann Gordon

This study examines variation in public attitudes toward abortion policy in the United States, focusing primarily on how political and/or demographic factors are shaping individual opinions. Existing research emphasizes the growing polarization regarding abortion attitudes, often highlighting and/or recognising both partisanship and ideology as key influences while giving less attention to how these factors are interacting with social characteristics such as gender, education, and religiosity. This study argues that partisanship and ideological self-identification are the primary drivers of abortion attitudes, while demographic variables are exerting secondary, conditional effects. More specifically, the influence of gender and other social factors are mediated by political identity, reinforcing rather than independently shaping opinion. Using data from ANES, this study analyzes survey responses that are measuring support for abortion under varying conditions. The dependent variable captures attitudes toward abortion policy, while independent variables include partisanship, ideology, gender, education, religion, and age. Statistical analysis is utilized in helping the relative strength of each predictor. The findings show that partisanship is the strongest determinant of abortion attitudes, with Democrats significantly more supportive of abortion rights and Republicans more opposed. Ideological identification further strengthens this divide, while gender differences are diminishing when controlling for political variables. Additionally, higher religiosity is mightily associated with greater opposition, whereas higher education correlates with increased support. Attitudes are also very conditional, with there being a broader agreement in cases involving health risks and/or coercion. This study will contribute to the literature by demonstrating abortion attitudes as being structured primarily by political identity, with demographic factors playing a reinforcing role while also highlighting the depth of polarization within contemporary American public opinion.

66. Symbolization, Hyperreality, and the Validation of Political Power in American Journalism

Presenter(s): Sage McCarty

Advisor(s): Dr. Gordon Babst

This project provides a new theory on the processes behind how American political media validates the use of political power, with special attention given to media about American involvement in conflicts in the Middle East. This project uses political scientist Murray Edelman's seminal work, The Symbolic Uses of Politics, as a starting point for understanding the types of emotional-political symbols that exist in media. This project analyzes political theory surrounding symbols' relationship to reality. Symbolization is presented as a necessary precursor for the development of communal understandings of sociopolitical realities. The project also explores the intersection between political theory, philosophy, and cultural theory on the subject of media's production of collective understandings of reality, and on the subject of these understandings' relationships with reality. The end result of this project is a new theory on the semiotic processes behind how American political media validates the use of political power, through the construction of collective understandings of reality. The theory's main argument is that emotional-political symbols in media produce collective understandings of reality, and these collective understandings validate the use of political power. Ultimately, the theory's usefulness is demonstrated through applications of this theory to media produced about American military involvement in conflicts in the Middle East.

67. Authoritarianism and Democratic Backsliding

Presenter(s): Annika Lindberg

Advisor(s): Dr. John Compton

In 2024, The Century Foundation rated American democracy at 79/100 on the democracy meter. In 2025, we see a huge decline in American democracy, being ranked 57/100 (The Century Foundation). This is a huge backslide in our country's democracy. In this paper, I will research Americans' willingness to shift from democracy in the US to a more authoritarian government, and whether democracy is always and under all circumstances preferable to any other kind of government. This study will run a crosstab to determine whether people are likely to be willing to not support the US as a democracy based on their political party, age, gender, race, educational level, and income. My study is relying on the American National Elections Studies of 2024, which is a long-term academic survey project that collects data on voting behavior, public opinion, and political participation in the U.S. This survey polls Americans before and after the presidential election. From background data and articles I have read, I have found that there is a serious threat to our American democracy as we know it. Articles are suggesting that this is a great amount of polarization, specifically in the Republican party, in regard to how presidents authority and the balance of executive power in regard to the Constitution. Others are examining the similarities between the Trump administration and the German government in the 1930s. I hope to further

add to research as to why certain Americans are willing to conform and support a shift to a form of government other than democracy.

68. The Impact of Social Media on Political Knowledge

Presenter(s): Arisha Habib

Advisor(s): Dr. Lewis Luartz

How does exposure to political content on social media platforms influence political choices and knowledge amongst voters? Existing literature on this phenomenon has failed to reach an actual consensus on the direct relationship between social media and its effect on political knowledge and comfort with conversing about political phenomenons. While some literature suggests that social media can be an efficient form of exposure for those not actively seeking political news, others claim that an increase in social media dependence can cause lower political knowledge and can rather create misconceptions and false beliefs despite access to information. I argue that social media can have a significant impact on a viewer's political knowledge and comfort, because of potential misinformation being communicated about a variety of political events and perceptions. To conduct my research, I used the ANES 2024 Time Series study to observe the relationship between how many days a week respondents use social media as a source of news, as well as the self-measured knowledge they believe they have about politics. In the way I designed my research, I estimated the relationship between these two variables using ordinary least squares regression. As a result, preliminary findings suggest that higher frequency of social media use negatively impacts political knowledge. These findings are significant because they can help policymakers and researchers identify how information on social media is negatively impacting consumers.

69. Subjective Economic Anxiety and Incumbent Voting

Presenter(s): Becca Baker

Advisor(s): Dr. Lewis Luartz

What impact does economic anxiety have on voting for incumbent parties? Theories of retrospective voting suggest that individuals evaluate incumbents based on objective economic conditions like financial stability, employment status and income levels. However, recent preliminary research indicates that subjective economic anxiety, which is individuals' perceptions of financial insecurity and uncertainty about future economic conditions, may play a more influential role in shaping electoral behavior. I argue that subjective economic anxiety increases an individual's perceived stakes of an election by encouraging voters to assign responsibility for economic uncertainty to the incumbent party, thus influencing them to vote against the incumbent party even when their personal financial situation is relatively stable. Using data from the American National Election Studies (ANES) 2024 Time Series Study, I estimate a logistic regression to evaluate this relationship while controlling for objective economic conditions such as employment. Preliminary results reveal a statistically significant relationship between economic anxiety and voting behavior suggesting that individuals who show greater concern

regarding their economic future are less likely to support the incumbent party. Additionally, individuals who are more worried about their current financial situation are less likely to support the incumbent and those who perceive worsening unemployment are substantially more likely to vote against incumbents. These findings support the assertion that subjective economic perceptions, particularly pessimism about future conditions and stability, play a vital role in electoral decision-making. This research has important implications for understanding electoral accountability, as it reinforces notions that incumbents may be rewarded or punished based not only on actual economic outcomes but also on how voters interpret subjective financial conditions.

70. How Does a Voter's Sexual Orientation Influence Their Vote in U.S. National Elections?

Presenter(s): Emily Matadamas
Advisor(s): Dr. Lewis Luartz

How does a voter's sexual orientation influence their vote in U.S. national elections? Existing literature on issue ownership suggests that the Democratic party "owns" the gay vote, which leads to "benign indifference" from party leaders regarding civil rights. This is problematic because it overlooks the empirical evidence that GLB voters are a group and can significantly impact election outcomes by shifting their support or withholding votes in key states during important elections. I argue that a voter's sexual orientation does influence how they vote in U.S. national elections. Using the dataset from the American National Election Studies we see the correlation between sexual orientation and how they vote. The findings suggest changes of political party and voters' sexual orientation have occurred in recent years. Specifically, GLB voters provided the decisive margin of victory in various battleground states in 2008. GLB voters are not captured constituencies and withheld their support when the democratic party failed to prioritize protections such as the Employment Non-Discrimination Act. In other words, a voter's sexual orientation influences national elections depending specific legislative accountability rather than unwavering party loyalty.

71. From Health Care Insecurity to Party Evaluations: The Role of Issue Salience and Issue Ownership

Presenter(s): Eryn Camylle Anum
Advisor(s): Dr. Lewis Luartz

How does insecurity about affording health care influence individuals' feelings toward the Republican Party? Health care is a major financial concern for many Americans, and yet the research shows not all individuals who experience economic insecurity develop negative attitudes toward Republicans, suggesting a gap in understanding when and why these concerns translate into political evaluations. I argue that the effect of health care insecurity on political attitudes depends on issue salience and issue ownership, such that individuals who prioritize health care and associate Democrats with stronger policy positions are more likely to express unfavorable views toward the Republican Party. Using data from the 2024 American National Election Studies

Time Series Dataset, I analyze the relationship between concern about affording health insurance and feeling thermometer ratings towards the Republicans, suggesting that individuals who are more concerned about affording health care tend to hold less favorable views of this party. These results highlight the importance of issue salience in shaping how economic concerns influence political attitudes, the role of political parties on issue decisions, and consequences associated with this relationship.

72. Voter Gender and US Senatorial Elections

Presenter(s): Gwenn Ricordel

Advisor(s): Dr. Lewis Luartz

This study examines whether gender influences voters' decisions to support candidates based on the political party of the senatorial candidate in the U.S. Senate elections. Existing research suggests that gender can affect voters' perception of a candidate and their political party through an understanding of their morals. I argue that voters may support candidates based on their political party because their party may influence a specific gender over the other, but it is not the sole purpose or reason that they chose that candidate. The main goal of this research is to determine whether the gender of the voter truly impacts whether they vote for a candidate based on political party, or whether their decision is rooted more on identity based morals. To test this argument, I use the 2024 American National Election Studies (ANES) and conduct an ols regression analysis to examine the relationship between the gender of the voter and the political party that the candidate identifies with. The correlation coefficient reveals a moderate positive relationship between male voters and voting for a Republican candidate. This study thus provides us with evidence that while belonging and understanding by shared identity factors may influence a voter, political parties do play a significant role in which gender votes for which party.

73. The Effect of Generational Identity on Voter Ideologies in Ireland

Presenter(s): Isis Martinez

Advisor(s): Dr. Lewis Luartz

How has generational identity of voters affected voter ideologies? Literature explains that voter ideology is greatly influenced by political institutions and historical influences that models voter attitudes as not very changing. However, literature fails to take into account how generational identity and one’s own experience in their socioeconomic situations shape voting preferences among cohorts which leaves a lack in understanding the gap between voter beliefs in different generations. I argue that voter ideologies and preferences are not shaped by generational identity, but rather they are influenced by other political factors such as socioeconomic situations and political socialization. I used an ordinary least squares (OLS) regression model to model the relationship between voter generation (IV) and that generation’s voter ideology (DV) using is the Comparative Study of Electoral (CSES) Integrated Module Dataset (IMD) with a focus on elections in Ireland from 2011 to 2016. The findings suggest that there is a weak negative relationship

between voter generation and turnout, meaning that generational differences do not shape ideological preferences.

74. Does Corruption Deter Voters? Assessing Citizen Response to Governance Failures in Mexico (2023)

Presenter(s): Kailey Swart

Advisor(s): Dr. Lewis Luartz

What is the impact of corruption on voter turnout in Mexico? With the country's political sphere of government corruption, such as bribery, favoritism, misuse of public funds, and abuse of authority by public officials, citizens' responses to these issues have left many scholars with varied outcomes. While some say perceptions of corruption can lead to lower trust in political institutions, making people feel their voices are useless and that voting is pointless, others claim that, despite corruption, many citizens still feel compelled to participate in elections to punish corrupt officials. These perspectives, when citizens believe the government is corrupt, can be broad when examining corruption; literary sources differ in the actual number of citizens who have experience with it, or in the extent to which widespread media scandals heighten corruption perceptions, which may not reflect the actual reality of Mexico's political climate. This study argues that when people believe the government is corrupt, they are less likely to participate in elections because their vote may not yield tangible policy change. Using the LAPOP Mexico 2023 Questionnaire, I analyzed this relationship using Logistic Regression. The findings suggest that the relationship between perceived corruption and voter turnout is not statistically significant; however, citizens' economic perceptions are statistically significant. This result may be because perceptions among individuals can range from high to low, meaning that while others' views of corruption may be high, the overall perception of corruption in Mexico isn't strong enough to significantly affect individuals' choice to participate in current or future elections. Compared to economic perceptions, this can be deemed a more substantial reason for citizens to participate in an election than corruption. Therefore, while corruption's effects on voter turnout are not significant, understanding citizens' responses to complex political climates is imperative for maintaining a government's stability and accountability.

75. Education Level and Voting By Mail

Presenter(s): Lily Fosmire

Advisor(s): Dr. Lewis Luartz

What impact does education level have on voting by mail? Mail in voting has become a topic of conversation in the political sphere in the past few decades, so the research is relatively new. There are gaps in the research between education level and vote method, which is what this study attempts to solve. The existing literature focuses mainly on partisan differences in voting methods, as opposed to demographic differences. It has often been assumed that education level increases as the likelihood of voting by mail increases, due to the overstudied claim that higher education leads to a Democratic vote, and that Democratic voters are more likely to use mail-in

options. I argue that the level of education positively impacts the likelihood of voting by mail because of the already established relationship between highly educated people who are less likely to leave work to vote due to the prestige of their job. However, the logistic regression I estimated using the 2024 Cooperative Election Study dataset suggests there is no significant relationship between the two variables of interest, but that other variables such as health indicated a strong relationship with mail-in voting. In short, while the findings are surprising, this model does not investigate the data at a state-by-state level which may yield different results. The model shows that the general state variable absorbs much of the effect, which could demonstrate a state-level difference and thus justify future research on this topic.

76. The Impact of Political Participation on Voting Likelihood in the United States

Presenter(s): Mario Valdespino
Advisor(s): Dr. Lewis Luartz

This study examines how political participation influences the likelihood of voting in the United States. While prior research has long established a relationship between civic engagement and voter turnout, less attention has been given to how different forms of participation vary in their impact on individuals' likelihood of voting, particularly when accounting for factors such as demographics and political attitudes. I argue that higher levels of political participation are positively associated with a greater likelihood of voting. Using data from the 2024 American National Election Study (ANES), I employ logistic regression analysis to evaluate this relationship. The results indicate that political participation is a positive and statistically significant predictor of likelihood to vote, even when controlling for relevant variables, suggesting that more politically engaged individuals are consistently more likely to vote. These findings highlight the independent effect of political participation on voting behavior and provide insight into which forms of engagement may be most effective in increasing voter turnout.

77. The Relationship Between Environmental Regulation Attitudes and Perceptions of Government Corruption

Presenter(s): Natasha Troiani
Advisor(s): Dr. Lewis Luartz

What impact do perceptions regarding climate-oriented business regulations have on whether voters think the government is corrupt? Existing research shows that politics strongly shapes environmental outcomes and public attitudes toward climate change. Political factors influence the effectiveness of environmental policies, and political trust and perceptions of government quality shape support for environmental action. However, less research defines how attitudes toward environmental regulations themselves influence perceptions of government corruption. I argue that individuals who believe environmental regulations on businesses are too strict are more likely to perceive government officials as corrupt, while those who support stronger regulations are less likely to hold these views. To test this, I use data from the 2024 American National Election Studies (ANES) Time Series dataset and estimate the relationship using a

Spearman correlation and regression analysis while controlling for political ideology and age. Preliminary results suggest that individuals who are more supportive of environmental regulations are significantly less likely to perceive government officials as corrupt, while those who believe regulations are too strict are more likely to hold these views. Although the relationship is statistically significant, the effect is relatively modest, suggesting that attitudes toward environmental regulations influence perceptions of government corruption, but other factors, particularly political ideology, play a larger role.

78. Immigration, Public Opinion, and the Rise of Right-Wing Politics in Europe

Presenter(s): Sofia Sinisi
Advisor(s): Dr. Lewis Luartz

How does public opinion on immigration influence support for right-wing parties and right-wing populism in Europe? Existing literature on right-wing parties and immigration largely treats right-wing parties as the independent variable, focusing on how they drive the politicization of immigration. This research reverses that relationship by analyzing immigration attitudes as the independent variable and examining how they shape support for right-wing parties. I argue that rising public discontent toward immigration increases support for right-wing parties and populism, as these parties are widely seen as "owning" the issue in the European political landscape. As a result, voters who prioritize immigration are more likely to support right-wing parties over left-wing alternatives.

To test this argument, I used the Eurobarometer 59.2 dataset (ZA3905) and estimated an ordinary least squares regression model. Preliminary results suggest that higher levels of dissatisfaction with immigration are associated with increased support for right-wing ideology and parties. This research contributes to the literature by showing how public opinion on immigration can help explain when and why right-wing parties gain electoral support in Europe.

79. The Influence of Social Media Use on Political Participation Among Americans

Presenter(s): Wren Wooten
Advisor(s): Dr. Lewis Luartz

How has social media use impacted political involvement, such as protests, rallies, and demonstrations, among Americans in 2024? The accessible and unrestricted nature of social networking apps allows for an array of diverse perspectives to be shared. However, as these sites are broadly unregulated, misinformation and extreme bias are widespread. Existing research within this field primarily focuses on the psychological impact that social media use has on Americans. I argue that higher levels of social media use among Americans as a primary source of information increases political participation because it encourages the dispersion of diverse ideas and makes political literacy accessible for a larger population. Using data from the 2024 ANES study, I estimate a logistic regression model to test this argument. Preliminary results suggest that higher social media use as a source of news positively impacts Americans participation in protests. Alternatively, this analysis also suggests that those who pay more

attention to politics are less likely to participate in protests, marches, or demonstrations. This topic is complex as multiple factors play into the results. However, as social media increasingly becomes a source of information for countless individuals, it's important to understand the effect that it has on people's political decision-making processes.

80. An Analysis of Socioeconomic Status and Its Influence on Voting Preferences

Presenter(s): Sophia Mejia

Advisor(s): Dr. Lewis Laurtz

This study examines how an individual's income and broader socioeconomic status influence voter registration and turnout in the United States. While existing research suggests a connection between economic resources and political participation, this study explores how specific factors, such as social class, family income group, and work status, relate to voting behavior. It also considers how major laws, policies, and economic conditions may shape both financial stability and political decision-making. I argue that individuals with higher income and stronger socioeconomic standing are more likely to register to vote because they have greater access to resources, political information, and opportunities for civic engagement, thereby lowering barriers to participation and increasing political involvement. To test this argument, I estimate an Ordinary Least Squares Regression (OLS) model using the ANES Time Series Cumulative Data File. The regression results indicate that both income and social class have a positive effect on voter participation, suggesting that individuals with greater economic resources are more likely to register and vote. These effects remain significant even after accounting for other socioeconomic variables, reinforcing the idea that financial stability plays a role in civic engagement. In contrast, work status does not have a statistically significant effect on voting behavior, indicating that employment alone is not a strong predictor of political participation. Overall, these findings are important for political scientists because they highlight how inequalities in economic resources can translate into unequal political participation, shaping who is represented in the democratic process. These findings suggest that efforts to increase civic engagement should focus on reducing resource-based barriers rather than employment, showing how socioeconomic inequality shapes political participation and democratic influence.

Psychology

81. Culture and Identity Factors in Undergraduate Research Engagement: The Role of Immigrant Generational Status Among Chapman Students

Presenter(s): Jazmin Zavala Ramirez, Louie Vitan, Julie Jaimes Castro, Sera Shimakura

Advisor(s): Dr Vincent Berardi

Undergraduate research (UGR) provides valuable opportunities for academic engagement and professional development by involving students in activities such as conducting literature reviews, analyzing data, and presenting findings. Despite university goals to make UGR accessible to all students, disparities in participation persist, particularly amongst students of immigrant origin.

On average immigrant-origin students spend approximately 9.2 hours per week on campus outside of class; but, their participation in UGR remains limited. This study aims to examine the impact of immigrant generational status on UGR engagement and assess students' perceptions of Chapman's UGR resources. As part of a mixed-methods study, we assessed students' demographic characteristics and perceptions of UGR through an online survey and semi-structured interviews to gain a more comprehensive understanding of their experiences. Our analysis investigates relationships among perceptions of UGR resources, familial and culture influence, and demographic characteristics. Preliminary findings suggest that awareness of UGR opportunities is largely informal, with students primarily learning through SONA participation, brief classroom mentions, or peer communication, suggesting a deficit in institutional advertisements of a clear pathway to involvement. Students of immigrant origin may also face significant psychological and structural barriers, including low academic confidence, imposter syndrome, time constraints, financial responsibilities, and family obligations, which make participation feel inaccessible despite strong interest. Engagement is shaped by cultural and social factors, as families often value education but lack familiarity with research pathways, and students emphasize the importance of representation and identity in fostering comfort and motivation. UGR participation may be influenced by limited institutional access, structural and psychological barriers. These findings highlight the need for clearer pathways, mentorship, and inclusive environments to improve access to UGR.

82. Testing Reverse Hierarchy Theory as a Framework for Social Cognition

Presenter(s): Natalia Keshishian
Advisor(s): Dr. Aaron Schurger

Social cognition involves the integration and pruning of details across sensory-perceptual domains in order to represent the gist of social interactions. Social cognition aptitude is not all-or-none, but rather exists on a spectrum. The field of social cognition lacks a theory that can account for the inter-individual variability in social-cognitive aptitude. Using reverse hierarchy theory (RHT) as a theoretical framework, we posed the question: what factors explain variability in social cognition across this spectrum? According to RHT, perception starts at the top of the perceptual hierarchy, pointing to perceptual abstraction as a potentially unifying factor that can explain the variance in social cognitive aptitude across individuals, including those with autism. Abstraction, roughly speaking, maps onto how high in the cortical hierarchy a representation is processed. Our hypothesis is that this hierarchy is stunted in autism, to varying degrees depending on severity. Thus, we proposed to test the correlation between measures of social cognition and experimental indices of perceptual abstraction. The first index looks at the way in which visual gist formation interacts with receptive field size, yielding a measure of the function of the cortical perceptual hierarchy. We presented Mooney face stimuli at different retinal sizes to estimate the probability of perceiving a low-contrast face as a function of the size of the stimulus on the retina. We predicted that the slope of this function would act as an indicator of social-cognitive aptitude and would covary with social cognition scores across individuals. We

have confirmed that reaction times vary based on image size across all participants. For instance, larger images take slightly longer to recognize. Data analyses focused on differences in face perception depending on retinal image size and social-cognitive aptitude are in progress, and we expect to have final results in time for the symposium.

83. Investigating Leakage in Visual Perceptual Decision-Making

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 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 certain rate and at a threshold-level information intensity. The task is to identify the orientation of the Gabor from among two options: leaning left or leaning right. If the visual system is inherently leaky then a percept will form only when the rate of evidence delivery overcomes the leakage, allowing the decision variable to reach threshold. 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.

84. Stress, Positive Affect, and Gastrointestinal Symptoms in College Students During COVID-19

Presenter(s): Saori Cochachin

Advisor(s): Dr. Brooke Jenkins

College students often experience high levels of stress, which can manifest in both psychological and physical symptoms, including gastrointestinal (GI) distress. Positive affect (PA) has been linked to improved health outcomes across a variety of physical health conditions and may serve as a potential buffer against stress-related physical symptoms. This study aimed to examine how perceived stress among college students during the COVID-19 pandemic influenced the severity of GI symptoms (e.g., nausea, diarrhea, stomach pain), with positive affect moderating the relationship. During the height of the COVID-19 pandemic, data were collected from 292 students through a questionnaire assessing perceived stress and state affect in May 2020, and a second questionnaire assessing physical symptom severity in September 2020. Linear regressions were

performed to analyze the main effects of an interaction between positive emotion and stress on GI symptoms. The results indicated that students with greater levels of perceived stress reported more severity of GI symptoms (b = 0.41, p = 0.766). However, positive affect was found not to be a significant moderator of the association between perceived stress and GI symptoms p >.05. While positive affect did not significantly moderate the association between perceived stress and GI symptoms, this study emphasizes the importance of reducing the physical manifestations of stress.

85. **Tangled Minds, Tangled Sheets: Exploring Associations among Stress, Relationship Conflict, and Relationship Quality**

Presenter(s): Abigail Rappoport

Advisor(s): Dr. David Frederick

Healthy romantic relationships are critical to overall well being, however conflict within them can erode both intimacy and satisfaction. This study tested whether relationship conflict influences sexual satisfaction both directly and indirectly through stress. Data were drawn from the National Covid-9 and Mental Health Study, which surveyed U.S adults in spring 2020 (N = 3,969; mean age = 39 years). Analyses focused on people in relationships living with their partners (n = 2,269). Consistent with my hypotheses, greater relationship conflict was associated with lower sexual satisfaction, r(2269) = -.254, and higher stress, r(2269) = .307. Stress was also negatively related to sexual satisfaction, r(2269) = -.224, showing an indirect pathway from conflict to satisfaction through stress. These findings highlight that conflict is not just about arguments in the moment, but rather it builds stress which spills into intimacy, lowering sexual satisfaction. Efforts to strengthen couples' conflict resolution skills including therapy and educational workshops may reduce stress, improve intimacy, and help protect relationship quality.

86. **The Fusion of Sexist and Racist Ideologies Harm Indian Women: Sociocultural Appearance and Femininity Pressures Shape Body and Facial Hair Attitudes**

Presenter(s): Arushi Shelvankar

Advisor(s): Dr. David Frederick

Using Gendered Race Theory and the Tripartite Model of Influence, I proposed that South Asian women are viewed as more masculine than East-Southeast Asian women and sometimes White women, leading to internalization of these racist ideologies. This study recruited 76 Indian American women from CloudResearch and used Sociocultural Attitudes Towards Appearance Questionnaire (SATAQ-4R-Female), The Skin Color Satisfaction Scale (SCSS), and Body-Self Relations Questionnaire (BSRQ) to measure appearance evaluation. South Asian women tend to have greater visible and darker body hair, such as thicker eyebrows and facial hair, seen as more masculine traits. These features substantially differ from Eurocentric beauty standards that centralize White women as conventional beauty in mainstream Hollywood. Phenotypic differences, such as darker skin, body hair, and prominent facial features such as bigger or hooked noses, contribute to the masculinization of South Asian women, which are reinforced by social

and media influences. South Asian women, in addition to body image pressures, experience pressure to feminize their appearance, which minimizes traits associated with their racial group.

87. **Body Dissatisfaction and Attention to Celebrity Culture on Social Media is Linked to Interest in Seeking Ozempic for Weight Loss**

Presenter(s): Chantal Fluetsch

Advisor(s): Dr. David Frederick

Objectification theory (Fredrickson & Roberts, 1997) and the tripartite model (van den Berg et al., 2002) are helpful for explaining why people seek GLP-1 weight-loss drugs such as Ozempic to modify their appearance. The models explain how body dissatisfaction is often linked with sociocultural influences as well as body dissatisfaction among women. I hypothesized that women who consume media that promotes the use of GLP-1 drugs, combined with a high body dissatisfaction, are less concerned about the risks Ozempic poses and more interested in using them for appearance-related motivations rather than health-related motivations. I hypothesized that women who closely follow celebrity culture will tend to have more interest in weight loss drugs such as GLP-1s for cosmetic reasons rather than health-related concerns. Women (N = 414) from an online panel service completed validated scales of body satisfaction, social attitudes towards appearance, attitudes toward celebrity media. Furthermore, we altered an interest in cosmetic surgery measure to assess different reasons for interest in weight-loss drugs, which revealed that sociocultural pressures and body image were linked to this interest. The findings highlight the key role that appearance-based concerns play in shaping the high demand for these GLP-1 drugs, and the importance of monitoring the effects of using these drugs for body modification.

88. **Temporal Comparison and Body Dissatisfaction among Women: Exploring the Role of Self-Compassion**

Presenter(s): Mia Starr

Advisor(s): Dr. David Frederick

Research has shown that women report less satisfaction with their bodies as they age, including negative perceptions of appearance and decline in health. The tripartite model posits that three primary sociocultural influences determine body dissatisfaction and disordered eating: peers, parents, and media. A key limitation of the tripartite model is it does not integrate past-self comparison, or temporal comparison, into the potential causes of body dissatisfaction. The link between past-self comparison and body dissatisfaction is an underexplored area of research, and the unpublished temporal appearance comparison measure was used in this study to further investigate female participants' attitudes toward their past selves relative to their current appearance and body image. This study also examined self-compassion as a potential protective factor against temporal appearance comparison and body dissatisfaction. A sample of adult women (N = 711) completed measures of self-compassion, thin-ideal internalization, and body dissatisfaction. Results demonstrated that women who are higher in self-compassion are less

likely to engage in past-self temporal comparisons and have more positive body image. The results of this study can contribute to a paradigm shift in how body image is viewed in society. The findings can help change the marketing and media that perpetuates standardized body image ideals, reforming the harmful messaging being received from girls and women throughout the world.

89. Impact of Knowledge Acquisition and Environment on Navigational Outcomes

Presenter(s): Dafna Chen

Advisor(s): Dr. Desiree Crevecoeur-MacPhail

Despite many years of research, scientists still have only uncovered a basic understanding of how the cognitive process of human navigation works. As it is, spatial cognition is understood to play a critical role in completing daily, necessary tasks such as packing a suitcase, finding our car in a parking lot, and navigating city streets using GPS (Desme et al, 2024), and wayfinding issues specifically have been found to be one of the earliest symptoms of dementia and neurological decline (Alam & Kim, 2023). However, due to being a single subset of the overwhelming field that is spatial cognition, navigation has been a hard subject to pinpoint. According to cognitive map theory, brains create internal "maps" to represent external spaces, which allow the organism the ability to navigate (Tolman, 1948). In the study described in this paper, the goal was to find whether knowledge of how we internalize our environments into these cognitive maps, and how our understanding of how wayfinding occurs, could help predict who will have better navigational outcomes, and if there are any other underlying factors that can affect these results. This was done by testing participants for factors that were hypothesized to affect their navigational skill, and then testing their overall navigational ability by tasking them with watching a video of a person navigating, and then showing them moments from the video when the individual was at a crossroads, and asking them which direction they thought the individual went. Assuming all hypotheses are supported, these results would provide support that there are ways to markedly improve navigational performance, which could have immense implications on how to help individuals with navigational difficulties, such as dementia patients who wander or individuals who experience injury or death after losing their bearings in nature.

90. Disorganized Attachment and Its Association With Increased Vulnerability to Eating Disorders

Presenter(s): Hazel Hagen

Advisor(s): Dr. Desiree Crevecoeur-MacPhail

Eating disorders are a significant and growing public health concern, particularly among adolescents and young adults. Although extensive research has examined various factors contributing to eating disorder development, less attention has been given to the role of early attachment experiences in shaping vulnerability to its onset. Grounded in Bowlby's Attachment Theory, which emphasizes the long-term effects of early caregiving relationships on emotional regulation and interpersonal functioning, this study explored the association between

disorganized attachment patterns and risk for eating disorders. While previous research has established links between anxious and avoidant attachment styles and disordered eating behaviors, there is a lack of research focusing specifically on the implications of disorganized attachment. Disorganized attachment is characterized by the coexistence of anxious and avoidant attachment styles, often resulting from inconsistent caregiving. Individuals with this attachment style frequently experience conflicting internal representations of relationships, which may contribute to maladaptive coping. This study aimed to further understand the relationship between disorganized attachment and eating disorder risk to offer important implications for early identification and prevention efforts, as well as attachment-informed therapeutic interventions that aim to address underlying relational dynamics.

91. Dating and Identity Exploration Among LGBT Emerging Adults: The Roles of Minority Stress and Dating Context

Presenter(s): Katrina Shirey

Advisor(s): Dr. Desiree Crevecoeur-MacPhail

This study examined the relationships between sexual identity exploration, dating involvement, minority stress, and risk-taking behaviors among lesbian, gay, bisexual, and transgender (LGBT) emerging adults. Emerging adulthood is the period between 18 and 25 years old, and this stage is characterized by exploration and increased involvement in romantic and sexual relationships, which might be influenced by the unique stressors that sexual and gender minorities face. According to identity-based motivation theory and minority stress model, the current study aims to examine whether sexual identity exploration is related to dating involvement and risk-taking, and whether minority stress moderates the relationship between sexual identity exploration and dating involvement, and between dating involvement and risk-taking behavior. The participants consisted of 50 LGBT undergraduate students. The participants completed questionnaires measuring sexual identity exploration and commitment, dating involvement, minority stress, relationship quality, and sexual risk-taking. The relationships between the variables were examined using a cross-sectional, correlational approach. The expected outcome is that sexual identity exploration is positively related to dating involvement and risk-taking, and sexual identity commitment is negatively related to risk-taking. Minority stress is expected to moderate the relationship between dating involvement and risk-taking behavior. The results are expected to clarify the mechanisms through which sexual identity and social stressors play a role in shaping the behavior of LGBT young adults, and the implications are expected to provide insights into the ways in which sexual identity and social stressors might be targeted to promote healthy identity development among LGBT young adults.

92. Symptoms on the Screen: How Social Media Drives Mental Health Confusion and Anxiety in Young Audiences

Presenter(s): Madeline Haeckl
Advisor(s): Dr. Desiree Crevecoeur-MacPhail

For some people, TikTok's "For You" page has been the cause of mental spiraling. It is easy to think about how similar the symptoms explained on the screen by our peers are to those of anxiety or extreme depression, which many people have experienced. Young adults and adolescents specifically have fallen victim to this spiral, which has been seen to cause great mental distress. Mental health diagnoses have been on the rise in recent years, and with that, so has awareness of the symptoms of these diagnoses. Social media tends to be very convincing to its viewers, and when it comes to explaining a mental illness, people can very easily be misled into believing they have a diagnosis without being told so by a mental health professional. The research in this study was guided by social comparison theory. The increase in social comparison and mental illness is creating massive amounts of anxiety surrounding mental health within our youth, and this anxiety is being perpetuated further than we know. The survey included short-form TikTok videos and a range of questions about participants' mental health. Data collection is still ongoing, but assuming all hypotheses are supported, social media usage in general and TikTok in particular tend to increase symptoms of mental illness and can cause viewers to self-diagnose if exposed to mental health content in their feed. Due to the extremely serious and evident impact of social media on mental health for young adults and adolescents, social media should be highly monitored so that there are specific qualifications for what is allowed to be posted in relation to mental health.

93. Exploring Parasocial Relationships Formed on Social Media

Presenter(s): Mia Levine
Advisor(s): Dr. Desiree Crevecoeur-MacPhail

Social media has steadily increased in popularity since its conception in the late 1990s. During this time, individuals posted about their lives and followed their friends, family, and influencers. Parasocial relationships, which are one-sided relationships between viewers and a persona, have been studied since the 1950s. Previous research found connections between parasocial relationships and actors, musicians, and attachment styles. However, very few studies focused on parasocial relationship formation with social media stars. The purpose of this study was to better understand the characteristics of parasocial relationships formed with social media influencers. This study employed a cross-sectional questionnaire at Chapman University. The questionnaire assessed the strength of parasocial relationships formed with social media influencers. It also examined how time, physical attraction, perceived similarity, and gender of the participants affected these connections. Correlation and ANOVA tests were utilized to analyze the results. We expected that participants who spent more time viewing content posted by their favorite influencer, perceived this individual as physically attractive and similar to themselves, and self-identified as women would form stronger parasocial relationships than individuals that did not

possess these qualities. These results are valuable because as social media continues to rise in popularity, it is important to understand how these platforms impact the communication skills and mental health of its users.

94. Breaking down A.B.C.D (American Born Confused Desi): Dual Identity Struggles & Mental Health Outcomes in South Asian American Youth

Presenter(s): Sanchi Kohli

Advisor(s): Dr. Desiree Crevecoeur-MacPhail

South Asian American youth are an understudied population in mental health-related research. When looking at data, we saw that in Asian American youth, suicide is the leading cause of death. The current study examined South Asian youth mental health and the confounding factors that lead to suicidality. Including parental pressures, dual identity struggles, and internalized racism. This was done specifically under the guidance of Benet-Martínez & Haritatos' (2005) theory of Bicultural identity integration. The study described how individuals with compatible or opposing cultural identities perceived their dual identities. In the case of this study, we identified whether South Asian American youth have more conflicting ideas of their cultures, and whether this led to an increase in internalized racism and stress versus a youth who is more confident in their identity. This quantitative study used a Qualtrics survey tool to survey diverse South Asian populations between ages 18-25 and yielded data to understand the effects of dual identity struggles, internalized racism, and familial pressures on South Asian American youth's mental health and suicidality. With all hypotheses supported, we utilized these results to identify the specific mental health needs of South Asian American youth. The overarching goal is to use this data to inform providers and increase accessibility to culturally competent mental health care.

95. Interpreting American Sign Language: a Literature Review of Assistive Technologies

Presenter(s): Natalie Paradiso, Emma Kochenderfer

Advisor(s): Dr. Kendra Day

American Sign Language (ASL) is a visually elaborate, spatially oriented linguistic methodology that relies on combinations of hand movements, body positioning, facial expressions, and motion/spatial perception, aspects of which make interpretation difficult for automated machine recognition. Current assistive technology approaches to ASL interpretation are generally within the categories of computer vision models (including deep learning, multi-focus image fusion, and keypoint tracking) and wearable, multimodal/sensor-based approaches (such as smart glasses and inertial-sensor gloves). Within controlled environments, computer vision models perform well. However, when applied to conditions such as non-manual signs/features, signer variability, and rapid assimilation, they falter in processing all aspects of speech. Wearable systems combat these issues but introduce their own usability issues, including difficulty with comfort and limited social acceptance. Consistent gaps persist, similar to inconsistent benchmarks, as these restricted databases remain undiverse, arising from models that minimally incorporate deaf signers in their construction. This literature review highlights the need for multi-faceted datasets with

multimodal fusion with a clear focus on human factors, advancing ASL assistive technologies to achieve real-world accessibility for the deaf community.

96. Sex-Specific Continuity in Anhedonic Phenotypes from Infancy to Young Adulthood

Presenter(s): Kaitlyn Clark, Isabella Najera, Caitlyn Roum

Advisor(s): Dr. Laura Glynn

Anhedonia, an impairment in seeking or experiencing pleasure, is a robust transdiagnostic risk factor for poor mental health. Although considerable progress has been made in the understanding of anhedonia and reward processes in adolescents and adults, very little is known about the development and expression of these phenotypes in very early life. Here, we test the hypothesis that maternal reports of infant anhedonia will predict child and young adult anhedonia symptoms. Further, because of well-documented sex differences in mental health trajectories across development, we also determine whether these associations are sex-specific. Study participants included youth from two prospective longitudinal studies of development and mental health. In both cohorts, anhedonia was assessed in infancy with the Infant Hedonic/Anhedonic Processing Index (HAPI), a validated parent-report measure of anhedonia and reward processing (Irwin et al., 2024). In Cohort 1, mothers completed the 23-item Preschool Feelings Checklist (Camacho et al., 2024), which includes items assessing social and behavioral anhedonia, when the children were approximately 5.3 years of age. In Cohort 2, the young adults (Mage =18.56) completed the Dimensional Anhedonia Rating Scale, which measures desire, motivation, effort, and consummatory pleasure across hedonic domains (Rizvi et al.,2015).

For both cohorts, infant anhedonia scores predicted later anhedonia symptoms in girls, whereas no associations were detected in boys. In Cohort 1, HAPI scores in infancy were positively correlated with higher PFC scores in females (r=.23, p<0.05). Similarly, in Cohort 2, greater anhedonia in infancy predicted more anhedonic symptoms among the females only (r=-.29, p<0.05).

These findings support the HAPI-Infant as an early indicator of anhedonia with long-term predictive value for anhedonic profiles in girls. Future research should investigate the potential biopsychosocial factors underlying sex differences in the developmental pathways from early anhedonia to later mental health outcomes.

97. Tracking Daily Mood: Examining Factors Impacting Daily Happiness

Presenter(s): Annabelle York

Advisor(s): Dr. Oliver Lopez

This project investigates how daily behaviors and lifestyle factors influence overall mood and perceived happiness over the course of a semester. The central research question is: to what extent do sleep duration, screen time, physical activity, caffeine intake, and calling my mom correlate to day to day variations in mood? Prior research in psychology suggests that factors such as adequate sleep, regular exercise, and meaningful social interactions are strongly associated with improved mental well being. On the other hand, excessive screen time and irregular routines

may negatively impact mood. This project aims to contribute a personalized perspective backed by data on how these variables interact in everyday life. The methodology involves longitudinal self tracking, where daily quantitative data is recorded on mood, hours of sleep, and screen time. Categorical variables are included as well, and indicate whether activities such as weightlifting, playing soccer, consuming coffee, and calling a family member occurred. This data will be analyzed using statistical techniques to demonstrate any correlation and trends to identify patterns and relationships between variables. It is expected that positive behaviors such as physical activity and social connection, will show a positive association with higher mood ratings, while higher screen time and lower sleep duration may correlate with lower mood. The anticipated outcome of this study will give a clearer understanding of which daily habits most strongly influence personal happiness. This will allow for more intentional decision making in the future to improve overall well being and maintain a more positive outlook on life.

98. The Double Effect Project: Identifying the Neural Correlates of Intention

Presenter(s): Ashley Waller

Advisor(s): Dr. Uri Maoz, Dr. Tomáš Dominik

Imagine a burglar unexpectedly encounters the homeowner while robbing their house. In this situation, the burglar beats up the homeowner with the intention to get away but with the foresight (and potential secondary intention) that this might cause serious injury to them. Like this scenario, most every outcome we face contains a degree of probability. If the burglar was aware of the specific probability of causing serious injury, would they choose differently? The purpose of this study was to determine whether individuals' willingness to do harm is impacted by outcome probability. In this study, participants completed a videogame task. On each trial, they tried to hit a moving target with a laser, choosing beforehand between two paths. Each path had color-coded targets associated with different outcomes, including earning money, delivering an electric shock to the next participant, a combination of these, or no outcome. Outcomes were either deterministic (100% certain; 1 outcome) or probabilistic (50% chance; x2 outcome). Participants were informed that they receive a bonus if they score better than the next participant. Lastly, they completed the BFI-2 and intention-based questions (strategy per choice type). It is expected that (1) individuals are more willing to do unnecessary harm when the outcome is presented probabilistically over deterministically, (2) men are more willing than women to do unnecessary harm when the outcome is presented probabilistically over deterministically, (3) individuals who score high in extraversion are more willing to do unnecessary harm when the outcome is presented probabilistically over deterministically, and (4) individuals who score high in conscientiousness are less willing to do unnecessary harm when the outcome is presented probabilistically over deterministically. This could shape the approach to potential scenarios for harm reduction—where resources might be needed. These outcomes might also express better ways to eventually identify neural basis of intention and therefore more accurately convict those who have done harm.

Religious Studies

99. Killing the Snake: Breaking Gender Norms in XXY
Presenter(s): Brandon Gill
Advisor(s): Dr. Ian Barnard

XXY, a film directed by Lucia Puenzo, follows Alex, an intersex protagonist. It shows her struggle within social systems in our society. Religion was incorporated to challenge gender norms, specifically within the first scene. I particularly looked at interpretations of Adam and Eve and the concept of the fall. Seeing these ideas presented in a new light in the film made me pause and consider how deeply these teachings shape our understanding of gender and identity. I will explore how XXY presents an alternative story of Genesis through its portrayal of nature and Alex's identity. By examining the film in relation to Ecologia Queer and alternative readings about creation, I determine that both spirituality and nature itself support a more fluid understanding of identity that challenges traditional Christian interpretations of gender.

Sociology

100. Bogs, Labs, Museums: An Ethnography of Bog Body Researchers
Presenter(s): Madison Andrews
Advisor(s): Dr. Kyle Harp-Rushing

In this project, I explore the ethics surrounding the scientific study of bog bodies (Iron-Age mummies interred in peaty wetlands throughout Northern Europe). I examined how they are analyzed in scholarly research, displayed in museums and popular media, and how bog body researchers themselves describe their work. I present a portrait of how those who work with bog bodies think deeply about their relationship and ethical commitments to the human remains they study, and to the wider public to which their findings are ultimately communicated.

Strategic & Corporate Communication

101. Routine and Results: Exploring Sleep, Steps, and Weight.
Presenter(s): Alan Duong
Advisor(s): Dr. Oliver Lopez

This semester, my project focuses on tracking personal health and lifestyle habits to better understand how they affect my overall well-being. I am collecting data on several outcomes, including the amount of sleep I get each night, whether I go to sleep before 12 a.m., the number of steps I take daily, and changes in my weight over time. Through this project, I hope to identify patterns between my habits and results, especially as I work toward getting leaner in the gym and maintaining a consistent eight hours of sleep each night. Ultimately, I want to learn how my daily choices impact my physical health and want to continue to develop a consistent routine.

World Languages and Cultures

102. Cultural Representation and Resistance in U.S. Media: Bad Bunny's Super Bowl Halftime Show

Presenter(s): Carolina Lansing

Advisor(s): Dr. James Hirsch

This paper aims to show how visual codes and Puerto Rican cultural symbolism function within Bad Bunny's Super Bowl LX Halftime Show as forms of representation and resistance in US mass media. It will examine how these elements communicate cultural identity within global media spaces that have not historically represented Latin American narratives. The central argument of the work explores how Bad Bunny's use of visual imagery, cultural references, and integration of his new album are not an isolated artistic choice, but a part of a broader historical movement that is at the intersection of music and expression of identity, especially those that challenge US media norms. The paper draws on Stuart Hall's encoding and decoding communication model, historical and cultural investigation of Puerto Rican and Latin American music, and visual analysis of Bad Bunny's halftime performance to examine how meaning is produced and interpreted across audiences. By incorporating theoretical frameworks on media representation with the evolution of music in Latin America as resistance and analysis of the performance; the project demonstrates how visual symbolism, language use, cultural references, and integration of the album, DeBÍ tiRAR MáS FOToS, encode messages of identity and cultural expression that are decoded differently by diverse audiences.

103. The Impact Social Media Use has on French Cuisine

Presenter(s): Annabelle Rowe

Advisor(s): Dr. Veronique Olivier

Through various media, such as the film Ratatouille, there is now a greater focus on French cuisine worldwide, as well as a broader fascination with it. The project examines the role social media plays in how French cuisine evolved and continues to evolve, as well as how the eating habits of those who use social media have changed. This thesis examines marketing tactics using social media, as many companies are increasingly willing to use it as a viable marketing option. My research will show that, similarly to the U.S., social media targets mostly younger people, who are most influenced by what they absorb while using it. Finally, my research uses a combination of interviews and research to examine the consequences, both positive and negative, of social media use on users' eating habits. A positive consequence is that small businesses and other types of cuisine get more visibility. A negative consequence is that expectations around food consumption and body image reflect unattainable, unhealthy standards, ultimately impacting self-esteem and confidence. In conclusion, social media and its use are transforming French culinary culture by making it more trend-driven, visible, and commercial.

104. The Evolution of the Rassemblement National

Presenter(s): Scarlett VanderMeer
Advisor(s): Dr. Veronique Olivier

This study examines the components involved in the recent growth of electoral support for the Rassemblement National (formerly the Front National) in mainland France. First, the project establishes the historical context which is necessary for a holistic understanding of the current success witnessed by the far-right political party, ranging from post-World War II to the early 2000s. It outlines the progression of salient historical events and core ideological pillars that had influenced the party's creation, perception, and future development. The study then considers the recalibration of the Rassemblement National after the introduction of Marine Le Pen in 2011, and the changes instituted within the far-right group. The research operates under the assumption that these changes have led to increased support for both the party and Le Pen herself, who received an unprecedented number of votes in the 2022 French presidential election. Delineating the principle facets involved in this transformation, including policy improvements and alterations, the political presence of Marie Le Pen, media influence, along with the recent popularity of far-right etymology, all contribute to understanding the party's rapid growth. Additionally, taking into account the succession of leadership from Le Pen to Jordan Bardella, public doubt and support surrounding these individuals, imparts essential potential interpretations in evaluating approval within the past four years. These findings will allow for predictions surrounding the Rassemblement National's future electoral results, estimating potential further diffusion of ideals towards members of the French republican vote, and compare these understandings of intensified support for far-right groups in France on a global level.

105. Preserving Quebec's Language and Culture Through its Modern Music Scene

Presenter(s): Caroline Seiler
Advisor(s): Dr. Veronique Olivier

Canada is a nation that was colonized by both Britain and France. Though France ceded their territory in Canada to Britain after their defeat in the Seven Years' War, the language and culture remained within parts of Canada, with both British and French influences making their mark on the territory today. Despite this, the distribution is not equal and French-Quebecers stand as a minority in the nation. Starting in the 1960's, Quebec went through an era known as the Silent Revolution that paved the way for the protection of the French language throughout the province. This project will provide a historical overview of these revitalization efforts. Next, we will investigate the recent debate within the Quebec music industry regarding government quotas that attempt to preserve and protect the French language. With social media and globalization playing a large role in the increasingly English-dominated online spheres today, the prosperity of French in Quebec is threatened yet again. Finally, this essay attempts to connect language preservation efforts and Quebec's music industry, showing how music can be used as a tool to preserve not only the French language in Quebec, but also Franco-Quebecois culture.

106. Loving by Looking: The Female Gaze Mastered by French Cinema

Presenter(s): Halle Ahn

Advisor(s): Dr. Veronique Olivier

Sapphic and lesbian representation in French cinema has been both a genre and art form extensively abused, misused and reimagined over the years, impacting the world of film with its controversial application of what is known as the "male gaze." This thesis aims to explore the different corners of this influence with the exaggerated pornography in La vie d'Adèle (2013), the authenticity in Naissance des Pieuvres (2007) and Portrait de la jeune fille en feu (2019), the sapphic context in the traditional Léon Morin, prêtre (1961), and the modern representation in La Petite Dernière (2025). My research analyzes the films' key themes and visuals with both specifically male- and female-centered perspectives from two theorists. The first, Simone de Beauvoir and her theories on gender and the second sex, showcase the difficulties of women's voices and agencies in a patriarchal society, explaining a "correct" understanding of the female experience. The second, Michel Foucault, counterbalances de Beauvoir's feminine strikes with theories of control and power, illustrating a unique way male directors conduct their spaces and final cinematography like that of a panopticonian prison. The torturous firsthand experiences from male directors like Abdellatif Kechiche and the thoughtfully curated spaces created by feminist directors like Céline Sciamma, offer an inside look of who turns the evolving wheels of sapphic French cinema in this day and age. This thesis highlights the successful and failed portrayals of romantic love between two women in French cinema, and how the "gaze" the directors use determines how we perceive women in films and in real life, and influences our society outside the cinematic community. The success in films like La Petite Dernière contributes to a new "gaze" being mastered in 21st century French films that could educate current and future Simone de Beauvoir's.

Biochemistry and Molecular Biology

1. **The Role of PRMT7 in Prolonged Doxorubicin-Induced Stress in Breast Cancer Cells**

Presenter(s): Anja Weiss, Molly Niswender

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

Doxorubicin (doxo), a chemotherapy drug, is known to alter gene expression by inserting into DNA and generating stress via the production of reactive oxygen species (ROS), highly unstable oxygen-containing molecules. This mechanism effectively causes apoptosis in cancerous cells, but can consequently cause DNA damage in healthy cells. Under healthy conditions, PRMT7 seems to be expressed during stress, attempting to maintain cellular homeostasis. However, in cancer (a state of elevated stress), PRMT7 is considered a driver of metastasis. Previous research in the Lopez laboratory has indicated that PRMT7 is upregulated when cells are exposed to cellular stressors such as ultraviolet C (UVC, 250-265nm) and ethidium bromide. In addition, histones are methylated by PRMT7 when proteins are incubated with PRMT7 and the methyl donor SAM. Since histone proteins are susceptible to stressor-induced DNA mutations in vitro, I aim to demonstrate that PRMT7 may participate in the cellular response to DNA damage by methylating histone proteins. I hypothesize that prolonged stress induced by doxorubicin will increase PRMT7 expression and make PRMT7 substrates more accessible. In particular, histone proteins package DNA into chromatin. With more methylation, transcriptional shifts will follow. Thus, PRMT7-mediated histone monomethylation will rise in cells upon doxorubicin stimulation. In altering histone binding, the subsequent change to gene expression will favor cancer proliferation and metastasis. The goal of this proposal is to investigate PRMT7's response to the cellular stressor doxorubicin and determine how the resulting histone methylation affects cancer progression. We plan to test our central hypothesis by defining how acute versus chronic stress alters PRMT expression and identifying post-translational modifications within histone proteins, thus uncovering functional cooperation between PRMT7 and DNA damage induced by the specific chemotherapy drug doxorubicin.

2. **Detecting Histone Protein Arginine Methylation Using Microfluidic Devices**

Presenter(s): Kaitlyn Pachura

Advisor(s): Dr. Cecilia Zurita-Lopez

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 toward the long-term goal of developing a portable point-of-care device that can detect methylated arginine residues with high sensitivity and specificity. To this end, we first carried out in vitro methylation reactions at concentrations and quantities comparable to those necessary in a microfluidic device. We next characterized a commercially purchased microfluidic device that utilized herringbone features for robust mixing made out of ZEONOR Cyclo Olefin Polymer (COP). Using different concentrations and flow rates, we set out to determine the conditions best suited for protein arginine

methylation reactions. Preliminary data indicate that arginine methylation can occur within this device.

3. **PRMT7-Mediated Methylation May Reveal Potential Crosstalk in Triple-Negative Breast Cancer**

Presenter(s): Molly Niswender

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

Triple-negative breast cancer (TNBC) is an aggressive subtype of breast cancer with high metastatic potential and limited treatment options, highlighting the need to better understand the molecular mechanisms that drive its progression. Protein Arginine Methyltransferase 7 (PRMT7), the only member of the PRMT family known to catalyze monomethylation of arginine residues, has been implicated in TNBC tumorigenesis and metastasis, though its specific substrates and mechanisms remain largely unresolved. This study investigates the hypothesis that PRMT7 may regulate other methyltransferases through direct methylation, representing a potential feedback or crosstalk mechanism within the PRMT family.

In vitro methylation assays were performed using recombinant PRMT7, PRMT1, PRMT5, and p53 in various combinations, followed by incubation with tritiated S-adenosylmethionine ([^{3}H]-AdoMet) to detect methylation events. Samples were analyzed via SDS-PAGE and autoradiography with progressive exposure times (3-45 days) to visualize methylation dynamics. Early exposures showed strong methylation bands for PRMT1, consistent with known automethylation activity. At intermediate exposures (7-23 days), faint new bands emerged in lanes containing PRMT7 with PRMT1 or PRMT5, suggesting potential methylation of these proteins by PRMT7. After 45 days, clear and distinct bands indicated that PRMT7 can methylate PRMT5 in vitro, with additional evidence supporting PRMT7-dependent modification of PRMT1.

These findings introduce the possibility that PRMT7 modulates the activity of other PRMTs through direct methylation, potentially influencing broader methylation networks and downstream signaling pathways involved in breast cancer progression. Further work will focus on validating these interactions in cellular contexts and determining how PRMT7-mediated regulation of other PRMTs contributes to cancer cell behavior.

4. **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.

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.

5. **Evaluating the Impact of the SPIRE Program and Influencing Factors on College Students' STEM Career Choices**

Presenter(s): Alexa Forbes
Advisor(s): Dr. Jeremy Hsu

Promoting students' interest in STEM careers remains a pressing need. We investigated factors influencing students' motivation to pursue STEM careers by assessing the impact of the Sustaining and Promoting Internship and Research Experiences (SPIRE) program, a year-long program for first-year undergraduates that provided near-peer mentorship and professional development to help students identify research opportunities and internships at a private four-year university in Southern California. Guided by social cognitive career theory (SCCT), which suggests that self-efficacy, outcome expectations, and interest are crucial determinants of career choice, we investigated: 1) How did the SPIRE program impact students' STEM career choice? 2) Do students' beliefs about their abilities impact their career choice in STEM fields?

We conducted 12 semi-structured interviews and transcribed them to conduct thematic analysis, focusing on one research question at a time. We are continuing thematic analysis, having a developed codebook and strong interrater reliability (Cohen's Kappa = 0.79) established for the first research question. For research question 2, we have reached consensus on a codebook, established interrater reliability (Cohen's Kappa = 0.78), and final independent coding is in progress.

The findings indicate that SPIRE had a positive overall impact on students preparing for STEM careers. Participants reported increased self-efficacy, strengthened professional skills development (resume and CV writing, interview preparation, LinkedIn optimization), and improved networking abilities. The program also cultivated greater interest in pursuing professional internships and research, and provided greater knowledge for navigating STEM opportunities. Students also cited benefits from attending field trips and interacting with near-peer mentors.

Our work generates insight into sustainable practices for promoting internships and research experiences, with implications for expanding these experience opportunities to advance STEM workforce growth.

6. **Adaptation to Chronic Oxidative Stress and Its Implications for Antibiotic Tolerance in E. coli**

Presenter(s): Ethan Irianto

Advisor(s): Dr. Michael Ibba, Dr. Lorenzo Leiva Araya

Oxidative stress is a common condition triggered by several environmental factors, characterized by an imbalance in the synthesis of reactive oxygen species (ROS) and the antioxidant defenses to degrade them, leading to cellular damage. 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 9 months of iterative growth cycles, we obtained strains adapted to high levels of paraquat (50 µM, 100 µM, and 150 µM), whose genomic DNA was purified and sequenced to identify mutation hotspots that enabled this adaptation to chronic stress. Our current results of 50 µM and 100 µM adapted E. coli 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. Additionally, mutations were found in the promoter region of the genes encoding a manganese transporter protein (mntH) and a multidrug efflux protein (emrE). To characterize the effect of these mutations, the expression of both genes was analyzed using real-time PCR. DNA sequences of the most recently analyzed 150 µM E. coli reveal even more cellular mechanisms and adaptations that have allowed the bacteria to survive in increasingly stressful conditions. Given that some antibiotics induce oxidative stress as a side effect of their mechanism of action, antibiotic tolerance of the mutated and wild-type strains were tested to further understand how adaptation to chronic oxidative stress affects the ability of bacteria to survive in stressful conditions not induced by paraquat. All these results could contribute to a better understanding of strategies for managing resistant strains relevant in clinical settings.

7. **Computational Discovery of Novel α7 Nicotinic Acetylcholine Receptor Positive Allosteric Modulators**

Presenter(s): Aidan Tran

Advisor(s): Dr. Tatiana Prytkova, Dr. Susan Yang

The α7 nicotinic acetylcholine receptor (α7 nAChR) is a ligand-gated ion channel involved in synaptic signaling, higher-order neurological function, and the cholinergic anti-inflammatory pathway, yet its unusually rapid desensitization has posed challenges towards therapeutic drug treatment in neurodegenerative diseases like Alzheimer's and Parkinson's. Type II positive allosteric modulators (PAMs) are compounds that can effectively prolong the channel openings. While type II PAMs such as PNU-120596 achieve this, they cause excessive potentiation through Ca2+ overload and eventually cytotoxicity, necessitating safer alternatives. In this project, a reference-guided BInD workflow was used to generate novel α7 nAChR PAMs within the PNU-120596 allosteric pocket of the 7EKT transmembrane domain. From 1,000 generated compounds,

380 passed the initial drug-likeness and synthetic accessibility thresholds, with a smaller subset of 327 possessing significant docking affinity and pharmacokinetics. Further prioritization yielded a ranked set of 27 Tier 1, 144 Tier 2, and 156 Tier 3 compounds. Tier 1 ligands displayed a mean first-pose docking affinity of -8.295 kcal/mol, with top candidates reaching as high as -9.49 kcal/mol. Additionally, these ligands possessed favorable physicochemical profiles, with QED values up to 0.91 and synthetic accessibility between 2.4 and 4.1. Pharmacokinetic profiling further indicated high gastrointestinal absorption and frequent blood-brain barrier permeability with low structural violations. High-ranking ligands preserved PNU-120596-like interactions within the allosteric cavity, such as contacts with Leu235, Met276, Ala298, and Leu278. These computational findings establish a robust pipeline for generating and identifying novel α7 nAChR PAMs with optimal binding affinities and medicinal properties. These findings support the need for experimental validation and provide a starting point for further drug development.

Biological Sciences

8. How do Student's at a Two-year College Percieve Office Hours?

Presenter(s): Grace Holick, Melody Manell
Advisor(s): Dr. Jeremy Hsu

Office hours are a valuable academic resource, yet students continually underutilize it and students don’t use it on a regular basis. This occurs also in STEM courses at two-year colleges. The study uses Expectancy-Value Theory (EVT) to determine how students find their knowledge of office hours, what motivates them to attend office hours, and what shapes their experiences in office hours through both survey and interview data. This data is compared to a four-year college as well with the same study. Findings show that students for the most part learn about office hours through their professors, classes, high school experiences, syllabi, and first day announcements, which shape their expectancy beliefs about office hours. Attendance is largely driven by utility value they find in office hours, this mostly includes content clarification, study strategies, and career-related benefits like building relationships with instructors. Additionally they see intrinsic and extrinsic value related to finding connection in office hours. Students' experiences in office hours are most influenced by instructor behavior and answers to questions as well as the structure of office hours, and whether or not other students are present. These shape both the benefits and costs that students weigh when deciding to attend office hours. Compared to a four year college student, two year college students have less sources of knowledge of office hours and different reasons for attending, For example students at a two year college attend office hours for forming connections with other students while those at a four year college don’t report this as much. Overall, engagement with office hours is shaped by expectancy beliefs, values, and perceived cost that allow for all to look at opportunities for instructors and institutions to optimize office hours use for the success of their students.

9. **Investigation of the Etiology, Practice Patterns, and Outcomes in Hypotensive Blunt Trauma Patients with Negative Chest X-Ray, Pelvic X-Ray, and FAST**

Presenter(s): Paige Kwan

Advisor(s): Dr. Oliver Lopez, Dr. Jean-Louis Bru

During the initial trauma assessment, chest x-rays (CXR), pelvis x-rays (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. This study aims to describe injury patterns and outcomes of hypotensive blunt trauma patients with triple-negative initial imaging (CXR, PXR, and FAST) and examine how other variables, such as comorbidities and vasopressor usage, influence clinical outcomes. Current studies have shown that 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. This retrospective chart review was conducted with manually collected variables, and statistical analysis was performed using SPSS and Excel. The results of this study demonstrated that patients in this cohort had injuries in four major categories: vascular injuries, high spinal cord injuries, abdominal solid organ injuries, and severe traumatic brain injuries. This suggests that although CXR, PXR, and FAST are regarded as effective methods of initial diagnosis, they do not completely rule out clinically significant hemorrhagic or neurologic injuries as causes for hypotension. Previously, there have been mixed perspectives regarding CT and early vasopressor usage for hypotensive patients. This study found that early resuscitation with blood products and selective vasopressor use enabled 93.2% of these patients to undergo CT without adverse effects, with nearly 20% receiving vasopressors early in their hospital stay and 67% receiving blood transfusions. The overall mortality rate of patients in this cohort was 5.5%, in which all patients died from severe neurologic injuries, and many had comorbidities contributing to worse outcomes.

10. **Western Diet-Induced Microgliosis in Alzheimer's Disease Pathology**

Presenter(s): Cody Newhart, G. Chuli Roules, Tumi Tran

Advisor(s): Dr. Rachita K. Sumbria

Alzheimer's disease (AD) and obesity are linked health challenges, with obesity driven by high-fat, sugary Western diets (WD) being a major AD risk factor. Microglial cells, the immune cells of the brain, play a central role in AD pathology; however, their role in WD-mediated AD pathology is unclear. To investigate the impact of chronic WD feeding on microgliosis in AD mice, we investigated the effects of WD through staining, imaging, and quantification of microglia in the brain, focusing on ionized calcium-binding adapter molecule 1 (IBA1) and triggering receptor expressed on myeloid cells 2 (TREM2). IBA1 is widely expressed on microglial cells while TREM2 is a marker of disease-associated microglia linked to AD pathology. Two-month-old female APPSAA knock-in (KI) mice carrying human Swedish, Arctic, and Austrian mutations of the amyloid

precursor protein (APP) gene, and wild-type (WT) mice, were fed a WD or control diet (CD) for 4 months. APP-WT mice without SAA mutations were also used as controls. Mouse brains were stained for IBA1 and TREM2 and imaged under 40x using a confocal microscope. Images were manually quantified to collect the number of microglia and % area positive for IBA1 and TREM2 in the hippocampus and cortex. Compared to a CD, WD-fed APPSAA KI mice showed significantly more amoeboid microglia (p<0.05) and reduced ramified microglia (p<0.05), in the cortex and hippocampus, while having no effect on total microglia number (p>0.05). The WD-fed APP-WT group showed a significant increase in hippocampal amoeboid microglia (p<0.05) compared to the CD, with no change in the cortex. Compared with CD, WD-fed APPSAA KI mice also showed significantly higher % TREM2-positive area (p<0.05), while WD-fed APP-WT mice showed no significant change (p>0.05). This shows that WD-fed AD mice carrying the SAA mutations were more susceptible to microglial activation, indicated by increased amoeboid microglia and higher TREM2 expression, representative of a worsened AD pathology.

Business

11. 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 consider thrifted items as trendy, ethical, and timeless. 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 captured online over time by comments and opinion threads featured in popular social media platforms, and will also include sentiment analysis from those sources.

Chemistry

12. Assessing the Bioaccessibility of Lead in Soils Following a Wildfire Event

Presenter(s): Sabrina Nguyen

Advisor(s): Dr. Christopher Kim

Wildfires in wildland-urban interface (WUI) regions have recently become more frequent occurring in many areas of the world, including California. The burning of residential structures in wildfires and the surrounding allows for metals from the structures to deposit into the soils beneath them, leading to possible metal contamination in the soils. Humans are most likely to come into contact with soil almost daily, with soil being commonly found where plants grow. Human exposure to the soil can pose significant health risks, especially if ingested into the body.

The study focuses on the bioaccessibility-- the fraction of which a metal is released from the soil matrix, allowing that amount to be available for absorption by the body. The soil samples are sourced from the Eaton Fire that occurred in January of 2025, courtesy of the residents in both burned and unburned residential areas. The soil samples are then placed in an environmental chamber during an allotted period of time at an expedited rate while conducting cyclic real-world temperature and humidity fluctuations. After the allotted period of time, the soil samples that have been rotated in and out of the chamber, will be subjected to a simulated gastric fluid (SGF) extraction and Inductively Coupled Plasma Optical Emission Spectroscopy (ICP-OES) for further determination of the bioaccessibility of the metals in the soil samples. We expect that longer exposure to the wet/dry cycles simulated through controlled temperature and humidity in the chamber, will increase the bioaccessibility of metals by promoting the metals into more soluble as well as mobile forms.

13. **Experimental Synthesis of β-Fluorinated Morphine Derivative for Selective Binding in Inflamed Tissue**

Presenter(s): Adel Martinez, Amelia Bayha
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 synthesis plan described in literature (Albertson & Wetterau, 1970). In Step 1, 3,4-Lutidine, a commercially available compound, is methylated with methyl iodide in the presence of anhydrous methanol to synthesize 1,3,4-Trimethylpyridinium. In Step 2, using a Grignard reagent (from 4-methoxybenzyl bromide) is added to 1-benzyl-3,4-dimethylpyridinium chloride and refluxed for 1.5 hours. Fluorination of the Grignard reaction product would precede the ring closure step achieved via Grewe Cyclization with 62% hydrobromic acid. 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.

Communication Sciences and Disorders

14. Rethinking Face Perception: Does Visual Language Experience Shape the N170 Response to Faces in Deaf Signers?

Presenter(s): Emily Hernandez

Advisor(s): Dr. Zed Sehyr

Face recognition is the cornerstone of social-emotional interaction. The N170 is an event-related potential (ERP) component associated with early visual processing of faces and is typically larger and right-lateralized in hearing adults, peaking approx. 170 ms post-stimulus onset. Expertise with specific or familiar objects increases the N170 amplitude, indicating its role in learning-induced, perceptual processing. However, sensory and language experience may shape this neural response. Deaf signers of American Sign Language rely heavily on facial expressions and mouth movements for linguistic information, suggesting that early face-processing mechanisms may be altered by visual language experience. The study examines whether deaf signers differ from hearing non-signers in N170 amplitude, latency, and scalp distribution using the standardized ERP CORE face-perception paradigm (Kappenman et al. 2021). Participants view faces, cars, and scrambled stimuli while EEG is recorded, and the N170 is analyzed at posterior sites (PO7/PO8) within the 110–180 ms time window. Our findings show that deaf signers exhibit larger and more bilaterally distributed N170 to faces, reflecting greater experience with facial cues used in sign language, with minimal group differences for cars. Previous research supports this idea, as Sehyr et al. (2020) found that deaf signers exhibit distinct N170 signatures for faces and enhanced face discrimination, suggesting that life-long sign language experience induces face-specific adaptations that may confer resilience to age-related neurodegenerative conditions.

Communication Studies

15. Gender Bias in Sports Reporting: A Comparative Analysis

Presenter(s): Sydney Brookman

Advisor(s): Dr. Jennifer Bevan

Despite increased visibility of women in sports media, the gender bias remains prevalent within the National Football League's (NFL) sideline reporting. Although there has been progress since the early 2000s, women are still underrepresented in these roles, making up less than 20% of NFL sideline reporters. Additionally, when women are seen in traditional male sports reporting, they are often regarded only for their appearance. Social media platforms such as Instagram reinforce this by enabling those with strong opinions to comment on a reporter's posts without consequence. Prior research demonstrates that both social and traditional media have continued to reinforce stereotypes that have marginalized women in sports reporting. This study examines whether female sideline reporters for the NFL receive more negative and appearance-based comments than their male counterparts. Using a comparative analysis, this research analyzes the

differences in audience reach (i.e., engagement, followers), Google search associations, and Instagram comments matched between male and female reporters from major broadcast networks. The content analysis includes dividing comments into different categories such as positive, negative, neutral, and appearance-based. Findings on the Instagram analysis indicate that women receive a higher proportion of appearance-based comments compared to men. Research also suggests that people are more curious about male sideline reporters' professional careers, whereas for the women they ask more about their personal relationships and private life. These findings demonstrate that there is a gender bias in sports sideline reporting which is amplified through social media. This study contributes to ongoing discussions about gender inequality in sports reporting, with a goal of breaking down these barriers to lessen these gender disparities in the future.

16. Examining Parasocial Relationships with AI Among Undergraduate Students

Presenter(s): Alexa Forbes, Benjamin Davis, Taya Good-Smith, Morgan Montesi, Isaac Storms

Advisor(s): Dr. Rebecca Tukachinsky Forster

Our study examines how young adults and college students may develop parasocial relationships with ChatGPT. Parasocial relationships are one-sided psychological bonds formed through media consumption, typically with influencers or celebrities who are unaware of the individual. We will explore whether loneliness and guided prompts influence this process. Unlike traditional media figures, AI can simulate interaction, potentially fostering familiar connections. College students often face changing social environments, increasing loneliness, and reliance on low-risk interactions. Because ChatGPT is consistently available, responsive, and nonjudgmental, it may serve as a platform for forming perceived relational bonds.

This study tests two hypotheses by conducting a timed interaction experiment with ChatGPT. To test these hypotheses, undergraduate participants will be assigned to either a social-oriented or task-oriented prompt condition and asked to interact with ChatGPT over the course of one week. Participants will complete survey measures assessing loneliness and the extent of parasocial relationship development following the interaction period. The two types of prompts we will ask participants to enter are task-oriented or social-oriented, which will determine how close a bond is created between college students/young adults and ChatGPT.

First, students who report higher levels of loneliness will be more likely to develop parasocial relationships with ChatGPT after consistent interaction over a one-week period than students who report lower levels of loneliness. Second, students who use social-oriented prompts with ChatGPT will report stronger parasocial relationships than students who use task-oriented prompts. Social-oriented prompts encourage emotional reflection and conversational dialogue, whereas task-oriented prompts focus on completing assignments or retrieving factual information.

17. How Celebrity Crushes Affect Real Life Romantic Relationship Satisfaction, Commitment, and Investment

Presenter(s): Emily Yancey, Lindsey Heinecken, Courtney Mulvoy, Ripley Sobo

Advisor(s): Dr. Rebecca Tukachinsky Forster

Our study examines how fantasizing about crushes with media figures may influence individuals' evaluations of their own romantic relationships. Parasocial relationships are one-sided emotional or romantic attachments that audiences form with media figures. As exposure to such figures has increased through social media and entertainment media, individuals may begin comparing these idealized alternatives to their real-life partners. Understanding how these comparisons shape perceptions of relationships is important because parasocial relationships may influence expectations and satisfaction within romantic relationships. We hypothesize that participants who reflect on a celebrity crush will report lower relationship satisfaction compared ot participants in a neutral control condition. We also hypothesize that participants in the parasocial relationship activation condition will report lower commitment and behavioral investment in their current relationship, as well as greater openness to alternative romantic options. To test these hypotheses, participants will be randomly assigned to one of the three conditions: writing about their celebrity crush, writing about their current romantic partner, or writing about a neutral topic. After completing the writing task, participants will complete survey measures assessing parasocial attachment, relationship satisfaction, and commitment.

18. Perception of Parasocial Romantic Relationships

Presenter(s): Lily Hopkins, Lexi Torres, Jaime Brienza, Tate Schuda, Cara Adams

Advisor(s): Dr. Rebecca Tukachinsky Forster

This study examines how respondents perceive parasocial romantic relationships (PSSRs) when presented with a story depending on the age and gender of the person engaging in the PSSR. PSRRs are defined as one-sided romantic connections to media figures. Depending on the people involved, social acceptance may vary. We hypothesize that participants will view a teenage female in a PSRR as the most socially acceptable, whereas an older male will be viewed as the least acceptable. We developed four articles featuring a character named "Parker" participating in a parasocial romantic relationship. We manipulated the age and gender of "Parker," creating one 16-year-old girl and boy, one 50-year-old man and woman. To test these hypotheses, an online experiment is carried out. Then, participants are asked about how they view the PSSR between Parker and the celebrity and how they view Parker personally, after reading the stimulus.

19. Against Type: How Unexpected Casting Influences Audience Engagement With Films.

Presenter(s): Kendall Barger, Simone Jackson, Liv Huntley-Robertson, Abbey Werner, Seif Al

Advisor(s): Dr. Rebecca Tukachinsky Forster

This study aims to examine how audiences evaluate actors when they are cast in roles that either match or deviate from their typical on-screen persona. Film audiences often develop expectations about actors based on repeated exposure to their previous roles, a phenomenon commonly

referred to as typecasting. When actors are placed in roles that contradict these expectations, audiences may respond differently to film advertisements, and their intentions to watch the film may change. Understanding this process is important because casting decisions and audience perceptions can influence the effectiveness of film marketing and overall audience engagement. This study draws on research related to typecasting and parasocial relationships, which suggests that viewers form psychological connections with media figures and develop expectations about their behavior and character portrayals. We hypothesize that when an actor appears in a role consistent with their established persona, participants will report higher anticipated engagement with the film. Additionally, parasocial attachment to the actor is expected to moderate these effects, such that viewers with stronger parasocial relationships may react more strongly to role-type matches or mismatches. To test these hypotheses, participants will complete an online experiment in which they are randomly assigned to view a movie advertisement featuring an actor in either a role-type match or a mismatch condition. Participants will then complete survey measures assessing parasocial attachment, perceived character morality, and anticipated film engagement.

Computer Science

20. **Evaluating Team Formation Strategies Using MR-QAP Analysis in Collaborative Classroom Projects**

Presenter(s): Ethan Lopez, Andy Vo
Advisor(s): Dr. LouAnne Boyd

Given effective teamwork is essential for collaborative learning, this study investigates how different team-building methods affect students' social and academic compatibility. Building on prior work in Celebratory Technology for Neurodiversity, we use visual social network analysis to examine interaction patterns in technology-mediated environments. Prior research on assistive technology has largely focused on behavioral interventions. However, recent research into Celebratory Technology highlights the importance of designing technologies that affirm identities to promote inclusiveness. This project contributes to that direction by examining how grouping algorithms can help alleviate social stigma in long-term teams. Students were initially assigned to teams using one of three algorithms: (1) random assignment (control), (2) a “diverse communication styles” condition using a reverse round-robin approach based on selected survey items, and (3) a “most matches” condition using a regular round-robin method to maximize similarity across those same variables. Following an initial collaboration period, students were given the opportunity to reorganize into self-selected groups. We model the relationship between initial assignment and final group selection using MR-QAP, allowing statistical comparison of relational data while accounting for network dependencies. Independent variables include the algorithmic grouping conditions and communication-style similarity measures, while the dependent variable captures changes in group membership between assigned and self-selected teams. We hypothesize that “diversity in communication styles” will produce distinct patterns of

group persistence or reorganization compared to "random" and "most matches" conditions. Results, including significance testing (p-values), centrality, and other metrics will be discussed to support this. This work contributes to a deeper understanding of how human-centered, algorithmically generated teams evolve and informs the design of more effective grouping strategies in collaborative environments.

Dance

21. Teaching Approaches and Psychological Effects in Elite Dancers

Presenter(s): Erin Wienke

Advisor(s): Dr. Desiree Macphail

Personal experience growing up as a competitive dancer has sparked interest in the topic relating to the psychological effects of dance teachers and their instructional approach on dancers, specifically at the elite level. Mental health has become a prevalent issue in competitive sports. Within the range of potential stressors that increase vulnerability to mental health in athletes (Rice et. al., 2016), interest lies in the teacher's role, specifically in dance. As a leader with authority, teachers and coaches are very influential, and different methods of instruction may fulfill or neglect students' psychological needs (Trine University, 2021). Generally speaking, about 5-35% of elite athletes report a mental health disorder in their career (Reardon et al., 2019), with the most prevalent being depression, eating disorders, and anxiety. The theory used to guide this research is Self Determination Theory (Deci & Ryan, 2000). The purpose of this study is to examine how various teaching methods in elite dance environments influence psychological well-being in dancers. The scales used examined motivation, self-efficacy, and engagement. These surveys, originally conducted for athletes/sports environments, were tailored to a dancer-only population. The results are to be determined with the undergoing study, however, assuming each hypothesis is supported, this indicates the importance of support in the student-teacher relationship to promote learning and performance and avoid burnout in elite dancers. Implications derived from the study include a shift in the way dancers are trained, bringing more attention to teaching style and the specific needs of individual students to enhance the overall training experience and mental health of elite dancers- creating a sustained positive relationship with dance leading to career longevity.

22. Development of Eating Disorders in Dancers

Presenter(s): Sydney Bacon

Advisor(s): Dr. Desiree Crevecoeur-MacPhail

Dance has existed for years, evolving from a form of communication and cultural expression into a highly competitive sport. This shift has introduced tough and often unattainable physical and aesthetic standards, putting significant pressure on dancers from instructors, peers, and societal expectations. Many dancers adopt harmful behaviors, such as disordered eating, in order to meet these demands and maintain peak performance, which are often seen as necessary for success

and to regain control of their bodies. This study examined the causes and consequences of eating disorders within the dance community, focusing on sociocultural influences and perfectionism. Pulling from the sociocultural theory, the research explored how social interactions and cultural norms shape dancers' perceptions of their bodies and performances. Perfectionism, defined as an overreliance on self-evaluation based on strict personal standards, was also considered a major contributing factor to these behaviors. By analyzing the interaction between external pressures and internal psychological traits, this study aimed to better understand dancers' vulnerability to disordered eating and the broader implications for their physical and mental health. If supported, these findings highlight the need for systemic change within both dance culture and society as a whole, including the promotion of training practices centered on both mental and physical health, increased education for instructors, and more inclusive representations of dancers' bodies in the media. Ultimately, this research emphasizes the importance and necessity of prioritizing well-being and sustainability when assessing a dancer's success and achievement, rather than the rigid aesthetic ideals currently in place.

Data Analytics

23. A Personal Data Study of Health, Habits, and Daily Life

Presenter(s): Alejandro Noriega
Advisor(s): Dr. Oliver Lopez

Self tracking is a growing area of research that uses personal data to better understand behavior, health, and everyday decision making. Studies in personal information science show that when people consistently record daily habits, they can see patterns that are normally overlooked and use those insights to make more intentional choices. The objective of this project is to analyze my lifestyle, health, and routine by tracking ten areas of my life over the course of one semester? This question is important because habits such as sleep, exercise, spending, screen time, and diet can strongly affect overall well being and productivity, however their relationships are often difficult to notice without organized data. I will create a semester long personal dataset by tracking ten variables including: weekly takeout frequency, daily sleep duration, weekly running mileage, weekly body weight, daily screen time, weekly workout frequency, daily wake up time, daily water intake, daily spending, and daily step count. Throughout this semester, I have been collecting this data and performing preliminary analysis by visualizing my data. I will continue to analyze my data using averages, trends, comparisons, and visual patterns in the data. This purpose of research is to show the connection between my daily habits and my overall lifestyle, while highlighting how small choices can shape long term habits.

Digital Arts

24. Giving Plants a Voice: Designing a Conversational Agent for Plant Care

Presenter(s): Elizabeth Bork, Lucy Periale

Advisor(s): Eric Chimenti, Maliheh Ghajargar

As Artificial Intellignece continues to expand industries and everyday life, it is crucial to consider how artificial agents could be used to improve our interactions with the natural world. From botanical classification to better understanding plant health and care, AI can help us "give a voice" to plants and learn more about them. To answer the question "How can AI conversational agents aid in botanical literacy to help inform users on plant care and health?" We first began with researching the interface and function of plant identifier apps and a series of popular Conversational Agents from Amazon Alexa, to the Google Home product lines. We found similarities in the physical construction of the products, but also overlaps in the Large Language models these devices used and their ability to answer more in depth questions than the plant identifiers apps alone. Insights from this research informed the design of a prototype device called LadybugAI, a plant scanning assistant capable of identifying plant species and responding to user questions about plant care through conversational interaction. The project progressed through multiple stages of ideation, sketching, and physical prototyping, culminating in a 3D printed prototype. The final prototype was applied to user testing with the Wizard of Oz methodology and autobiographical design, which simulated conversational interactions to observe usability challenges, and learning outcomes. We found that conversational interaction allowed the user to view LadybugAI as a companion tool and encouraged free flowing conversation that taught the user about the plant's care, health, and condition. Our testing also highlighted improvements in the design from shifting button size and placement, to revising the clip feature so as not to damage plants. While proving beneficial in showcasing the roles of a companion tool and conversational agent, future works are still needed to appeal to a larger demographic and consider more diverse uses.

Electrical Engineering

25. Sustainable Additive for Plant-Based DLP Resins

Presenter(s): Josephine Velez

Advisor(s): Dr. Nicole Wagner

This project will investigate whether bio-based additives can enhance the mechanical performance and hydrophobicity of photopolymer resins used in 3D printing. While synthetic modifiers are commonly employed to adjust resin properties, growing interest in sustainable materials highlights the need for renewable alternatives that reduce dependence on petroleum derived components. Building on existing research in biopolymer composites and plant-based resin systems, this study examines micronized carnauba wax as a natural reinforcing additive for

a soybean-derived photopolymer resin. In this study, resin blends will be formulated with varying weight percentages of carnauba wax in the soybean-based resin, Anycubic Plant-Based UV Resin 2.0. The viscosity of each formulation will be measured to assess printability in a digital light processing (DLP) additive manufacturing technique. Tensile test specimens will be fabricated from each formulation using a resin Asiga Max UV DLP 3D Printer. An Instron universal testing machine will be used to conduct tensile tests on specimens to evaluate stress–strain behavior. Results from each formulation will be compared to those for pure resin to determine how wax concentration influences mechanical performance. The addition of carnauba wax to the base resin is expected to function as an effective reinforcing filler while maintaining the hydrophobic characteristics of the soybean-based resin. By mixing carnauba wax into the base resin, hardness, tensile strength, and water hydrophobicity are expected to increase. The anticipated findings aim to demonstrate a scalable, environmentally conscious approach to enhancing plant-derived 3D printing resins through the integration of a renewable, plant based additive.

English

26. The Weight of the Unknown: Xenophobia in Lucía Puenzo's XXY

Presenter(s): Daylen Motamed
Advisor(s): Dr. Ian Barnard

This project examines how Lucía Puenzo's film titled XXY critiques societal responses to unique identities (specifically intersex as an example), asking how xenophobia and normative gender expectations shape the marginalization of bodies that exist outside the binary. Situating the film within scholarship on queer adolescence and intersex representation, the analysis of this poster will argue that XXY exposes how institutions such as medicine and family reinforce harmful notions of "normalization."

Drawing on close textual analysis of key scenes and engagement with critical sources, including Guillermo Olivera's work on space and visibility and testimonies from intersex individuals, this study investigates how language, character dynamics, and narrative structure reveal underlying cultural anxieties about difference. In presentation, particular attention is given to interactions between Alex and Álvaro, as well as discourse surrounding surgical intervention, to demonstrate how seemingly compassionate perspectives often perpetuate the belief that intersex bodies require correction.

The project finds that the film ultimately reframes the perceived "problem" of intersex identity, shifting the focus away from the body itself and toward a society unwilling to expand its understanding of gender. In doing so, XXY challenges viewers to confront their own complicity in systems of exclusion and to reconsider the ethical implications of normalization practices. This analysis concludes that Puenzo's film contributes to broader conversations in gender and sexuality studies by emphasizing autonomy, visibility, and the necessity of dismantling xenophobic frameworks that define difference as deficiency.

27. Performing Realness: Identity, Survival, and Power in Paris Is Burning

Presenter(s): Elissia Presti
Advisor(s): Dr. Ian Barnard

Central Research Question / Purpose:
This project examines how "realness" in Jennie Livingston's Paris Is Burning (1990), a documentary about Black and Latinx queer ballroom culture in Harlem, functions not merely as an imitation of dominant identities but as a strategic practice of survival shaped by power, inequality, and cultural negotiation.
Scholarly / Research Context:
In the film, participants compete in ballroom events, where they perform and are judged on how convincingly they embody socially valued roles such as heterosexuality, wealth, and normative femininity. While realness is often understood as mere imitation, this study reframes it through José Esteban Muñoz's theory of disidentification and critical perspectives from scholars such as Drake Harris, Ryan Ashley Caldwell, and Phillip Brian Harper. In doing so, it contributes to discussions in queer theory and performance studies about how marginalized individuals construct identity within systems that exclude them.
Methodology:
Methodologically, this project combines close analysis of key scenes from Paris Is Burning with theoretical application, focusing on how gesture, fashion, and performance construct identity within specific social conditions.
Expected Results / Conclusions:
The findings suggest that realness operates as both a creative and pragmatic response to systemic exclusion, revealing identity as something actively produced through repeated social codes rather than inherently possessed. At the same time, ballroom performance does not dismantle broader structures of racism, class inequality, and heteronormativity. Ultimately, this research concludes that identity in Paris Is Burning is shaped through ongoing negotiation with power, where moments of empowerment and imagination coexist with persistent structural constraints, emphasizing survival as central to the performance of self.

28. A Moment In Time; Disrupting LA Glamour and Centering Realism in "Tangerine"

Presenter(s): Emily Murden
Advisor(s): Dr. Ian Barnard

This project examines Sean Baker's 2015 film Tangerine as a disruptive response to the glorified glitz and glamour of Los Angeles often portrayed in mainstream, Western media. I focus on the film's choice of iPhone cinematography and how the camera work, plot, and themes presented, made the film an incredibly compelling and transformative watch. Drawing on Maegan E. Malone's work throughout, my analysis highlights how this raw, immersive, vibrant aesthetic, and unconventional camera techniques help in conveying this real, and grounded experience, playing a key role in how trans characters are represented through the screen.

This project also explores how Tangerine stands out as one of the first films I had watched in which trans characters are not defined solely by their gender identity, but in complex and passionate ways. Sin-Dee and Alexandra's friendship emerges as the film's core, emphasizing these themes of vulnerability, loyalty, and hardship. Using Mey Rude's article, I discuss how the film is positioned as one of the very few examples that avoids "othering" trans characters in media, instead presenting characters whose identities, passions, and hardships go far beyond these oppressive societal stereotypes.

Lastly, my analysis explicates how Tangerine extends this realism across all characters represented in the film. It's a complex piece, with complex stories, and complex people. Noted in my peer Daylen Motamed's film response, the character Razmik's hardships bring up these complexities on how identity and sexuality can also be shaped and often constructed by cultural expectations and societal pressures. Ultimately, Tangerine centers a shared humanity by cultivating a chaotic but unifying final scene. Tangerine completely breaks the stereotypical power dynamics and hierarchies exhibited in the media; no one is purely right or wrong. It's just a group of people, in a place, experiencing a mere moment in time.

29. It's Almost Progress: The Problem with Tangerine

Presenter(s): Kaitlyn Lee

Advisor(s): Dr. Ian Barnard

In this presentation, I compare the film Tangerine to the issues discussed in the documentary Disclosure to evaluate the progress and limitations of trans representation. Disclosure discusses the history of trans representation in Hollywood, featuring interviews of different transgender individuals, highlighting the lack of authentic representation and critiquing many existing movies throughout history for their harmful tropes and stereotypes. Tangerine follows two trans women who are sex workers throughout Christmas Day in LA. I argue that while Tangerine represents a significant shift in authentic trans representation by casting trans women, and letting them have input in the making of the film, ultimately it still perpetuates many of the harmful tropes and stereotypes often used in Hollywood that Disclosure discusses. Tangerine normalizes violence against trans women and reinforces narrow perceptions of trans women by having their entire story revolve around sex work. Additionally, the film fails to give official credit to the trans women as writers who helped shape the story, highlighting the broader industry power imbalances in Hollywood. My analysis showcases that though increased representation is a small step in the right direction, it is not always enough. Even a more progressive film like Tangerine can perpetuate harmful narratives as the film reinforces dominant stereotypes rather than challenging them.

30. **Evaluating how Patriarchal Standards Shape Minority Communities Through the Film Paris Is Burning:**

Presenter(s): Katelyn Karcher

Advisor(s): Dr. Ian Barnard

This poster examines how patriarchal standards shape the experiences and internal dynamics of minority communities through the lens of Jennie Livingston's film Paris Is Burning. While patriarchy is often discussed in relation to dominant cultures, its influence within marginalized groups is just as significant, though seemingly less visible. This paper argues that patriarchal norms are not only imposed externally through broad systems of power, but are also individually internalized within minority communities themselves. As a result, these norms tend to reinforce gender hierarchies and limit expression, especially for queer individuals. By looking at cultural practices, the ball community, and social expectations, this poster explores how the patriarchy intersects with race, ethnicity, and identity to create layered forms of disempowerment. This poster also considers the tension that arises when these standards both help preserve cultural identity and contribute to inequality. Ultimately, this poster shows that examining the patriarchy within minority communities is necessary for understanding how power, identity, and communication operate both within these groups and in relation to the wider society.

Environmental Science and Policy

31. **Then and Now: Historical Comparison of Floodplain Ecosystems, Vegetation and Land Coverage Diversity of Santiago Creek**

Presenter(s): Emily Aghajani

Advisor(s): Dr. Sam Stein

Santiago Creek is 34 miles long and a tributary that flows into the larger Santa Ana River in Orange County. Due to heavy flooding and urbanization, the creek was channelized with concrete, and the banks were lined with boarding. This altered the natural functions it once provided, like groundwater recharge, supplying the floodplain ecosystem with water, and nutrient recycling. Using a space-for-time analysis, we used a less developed stream, Modjeska Creek, as a proxy for a less developed Santiago Creek, comparing it to the current lower Santiago Creek's hydrogeology. Transect lines were established perpendicular to the rivers in the upstream and downstream regions to analyze land cover diversity. Quadrats were used to assess biodiversity in floodplain ecosystems using the Shannon-Weiner Diversity Index. Biodiversity measures were done on both the right and left banks of both rivers, with the reaches divided into Upstream, Midstream, and Downstream. In the same reaches, we used remote sensing data from LANDSAT, and the Normalized Difference Vegetation Index (NDVI) was calculated. We found that the pre-channelization era of Santiago Creek had higher diversity and coverage within the floodplain ecosystem than the current state of urbanization. Overall, the more natural stream had higher NDVI values that remained stable throughout the year, suggesting that Modjeska Creek has hydrological conditions that support dense vegetation, unlike Santiago Creek. The pre-

channelized river had greater recharge, allowing for more diverse and abundant riparian foliage to inhabit the floodplains. The hydrogeological analysis of pre- and post-channelized creeks helps close knowledge gaps in understanding these urban systems.

32. **Influence of Native Riparian Vegetation on Sediment Stability in the Santiago Creek Watershed**

Presenter(s): Ruby Thompson

Advisor(s): Dr. Sam Stein

Riparian vegetation is important for reducing erosion and keeping sediment in place along stream channels. In Southern California, many riparian zones have been damaged by urban development, which has led to less vegetation and more channelized streams. The Santiago Creek watershed shows a strong contrast between areas with healthy vegetation in less developed regions and more developed areas downstream. Studying how native plants affect sediment movement in these different environments can help guide future restoration projects. We hypothesized that areas with more native vegetation will have less erosion and more sediment buildup compared to areas with little or no vegetation, and that planting certain native species in areas that erode easily may help slow water flow and increase natural sediment deposition over time. We studied two sites in the Santiago Creek watershed. At each site, we recorded the vegetation species present and ground cover per species. To measure sediment transport, we used erosion pins anchored in the streambank to record erosion and deposition rates. Data was collected before, during, and after the bulk of the rainy season. As expected, areas with more native riparian plants showed less erosion and greater sediment buildup. We used this data to make recommendations for future restoration efforts in the creek. Native riparian vegetation stabilizes streambanks and reduces erosion in urbanized watersheds. In Santiago Creek, sites with native plants retained more sediment and showed less channel degradation. These results support using native species in restoration to improve sediment retention and ecosystem resilience in Southern California streams.

Film

33. **Dressed for the Part: Costume, Silhouette, and the Construction of Femininity in 1950s Disney Animation**

Presenter(s): Bailey Cunningham

Advisor(s): Emily Carman

This project examines how costume design functions as a central element of character construction in 1950s Disney animation, asking how animated clothing translates postwar fashion ideals into visual representations of femininity. While Disney films are often treated as products of fairy tales, scholars in film and media studies have examined them as cultural texts that reflect gendered ideals, particularly through narrative structure and the stylized animated body. With that said, however, less attention has been given to costume design as a formal component of

animation. Building on work in animation studies, feminist film theory, and fashion history, this project focuses on Cinderella (1950), Alice in Wonderland (1951), and Sleeping Beauty (1959) to analyze how costume and silhouette operate within animation. Through close visual analysis of movement, proportion, and design, the study demonstrates how clothing is simplified and stabilized to maintain clear silhouettes. In Cinderella, the ball gown reflects the structure of Christian Dior's New Look, while Alice's simpler dress presents a controlled model of femininity. These examples show that costume does not function as decoration, but shapes how femininity is constructed. By examining costume as part of animated form, this project demonstrates how visual design produces cultural meaning.

34. Spectatorship and Legacy: The 2000s Hip-Hop Musical

Presenter(s): Evan Legaspi

Advisor(s): Emily Carman

This project uses a theoretical framework to read the hip-hop musical under a scholarly lens, placing the cultural impact and popularity in conversation with the subgenre's absence in the film canon. Specific texts analyzed include but are not limited to You Got Served (Stokes, 2004) and the Step Up franchise. The foundational theory draws from Linda Williams's concept of body genres; with Janet Staiger's work on canon formation, and scholarship on performance and spectatorship, I argue that these films must be read not as dismissed popular spectacle but as culturally specific texts with appeal that depends on a shared hip-hop literacy. Through textual analysis, attention to the genre's sociocultural context of the 2000s, and studies on nostalgia, this paper shows that the hip-hop musical was a powerful subgenre regardless of dominant critical frameworks overlooking it. As a scholar, I find my avowed identities as a former dancer and racial minority prominent in elevating these texts to a deserved place in scholarship. Using the hip-hop musical's durability, this essay challenges conventional ideas of which works in cinema are placed into the film canon and invites a more inclusive understanding of film history.

35. Killers, Ghosts, and Survivors: The Role of Violence in Modern AAA Video Games

Presenter(s): Quinn Danner-Forde

Advisor(s): Emily Carman, Jacob Bohrod

The biggest, most expensive video games by the most prominent studios (called AAA games) have recently had to deal with the issue of the violence they present, with their worlds becoming so detailed and lifelike that it is impossible to ignore the killing the player so often undertakes. By comparing two recent, high-profile AAA games, Ghost of Tsushima (Sucker Punch Productions, 2020) and The Last of Us Part II (Naughty Dog, 2020), and the ways these games frame violence, I argue that the ways in which modern AAA games examine the violent acts the player commits reflect the intended gameplay experience of the game. In Ghost of Tsushima, enemies are deliberately dehumanized and alienated from the player in order to encourage the player to be more violent, imparting the feeling of being an almost superhuman anti-hero. The player becomes a one-man army, facing down hordes of enemies with ease. In contrast, The Last of Us

Part II highlights the humanity of its enemies to prompt the player to think critically about the role of violence in video games and the part they play in it. The player characters are desperate survivors who are always coming incredibly close to death. Through their narratives, gameplay mechanics and objectives, and enemy appearance and behavior, the two games send very different messages and affect the player in very different ways. The issue of violence is central to both games, and is the core of their narratives, but is used to create two very different results.

36. Negotiated Authorship and Feminism in Greta Gerwig's Barbie

Presenter(s): Mayeh Thomas

Advisor(s): Emily Carman

This paper examines Greta Gerwig's Barbie as an example of negotiated authorship within the constraints of corporate contemporary Hollywood filmmaking. It argues that Gerwig employs surface-level feminism in the film not as a failure of depth, but as a strategic tool to critique the male-dominated film industry while maintaining creative agency within a blockbuster intellectual property. By analyzing and contextualizing Gerwig's entire filmography, dissecting her use of signature elements throughout Barbie, and examining the context of female authorship within the modern era of conglomerates and corporate mandates, this paper demonstrates how Barbie balances individuality and industrial limits. By situating the film within the contemporary media landscape, overrun by conglomerates, franchises, and corporate mandates, my analysis reframes critiques of the film's perceived lack of feminist rhetoric. Rather than signaling weakness, these elements reveal a calculated negotiation between authorship and capitalism. Gerwig uses spectacle, irony, and sincerity to transform a mass-marketed brand into a self-aware text that simultaneously participates in and critiques its own industrial conditions. This paper reveals that Gerwig's auteur status is not diminished by these constraints, but instead redefined through them. Barbie presents a model of authorship that is collaborative, self-conscious, and shaped by corporate structures, rather than existing outside of them. Ultimately, this analysis suggests that in an era dominated by global IP and media consolidation, female directors can still exercise agency. By working within the system rather than rejecting it, Gerwig exemplifies an evolving form of auteurism that expands the possibilities for women navigating the contemporary film industry.

Health and Strategic Communication

37. A Feverish Fear: Examining the Fear of Epidemics with the Fear of Losing One to Illness

Presenter(s): Joseph Rinaldi

Advisor(s): Dr. Ann Gordon

This paper examines how pandemics, epidemics, and other illnesses foster fear in the public, shaping behavior, social relationships, and attitudes towards health. It will explore these fears, especially the idea of losing a loved one or themselves to one of these illnesses, and how they shift their psychological well-being and decision-making during these health crises. By analyzing

historical outbreaks alongside the recent COVID-19 pandemic, this study will identify patterns in emotional reactions to these issues and in how people adapt to them. Epidemics have often created both physical and psychological suffering, whether it is a simple flu or the revival of measles. These diseases often harm one's mental health, making them more cautious about the lives around them, including their own. This study examines collective fear caused by epidemics, pandemics, and other illnesses. The overall anxiety developed from these illnesses often leads to negative impacts on one's life, whether it's becoming overprotective and overly anxious, both on a physical and psychological level. The study attempts to prove that a person's fear of the revival or rise of a pandemic, epidemic, or other illness shares a heavy correlation with their fear of themselves or a loved one gaining a serious illness, ultimately showing the overall effects this has on a person in both a physical and psychological way.

38. From Energy Boosts to Bedtime: An Analysis of Caffeine Intake and Sleep Habits

Presenter(s): Abigail Kim
Advisor(s): Dr. Oliver Lopez

This project examines the relationship between caffeine intake and sleep patterns over the course of a semester. Caffeine intake was measured by recording the specific amount of caffeine in milligrams, while sleep was measured by recording the total number of hours of sleep every night. The purpose of this study is to better understand how everyday consumption habits may influence sleep behavior in a college student's routine. Statistical analysis was used to identify patterns, describe overall trends, and measure the strength and direction of the relationship between the two variables. It was expected that higher caffeine intake would be associated with less sleep, since caffeine is commonly used to increase alertness and may interfere with the ability to fall or stay asleep. The findings of this study may provide insight into how caffeine consumption affects rest and highlights the importance of monitoring daily habits that influence overall well-being.

39. Beyond the Headache: An Analysis of Chronic Migraine Patterns in Relation to Treatment Timing, Physical Activity, and Hormonal Changes

Presenter(s): Francesca Snyder
Advisor(s): Dr. Oliver Lopez

Chronic Migraine is an invisible neurological condition that significantly impacts one's quality of life and well-being. After sustaining a sport-related mild traumatic brain injury in the Spring 2022 semester, this was shortly followed by the diagnosis of chronic migraine. Chronic Migraine is diagnosed in individuals who experience fifteen or more headaches per month. This study was constructed to raise awareness among brain Injury survivors and individuals who have traumatic brain injury-related disabilities.

With late enrollment into the Spring 2026 semester, data was collected through accessing the data history of four different applications stored on a mobile device. The names of the applications utilized are as follows: Nerivio, Health, Fitbod, and MyChart. The medical device

(Nerivio) is used as an acute treatment to treat and measure the frequency of daily migraine activity. The length of each Nervio session is consistent in timing, and the level of intensity of the electrical stimulation can be manually changed depending on the severity of the migraine. The level of intensity is measured as a percentage, and the average intensity was taken across multiple sessions per day.

This study aims to see the relationship between the timing of migraine infusion medication (Vyepti), migraine Botox, monthly hormonal changes, and physical activity in influencing the effectiveness of the frequency of migraine attacks. Analyzing the exact timing of the day when these migraine attacks are more likely to occur.

40. Tracking My Habits Over a Semester: See What's Ruining My Mood

Presenter(s): Gia Ylena Cayabyab
Advisor(s): Dr. Oliver Lopez

This project is an experiment where I track and analyze my daily habits throughout the Spring 2026 semester. I'm recording ten different variables, like hours of sleep and steps, social aspects such as hanging out with friends, and even money spent, to get a clearer, data-based picture of my everyday life. The main things I'm focusing on are my mood (on a scale of 1–10) and how consistent I am academically, measured by hours spent studying. I log everything daily in a spreadsheet so I can start to see patterns and changes over time. The goal is to figure out how my habits actually affect how I feel and perform in school, and to see which ones have the biggest impact on my overall happiness and success.

41. The Ups and Downs of a Second Semester First-Year: Tracking and Analyzing Daily and Weekly Routines Across a Semester

Presenter(s): Grace Granger
Advisor(s): Dr. Oliver Lopez

The central purpose of my research project is to track and analyze my daily habits and routines across a semester. This research is part of a project for my Math 203: Intro to Statistics class. Beyond being a statistics project, studying one's routine allows people to better understand their mental, physical, and social wellbeing. As well as what in their routines might be having a positive or negative influence on them. By tracking parts of my own daily routine and analyzing them, I'm developing a better understanding of myself, and, hopefully, inspiring others to do the same. My research is focused on tracking 12 parts of my daily routine: how much sleep I get, my mood, how many pages of books I read, how much I eat for breakfast, if I exercised, how many times I open Instagram, how long I'm on Instagram, how much I spend of my personal money and of Pantherbucks, how many clubs I attend, how many times I'm in contact with my parents, and how long I shower. I began self tracking these on February 7 and I will end tracking on April 12. Generally speaking, I'm keeping track of start and end times/pages, receipts, text records, and food servings. After collecting my data, I expect to see patterns in my daily and weekly routines.

As I'm tracking my daily mood, I also look forward to studying how different aspects of my routine may be affecting my mood in different ways.

42. The Moods and Stims of My Daily Life

Presenter(s): Kailee Rustia

Advisor(s): Dr. Oliver Lopez

For the data analysis, I decided to go off points that really impact my moods, life, and efforts! These are the main points that really affect my daily mood. Using these data points: the amount of caffeine I have, the time I go to bed, whether I am hanging out with my friends, whether I work that day, what time I sleep, TikTok screentime hours and minutes. Caffeine patterns tend to make me go to bed early. When I spend more time on TikTok, not only does my sleep schedule get really bad, but my mood also gets pretty low. Moreover, when I go to work, I usually will sleep right away and at the end of the day I will be pretty tired. My data really aligns with not only my moods but also my daily life.

43. Quantitative Analysis of Individual Spending Habits through Digital Banking Data

Presenter(s): Maddie Swansiger

Advisor(s): Dr. Oliver Lopez

This research project will include the analysis of my personal spending habits and financial behaviors using data downloaded from my mobile banking application. The financial data has been taken from January 23rd, 2025, through April 5th, 2026, over a year of spending, and compiled in Excel. This data will be broken down categorically, and multiple graphing functions and techniques will be used to visualize the spread in expenses over a year and relate them to external factors that may be significant. The purpose of this research process is to identify patterns in spending over designated periods of time, such as the different seasons, as well as to study categorical variables and break down the main areas of spending habits. Being able to understand the interactions of our behavior with economic and financial responsibilities. This study will offer insights into how to be held accountable for spending and which areas may need more restrictions and budgeting than others. Results may include spikes in spending during seasonal periods, as well as a majority of purchases made at retail stores and fast-food chains. These conclusions will help with future planning and organizational tactics for spending, including how to control, budget, and improve it. Although this project will appeal to me and my habits, it should appeal to others as well, since economics is at the root of our society, and others may be prompted to explore their transactional history.

44. Happiness Connections -A Statistical Analysis of Daily Behaviors that Contribute to Health and Happiness

Presenter(s): Madeleine Rand

Advisor(s): Dr. Oliver Lopez

This semester, I have been tracking a lot of different things in my life to see whether there are any assosiation between my health and my happiness outcomes. I measured my sleep and steps, and how many water bottles I drank for my health. For happiness, I tracked my mood each day. To get a couple of other data points, I tracked how many pieces of dessert I had per day, how many times I called home, and whether I bought a "fun drink" (like coffee, matcha, or anything other than water). I tracked my health data on my Apple Watch, and at the end of the day or the beginning of the next day, I would write down all the data from the previous day in a spreadsheet. For happiness, I rated it on a scale from 1-5, 1 being an awful day when I didn't feel good or was unmotivated, and 5 being a great day, super productive, and a good time. For the miscellaneous data, I tracked it in the spreadsheet immediately, or I wrote it down in my notes app and updated it later.

45. Habits and Happiness: A Three-Month Personal Data Analysis

Presenter(s): Zachariah Cook

Advisor(s): Dr. Oliver Lopez

My study examines the relationship between my daily lifestyle behaviors and my self-reported quality of life over an approximately three-month period from February through May 2026. I collected data on myself daily across several key categories, including physical activity, screen time, sleep duration, workout frequency, morning mood, and notable substance-related events. Using descriptive statistics, confidence intervals, and z-scores, I applied introductory statistics concepts to my own self-generated data in order to identify meaningful patterns and correlations across these categories. The central question driving this project is: do screen time, physical fitness, and substance consumption meaningfully impact my daily quality of life, and if so, by how much?

Health Humanities

46. From Principles to Practice: How the Institutional Review Board Operates at Kaiser Permanente Southern California–Hawai'i

Presenter(s): Zoe Zadah

Advisor(s): Dr. Oliver Lopez

Institutional Review Boards (IRBs) are administrative bodies that are designed to assess studies involving human subjects to ensure and protect individuals' safety, welfare, and rights. In environments where medical research is conducted, such as hospitals, clinics, and labs, Institutional Review Boards are commonly tasked with examining research designs and protocols. This project will examine how Institutional Review Boards function to protect human research

subjects within large healthcare systems, specifically at Kaiser Permanente Southern California-Hawaii. While IRBs are guided by policies for ethical research, such as the Federal Policy for the Protection of Human Subjects, also known as the Common Rule, and international agreements, such as the Declaration of Helsinki, this study aims to discover how these principles are interpreted and implemented in real time at the institutional level. Using observational and qualitative methods - conducting interviews with IRB members, attending an IRB meeting, and analyzing institutional documents and federal regulations - this project will navigate the complexity of IRBs as regulatory and interpretive bodies. Finally, this project will offer insight into pathways for students interested in entering the field of research ethics and oversight.

Health Sciences and Kinesiology

47. Discrepancies in Pediatric Oral Health

Presenter(s): Tyler Truong

Advisor(s): Amy Mai Tran

In 2024, data was collected by the CDC on untreated tooth decay. From that data, children living in low-income households had an estimated 18.8% of tooth decay untreated, almost triple the amount when compared to children from middle to high income households (6.6%). As the income disparity continues to grow in the US, it is critical that we implement strategies to aid lower income communities in providing their children with proper oral hygiene tactics. In order to understand how communities can help promote healthy oral hygiene for their children, a survey of dentists from various areas was conducted to see their perception on oral hygiene for children in their community. Using the research, the objective is to provide insight from dentists on how communities can improve their oral hygiene for their children. In the surveys, they were asked about dental caries, no-shows, reschedules, anxiety, parents' hesitation to pay, and Oregon Health Plan/DentiCal. Along with that they were also asked how their community values the importance of oral hygiene for their children and any additional comments they had. Using the research, the objective is to provide insight from dentists on how communities can improve their oral hygiene for their children. From the data collection, it was evident that children that visited public practices (Oregon Health and Science School of Dentistry) had a much higher rate of caries compared to patients that go to private dental practices. The data along with the comments from the dentists provide insight into how communities, especially parents, have influenced their children's oral health habits. Using this information many solutions could be made on how dentists and others can help promote the importance of oral healthcare for children.

History

48. Engineering the American Gothic: The Fear of Monstrous Technology within American Machine Age Media (1880–1945)

Presenter(s): Abigail Stephens

Advisor(s): Dr. Jeffery Koerber

During the Machine Age, a period of immense technological advancement from 1880 to 1945, the most pervasive inventions worked to rapidly alter traditional understandings of space and time. The telephone and automobile expanded personal, professional, and commercial relationships past spatial boundaries restricted by centuries of limited mobility. While most consumers had neither the purchasing power nor practical need for these products at their inception, popular media produced critical depictions of distance-collapsing technology and introduced technophobic beliefs to the general public. This paper investigates how fearful reactions to nation-spanning technology manifested in Machine Age American mass media. Through investigating political cartoons, pulp fiction, and short stories within magazines, this paper finds that the automobile and telephone visually embodied the unyielding steamroller of 20th century modernity. Popular media typically represented the belief systems of white, middle class readers. While cartoonists and authors depicted technology's impacts on health, safety, and the lived environment, concerns over endangered communities were overshadowed by pervasive social stigmas. Turn-of-the-century America experienced en masse immigration, nationwide monopolies, first wave feminists, and emancipated Black Americans. Concerned with maintaining separate spheres, segregation, and personal autonomy within a nationwide network promising to collapse spatial separation, popular media warned of a future where technology liberated the "wrong" demographics of consumers.

49. Selling America in Sokolniki Park: The USIA, Soviet Consumerism and the 1959 U.S. National Exhibition in Moscow

Presenter(s): Brian Beck

Advisor(s): Dr. Jeffery Koerber

This project will analyze the U.S. Information Agency's propaganda strategy of "people's capitalism" and its reliance on material abundance as employed at the 1959 American National Exhibition in Moscow, and determine whether this focus appealed to the consumer culture of its Soviet audience. This study is informed by foundational research on postwar USIA propaganda efforts conducted by Nicholas J. Cull, Walter Hixson, and R.H. Haddow, as well as analyses of mid-century Soviet consumer life written by cultural historians such as Susan E. Reid, Victor Buchli, and Christine Varga-Harris. As for primary sources, the development of the Exhibition's central theme of abundance will be assessed using internal USIA and State Department communications, as well as public press releases published in periodicals. Additionally, the ongoing Soviet "consumer revolution" and housing reforms undertaken as part of Nikita Khrushchev's Seven-Year Plan will be examined as described in contemporary economic studies and highlighted in

publications such as the English-language magazine USSR and selected translations of state media, including Pravda and Izvestia. Finally, responses and reactions to the Exhibition's displays, left by visitors in comment books, will be viewed in light of these reforms in consumer taste. Based on these sources, it will be argued that the USIA's decision to emphasize American abundance at the Exhibition was founded on a misreading of the Soviet audience: Though the USIA saw Soviet attendees as desperate consumers deprived of material plenty who would be easily impressed by showy models of the comparative wealth of American households, in reality, visitors had internalized the practical, restrained consumer taste of the Khrushchev era and were largely unpersuaded by such displays.

50. Poking the Bear: American Involvement in the Afghan-Soviet War

Presenter(s): Daniel Gunnarson
Advisor(s): Dr. Jeffery Koerber

In 1979, tensions were high in Afghanistan, as the communist government desperately tried to cling to power against the mounting rebel forces. The United States began to send monetary aid to these anti-communist forces, also known as the Mujahideen, a term the rebels coined meaning "holy warriors". This assistance caused the Soviet Union to take action to avoid the disintegration of a friendly government nearby. On December 27, 1979, Soviet troops stormed the presidential palace in Kabul and murdered Afghan leader Hafizullah Amin in a bloody coup. The war would drag on for a decade, causing the deaths of millions in the process. Over the course of the 1980s, Washington supplied the Mujahideen with billions of dollars in aid and weaponry. What often goes unnoticed is the U.S. government's desire to see the Soviets bogged down in a Vietnam-type military conflict, bleeding their resources and locking them in an unwinnable war. There was also a great degree of short-sightedness, as various Mujahideen fighters would later create some of the most notorious terrorist organizations of the past 30 years, including groups such as Al-Qaeda and the Taliban. While the whole story will be briefly touched on, in my research I will look extensively at the specific actions the United States took prior to and during the Soviet invasion, and how their actions reflected specific Cold War fears and desires. Specific actors looked at will be Carter's cabinet and CIA figures, and how they worked to embed the U.S. in this conflict. Through an analysis of declassified State Department documents and correspondence with American embassies, a picture of how U.S. foreign policy projected itself and influenced the Soviet-Afghan war will come into view. The U.S. succeeded in bleeding the Soviets white, but with dire consequences for millions that would be affected.

51. Beyond the Union: Northern Motivation During the American Civil War

Presenter(s): Stewart Randall
Advisor(s): Dr. Jeffery Koerber

This project examines the motivations of Union soldiers during the American Civil War and how those motivations evolved throughout the conflict. Historians have often flattened these complex and deeply felt beliefs under the "saving the Union" umbrella. However, the actual writings of the

soldiers themselves reveal the complicated nature of these ideas. Drawing upon the scholarship of historians such as James McPherson, Chandra Manning, Gary Gallagher, and Gerald Linderman, this research seeks to understand how nationalism, religion, manhood, comradeship, and anti-slavery sentiment intersected in the minds of Union soldiers. This project draws upon the soldier diaries, newspapers, letters, and speeches of this period, with particular attention paid to the wartime diaries of Elisha Hunt Rhodes, Wilber Fisk, and Chauncey Cooke. These writings demonstrate just how malleable these beliefs became. Combat experiences, exposure to slavery, and the bonds formed while in service transformed the average soldier's beliefs of 1861 into completely different entities by 1865. This study argues that Union soldiers developed a shifting ideological framework rather than a single cause. Understanding that shift offers a more nuanced understanding of why Northern soldiers continued to fight in one of the most destructive conflicts in America's history.

52. From Community Protection to National Collaboration: Tracking the Anti-Defamation League's Evolving Mission Over Time

Presenter(s): Gabi Fischthal

Advisor(s): Dr. Shira Klein

The Anti-Defamation League (ADL) defines their organization as one committed to stopping the defamation of Jewish people and securing better treatment for everyone, and has subsequently been the go-to for news organizations reporting on antisemitism in the United States. This research aims to understand how the ADL's mission has changed over time and how that has affected its stated work of defending Jews from defamation. Through the collection of hundreds of primary sources, three themes were explored: the Anti-Defamation League's work in combatting antisemitism, the ADL's alliance with the United States government, and its support for Zionism. The sources collected showed that changes occurred both in the organization and societally, causing the ADL to deviate from its original stated mission of fighting the antisemitism. This change is especially seen during two periods. For one: McCarthyism, as the ADL provided documents and testimony to the House Un-American Activities Committee. The second: The height of the Black liberation struggle, as Black activists equated Zionism with the racism they were experiencing in America, which drew condemnation from the Anti-Defamation League and an increase in pro-Israel advocacy.

Honors

53. The Marginal Sexual Equality Game: Defining the Incentives for Sexual Equality using Economic Game Theory and Butler's Gender Trouble

Presenter(s): Blaise Bowers

Advisor(s): Dr. Ian Barnard, Dr. Jared Rubin

This project takes an interdisciplinary economic and gender studies approach to explain subversion, sexual equality, and the marginal nature of sexual rights. The project uses advanced

economic game theory to derive the Marginal Sexual Equality Game Formula. The formula explains the various political-economic incentives for a minority gender/sexual identity's subversion of dominance, a dominant sex's incentive to suppress, the impact of cooperation versus division among minority genders/sexual identities, incentives and impacts of cooperation between sects of minority genders/sexual identities and the dominant gender/sexual identity, and the various consequences of various social mobility and elasticity. Additionally, the formula proves and showcases the effects of sexual variability and the fallibility of original sex as argued by Judith Butler in their book Gender Trouble. The project justifies this game by drawing on real-world, historical, and fictional societies, ranging from the United States, Ancient and Modern Asia, to Gilead in The Handmaid's Tale, as well as modern ephemeral identities such as drag personas and immemorial identities such as transgender and non-binary. From there, the project argues in favor of a marginal view of sexual equality, in which the extractive power of a dominant sex versus the general extractive authority and gini coefficient of a society dictates the consequence with high variability. Using a diverse array of queer, trans, sociological, and economic theory, the project creates a clear framework for predicting the consequences of rights, presence of diverse sexes, state extractive capacity, gini coefficients, and the elasticity coefficient of rights.

54. Entertainment or Resistance: What Is Drag Really For?

Presenter(s): Gracie Wakefield
Advisor(s): Dr. Ian Barnard

This project aims to explore the art of drag performance under the lens of heightened theatrical entertainment as well as a form of resistance against political and social structures that reject uniqueness. Drag is a highly expressive art form that challenges the way gender is perceived in a society that thrives on the rigidity of the gender binary structure. It flourishes on subversion of expectations and pushes the boundaries of what most people would consider "normal". People who perform drag are actively fighting against these gender stereotypes and categories that we as humans are placed into every day. They are bursting outside of the box rather than confining themselves to what society assigns them to be. Simultaneously, this project analyzes drag in a socio-political context by viewing it as a form of protest. The elevated and commercialized performance of gender being both celebrated and put down just serves as another reminder of the attacks that are made on LGBTQIA+ individuals on a daily basis in the United States of America, including legislation restricting the recognition of gender identity and the social dangers of being queer in America. These points overall beg the question, is drag more of a performance art intended for audience satisfaction, or a form of protest aimed to comfort the disturbed and disturb the comforted?

Interdisciplinary

55. Between Authenticity and Exploitation: Rethinking the Intended Audience of Sean Baker's Tangerine

Presenter(s): Ava Brandt

Advisor(s): Dr. Ian Barnard

Sean Baker's Tangerine (2015) has generated genuinely divided responses among trans critics, and for good reason. This paper takes that division seriously, using two reviews published on Autostraddle within six weeks of each other to frame a central question: who is Tangerine actually for? Existing scholarship on trans cinema has tended to evaluate films on a spectrum from exploitative to affirming, but this paper argues that framework is insufficient for a film like Tangerine, which operates as both simultaneously. Through close reading of the film alongside its production history, paratexts, and reception, and drawing on Paige Macintosh's scholarship on trans representation and respectability politics, I examine how Tangerine speaks authentically to trans audiences through its insider language, humor, and unmediated Black queer culture, precisely because trans performers Mya Taylor and Kitana Kiki Rodriguez shaped it from the inside. At the same time, the structures surrounding the film redirect its cultural and financial capital away from those same women and toward the white male filmmaker whose career it elevated. I conclude that Tangerine is a genuine turning point in American trans cinema, but one that reproduces the very industry inequities it seems to resist, and that taking the film seriously requires holding both of those things true at once.

Physical Therapy

56. Minimal Detectable Change in Gait Spatiotemporal and Kinematic Variables Post-Stroke: Comparison With Age- and Speed-Matched Controls

Presenter(s): Alejandro Aguirre Ramirez

Advisor(s): Dr. Natalia Sanchez, Andrian Kuch

Stroke is a major health concern in the United States, with approximately 75% of survivors experiencing walking impairments, making gait recovery a primary goal of rehabilitation. Motion capture gait analysis is widely used to assess walking; however, interpretation of longitudinal changes is limited by measurement error from day-to-day gait variability and inconsistent marker placement. Establishing the minimal detectable change (MDC) is essential to distinguish true intervention-related biomechanical change from measurement error. MDCs have been reported for post-stroke gait, but not for newer systems using reduced marker sets, nor is it known whether MDCs differ between individuals post-stroke and matched controls.

The purpose of this study was to quantify intra-rater reliability and MDC values for spatiotemporal gait variables in individuals post-stroke and age-, sex-, and speed-matched neurotypical controls. 15 individuals with chronic stroke and 13 matched controls completed two treadmill walking

sessions separated by 1–3 days. Participants post-stroke walked at their self-selected speed, while controls walked at matched speeds. Spatiotemporal parameters were computed using Motek Medical's Gait Offline Analysis Tool. Test–retest reliability was assessed using two-way random-effects intraclass correlation coefficients (ICC 2,1).

Spatiotemporal parameters demonstrated excellent reliability across groups (ICC > 0.90), except step width, which showed good reliability (ICC = 0.785–0.846). MDCs were larger post-stroke than in controls. Step length MDCs were 9.16% in controls, 10.99% in the paretic limb, and 16.04% in the non-paretic limb. Step width MDCs were 18.99% in controls and 33.68% post-stroke. Stance time MDCs were 5.34% in controls, 18.89% paretic, and 12.82% non-paretic, while swing time MDCs were 7.12% in controls, 11.28% paretic, and 9.38% non-paretic. These MDC values provide clinically meaningful thresholds for interpreting gait changes following stroke rehabilitation.

57. Assessment of Cognitive Function in Stroke Survivors Using the Montreal Cognitive Assessment (MoCA)

Presenter(s): Georgia Cameron
Advisor(s): Dr. Rahul Soangra

Falls are a common and serious complication in post-stroke patients, with 37–73% of individuals falling within the first 6 months post-stroke and up to 73% within the first year (Verheyden et al., 2013). This study is part of a broader investigation examining whether gait characteristics and impaired cognitive function can predict fall risk when used alongside artificial intelligence. Prior to strength testing and gait analysis, multiple surveys were administered to assess the participants' cognitive function, including the Montreal Cognitive Assessment (MoCA). The MoCA is a cognitive screening tool developed to detect mild cognitive impairment and assess multiple cognitive domains, including memory, language, executive function, visuospatial skills, calculation, abstraction, attention, concentration, and orientation (Nasreddine et al., 2005). This study aimed to assess the cognitive function, as measured by MoCA, in stroke survivors. The average MoCA score across all study participants was 24.7 ± 5.5 (n = 17), which falls below the commonly used cutoff of 26/30 and suggests cognitive impairment in this population. These findings are consistent with prior research showing lower MoCA scores in stroke populations compared to healthy individuals, indicating reduced cognitive performance following stroke. However, recent studies suggest that lower cutoffs than the standard may improve the accuracy of detecting cognitive impairment in stroke populations (Salvadori et al., 2022). The small sample size limits the generalizability of these findings. In the future, we will collect additional data to strengthen our hypothesis.

Physics

58. 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.

Political Science

59. Mapping the Far Right: Extremist Incidents and Electoral Support in France

Presenter(s): Scarlett VanderMeer
Advisor(s): Dr Andrea Molle

This study analyzes the spatial distribution of far-right extremist incidents in France and compares these patterns to far-right electoral support at the département-level. Using geocoded incident data from the Global Terrorism Database (GTD), alongside socio-demographic indicators from the National Institute of Statistics and Economic Studies (INSEE) and electoral results for the Rassemblement National, it examines how local economic and demographic factors are associated with extremist activity. The analysis employs descriptive mapping and spatial statistical methods in R to assess whether extremist incidents are geographically clustered from data aggregated over the period 2015-2022. It then estimates regression models to evaluate the relationship between socio-economic conditions and extremist incidents. Comparing these results to parallel models from the study will aid in predicting far-right vote share. By examining

both outcomes at the same subnational scale, the project distinguishes between extremist behavior and electoral support. The theoretical framework provides competing explanations involving grievance and opportunity, influencing expectations surrounding the variables. This cross-sectional approach sets the research apart from existing literature, which often studies these phenomena separately. These findings elucidate the connection between far-right support and political violence, as well as contribute to revealing the determinants of far-right electoral success.

60. AI is Taking Over! A New Generation of Unemployment Fears

Presenter(s): Amaya Hepburn
Advisor(s): Dr. Ann Gordon

The growing panic surrounding AI taking over the workforce is strong in a distinct group of demographics, in contrast to the fear of computers taking over the workforce that was seen in previous generations. This suggests that AI developments have sparked a wave of fear that is unlike the fear of tech developments in the past. I have discovered that this fear is prevalent across several demographics: age, employment, and income. By cross-analyzing through the 2017 and 2025 fear surveys, I discovered that fear of AI is more prevalent in younger generations and is more threatening to students entering the workforce than to those already employed. It reveals that the present fear of AI is less centered around job displacement and is more present in young professionals who will need to pursue the job market in the future. The data sets also reveal that people of lower income levels are much more afraid of AI taking over than they were of computers, meaning that there is more fear of instability, which may speak to a rise in job insecurity. The purpose of this study is to identify the contrast between those who were afraid of technological developments in the past and those who are now. Fear of computers taking over the workforce was associated with job displacement in people already settled into their careers, whereas fear of AI taking over is more of a threat to future workers. AI is a growing industry, but this new wave of fear raises the question of how it will transform the job market for low-income individuals and future generations.

61. The Social Construction of Nuclear Fear in the United States: From the Cold War to Modern Tensions

Presenter(s): Henry Miller
Advisor(s): Dr. Ann Gordon

This paper will look into the personal fears of nuclear war in the United States in regard to its citizens, specifically the anxiety around foreign enemies of the United States, and looks into how this fear has changed from the Cold War and Work War II to present times. My paper specifically looks into and analyses how political agendas, media interpretations, and tensions within America shape United States citizens fears about nuclear weapons and threats from the countries Russia, China, North Korea, and Iran. By looking into basic fears in regard to history itself. This specific study dives into understanding how nuclear anxiety influences public opinion, specific American

national identity, and policy. Since the bombings of Hiroshima and Nagasaki in 1945, nuclear weapons have occupied a huge psychological and strategic space in American consciousness. Especially in young adults. During the Cold War, the Cuban Missile Crisis a culture of preparedness and existential dread, reinforced by civil defense campaigns and popular media. After the Cold War, tensions increased specially with Russia, North Korea. This has increased fears within citizens in the United States. Looking into discussion about political discussions as well as public opinions, and media, my paper claims that fear of nuclear war is not just one reaction to actual proven capabilities of foreign nations, however it is socially constructed and is more intense over the years during moments of international crisis. By making certain historical patterns connect in regard to nuclear anxiety to modern debates over foreign arguments in policy. This paper address and speaks to discussions on security studies, risk perception, and the role of fear in democratic societies.

62. **Raised to Hold Firm: Authoritarian Child-Rearing Values and Opposition to Political Compromise**

Presenter(s): Morgan Romine
Advisor(s): Dr. John Compton

This research project examines how at-home values might explain an individual's view on political compromise. Using the 2024 American National Election Studies (ANES) survey data, I study the relationship between authoritarian child-rearing preferences and support for political compromise. While existing research has linked authoritarian values to attitudes such as prejudice and support for strong leaders, less attention has been paid to how those same values shape attitudes toward political negotiation. My hypothesis is that people who prioritize obedience, respect, and good manners over independence and curiosity in children reflect broader goals toward order and stability, and that those preferences translate into a lower tolerance for belief updating and a reduced willingness to support compromise. To test this, I construct two key variables from the ANES data. Support for compromise is measured by combining two survey questions that capture whether respondents prefer politicians who compromise or stick to their principles, along with the strength of their feelings about that choice. Authoritarian values are measured using an index built from four child-rearing questions where respondents chose between paired traits, such as obedience versus self-reliance. I then analyze the relationship between these variables using regression models while accounting for partisanship and basic demographic information. I expect that individuals who score higher on the authoritarian child-rearing scale will be less supportive of political compromise, potentially because they interpret compromise not as a neutral negotiation but as an admission of being wrong or a giving up of deeply held values. These findings suggest that resistance to compromise is rooted in value systems formed early in life, with broader implications for understanding political polarization in the United States.

63. Beyond the Model Minority Myth: Discrimination as a Predictor of Asian American Partisan Behavior

Presenter(s): Abigail Cho

Advisor(s): Dr. Lewis Luartz

To what extent does the belief and internalization of the model minority myth lead to support for the Republican Party among Asian Americans? Existing studies on Asian American voting behavior focus mainly on broad demographic changes but fail to explore how internalized racial stereotypes shape political preferences. Research on Asian American political identity remains incomplete, as scholars have ignored how myths rooted in racial hierarchy influence their partisan alignment. I argue that Asian Americans who fully embrace the model minority stereotype, depicting them as exceptional and hardworking, lead to support for the Republican Party, as the Republican Party prides itself on personal success and self-sufficiency, which aligns with the central theme of the model minority myth. Using the 2020 ANES Time Series dataset as the foundation for my research, I conducted an Ordinary Least Squares regression analysis, examining the relationship between the respondent's ratings of Asian Americans as hardworking (V202520) and their 2020 presidential vote choice (V202073), controlling for the Asian American feeling thermometer (V202477) and observed discrimination against Asian Americans in the United States (V202529). The results from the restricted model show rating Asian Americans as hardworking at level 5 has a modest positive effect on the Republican vote choice ($b = 0.113$, $p = 0.043$), but this effect disappears once the controls are included in the unrestricted model. This suggests that perceived discrimination against Asian Americans absorbs the influence of the hardworking perception on partisanship preference. These findings show that the model minority myth creates an initial impact on Republican support, but perceived discrimination becomes the more powerful factor, which requires researchers to create frameworks that incorporate both internalized and racial ideologies, as well as firsthand discrimination experiences, when they investigate minority voting patterns.

64. Levels of Trust

Presenter(s): Adam Erdkamp

Advisor(s): Dr. Lewis Luartz

The research question I have chosen for my project is, "In what ways do levels of trust impact whether someone chooses to participate in an in-person protest?" A current problem within this field from previous findings is that research claims there is no consensus on whether trust encourages participation or if distrust drives it. Therefore, while some believe that a minimum level of trust is necessary to participate in politics, others argue that distrust drives citizens to partake in non-institutionalized, radicalized, or in-person protests. My answer to this question is that I believe if people were to have high levels of trust in institutions, then it would incentivize them to participate in a protest due to it being a safe activity. However, if they displace hatred towards institutions then they may fear unfair treatment, escalation, or negative consequences, making them less likely to attend. The type of model I used for my project is the general linear

model and as far as the name of my data set, I used the Arab Barometer Wave VII from the timeframe October 2021 - July 2022. Lastly, my findings suggest that overall when people have to be careful in placing trust in institutions then they will be less likely to attend a protest by a factor of -4.67*10^-02.

65. The Effects of Partisanship and Immigration Attitudes on Voter Turnout, 2016-2020

Presenter(s): Alice Malebranche

Advisor(s): Dr. Lewis Luartz

The issue of immigration in the United States has become one of the most salient and divisive topics of modern politics. Border control and national immigration policies now frequently shape voting attitudes, campaigns, and political discourse. The concept of immigration as an issue increased significantly after the election of President Donald Trump in 2016. In the years that followed, immigration became a critical point of partisan conflict with political movements, such as the newly emerged MAGA movement emphasizing criticism of Democratic immigration policy, especially under President Biden's administration. How do partisanship and attitudes towards immigration predict voter turnout in the American presidential elections of 2016 and 2020? Scholars have suggested that the increasing prominence of immigration reflects broader trends of political polarization, where issue positions are more closely linked to partisan identities. I argue that as the issue of immigration becomes increasingly salient, the effect of partisanship identification on voter turnout strengthens. Using American National Election Studies (ANES) Time Series data sets from 2016 and 2020, I tested the validity of this relationship. I especially focused on the variables of voter turnout, survey participants' strength of party identification, and the attitude about the permitted level of immigration levels in the United States. My preliminary findings suggest that partisan identity has become an increasingly powerful predictor of voter turnout in recent elections between 2016 and 2020. While it is not clear that immigration attitudes consistently predict turnout, their significance in 2020 indicates that issue salience may amplify political participation under these specific conditions. These results point to a broader trend in which electoral participation is increasingly structured by partisan alignment. This contributes to a better understanding of how immigration is more than just a policy issue but a symbolic marker of group identity and political belonging.

66. Abstract

Presenter(s): Andrew Johnson

Advisor(s): Dr. Lewis Luartz

What impact does religion have on support for federal border security spending in America? Border security has become one of the most contested areas of American politics over the last decade. While there is plenty of research examining party affiliation and demographics in relation to border security, religious identity and its effects has received less attention. While religious Americans (especially Christians) have historically aligned with more conservative politics,

religion also teaches compassion and love for others, making its effects on border security worth investigating.

This study argues that Americans who identify with a religion will show greater support for federal border security spending, because religious identity has historically been associated with conservative political values that favor stricter border enforcement. To test this I used data from the American National Election Studies 2024 Time Series Study (ANES) to estimate an OLS regression. The preliminary results were surprising: Compared to Protestants, non-Christian groups like Buddhists, Hindus, and non-religious groups like atheists and agnostics all showed significantly more support for border security spending. These findings suggest that religion does have an impact on border security spending, just not in the expected direction. Although the results did not support my initial hypothesis, the findings are nevertheless still important as they highlight the importance of the diversity of religion's effects on potential policy positions.

67. Social Media and Voter Turnout in the United States

Presenter(s): Brooke Beardsley
Advisor(s): Dr. Lewis Luartz

How does social media use affect voter turnout in the United States? Research shows that social media can have both positive and negative effects on voter turnout, encouraging civic engagement while also spreading false information. However, recent literature remains inconclusive, as it typically focuses on a specific platform's short-term effects, thereby excluding the overall impact of social media on voter turnout. I argue that social media increases voter turnout in the United States by making political information more accessible, ultimately encouraging political participation. To test this argument, I use logistic regression to analyze data from the ANES 2020-2022 Social Media Study. Preliminary findings suggest that social media use does have a positive effect on voter turnout. These findings imply that social media can be used to encourage voters to be more involved by making political and voting information easily accessible. Given the increasing relevance social media has on daily life, this study provided insight on what effects social media platforms may have come election time.

68. Partisan Affiliation and Attitudes Toward Urban Unrest

Presenter(s): Diana Ayala
Advisor(s): Dr. Lewis Luartz

How does partisan affiliation affect attitudes toward dealing with urban unrest? Existing research suggests that issue ownership shapes how individuals interpret disorder, protests, and government response, with Democrats and Republicans taking a lead on different policy approaches. However, it remains unclear how partisan affiliation alone influences preferences specifically toward urban unrest, leaving a gap in understanding how party identity directly shapes these attitudes. I argue Republicans are more likely to favor law enforcement responses to urban unrest, while Democrats are more likely to support protest as a means of addressing social injustices. This reasoning stems from the idea that these parties are usually associated with

conservative and liberal ideological orientations, which prioritize social order and authority versus reform and addressing systemic inequalities. To test this argument, I estimated an Ordinary Least Squares regression model using the ANES 2024 Time Series Study. The preliminary findings suggest that the party of registration significantly influences attitudes toward urban unrest, with Republicans favoring stricter law and order approaches relative to Democrats, who serve as the baseline category, implying greater Democratic support for systemic change. These results highlight the role of partisan identity in shaping how voters interpret and respond to social conflict.

69. The Impact of National and Religious Identity on Electoral Support for Recep Tayyip Erdoğan among Turkish Citizens in Germany

Presenter(s): Dila Özbugutu

Advisor(s): Dr. Lewis Luartz

Does the strength of national and religious identity among Turkish citizens living in Germany increase electoral support for Recep Tayyip Erdoğan? In recent decades, as globalization and immigration have continued to increase, the concept of transnational voting and the political relevance of diasporas has become all the more relevant. Existing research on diaspora voting behavior often explains diaspora voting behavior through economic conditions or access to information, but it often overlooks how specific factors of one's identity shape political preferences. This then leaves a gap in the understanding of how diaspora identities operate in different social and political contexts. I argue that stronger religious and national identity increases support for Erdoğan, while a stronger connection to German society decreases that likelihood. This is because Erdoğan's political rhetoric emphasizes traditional values such as nationalism and religion, which may resonate more strongly with individuals who feel closely tied to these identities. This is enhanced through the diaspora context where identity can be reinforced through shared experiences and social echo chambers. To test this, I used a logistic regression on the 2000 Families: Migration Histories of Turks in Europe (2016) dataset to analyze the relationship between religious identity and national identity and how they affect voting preferences. Additionally, I used controlled variables such as Turkish Citizenship and connection to German society. The preliminary results suggest that identity variables have a positive but relatively weak effect on support for Erdoğan. This indicates that while identity affects voting behavior of diasporas, additional factors also play an important role in this complex.

70. How did Gender Influence the Urgency of Voter Registration for the 2024 Election?

Presenter(s): Dylan Mendoza, Corinne Vicente

Advisor(s): Dr. Lewis Luartz

How did gender influence the urgency of voter registration for the 2024 election? Existing literature suggests that women are generally as likely or slightly more likely than men to be registered to vote due to higher levels of civic engagement. Existing research also suggests that other factors, such as race and class among genders, impact voting registration as well. We argue

that gender influences voter registration in the U.S. because differences in political socialization, group identity, and issue salience among genders shape which issues men and women find personally relevant. In other words, when policies disproportionately affect a gender group, they can increase motivation to engage politically and register to vote. Using the ANES 2024 Time Series dataset, we analyzed the relationship between gender and voter registration by using an Ordinary Least Squares Regression Model. Preliminary results suggest that people who identify as non-binary were more influenced to register to vote for the 2024 election compared to other genders. People who were never married and were more educated were more likely to already be registered to vote prior to the 2024 election. These findings suggest that the relationship between gender and voter registration in 2024 is more complex, requiring readers to account for intersecting factors such as identity, education, and marital status.

71. Trust in Social Media: Its Impact on Political Interest

Presenter(s): Elizabeth Aguirre, Carlos Lozano
Advisor(s): Dr. Lewis Luartz

What is the impact of trust in social media on individuals' political interest? The current literature shows that social media shapes political engagement; however, the line is unclear on whether this trust increases or undermines political interest due to concerns about misinformation and overconsumption. As social media has become a norm, especially among younger individuals, it is important to dig deeper into understanding how trust in these platforms influences political interest. We argue that trust in social media plays a significant role in shaping political interest, though its effects may not always be positive. Individuals who perceive online media as more credible are more likely to engage with political content and thus become politically interested. To test this argument, we analyze data from the ANES 2024 Time Series Study to examine the relationship between trust in news media and self-reported political interest using Ordinary Least Squares (OLS) regression. The findings suggest that higher levels of political interest decrease trust in social media for news consumption. Additionally, greater trust in the news media decreases use of social media as a news source. These results show that individuals who are more politically engaged and who place greater trust in traditional media may be less dependent on social media for political information. Trust and exposure alone may not be enough to foster political engagement and, in some cases, may even contribute to disengagement.

72. The Relationship Between Affective Polarization and Strained Real-World Interactions

Presenter(s): Emrey Cohen
Advisor(s): Dr. Lewis Luartz, Dr. John Compton

Does affective polarization, meaning the degree to which partisans dislike and distrust the opposing party, actually shape how people treat each other in everyday life? More and more research has been documenting a rise in partisan hostility in the United States, but does this rise mean more people have strained real-world interactions? This is important because, if affective polarization drives real interpersonal conflict, the problem is much more serious than the

literature has captured. I argue that higher affective polarization is positively associated with more strained real-world encounters, and that partisan hostility is not just an abstract survey data point but a real social problem with actual consequences for how Americans interact with one another. This project uses data from the 2024 American National Election Studies (ANES) and OLS regression models to test whether affective polarization predicts more frequent negative interactions. Preliminary findings suggest that the data support this relationship.

73. Racial Differences in Voter Turnout: Evidence from the 2020 U.S. Presidential Election

Presenter(s): Harrison Kundahl, Elena Warner

Advisor(s): Dr. Lewis Luartz

How does race impact voter turnout in the 2020 U.S. presidential election? Existing research shows that political participation depends on access to resources and civic skills, while institutional barriers such as voter identification laws can disproportionately affect racial minorities. However, less attention has been given to whether these disparities persist at the individual level when accounting for other relevant factors. We argue that racial minority groups, particularly Hispanic and non-Hispanic "other" respondents, are less likely to vote than White (non-Hispanic) respondents in the 2020 presidential election. To test this argument, we use individual-level data from the ANES 2020–2022 Social Media Study and estimate a logistic regression model predicting whether a respondent voted in the 2020 presidential election. Our preliminary findings suggest that being in the other (non-Hispanic) category, including Asian, and the Hispanic category show a negative effect on voting in the 2020 election.

74. Educational Attainment and Voter Turnout: Analyzing the Effects of Education on 2020 Voters

Presenter(s): Hunter Thomas

Advisor(s): Dr. Lewis Luartz

This study explores what the relationship is between educational attainment and voter turnout for voting-eligible citizens in the United States. Political scientists and researchers have long claimed that there is a positive relationship between the two variables, yet they have struggled to prove a causal relationship and are left with only correlation. This issue primarily stems from being unable to prove that there is a single direction of causality, as some researchers believe that there are other factors that could affect both educational attainment and voter turnout, creating a spurious relationship. I argue that higher educational attainment will result in increased voter turnout because higher education instills values into citizens that increase their interest and participation in politics. Using the 2020 ANES Time Series Study, I estimated two logistic regression models to test this argument. Preliminary findings suggest a statistically significant relationship between educational attainment and voter turnout, implying that higher educational attainment increases voter turnout. These findings are important because they will help policy makers understand the importance of education in strengthening a democracy, as voter turnout is a key sign of a politically active constituency.

75. Abstract

Presenter(s): Jack Krikorian

Advisor(s): Dr. Lewis Luartz

Does the perception of threat from cultural and demographic transformations increase a tendency to support authoritarian and nationalist views in politics in the United States? While current research indicates that demographic anxiety, rather than economic distress, has fueled support for authoritarian political figures in recent elections, there has been insufficient focus on whether such threat perceptions directly forecast support for authoritarian governance more generally. I argue that individuals who recognize heightened cultural and demographic threats are more inclined to support robust, authoritarian leadership, as perceived threats amplify the psychological necessity for security and order over democratic limitations. I utilize the 2020 American National Election Studies to estimate a model (OLS) to test this argument. Preliminary findings suggest I utilized the 2020 American National Election Studies to estimate an ordinary least squares regression model to test this argument. Preliminary findings reveal a positive but declining relationship between attitudes toward Hispanic political representation and support for strong leadership, while controlling for race/ethnicity and education level. The findings indicate that individuals who prioritize Hispanic political representation exhibit increased support for authoritarian leadership, although this effect diminishes at elevated levels of the scale. These findings suggest that cultural and demographic threat attitudes have considerable, though constrained, predictive validity concerning authoritarian inclinations, thereby reinforcing the central thesis that identity-driven anxieties, rather than mere economic grievances, are crucial in explaining the rise of authoritarianism in contemporary American democracy.

76. Religion and Public Opinion on Abortion Policy in the United States.

Presenter(s): Jaylene Alvear

Advisor(s): Dr. Lewis Luartz

This study examines whether religion influences public opinion toward abortion policy in the United States. Previous political science research shows that religion is one of the strongest predictors of abortion attitudes, but other factors, such as gender and education, may also influence these attitudes. This study tests whether religion remains a strong predictor of abortion attitudes when controlling for gender and education, and whether religion has a stronger effect than these other social factors. I argue that religion has a strong influence on abortion attitudes because religious beliefs shape individuals' moral values, which in turn influence their political opinions and policy preferences on social issues. Using data from the American National Election Studies (ANES) 2020 Time Series Study, I estimate a logistic regression model. The analysis includes 8,028 respondents after missing data were removed. Preliminary results suggest that religion has a strong and statistically significant positive effect on abortion opinions. The results also show that the effect of religion is stronger than the effects of gender and education in predicting abortion attitudes. These findings suggest that religion substantially influences public

opinion and political attitudes toward abortion policy in the United States and remains an important factor in shaping policy preferences and political divisions on social issues.

77. The Impact that Partisan Identity Has on Perceptions of Government Corruption.

Presenter(s): Kate Lum

Advisor(s): Dr. Lewis Luartz

This study aims to examine what impact partisan identity has on perceptions of government corruption. “Corruption” means different things to different people, and this can lead to large and varied political implications. There is significant variation in how individuals analyze and understand corruption in politics at any given moment. When an outright unlawful act in government occurs, most people view the act as corrupt, however, when politicians perform actions that are technically legal but unethical or violate democratic/communal norms, evaluations of their actions as “corrupt” become less clear.

I argue that incumbents of particular political parties are subject to higher levels of perceived corruption when they take office, especially because of recently increased political polarization and partisan support in the US. Politicians with various levels of power are apt to receive more accusations of corruption from opposing parties.

Perceptions of corruption in government also vary in respective parties depending on aspects like a person's education or economic/class tier, gender, age and also party affiliation.

The differences of opinion on political corruption can also be restricted or manipulated by political institutions and news organizations.

To test the effects of partisan identity on perceptions of government corruption, I estimate a regression model using ordinary least squares, analyzing a dataset from the 2024 American National Election Study.

My preliminary regression findings are positive. This suggests that a stronger partisan identity may lead to higher levels of perceived corruption in government.

78. The Iraq War and Voter Ideology

Presenter(s): Kelechi Igbokwe

Advisor(s): Dr. Lewis Luartz

What impact did Bush’s approval rating regarding the War in Iraq have on voter ideology in 2004? Existing literature on the War in Iraq, and its relation to voting, suggests that Bush and Republicans suffered in elections as districts affected by Iraq shifted to Democrats. However, this literature typically does not focus on approval of the Iraq War and how that relates to political ideology. While shifting support for the Democrat party is an indication of how people perceive support for the Iraq War, it is not definitive evidence on how beliefs towards Iraq affected political viewpoints. I argue that negative perceptions towards the war would result in a more liberal or moderate ideology. A higher approval of Bush’s war efforts should likely result in a higher likelihood of adopting a conservative-leaning political ideology. I used the 2004 American National Election Study to estimate ordinary least squares to test this argument.

Preliminary results suggest that increased presidential disapproval makes voters more liberal. These results support previous studies on the Iraq War, and its effect on voting patterns.

79. Education's Role in Indian Democracy

Presenter(s): Kiranjot Atwal

Advisor(s): Dr. Lewis Luartz

What impact do higher levels of education have on support for democracy in India? Existing research has largely demonstrated that education can foster democratic values through increased political awareness and civic involvement; however, researchers have only just begun to explore how education contributes to developing democracies, where social and political contexts may influence the formation of attitudes in distinct ways. This gap creates a question as to whether or not the positive impacts of education on democratic support hold true across diverse populations. I argue education promotes democratic governance by serving as a catalyst for increased engagement and interaction between citizens and their governments through improved access to political knowledge and norms of behavior; therefore, creating more positive perceptions of democratic institutions. To evaluate this argument, I use data from Wave V of the Asian Barometer Survey to estimate a logistic regression model, focusing specifically on respondents from India. As one of the world's most diverse democracies, India is an excellent case study for examining differences in social and structural democratic conditions. Preliminary findings show no relationship between education and supporting democracy. Religion does, however, have a large and statistically significant relationship when comparing Islam and Christians to Hindus regarding their support of democracy. A potential reason that explains why education does not have a greater influence on support for democracy is that a large number of people in India receive higher education abroad, therefore they would not necessarily have been exposed to democratic principles through schooling in their home country. Overall, the evidence shows that there are additional factors beyond education that also have an important impact on support for democracy in India.

80. What Impact Does the Belief that the Democratic Party Handles Illegal Immigration Better Have on Voter Trust Toward the Federal Government?

Presenter(s): Linda Gutierrez

Advisor(s): Dr. Lewis Luartz

This project examines how political perceptions on immigration policies influence trust in the federal government. The central question asks: What impact does the belief that the Democratic Party handles illegal immigration better have on voter trust toward the federal government? Political parties play a major role in shaping both immigration policy and how the public views government performance. Previous research suggests that trust in the government is ties to perceptions of competence, transparency, and fairness. In more recent years, debates over immigration have intensified concerns about government priorities, enforcement strategies, and

the use of federal resources. This study contributes to the discussion by focusing on how party based evaluations of immigration policy relate to public trust.

The methodology for this project uses quantitative analysis of survey data using the American national election 2024 data set. The independent variable measures the respondents beliefs about which political party better handles illegal immigration, while the dependent variable measures their level of trust in the federal government. Using regression analysis in R, the study evaluates with differences in trust levels. This approach allows for systematic examination of how political attitudes affect broader views of government effectiveness. The expected results suggest that individuals who believe the democratic party handles illegal immigration better may report lower trust in the federal government, particularly if their views are shaped by mismanagement under republican leadership. Factors such as concerns about excessive spending on immigration enforcement, division of federal resources, and lack of transparency in enforcement practices are likely to contribute to this relationship. Overall, this project concludes that voter trust is influenced not only by policy outcomes but also by perceptions of how effectively and ethically those policies are implemented

81. Trust in Mainstream Elites and Right-Wing Voting Among Young Voters: A Comparative Study of Germany and the United States Since 2016

Presenter(s): Samantha Parrish

Advisor(s): Dr. Lewis Luartz

This study examines how trust in mainstream elites influences the likelihood that young voters (ages 18-25) support right-wing parties in Germany and the United States. While existing research links declining trust in political elites to the rise of populist and right-wing support, less attention has been given to the relationship among young voters. This project addresses that gap by analyzing whether discrust in elite independently drives right-wing voting or whether it interacts with other potential attitudes. I argue that lower trust in mainstream elites increases the likelihood that younger voters will support right-wing parties, but this relationship is also shaped by people's attitudes towards immigration. While this relationship has been observed among adult voters, this study focuses on young voters, given that elite distrust works differently at earlier stages of political socialization. Using data from the Comparative Study of Electional Systems (CSES) Module 5, I analyze elections in Germany (2017, 2021) and the United States (2016, 2020). A logistic regression model with an interaction term between elite trust and immigration attitudes is used to estimate the predicted probabilities of voting right-wing and to compare patterns across election years in both Germany and the United States, to see whether the relationship changes over time within each country. The results reveal that anti-immigration attitudes significantly amplify the effect of low elites' trust, while higher trust in elites dampens the likelihood of right-wing support across both countries, with low variation in the relationship across election cycles. Overall, this study demonstrates that young voters' behavior should not be underestimated by highlighting how distrust in political elites and young voters' attitudes toward

immigration interact with young voters' voting behavior. This offers insight into how early political attitudes take form.

82. How Might Californians Perception of Immigration Changed (in Modern Politics)

Presenter(s): Wyatt Aryana

Advisor(s): Dr. Lewis Luartz

What impact does political ideology have on perceptions toward immigrants in California? Existing literature consistently finds that political ideology is a dominant predictor of attitudes toward immigrants, often portraying a stark divide between liberals and conservatives. Existing research has underscored that the intense anti-immigrant climate had starkly spread to California legislation to enact the 1994 Proposition 187, often called the "Save Our State" initiative. The backlash to Proposition 187 helped mobilize Latino voters and shifted the state's partisan balance. Elements of the debate of the 1980s–90s were more heavily focused on California's vision of itself as a "microcosm of the nation" rather than an outlier or a leader of a neo-nativist movement. The greater question for many political scholars in California is whether these perceptions of immigration in California have changed. I argue that Californians' political ideology strongly predicts Californians' views on immigration attitudes, as ideology in California strongly impacts policy due to the nature of the microcosm. Using the February 2025 PPIC Statewide Survey, I estimate a logistic regression model to test this argument. Preliminary findings reveal the odds of viewing immigrants as a benefit increase significantly for conservatives, moderates, liberals, and very liberal voters relative to the most conservative voters in the state. The results from this regression logistical testing have proven a stronger sense of political openness to open borders. Believing that equality and open opportunity is the great solution to political regression than a greater hive-mindset of nationalism.

83. Reconstructing Hidden Histories: Japanese and Mexican Immigrant Women in Orange County's Citrus Industry

Presenter(s): Timea Steingart

Advisor(s): Dr. Lisa Leitz

This project examines the foundational yet often overlooked contributions of Japanese and Mexican immigrant women to the social and economic development of Orange County's citrus belt from 1910 to 1950. Utilizing an intersectional feminist framework and Historical Geographic Information Systems (H-GIS), this research challenges the dominant public memory that privileges the achievements of white architects and developers while obscuring the racialized and gendered labor force that sustained the citrus industry. Through archival research and oral histories, this project analyzes how housing, schooling, and workplace arrangements structured racial, gender, and class hierarchies in citrus communities. This work demonstrates how interlocking systems of oppression mutually constituted the labor conditions of immigrant women and shaped the ways their contributions have been remembered, or silenced, in public memory. The project culminates in Reconstructing Hidden Histories, a self-guided walking tour of

Old Towne Orange built as an ArcGIS StoryMap. Reconstructing Hidden Histories integrates place-based narratives, data-driven information about locations, archival photographs, historical maps, and oral history excerpts, allowing users to navigate the research spatially and engage with the citrus landscape that remains embedded in the built environment of the city.

Psychology

84. No Event Paradigm: Testing Visual Perception and Consciousness

Presenter(s): Valerie Noria

Advisor(s): Dr. Aaron Schurger

Investigating the mechanisms by which visual information reaches conscious awareness remains an essential focal point in cognitive psychology experimentation. The No-Event project aims to research whether participants can detect the presence of a visual stimulus when they fail to detect any sensory event happening, and investigate the concurrent EEG activity. Specifically, we utilize dichoptic color masking (DCM), a technique based on the phenomenon of dichoptic color fusion (DCF). During DCM, two versions of the stimulus are presented separately to each eye using a stereoscope (e.g. an orange house on a green background and a green house on an orange background). Thanks to the phenomenon of dichoptic color fusion, the opposite colors cancel each other out in the brain and the participant subjectively perceives a solid yellow square with no stimulus in it. Throughout the experiment, participants observe many such stimuli and report if they detected a visual event and what the identity of the stimulus was, while we record their brain activity using electroencephalography (EEG). Preliminary behavioral data we collected indicates that participants are at chance in correctly identifying the presented stimulus. At the same time, the central question of our study is whether, although participants fail to notice a visual event, their visual system nonetheless receives and processes stimulus-related information, which we aim to investigate through the analysis of event-related potentials (ERPs). Taken together, our study attempts to shed light on how visual information can be processed in the absence of conscious detection, contributing to a broader understanding of the mechanisms underlying visual awareness.

85. A Thematic Analysis of University Instructors' Perspectives Regarding DEI Education and Academic Freedom Amid National Debate

Presenter(s): Kalyn Su

Advisor(s): Dr. Amy Moors

Higher education institutions across the U.S. have headlined news outlets and become viral across social media in relation to the federal government's attempts to rid of diversity, equity, and inclusion (DEI) efforts (McClour, 2025; NBC News, 2024; The White House, 2025). Institution administrators, professors, deans, and presidents have lost their jobs and/or jeopardized their reputations due to polarized discussions surrounding DEI (Patel & Goodman, 2025; Priest, 2025). These stories signify a reversal of progress which previously occurred in higher education. In 1991,

34% of universities within the American Association of Colleges and Universities upheld a requirement for students to take at least one course related to DEI before graduating (Zabala-Eisshofer, 2025). In 2024, that number rose to 67% in an analysis of 248 higher education institutions; yet, in response to government orders announced in 2025, hundreds of these institutions removed their DEI requirement (Green, 2025; Rogin, 2025; Speech First, 2024). Amid this political landscape, the present study seeks to better understand pedagogy, experiences, and reactions of university instructors related to such drastic changes revolving DEI, as well as their thoughts on academic freedom in the current climate. To recruit participants, an email was sent to 22 instructors from one institution, who taught DEI-related courses during a semester that received much of the immediate aftermath of local and national backlash. Ultimately, six instructors individually participated in one 45-60 minute interview. Data analysis, particularly, a qualitative thematic analysis, is currently ongoing. However, preliminary analysis shows that instructors unanimously express worry about the current state of academic freedom within the nation, but they continue to uphold the value of DEI in their classrooms, debated but did not change course structure after local and national updates, and received support from department deans.

86. The Importance of Coping Styles and Social Support in Predicting Gastrointestinal Symptoms

Presenter(s): Mia Levine
Advisor(s): Dr. Brooke Jenkins

Many individuals struggle with gastrointestinal symptoms. Coping strategies, often divided into approach and avoidance styles, and social networks may influence these symptoms. Previous research finds that avoidance coping can increase gastrointestinal symptoms, while it is unclear if approach coping has an effect. The present study aimed to explore how coping styles and perceived social support relate to gastrointestinal symptoms. We hypothesized that greater use of approach coping, less use of avoidance coping, and greater social support would be related to fewer gastrointestinal symptoms. During the COVID-19 pandemic, 96 students completed data collection across five time points. In the first wave, they completed a questionnaire assessing coping mechanisms, social support, and gastrointestinal symptoms. In the rest of the waves, gastrointestinal symptoms were assessed. MANCOVA was used to analyze the effects of coping styles and social support in predicting gastrointestinal symptoms. Individuals who reported greater perceived social support at wave one had fewer gastrointestinal symptoms at wave two ($b = -.010$, $p = .009$). Those who employed approach coping at wave one had less gastrointestinal symptoms at wave one ($b = -.204$, $p = .019$). Participants who had higher avoidance coping in the first wave reported higher amounts of gastrointestinal symptoms in the first wave ($b = .296$, $p = .001$). The interactions between social support and both coping strategies were not significant (social support*approach coping: $p = .923$; social support*avoidance coping: $p = .707$). This study highlights that social support and approach coping can potentially improve gastrointestinal symptoms while avoidance coping may make these symptoms worse. Social support did not

moderate the association between either coping strategies and gastrointestinal symptoms. Results emphasize the importance of social support and teaching positive coping strategies to college students which may improve their gastrointestinal symptoms and quality of life.

87. When Do Coping Styles Benefit versus Backfire? Associations of Anxiety, Substance Abuse and Stress during the COVID-19 Pandemic

Presenter(s): Mia Depasquale

Advisor(s): Dr. David Frederick

The COVID-19 pandemic caused high levels of stress and anxiety for many people. People used a wide variety of coping strategies to deal with these stresses, some of which involved unhealthy substance use that can lead to further negative consequences. This study examined how eight different coping strategies were linked with anxiety during the pandemic.

Participants were 4,141 adults (Mage=39) recruited early in the pandemic in 2020 when safer-at-home orders became common.

Some coping styles were strongly linked to feeling greater anxiety (r = .391), whereas other coping styles, such as taking direct

action or positive reframing, were linked to lower anxiety. It is possible that maladaptive coping strategies may instead increase anxiety by amplifying negative emotions after initial relief, and leading people to not address the causes of their anxiety.

Alternatively, other coping strategies may have served as effective buffers against high anxiety. These findings provide insight into which coping styles might be effective in chronically stressful situations.

88. If You and I Were Socks, We'd Make a Great Pair. Men's Views of their Sexually Dimorphic Traits Relate to Dating Confidence.

Presenter(s): Nikoline Smart

Advisor(s): Dr. David Frederick, Dr. Desiree A. Crevecoeur-MacPhail

What it means to be masculine has taken a turn in the last decades. In an era where men and women are no longer distinguished by traditional markers such as what types of jobs they can work and the amount of power they can hold, men are no longer able to rely on these labels to feel masculine. This shift has caused men to create new outlets, putting pressure on their sexually dimorphic traits such as upper-body muscularity, height, body fat, amongst others (Mills & D'Alfonso, 2007). Evolutionary social sciences have extensively examined women's preferences for traits such as muscle mass and voice pitch, reasoning that these traits serve as cues of men's ability to provide direct benefits (e.g., resources) and indirect (genetic) benefits passed on to offspring. At the same time, body image researchers have extensively focused on the social causes and consequences of men's dissatisfaction with their muscularity and body fat. We connected these two research traditions by examining how single men's views of their sexually dimorphic traits related to overall feelings of attractiveness and comfort with dating (e.g., evaluations of appearance; feeling acceptable as a sex partner). We hypothesized that men who have poorer

attitudes about their sexually dimorphic traits would report having lower body satisfaction, and in turn, have lower comfort in early dating situations. We surveyed 1384 single men living in the U.S. via Cloudresearch online panels. The survey included measures of dating confidence, appearance evaluation, and sexuality-related body image. We found men who reported they were less muscular than other men tended to feel less confident in early dating situations. These results underline how ideals of masculinity have influenced men's dating behaviors and body satisfaction.

89. Mental Health and Dating Attitudes among Men Who Are Involuntarily Celibate (but Not Necessarily "Incels")

Presenter(s): Silas J. Fernandes

Advisor(s): Dr. David Frederick

Flirting with a woman and asking her on a date can be an anxiety-inducing experience for some men who face the possibility of rejection. The "incel" (involuntarily celibate) movement consists of an internet subculture of men who tend to hold negative views of women's mate preferences and toward themselves. Less explored are the experiences of men who are involuntarily celibate but who do not necessarily identify with this subculture. We surveyed 435 men ages 18-40 via Cloudresearch online panels about why they were currently single. While very few participants said they identified as incels (N = 11), many more (N = 94) agreed with the statement that they were involuntarily celibate. Men who agreed with the statement more strongly tended to report lower self-esteem (r = -.258), lower dating confidence (r = -.258), and greater anxiety when dating (r = .319). Even when including the "incel" identifying men, however, there was only a weak correlation higher drive for power over women (r = .150). These findings highlight the importance of examining the challenges and concerns faced by men who are involuntarily celibate (but not necessarily "incels").

90. Frontal Alpha Asymmetry as a Neural Marker of Depression Severity

Presenter(s): Andre Hyrkin

Advisor(s): Dr. Desiree Crevecoeur-MacPhail

This study investigates whether frontal alpha asymmetry (FAA), measured using electroencephalography (EEG), can serve as a neural indicator of depression severity. Depression is a highly prevalent mental health disorder, yet current diagnosis relies largely on self-report and clinical interviews without objective biological measures. Within affective neuroscience, FAA has been proposed as a neural marker of motivational processes related to approach and withdrawal behavior. Research suggests that relatively greater right-frontal activity, reflected by higher alpha power in the left frontal cortex, is associated with withdrawal-related emotional states such as depression. However, findings across studies have been mixed, and further investigation using accessible datasets is needed to clarify the reliability of this relationship. The present project uses resting-state EEG data from an open-access dataset to examine whether FAA predicts individual differences in depressive symptom severity. EEG recordings collected during resting conditions

will be processed to compute alpha power in left and right frontal electrode sites, and FAA will be calculated as the difference in log-transformed alpha power between hemispheres. Statistical analyses will test whether FAA significantly predicts depression severity scores while evaluating the strength and direction of this association. It is expected that individuals with higher depressive symptoms will show greater right-frontal dominance, consistent with withdrawal-related motivational patterns. By examining FAA using open and reproducible methods, this project aims to contribute to ongoing efforts in affective neuroscience to identify reliable neural markers of depression. Establishing whether EEG-based measures such as FAA are associated with symptom severity may help inform future work in precision psychiatry and improve understanding of the neural mechanisms underlying mood disorders.

91. Behind the Self-Report: Cognitive Symptoms and Moderating Variables during COVID-19 Quarantine

Presenter(s): Ashley Jo

Advisor(s): Dr. Desiree Crevecoeur-MacPhail

A lesser-known impact of the SARS-CoV-2 (COVID-19) pandemic is the impairment of cognitive functioning among seemingly unsusceptible, healthy, and young populations. Research suggests that the circumstances of extreme social isolation, incited by the pandemic, have had significantly negative impacts on adolescents and young adults across numerous social, cognitive, and psychological dimensions. Although research on both young and older populations has yielded similar results, others have found that adolescents are at a unique and more extreme risk than adults and children. The cognitive load theory (CLT) suggests that high extraneous load reduces working memory capacity and executive function. Applying this theory to the COVID-19 quarantine landscape, this study aims to understand the effects of the COVID-19 quarantine on cognitive functioning amongst adolescents and young adults at the time, moderated by mental health history, personality, and resilience. These variables will be measured using the Perceived Stress Scale, the Cognitive Failure Questionnaire 2.0, the Kessler Psychological Distress Scale, the Big Five Inventory-2, and the 10-item Conner-Davidson Resilience Scale. Statistical methods to analyze such relationships will include correlational and moderation analysis using multiple linear regression. If the hypotheses are supported, the evidence for the long-term impacts of the COVID-19 quarantine will encourage researchers, educators, and government officials to reconsider the current understandings of human development, the structure of schools, and policies that must differ from those of a pre-COVID-19 era. Furthermore, highlighting the evidence-backed struggles of adolescents and young adults will spur research and attention to the various effects on their present and future potential.

92. Moral Foundations and the Effect of Worldview in Second Amendment Attitudes

Presenter(s): Bella Graham

Advisor(s): Dr. Desiree Crevecoeur-MacPhail

Instances of shootings in schools in the United States of America predate the formation of the country itself, and in recent decades, school shootings have only become more common (Conley 2025). Other developed nations have enforced strict gun laws following any instance of mass gun violence, particularly in schools; however, the U.S. has consistently cited freedom to own a firearm (as protected by the Second Amendment of the U.S. Constitution) to oppose stricter gun regulation. This paper aimed to understand the importance Americans place on certain moral foundations and how that informs the unique relationship Americans have with firearms through the lens of Social Identity Theory, Moral Foundations Theory, Social Dominance Orientation, and Belief in a Dangerous World. Data from four surveys were used to assess participants' moral foundations and worldviews as they interact to inform their attitudes toward guns. Participants were asked to consider the moral considerations that inform their decision-making, their perceptions of danger in the world, and their attitudes toward gun ownership. This study hypothesized that certain moral foundations consistent with conservative political beliefs (sanctity, authority, and loyalty) are predictive of more pro-gun attitudes. Additionally, it is hypothesized that these moral foundations interact with social dominance orientation and belief in a dangerous world independently to increase pro-gun attitudes. Similarly, the conjunction of all three traits will result in the most pro-gun attitudes. Data collection is ongoing; however, should these hypotheses be supported, the approach to gun control conversations must adapt. Individuals with potent pro-gun attitudes have a vastly different moral approach to the issue, and a different understanding of their safety, both symbolic and actual. For discourse surrounding gun control initiatives to be relevant to conservative voters, the moral framing of the issue must appeal to their value of authority and purity of the Constitution.

93. Language Choice in Emotional Expression Among Spanish-English Bilinguals

Presenter(s): Chloe Wieland

Advisor(s): Dr. Desiree Crevecoeur-MacPhail

Within the Spanish-speaking community, generational stigma has long shaped the way individuals talk, or choose not to talk, about their emotions. This is especially relevant at a time when society is gradually reducing the stigma around mental health and encouraging open conversations. For bilingual individuals, the use of each language might be triggered by social, environmental, or contextual factors; however, the nuances of communicating emotions can be found in all those situations. What remains less understood is which factors drive an individual's choice to use their native or second language when engaging in emotionally charged conversations. To better understand these dynamics, the survey will include three standardized measures along with an investigator created scenario-based task. The scenarios were designed to examine language choice in an emotionally charged vs. neutral situation and upon reading the scenario participants will respond to two follow-up questions. Data collection is still in progress, but it is anticipated

that bilingual participants will rely more on their primary language in emotional contexts and that higher stigma will relate to lower help-seeking attitudes, except with younger Spanish speakers who will show greater openness to emotional expression and professional support. If supported, these findings may highlight how generational differences and stigma shape emotional communication and attitudes toward mental health care. This would offer insight for culturally and linguistically responsive approaches to mental health outreach within Spanish-speaking communities.

94. The Effect of Artificial Intelligence Use on Student Creativity

Presenter(s): Cole Raber

Advisor(s): Dr. Desiree Crevecoeur-MacPhail

Artificial Intelligence technology has evolved rapidly over the past 5 years, to the point that chatbots can generate large swaths of texts and novel-seeming ideas at levels comparable to human writing, with a tiny fraction of the personal effort required. Consequently, concerns have been raised over the implications on academic and personal development in an environment where students can get by with minimal work. Artificial intelligence use is rapidly increasing worldwide, and the implications of this sudden spike in usage are as of yet poorly understood. As a resource that removes the burden of creative and critical thinking, it is important to take caution and ensure that this technology doesn't reduce, or perhaps even replace, human creativity. This paper draws from Amabile's componential theory of creativity and analyzes the impact of artificial intelligence use on creativity as a whole, as well as the impact on each of the three components of creativity: intrinsic motivation, creativity-relevant processes, and domain-relevant skills, focusing on the domain of writing among psychology undergraduates. Data collection is still in process, but if the hypothesis proves true that artificial intelligence use is linked to a decrease in creativity, the implications are widespread and potential severe. Creativity is one of the most important skills that we possess as a species, contributing immensely to artistic and economic output, interpersonal connection, and the very nature of human life. The atrophy of creativity as a result of artificial intelligence use will only grow more pronounced with time, as children grow up devoid of creative skills on a global level. We must protect this vital characteristic from being stolen from us by our own creation, or we will lose one of the very things that makes us human.

95. Cross-Language Effects on Memory Recall and Self-Perception

Presenter(s): Jimena Casasola Berrocal

Advisor(s): Dr. Desiree Crevecoeur-MacPhail

Research on multilingualism suggests that individuals often show preferences between their native and secondary languages when expressing and perceiving emotional experiences. Understanding bicultural identities through the framework of language offers deeper insight into how cognition and identity development are shaped by linguistic context. The linguistic relativity hypothesis proposes that language influences how speakers perceive and conceptualize the world, suggesting that bilingual individuals may experience memories and self-perception

differently depending on the language being used. This study involved participants reflecting on emotional circumstances either in their primary or secondary language and then responding to surveys with the expectation that depending on which language was used, it would have an effect on their responses. These surveys measured things like memory recall, emotional intensity, their self-esteem, and sense of efficacy. Assuming these hypotheses are supported, this would indicate that in the context of bilingual or multilingual individuals, the use of language dictates much about their communication with the world, understanding of themselves, and intensity of emotional experience and expression. This study provides additional context to further our understanding of interpersonal communication specifically when it comes to individuals that speak multiple languages and carry cultural differences.

96. Modeling the Self Through Media: The Role of Parasocial Relationships in Identity and Mental Health

Presenter(s): Josephine Railston

Advisor(s): Dr. Desiree Crevecoeur-MacPhail

Parasocial relationships are one-sided emotional connections people form with media personalities such as influencers, streamers, and celebrities. Although these relationships are inherently unreciprocated, prior research has shown that they can provide meaningful feelings of companionship. While parasocial relationships are often viewed negatively, the current study examined the association between parasocial relationship strength and multiple dimensions of psychological well-being, including loneliness, perceived stress, self-esteem, and behavior mimicry. Grounded in Bandura's Social Learning Theory, media personalities were conceptualized as role models whose behaviors and attitudes are observed, internalized, and potentially imitated by audiences. Participants completed an online survey assessing the strength of their parasocial connection with a favorite media figure, with a focus on emerging adults who frequently engage with online personalities for entertainment, guidance, and social fulfillment. It was hypothesized that stronger parasocial relationships would be associated with lower levels of loneliness and perceived stress, as well as higher self-esteem. Additionally, greater identification with a media figure was expected to predict increased likelihood of emulating that figure's positive behaviors and attitudes. Overall, the findings highlight both emotional and behavioral outcomes of parasocial relationships and suggest that these connections may function as a meaningful source of support and social learning. These results carry important implications, indicating that rather than being dismissed as inherently harmful, parasocial relationships may serve adaptive roles when individuals are aware of their influence, underscoring the need for informed engagement rather than blanket discouragement.

97. Phobias in College Students: Types, Development, University Support, and Daily Coping Strategies

Presenter(s): Sophie Mines
Advisor(s): Dr. Desiree MacPhail

Specific phobias are both prevalent and frequently overlooked among college students, despite the significant academic and social pressures associated with this transitional life stage. These phobias, defined as intense, irrational fears of specific objects or situations, can lead to substantial distress and avoidance behaviors that interfere with academic performance, social functioning, and overall well-being. Although university counseling centers are widely available, many lack specialized treatments for specific phobias, resulting in underutilization of services. Students may avoid seeking help due to stigma, a desire to appear independent, or the belief that their symptoms are not severe enough to warrant intervention. Classical conditioning provides a useful framework for understanding the development and maintenance of phobias in this population. Phobias can arise when a previously neutral stimulus becomes associated with a negative emotional experience. For example, a student who experiences intense anxiety during a class presentation may begin to associate public speaking with fear, reinforcing avoidance behaviors that prevent engagement with academic opportunities. Over time, these avoidance patterns strengthen the phobic response and hinder the development of coping skills or positive experiences that could reduce fear. The present study aims to examine intervention and coping strategies for college students diagnosed with specific phobias and to evaluate how these approaches influence academic, social, and emotional functioning. Findings may inform university mental health programs by encouraging the development of targeted interventions and outreach initiatives. By identifying effective coping strategies and reducing barriers to care, colleges can support students' academic success, improve overall well-being, and foster a campus environment that promotes mental health awareness and proactive engagement with psychological services.

98. Effectiveness of Cognitive Behavioral Therapy (CBT) in Treating Anxiety Disorders in Young Adults

Presenter(s): Palak Dhami
Advisor(s): Dr. Jillian Janowiak

Anxiety disorders have become extremely common among young adults and can have a serious impact on their academic performance, relationships, and overall well-being. Cognitive Behavioral Therapy (CBT) is often the first treatment that is used for anxiety disorders and also helps people recognise and change maladaptive thoughts and behaviors. This review looks at how well CBT reduces anxiety symptoms in young adults and what factors may be affecting the effectiveness of this treatment. This project examines research from peer-reviewed journals on CBT for different anxiety disorders, such as generalised anxiety disorder (GAD), social anxiety disorder, and panic disorder. The findings show that CBT leads to reduced anxiety and improvement in the daily functioning of an individual. It works in very different ways, including

individual therapy, group sessions, and online therapy. The findings also suggest that earlier implementation of CBT is associated with better outcomes in young adults. However, its success can depend on things like how involved the client is in therapy and whether they have other mental health challenges, such as depression, eating disorders, PTSD (post-traumatic stress disorder), sleep disorders, etc. In summary, this review shows that CBT is a flexible and effective way to treat anxiety in young adults and supports its ongoing use in clinical practice.

Sociology

99. Understanding Mandarin Heritage Language Speakers at Chapman

Presenter(s): Aleksander Lam
Advisor(s): Dr. Shyh-Wei Yang

As the ethnic and linguistic makeup of postsecondary schools diversifies, the need for more heritage-language (HL) classes arises. HL learners are an emerging demographic that is increasingly enrolling into university language classes. These students are often transnational citizens with familial and cultural connections to both the USA and their countries of origin — they are familiar with their HL language but do not speak it fluently. To HL learners, language is a key to identity, and mastery of a language affects their feelings of self-worth. In this way, HL learners constitute a subset of linguistic diversity; their backgrounds can differ greatly from those of their peers' monocultural backgrounds, which, in turn, affects classroom learning and peer dynamics. To design assessments and curricula that meet their needs, HL learners' identities and cultural patterns need to be understood.

This work hopes to identify sociocultural factors that influence HL learners' identities and motives for learning their HL. Part of my research will also be to analyse the various definitions and uses of the term "heritage language," as the meaning shifts with the individual's attitudes towards their own fluency and family dynamic. Participants will be heritage Mandarin speakers recruited from Chapman's Chinese program and personal networks. As a HL learner myself, I am enrolled in Chapman's Chinese program and hope to use both autoethnographic methods and qualitative ethnographic methods to discern attitudes towards HL learning. Along with interviewing myself and reflecting on my own experience in the Chinese program, I will also interview other students and use inductive coding to identify patterns and emotions that arise. Through this research, HL learners' subjective experiences and our identities will be better understood. I hope to produce a better picture of our educational needs and mobilise that information to create new educational frameworks.

100. "Sink or Swim" : Hustle Culture in the Restaurant Industry as a Means for Worker Autonomy

Presenter(s): Coco Ridge

Advisor(s): Dr. Steven Pfaff

Industrial and white-collar work has been thoroughly examined as exploitative and alienating in the sociological study of work. As the nature of work rapidly evolves, service work has emerged as the dominant sector of the economy. The literature identifies significant structural differences in service work, which complicate the historical understanding of workers' experiences. Existing food service ethnographies have found that workers ultimately experienced autonomy in their work across varying conditions. I seek to examine how restaurant servers experience their work within the restaurant structure. This ethnography examines a large brewery in Orange County, CA, drawing on four months of detailed field notes of participant observation. I utilize the negotiated order perspective to examine how servers continuously construct the restaurant's social order through their behavior. I find that servers negotiate nearly every aspect of their roles, mostly horizontally among coworkers rather than vertically with management. I argue that the server role is created by the restaurant structure but permits thorough negotiation through server behavior and that servers experience these negotiations as an expression of autonomy. I describe the brewery's culture as a "hustle culture," embraced and reinforced by workers through this process of negotiation. This study offers insight into the fundamental question of why workers accept conditions like "hustling," historically understood as exploitative, arguing that workers are agentic actors in shaping the conditions of their work.

101. The Texas Chainsaw Massacre: An Exploration of Feminism Within Horror

Presenter(s): Alexia Danessi

Advisor(s): Micol Hebron, CK Magliola

This research will be analyzing the events, characters, and motivations in the Texas Chainsaw Massacre through a feminist lens. The film highlights issues that are discussed within feminist frameworks and showcases their extreme consequences. Since most studies on feminist theory and film theory on horror movies center around issues within their area of focus, there is little conversation about feminism within horror, usually the critique is in regards to misogyny. Feminist theory and film theory fuse in an unexpected place for this study. This is a literature review of feminist theory and film theory focused on The Texas Chainsaw Massacre and an analysis of character tropes and events to demonstrate how they embody feminist concerns. The film is an unexpected vessel of feminist theory as it reflects lived experiences in society at large. Nuclear family structures, gender roles, and the impacts of government interventions (or their lack thereof) are all explored and perverted in this classic horror film.

World Languages and Cultures

102. El Papel del Bilingüismo en la Atención Médica a Pacientes Hispanohablantes

Presenter(s): Ariela deLeon

Advisor(s): Dr. James Hirsch

Spanish-speaking patients in the United States frequently face significant barriers to quality healthcare due to language differences between themselves and their providers. This project examines how English-Spanish bilingualism among healthcare professionals meaningfully improves the quality of care delivered to Spanish-speaking patients. To analyze this, the project draws on a review of academic literature on bilingualism, language concordance, medical interpretation, and health outcomes, as well as interviews with healthcare professionals across various fields who possess different levels of Spanish fluency and regularly work with Spanish-speaking patients. This project argues that bilingualism among healthcare providers is not merely a supplementary skill but a necessary component of equitable, patient-centered care. The evidence drawn from the literature and provider interviews reveals that language concordance directly shapes patient comprehension, medical decision-making, and the overall patient-provider relationship. Ultimately, this study contends that healthcare institutions should reframe language access not as a logistical consideration, but as a clinical priority with direct implications for patient health outcomes.

103. La Barrera Lingüística Como Determinante Estructural de la Salud en Estados Unidos.

Presenter(s): Emerson Ellis

Advisor(s): Dr. James Hirsch

For millions of Spanish-speaking patients in the United States, access to quality healthcare depends on a factor the system too often overlooks: language. How does the absence or inadequacy of translation of physiological language generate discrepancies in the quality of healthcare for Spanish-speaking patients in the U.S.? This study argues that these disparities are not inevitable, but rather the product of specific institutional decisions, including the lack of professional interpreters and insufficient training in intercultural communication. Drawing on national epidemiological data to illustrate the scope of the issue, medical safety reports to identify mechanisms of clinical error, and scholarship on cultural competence as an explanatory framework, this analysis reveals how language barriers compromise the three most critical stages of the doctor–patient relationship: diagnosis, informed consent, and treatment adherence. The reliance on unqualified interpreters does not resolve these issues but instead shifts their consequences onto patients themselves. In a multilingual nation, equitable healthcare is not an goal but an obligation—one the system has the resources to meet, yet has not consistently prioritized.

104. High- and Low-Context Communication in U.S.–Mexico Border Maquiladoras and Migrant Integration

Presenter(s): Kyler Escutia

Advisor(s): Dr. James Hirsch

This study examines how differences between high-context and low-context communication systems generate misunderstandings in two key settings: labor negotiations in border maquiladoras in Mexico and the acculturation of Mexican migrants in California. The objective is to demonstrate that these tensions are not simply the result of linguistic barriers, but of structural differences in how meaning is constructed, as outlined in Edward T. Hall's theory. The analysis combines a theoretical and applied approach, drawing on Hall's framework alongside academic literature on maquiladoras and migration. It first outlines the defining features of high-context and low-context cultures, characterizing Mexico as predominantly relational and implicit, and the United States as explicit and task-oriented. It then examines communicative dynamics in maquiladora workplaces, including wage negotiations, production demands, and supervisor–employee interactions, and extends this analysis to migrant experiences in institutional and social contexts in California. The findings show that low-context communication norms often function as the institutional standard, shaping expectations of transparency, accountability, and professionalism. As a result, high-context communicative practices are frequently misinterpreted, producing recurring misunderstandings that reflect deeper structural asymmetries rather than isolated cultural differences. The study concludes that intercultural contact does not lead to communicative homogenization, but instead to the emergence of hybrid practices. In this sense, the U.S.–Mexico border operates not only as a geographic boundary, but as a dynamic communicative space where meaning is continuously negotiated.

105. The Decline of the French Healthcare System

Presenter(s): Benjamin Blatt

Advisor(s): Dr. Veronique Olivier

In this thesis, we will dive into the ins and outs of the French healthcare system. Its system, regarded highly and idolized by most for many decades, has been struggling in recent years with its systeme de santé or healthcare, as it has been on the decline. In this research, we will examine the different reasons for this occurrence. Starting with the background of the French healthcare system we know today, we will see the path it took from its first introduction after World War II. Following with a dive into significant figures in time that molded the system. Some remarks on the positives the system has experienced, such as recognition from the World Health Organization. An analysis of the effects the system will experience nationally as "baby boomers" continue to enter retirement and experience more health conditions. Additionally, rolling into the decline of the system and how it's progressing with the problems that arise with increased medical deserts, medical burnout, citizens' lack of confidence in the system, the system's fragility (financially and administratively), the lack of preventative care, the lasting effect of Covid-19, and how the carte vitale plays its role in French society. Lastly, we'll also be measuring what's at stake

for France and what is to come for the future of the country. There have been many policy changes and projects started within the last few years. To have a better understanding of what the French should anticipate under their system, we'll look at changes to medical school, trying to eliminate medical deserts, the integration of artificial intelligence in medicine, and discuss how telemedicine continues to be a tool to connect patient and provider.

106. Les Vedettes: An Exploration of French Female Film Stars

Presenter(s): Kalika Lothian

Advisor(s): Dr. Veronique Olivier

This project aims to examine the cultural significance of the film industry and the power it holds in French society by analyzing the lives and impacts of French actresses throughout film history. We begin with an overview of film's origins and highlight pioneering filmmakers such as Alice Guy-Blaché and Musidora, who rose to prominence during the silent era. Their works emphasized femininity and feminist values, in contrast to those of their male counterparts. Blaché is credited as the first director to create a narrative film, and Musidora, with her character Irma Vep, popularized the archetype of the femme fatale. With the introduction of sound, the film industry became more regulated, and film stars became household names. Everything changed in 1939, with the beginning of World War II. The Occupation of France by Nazi Germany had a profound impact on the entire country. Actresses joined the resistance as spies and used their platform and status to defend and support their country. Film began an immense revolution with the French New Wave, and these actresses had immense influence and social status. Brigette Bardot will remain a household name, and the works of Catherine Deneuve will continue to be studied and analyzed. Finally, what does the present day hold for French cinema and actresses? With social media, stars have easier access to their audience and can use their voice and platform to effect serious societal change.

107. L'Empire de l'Élégance: Histoire et Marketing du Luxe en France (The Empire of Elegance: The History and Marketing of Luxury in France)

Presenter(s): Kayleigh Gilbert

Advisor(s): Dr. Veronique Olivier

This thesis explores how France established and maintains its global leadership in the luxury sector by transforming high-end consumption from a tool of royal power into a modern economic pillar. The central research examines the historical evolution of French luxury, moving from the court of Louis XIV at Versailles to current global marketing, as well as how the strategic use of France's national identity creates a manufactured desire that goes beyond a physical product. Within the context of luxury history and consumer economics, the project builds upon the work of scholars like William Beik and Michael Kwass to show how France moved from simply making expensive goods to defining a global culture of prestige. The thesis combines a historical analysis of 17th and 18th century social hierarchies with a study of modern media and advertising, such as campaigns by Air France and Louis Vuitton. The research concludes that the French luxury

industry has succeeded in framing national consumption as an investment in cultural heritage rather than a display of vanity, effectively neutralizing historical debates and social criticisms. By linking products to national identity and an array of emotional experiences tied to a purchase, France protects its luxury sector from economic shifts and social critique. Ultimately, the thesis argues that France does not merely market goods but sells a curated image of sophistication, ensuring that the "French brand" remains a dominant and resilient force in the global marketplace.

Art

1. **Vive la Commune! The Artistic Legacy of the Paris Commune**

Presenter(s): Mason Fujikawa

Advisor(s): Dr. Veronique Olivier

In 1871, after the fall of the French Empire in the Franco-Prussian War, the new republic left Paris defenseless. In response, a coalition of anarchists and socialists formed a revolutionary government called the Paris Commune. The Communards remitted rent payments, separated church and state, and planned to convert abandoned factories into worker-owned cooperatives. Inspired by past French revolutions, they erected barricades in the streets, and for a moment, the red flag flew over Paris. Two months later, the Republican army returned to the city and put an end to the Commune, killing thousands during the "Bloody Week." The Commune lasted only seventy-two days, but its revolutionary spirit echoed throughout history. Subsequent communist movements, such as the Russian Revolution of 1917, the Shanghai Commune of 1967, and May 68 in France, emulated the Communards, placing themselves in the same revolutionary lineage. Through posters, paintings, and films, these self-fashioned successors immortalized the Commune as a model, not just a political one but an iconographic one. The red flag and barricades of 1871 became the symbols of communist revolution around the world. This thesis examines the shifting legacy of the Paris Commune using its various representations in art.

Athletic Training

2. **Analyzing My Daily Habits Through Statistics**

Presenter(s): Julia Williams

Advisor(s): Dr. Oliver Lopez

This semester, I am completing a personal data project where I track different aspects of my daily routine to better understand my habits using statistics. The purpose of this project is to collect consistent data that reflects both my health and lifestyle behaviors over time. The variables I am recording include daily workouts, gym progress, protein intake, water intake, steps per day, screen time, swimming activity, hours of sleep, and money spent.

I record my data each day throughout the semester in order to build a complete and organized dataset. By tracking a variety of categories, this project captures both physical activity and everyday habits, allowing for a broader view of my daily routine. The goal is to create a dataset that can later be used to explore patterns, relationships, and trends between variables such as sleep, activity levels, and spending habits.

This project connects directly to concepts learned in class, including organizing data, summarizing variables, and using visualizations. Methods such as calculating the mean, median, and standard deviation, along with creating graphs and charts, will help make the data easier to understand and interpret.

Overall, this project demonstrates how statistics can be applied to real-life situations through simple and consistent data collection. By tracking my own habits, I am building a dataset that can provide meaningful insights into daily behaviors and decision-making.

Biochemistry and Molecular Biology

3. Macromolecular Crowding Effects on Collagen Gelation

Presenter(s): Megan Hicks
Advisor(s): Dr L. Andrew Lyon, Dr. E. Daniel Cardenas-Vasquez

Despite extensive study of collagen gelation, the influence of crowding agents, such as microgels, on its kinetics remains poorly characterized. Collagen self-assembles from a homogeneous collection of thin rod-shaped molecules into a fibrillar network composed of three protein chains wound into a triple helix. The rigidity and support collagen provides to connective tissues, bones, and tendons make it a crucial protein for wound healing, tissue structural support, and tissue regeneration. This project investigates the influence of macromolecular crowding on the rate of collagen synthesis by incorporating increasing concentrations of ultra-low crosslinked (ULC) microgels into the solution. Collagen gels were prepared with a consistent collagen concentration (1.05 mg/mL) and varying microgel concentrations (1-20 mg/mL), and analyzed by oscillatory rheology. Time-dependent changes in the viscoelastic storage modulus (G') were measured, and gelation onset time was quantified as a function of microgel concentration. Based on preliminary observations and studies, higher macromolecular crowding, or higher microgel concentration, accelerates the rate of collagen synthesis and gelation. These results highlight the role of macromolecular crowding in modulating collagen assembly kinetics and suggest a mechanism by which microgels enhance fibril formation.

4. Enzyme Activity in Crowded Colloidal Media

Presenter(s): Manya Chandra
Advisor(s): Dr. 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 visualze 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. **Developing Mechanically Tunable Extracellular Matrix Mimicking Composites Using Alginate**

Presenter(s): Neeraja Gajendran

Advisor(s): Dr. Andrew Lyon

Tissue engineering relies on biomaterials that replicate the extracellular matrix (ECM) to support cell growth, guide regeneration, and maintain nutrient transport. Collagen is commonly used in hydrogel scaffolds due to its natural integrin-binding domains, but collagen-only networks often lack the mechanical stability needed for more demanding tissue environments. To address this limitation, we have developed composite hydrogels combining collagen with densely packed poly(N-isopropylacrylamide)-based microgels to mimic the crowded, heterogeneous structure of native ECM while enhancing material robustness. Building on this approach, we incorporated alginate, a negatively charged polysaccharide capable of forming ionically crosslinked networks with calcium ions, to further tune composite mechanics and collagen assembly.

Two composite formulations were prepared for comparison. The control condition contained water, pNIPAM microgels, sodium bicarbonate, and tropocollagen. In the alginate condition, the added alginate solution replaced an equivalent volume of water to maintain a constant total reaction volume. Collagen morphology was assessed using confocal and image analysis in custom Python code. To enable quantitative fiber analysis, composites were also prepared with dyed collagen and analyzed using custom Python code.

Collagen in microgel-only composites formed a dispersed, web-like network. In contrast, the incorporation of alginate promoted the formation of more defined collagen bundles, with visible differences in morphology observed even prior to crosslinking. Together, these results suggest that alginate is effective in tuning microgel:collagen composites by reshaping collagen architecture and potentially increasing composite rigidity, ultimately supporting the development of more physiologically relevant, mechanically adaptable ECM-mimetic scaffolds for tissue engineering applications.

6. Quantitative Morphological Analysis of Collagen Networks in Alginate-Crowded Pastes

Presenter(s): Sebastian Herrera Vargas, Neeraja Gajendran

Advisor(s): Dr. 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, necessitating quantitative collagen fibrillogenesis analysis techniques to quantify observed fiber growth differences in samples. The Lyon Group has developed a python-based code to quantify morphological features in samples, a progression from the more subjective analysis technique utilizing FIJI, an open-source ImageJ software application for bioimaging. 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 python 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. Decoding Methyl–Phospho Crosstalk on Histone H3 in Breast Cancer

Presenter(s): Kalli Lim

Advisor(s): Dr. Cecilia Lopez

Histone post-translational modifications (PTMs) regulate chromatin structure and gene expression through combinatorial crosstalk. Aurora B kinase (AURKB) phosphorylates histone H3 at serine 10 (H3S10), a hallmark of mitotic chromosome condensation and subsequent cell division. Overexpression of AURKB leads to hyperphosphorylation of H3S10, driving proto-oncogene expression and tumor progression in breast cancer. Protein arginine methyltransferase 5 (PRMT5) preferentially methylates arginine-8 in histone H3, which overlaps with the AURKB recognition sequence arginine-lysine-serine (RKS) motif of histone H3. This convergence raises the hypothesis that arginine methylation at R8 sterically or electrostatically inhibits neighboring serine-10 phosphorylation, representing a novel regulatory mechanism against aberrant AURKB activity. To test this, we employed an ADP-Glo luminescence-based kinase assay to quantify AURKB activity on histone H3 peptides harboring defined methylation states: unmethylated R8

and dimethylated arginine-8 residues flanking S10. Baseline phosphorylation was established using unmethylated substrates and validated for sensitivity, reproducibility, and linear dynamic range. Comparative assays between methylated and unmethylated peptides will determine whether arginine methylation reduces phosphorylation efficiency at S10. Molecular modeling using PyMOL complements biochemical findings by visualizing steric and electrostatic interactions within the RKS motif. These experiments will provide quantitative evidence for or against inhibitory crosstalk between arginine methylation and serine phosphorylation on histone H3. If confirmed, arginine methylation within the RKS motif could serve as an endogenous brake on AURKB-driven hyperphosphorylation, establishing a novel epigenetic switch relevant to cancer progression. Insights from this work will lay the foundation for future cell-based studies using methyltransferase and kinase inhibitors, ultimately advancing understanding of epigenetic dysregulation in breast cancer.

8. A Ruthenium-Labeled MoFe-Protein Variant for FeP-Independent Nitrogenase Catalysis

Presenter(s): Jack Martinson
Advisor(s): Dr. Cedric Owens

Nitrogenases are the only enzymes in nature capable of catalyzing the reduction of nitrogen into ammonia. Molybdenum-dependent nitrogenase composes the Fe-protein (FeP) and MoFe-Protein (MoFeP). FeP couples MgATP hydrolysis to electron transfer, reducing MoFeP's iron-sulfur cluster (the P cluster), and ultimately the catalytic molybdenum cofactor (FeMoco). It has been suggested that during the reduction cycle, one sulfur in FeMoco becomes loosely bound and spontaneously released, potentially needing replenishment during catalysis. Additionally, MoFeP has rarely been shown to catalyze substrate reduction without FeP. Despite having lower or comparable redox potentials to FeP, sacrificial electron donors like dithionite (DT) cannot support MoFeP catalysis alone. However, photosensitizer-labeled MoFeP variants have been shown to catalyze proton and acetylene reduction without the help of FeP. Ruthenium photosensitizers like Ru(bpy)2(5-iodoacetamido-1,10-phenanthroline) (Rubpy) enter a highly reductive state upon photochemical MLCT excitation and reductive quenching with DT. Interestingly, replacing DT with other sacrificial reductants diminishes catalytic activity. It is unknown whether this is due to DT's photochemical properties or DT's ability to replenish FeMoco's lost sulfur. To activate MoFeP turnover with light and probe DT's roles in catalysis, we synthesized Rubpy and validated it with proton NMR and UV-Vis spectroscopy. A MoFeP variant was covalently labeled with Rubpy at a P cluster-proximal cysteine. Labeling was confirmed with fluorescence SDS-PAGE and UV-Vis spectroscopy. Rubpy-labeled MoFeP demonstrated FeP and DT-dependent catalytic activity half that of unlabeled MoFeP. Rubpy-labeled MoFeP demonstrated no light-driven catalytic activity, possibly due to Rubpy photobleaching or improper laser parameters. Current investigations will troubleshoot the light-driven turnover assays. Future experiments will test if DT can be replaced with sulfur-containing and sulfur-lacking electron donors, supporting the theory that DT can replenish FeMoco's lost sulfur.

9. **The Activation Thermodynamics of Nitrogenase**

Presenter(s): Katie Sanders

Advisor(s): Dr. Cedric Owens

Nitrogenase converts atmospheric dinitrogen gas into ammonia, an essential building block for biosynthesis in plants. Nitrogenase is a two-protein complex consisting of the MoFe protein (MoFeP) and Fe protein (FeP). FeP is a reductase that transfers electrons to MoFeP. MoFeP contains the FeMoco active site and the P-cluster, which shuttles electrons between FeP and FeMoco. Nitrogen reduction is an energy-dependent process since FeP hydrolyzes two molecules of ATP per electron transfer. The temperature-dependence of nitrogenase displays nonlinear Arrhenius behavior since its activity declines dramatically at low temperature. The mechanistic reason for this dropoff is unclear. Furthermore, the activation thermodynamics for the different nitrogenase turnover steps have not been fully reported. Here, we report the activation thermodynamics for two steps of the Azotobacter vinelandii nitrogenase turnover cycle, the initial electron transfer between FeP and MoFeP, and the final step, FeP dissociation. Temperature-dependent kinetics of electron transfer were fit to an nonlinear Eyring model, where the activation heat capacity term is non-zero. The activation thermodynamics parameters were ΔH‡ = +78.6 kJ/mol, ΔS‡ = +60.1 J/(mol K), ΔCp‡ = -5.2 kJ/(mol K), and ΔG‡ = +60.7 kJ/mol at 298K. These data align well with previously reported results on the change in heat capacity associated with FeP to MoFeP electron transfer by Mayweather et al. Turnover is limited by phosphate release after ATP hydrolysis and subsequent FeP dissociation. The temperature dependent kinetics for turnover yield the activation parameters for these rate limiting steps. The activation thermodynamics parameters for phosphate release and FeP dissociation were determined to be ΔH‡ = +94.6 kJ/mol, ΔS‡ = +78.2 J/(mol K), ΔCp‡ = -7.0 kJ/(mol K), and ΔG‡ = +71.3 kJ/mol at 298K. These data suggest that both the initial electron transfer and phosphate release/FeP dissociation are entropically favorable and accompanied by a negative change in the heat capacity of between the ground and transition state.

10. **Mutational Analysis of the CO ProtectivePprotein CowN in the Diazotroph Glucoacetobacter Diazotrophicus**

Presenter(s): Julie Takei

Advisor(s): Dr. Cedric Owens

Nitrogenase is an important enzyme responsible for biological nitrogen fixation, the conversion of atmospheric dinitrogen gas into the plant nutrient ammonia. Nitrogenase is composed of the iron protein (FeP) and molybdenum-iron protein (MoFeP). MoFeP, which contains the active site, is highly sensitive to inhibition by carbon monoxide (CO). In diazotrophic bacteria, such as Gluconacetobacter diazotrophicus, the protein CowN provides protection against CO, although the CowN mechanism remains somewhat unclear. Previous studies suggested that an acidic Glu residue (E87) near CowN's N-terminus is required for CowN association with MoFeP and CO protection. This work continues the mutational analysis of G. diazotrophicus CowN. A Lys residue (K68) in G. diazotrophicus CowN is predicted to form hydrogen bonds with E87. The K64A CowN

mutant is misfolded and incapable of CO protection. In contrast, the K64R mutant is folded. This suggests that a positive charge at position 64 is required for protein stability. This result may be explained by the observation that K68 forms hydrogen bonds with both E87 and a nearby Glu residue, E84. We speculate that K68 must form a hydrogen bond with at least one of the two Glu residues for CowN to properly fold. The E87A CowN mutant, although inactive, is folded, lending support to this hypothesis. Ongoing work focuses on determining the stability of the E84A CowN mutant and investigating the CO protective activity of the K64R and E84A mutants.

11. Biomimetic 3D Printing of Hagfish Egg Anchor Filaments

Presenter(s): Ethan Bravo

Advisor(s): Dr. Douglas Fudge

Hagfish (Eptatretus spp.) produce eggs that are encased in a durable capsule with specialized structures at each end known as anchor filaments. Anchor filaments are made up of protein-based fibers and exhibit notable tensile strength but their mechanical behavior and how well they can be replicated remain largely unknown. This project is currently in the early prototyping phase, where anchor filaments from three different hagfish species (Deani, springeri and Limosa) are being compared based on their structure. Each species shows noticeable differences in lobe shape and arrangement. Deani has more branching, almost tree-like lobes, which seem to create more opportunities for the stem and lobes to grab or lock in place. Springeri only has two larger lobes but once they lock, they appear like they could hold more force before releasing. Limosa has around four to five smaller lobes, which at first seems like it would create more contact points but so far it doesn't seem to interlock as effectively. Initial 3D printed models have already been created using PETG and a standard printing process. While formal tensile testing has not yet been completed, these early prints help give us an idea of how the structure might perform. Moving forward, we plan to test different materials and printing methods. For example, using thermoplastic polyurethane (TPU) or a flexible resin to improve quality while maintaining flexibility. Overall, this project is working toward developing a bioinspired fastening system based on anchor filaments, basically an organic alternative to Velcro, that could offer different or improved mechanical properties.

12. Calcium-Dependent Mechanism of Calmodulin Binding to the HIV-1 Matrix Protein

Presenter(s): Al Hussein Gamal El Din

Advisor(s): Dr. Jerry LaRue

This study investigates the calcium-dependent interaction between calmodulin (CaM), a key cellular signaling protein, and the HIV-1 matrix (MA) domain of the Gag polyprotein, which plays a central role in viral assembly at the host cell membrane. While previous studies have established that CaM binds MA in a calcium-dependent manner and induces conformational changes that expose the myristoyl group required for membrane association, the precise mechanism of this interaction remains unclear. In particular, it is unknown whether binding is initiated through a specific MA domain and whether it follows a sequential, two-step process involving CaM's N- and

C-terminal lobes. To address this, fluorescence spectroscopy will be used to monitor conformational changes in MA during CaM binding under both calcium-present and calcium-absent conditions. Tryptophan fluorescence within MA provides a sensitive probe for detecting binding-induced structural changes, allowing quantitative analysis through titration experiments. In addition to full-length MA, isolated N-terminal and C-terminal domains will be examined independently to determine whether binding is domain-specific or cooperative. It is expected that calcium-dependent shifts in fluorescence intensity and wavelength will be observed under calcium conditions but not under calcium-absent conditions, supporting the role of calcium as a regulatory trigger. Furthermore, differential responses between domains may reveal a hierarchical or sequential binding mechanism. Overall, this work aims to establish a mechanistic model of CaM-MA interaction, providing insight into how host calcium signaling regulates HIV-1 assembly and identifying potential targets for disrupting viral production.

13. **Regulation of Stress Granule Formation by ISR and TOR Signaling Pathways in Drosophila Ovaries**

Presenter(s): James Zoumas, Al Hassan Gamal El-Din, Maahi Rakholia, Risha Shaikh

Advisor(s): Dr. Jerry LaRue

The Human Immunodeficiency Virus (HIV) is a disease which attacks the Immune system and inhibits the body's ability to fight off infection. When left untreated HIV develops into acquired immunodeficiency syndrome (AIDS). The HIV- matrix protein (HIV-MA) is a key part of the Gag polyprotein which is crucial to the replication of HIV. HIV-MA facilitates replication of HIV through its myristoyl group which allows HIV-MA to bind to the plasma membrane of the host cell allowing HIV to undergo its replication cycle. However, for this to occur HIV-MA must first bind to Calmodulin (CaM) which is a calcium messenger found in all eukaryotic cells and is upregulated by HIV. Little is known about the binding interaction between CaM and HIV-MA but resent research suggests that it is calcium (Ca2+) dependent. By exploiting the two-tryptophan residues W16 and W36 one being on the N-term and the other on the C-term of the binding domain of HIV-MA and are in the binding sites fluorescence spectroscopy was used to reveal that CaM and HIV-MA bind via a two-step process where the C-terminus of CaM binds to the N-term of MA first.

14. **Regulation of Stress Granule Formation by ISR and TOR Signaling Pathways in Drosophila Ovaries**

Presenter(s): Jacqueline Orellana Mejia

Advisor(s): Dr. Rebecca Glineburg

This study tests the hypothesis that inhibition of translation through ISR activation will promote stress granule formation, while modulation of TOR signaling will regulate SG and P-body formation. Cells rely on multiple signaling pathways to coordinate responses to environmental and cellular stress, yet how these pathways interact to regulate stress granule (SG) formation remains largely unexplored, particularly in ovarian tissue. In this study, I investigate how modulation of the Integrated Stress Response (ISR), Target of Rapamycin Complex 1 (TORC1), and

Target of Rapamycin Complex 2 (TORC2) pathways influences stress granule dynamics in the ovaries of Drosophila melanogaster. While individual roles of these pathways in translation and stress signaling have been characterized, their combined effects on SG formation have not yet been investigated. Ovaries expressing fluorescently tagged markers for stress granules (mCherry-Rin) and P-bodies (Me31B-GFP) were dissected and pre-treated with pathway-specific inhibitors ISRIB, Torin, and Rapamycin, followed by either oxidative stress or no stress control treatments. I used confocal microscopy to assess differences in granule formation across stages of oogenesis. These conditions enable direct comparison of how inhibition of ISR and TOR signaling pathways impacts SG assembly. To further evaluate the role of RNA in granule stability, a subset of stress treated samples were treated with RNase prior to imaging. Preliminary findings suggest that ISR signaling is needed for stress granule formation, while TOR signaling modulates the intensity of SG assembly. This work addresses a gap in understanding how multiple stress-response pathways integrate to control post-transcriptional gene regulation during oogenesis.

Biological Sciences

15. **The Role of Predator Derived Chemical Signaling in Shaping Prey Behavior within Intertidal Marine Ecosystems, with a Specific Focus on Hermit Crab Locomotion in Response to Red Rock Crab Pheromones.**

Presenter(s): Youssef Makrom
Advisor(s): Dr. William Wright

This study examines the neurobiology and ecology of marine invertebrates, with a primary focus on predator-prey relationships and interactions. The experiment investigates the role of predator derived chemical signaling in shaping prey behavior within intertidal marine ecosystems, with a specific focus on hermit crab locomotion in response to red rock crab pheromones. Chemical communication (including pheromone and hormone mediated responses) is known to influence survival strategies (predator avoidance, territoriality, and interspecies interactions) amongst prey, yet isolating these effects experimentally remains challenging due to confounding environmental variables. To address limitations from previous experimental designs, a more controlled apparatus was designed and constructed to isolate predator pheromones as the sole independent variable affecting prey movement. The system utilized a gravity driven, dual channel structure that contained symmetrical chambers and piping to deliver a continuous and consistent flow of freshly generated predator pheromone cues from red rock crabs to hermit crabs. The structure also simultaneously minimized external variability (light, feeding state, phenotypic variation, physical disturbance, and unreliable predator pheromone dispensing). Hermit crab movement was quantified by recording lap counts during pre and post predator pheromone exposure phases across 32 trials. Pre treatment results showed that both pre treatment groups showed similar lap counts before the treatment. Post treatment results demonstrated a significant increase in locomotion in hermit crabs exposed to the predator pheromone treatment compared to the controls that were not exposed to the treatment. The post treatment means were 3.69 laps for

the experimental group versus 2.63 laps for the control group (1.06 laps difference) and a statistically significant difference (WSRK test, p = 0.0008). These findings support the hypothesis that predator emitted chemical cues directly enhance prey activity, likely as an adaptive response to perceived predation risk.

16. Hagfish Slime Gland Morphometrics

Presenter(s): Andrew Gabriel, Samantha 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 located from head to tail 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 sinistral side of the animal, the lack of data for the dextral side has created ambiguity in whether or not the number of slime pores differ on both sides. This study investigates the taxonomic differences of slime gland morphometrics between the sinistral and dextral sides of 40 individuals comprising 9 different species of hagfish. Our results suggest that there is no significant 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 work will measure the number of slime pores on both the sinistral and dextral sides of several more species using museum specimens, compare pore counts across sections, and explore possible correlations between gland counts and size using μ-CT scans.

17. Capturing the Early Stages of Hagfish Slime Deployment

Presenter(s): Jewelz Cook
Advisor(s): Dr. Douglas Fudge

Hagfish produce a unique defensive slime that rapidly expands in seawater within fractions of a second (0.1-0.4 seconds), helping to clog the gills of predators and escape attacks. This slime is composed of tightly coiled protein thread skeins and mucous vesicles that hydrate, swell, and unravel upon contact with seawater, creating a large, fibrous mucus network. While previous studies have examined how external factors such as turbulence influence slime expansion, the earliest stages of this expansion remain poorly understood because these transformations begin almost immediately after exudate is secreted. In this study, we developed a method that will help capture the early stages of slime deployment before full expansion occurs. Fresh hagfish exudate was placed on an angled metal slide, exposed to multiple droplets of deionized water, and rapidly frozen in liquid nitrogen. Samples were then freeze-dried, sectioned, and imaged using scanning electron microscopy (SEM).

18. Slime Properties Among Different Hagfish Species

Presenter(s): Lindsay Ross, Colin Jackson

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. 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.

19. Effects of Seawater Temperature on Slime Expansion in Myxine glutinosa and Eptatretus stoutii

Presenter(s): Marin Morrison

Advisor(s): Dr. Douglas Fudge, Julia Teeple, Andrew Lowe

Hagfish defensive slime is a rapidly expanding hydrogel that forms when glandular exudate contacts seawater, deploying almost instantaneously to deter predators. Although the biochemical components of threads have been well characterized, the environmental factors that influence the physical expansion of threads and skeins remain poorly understood. Temperature is a particularly relevant variable because hagfish encounter a wide range of thermal conditions in the wild, from cold deep-sea habitats to warmer surface waters, yet its influence on slime deployment has not been tested experimentally across species. This study examines how three seawater temperature conditions (cold, room temperature, and hot) affect the expansion volume of exudate from Myxine glutinosa (Atlantic hagfish) and Eptatretus stoutii (Pacific hagfish). Weighed masses of exudate were introduced into temperature-controlled seawater and gently inverted to initiate deployment, after which the final slime volume was measured. The expansion ratio was calculated as the final slime volume divided by the initial exudate mass. A two-way ANOVA will assess the effects of temperature and species on expansion performance. Warmer temperatures are expected to enhance expansion by accelerating mucous vesicle rupture and reducing fluid viscosity, whereas colder temperatures may slow thread skein unraveling. Species-level differences may arise if Atlantic and Pacific hagfish vary in the molecular weight of the polymers or the charge on the polymers. By clarifying how temperature influences slime formation, this work advances understanding of hagfish predator defense biomechanics and supports the development of engineered hydrogels inspired by rapid biological deployment.

20. Microplastic Concentrations in Eptatretus stoutii

Presenter(s): Miya Escalante, Ari Dedeoglu

Advisor(s): Dr. Douglas Fudge, Andrew Lowe, Julia Teeple

Microplastics, plastics less than 5 mm, are pervasive contaminants with adverse effects on the physiology, health, and reproduction of marine life. Microfibers, a common form of microplastic, are thin, thread-like plastic filaments with uniform density. The Pacific hagfish (Eptatretus stoutii) is a deep-sea scavenger that burrows in marine sediments and may be susceptible to microplastic exposure due to these behaviors. This study analyzed microplastic concentrations in the gastrointestinal (GI) tract, GI contents, heart, gills, muscle, eggs, viscera, and skin. These tissue samples were digested using 20% potassium hydroxide (KOH) for one week at 60°C. This was filtered through microporous glass fiber filters and imaged using brightfield and fluorescence light microscopy to detect microplastics. Preliminary results indicate that hagfish tissues primarily contain microfibers, while spherical microplastics were detected much less frequently. A quantum cascade laser was utilized to confirm the presence of plastics in hagfish and to analyze their chemical structures, revealing polyvinyl chloride 1, cotton, and lyocell. As one of the few studies on benthic scavengers, these results contribute to understanding microplastic movement through the ecosystem and across trophic levels.

21. 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. Next, using Orthofinder with the proteins of each assembly, 95% of genes were found to match orthogroups, showing well-annotated and comparable genomes. 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 with notable differences in chromosome size, particularly in the assemblies by Atamian and Brose compared to the Wang assembly. 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 comparative genomic analysis highlighted the functional and structural diversity between accessions, leveraging chia's genetic diversity.

22. Factors Shaping Students' Study Strategies in Introductory Biology Classes

Presenter(s): Makaylee Dahms, Molly Niswender
Advisor(s): Dr. Jeremy Hsu

Promoting effective study strategies is critical in undergraduate biology, yet many students enter college relying on less productive methods (Walk-Shannon et al., 2021). Limited research outside of R1 institutions has examined what shapes students' study strategies and how these evolve over time. Prior work suggests that beliefs about ability may play a role: students with a growth mindset often use more effective strategies than those with a fixed mindset (Chouvalova et al., 2024). However, it remains unclear to what extent mindset and institutional context influence students' strategies. We investigated the research questions: (1) How do students in introductory biology study at an R2 and an open-enrollment university? (2) Where do students learn their strategies? (3) What factors prompt changes? (4) How, if at all, does mindset shape study approaches? This study was conducted at an R2 institution in California and an open-enrollment institution in Utah. Beginning- and end-of-course surveys were administered in introductory biology courses. Two coders independently developed codebooks, reached consensus, and established interrater reliability (K = 0.70–0.80). We then developed and validated an interview protocol and conducted 32 semi-structured interviews across institutions, and collaboratively coded the interviews to establish interrater reliability. Survey results suggest that instructors and trial-and-error are the primary influences on students' study strategies. Over time, students reported changing strategies. Interviews revealed frequent use of active strategies, with educators and social networks as key influences. Motivations for change included prior performance and career aspirations. Preliminary findings suggest that mindset and response to error shape study strategies.

23. Investigating the Role of the Integrated Stress Response Regulator p58IPK in Drosophila Neurodegeneration Models

Presenter(s): Laila Makrom
Advisor(s): Dr. Rebecca Glineburg

Neurodegenerative diseases such as fragile X-associated tremor/ataxia syndrome (FXTAS), amyotrophic lateral sclerosis (ALS), Parkinson's disease, and Huntington's disease are characterized by chronic cellular stress and progressive neuronal loss. The integrated stress response (ISR) is a protective pathway that restores cellular homeostasis under acute stress but may become dysregulated during chronic disease. p58IPK and GADD34 are negative regulators of the ISR that function to restore normal protein synthesis following stress. This study investigated the role of p58IPK in modulating neurodegeneration using multiple Drosophila melanogaster disease models.

Eye degeneration assays were used to assess phenotypic severity in FXTAS, Parkinson's, and Huntington's models, while apoptosis was quantified in an ALS model using the GC3Ai fluorescence reporter and ImageJ analysis. Gene expression of p58IPK and GADD34 was examined using qRT-PCR normalized to GAPDH. Reduction of p58IPK expression significantly worsened neurodegeneration in FXTAS and Parkinson's models, supporting a protective role. In the ALS model, p58IPK knockdown produced a sex-dependent effect, significantly increasing apoptosis in females while significantly decreasing apoptosis in males. No significant effect of p58IPK manipulation was observed in the Huntington's model. qRT-PCR analysis revealed increased expression of p58IPK and GADD34 in several neurodegenerative conditions, supporting the hypothesis of chronic ISR activation and compensatory negative feedback.

These findings demonstrate that p58IPK plays a context-dependent role in neurodegeneration, acting as a protective factor in some disease models while exhibiting complex, sex-specific effects in others. Further investigation of ISR regulation may provide insight into therapeutic strategies for neurodegenerative diseases.

Chemistry

24. Heterogeneous Catalysis: Methanol Decomposition on Platinum

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 often seen as a 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 for future applications.

25. Adsorption of Anisole on Ni(111)

Presenter(s): Brianna Zamora

Advisor(s): Dr. Jerry LaRue

Bio-oils derived from lignocellulosic biomass are a promising, more environmentally-friendly alternative to fossil fuels, but their high oxygen content limits their stability and utility. In this study, anisole was used as a model compound to represent oxygenated aromatic species commonly found in lignin-derived bio-oils. The interaction of anisole with a Ni(111) surface was investigated to understand the fundamental deoxygenation process at the metal interface of upgrading bio-oils. A combination of temperature-programmed desorption (TPD), sum frequency generation (SFG), and X-ray photoelectron spectroscopy (XPS) was used to test adsorption behavior, molecular structure, and thermal decomposition. Controlled dosing of anisole under ultra-high vacuum conditions enabled analysis of its behavior at different surface concentrations of anisole. Temperature-dependent experiments, on the other hand, revealed reaction intermediates and product evolution. SFG data indicated changes in bonding at the sub-monolayer level, and XPS confirmed the loss of oxygen and the transformation of carbon species with increasing temperature. Overall, the results demonstrated that anisole undergoes deoxygenation on Ni(111), accompanied by surface carbon formation that may lead to catalyst deactivation at higher temperatures. These findings provide insight into oxygen removal on nickel surfaces and contribute to the development of more effective catalysts for biomass upgrading.

26. Comparative Synthesis of Plasmonic Au@M Nanoparticles: Effects of Citrate, Tannic Acid, and Oleylamine Methods on Size and Morphology

Presenter(s): Olivia Guyette

Advisor(s): Dr. Jerry larue

This study investigates how synthesis method influences the formation of plasmonic Au@M core–shell nanoparticles for light-driven catalytic applications. Gold nanoparticles were synthesized using multiple approaches, including a sodium citrate reduction method, a citrate–tannic acid method, and an oleylamine-based synthesis. The nanoparticles were characterized using UV–Vis spectroscopy, dynamic light scattering (DLS), and scanning electron microscopy (SEM) to evaluate their optical properties, size distribution, and morphology.

Initial results confirm successful nanoparticle formation, as indicated by plasmonic absorption in UV–Vis spectra and nanoparticle-sized distributions observed by DLS for the citrate-stabilized sample. Additional characterization of the tannic acid and oleylamine methods is ongoing to compare how synthesis conditions influence nanoparticle size, uniformity, and structure.

This work aims to establish how different synthesis strategies impact plasmonic nanoparticle properties, providing a foundation for optimizing materials used in future light-driven catalytic applications.

27. Exploring the Methanol Decomposition Pathway

Presenter(s): Andrew Crockett, Benjamin Smith
Advisor(s): Dr. Jerry LaRue

With broad uses and applications in industry, methanol's basic properties are widely studied and understood. However, when it comes to surface science and, more specifically, heavy metal catalysts, methanol's behavior becomes more complex. To help understand these dynamics, platinum is ideal due to its "Goldilocks" binding affinity and well-studied surfaces. The goal of this study is to better understand the kinetics and the dominant pathway of methanol decomposition, while also challenging the existence of three competing mechanisms suggested by prior literature. In the experiment, the rate and pathway of methanol decomposition from an atomically flat platinum crystal (Pt(111)) under ultra-high vacuum (<10e-7 Torr) is measured. The Pt(111) crystal, which is under constant cooling from liquid nitrogen, is cleaned via Ar+ ion sputtering, annealing, and O2 cleaning, before being dosed with methanol. The desorption spectrum of methanol from the crystal is then measured using Temperature Programmed Desorption (TPD). Additional surface analysis techniques, like low energy electron diffraction (LEED) and Auger electron spectroscopy (AES) are performed separately, along with desorption spectra of other substances like Oxygen and Hydrogen in conjunction with methanol. These procedures corroborate the methanol TPD results. TPD spectra reveal that Hydrogen desorption peaks around 350 K, followed by a much longer-lived increase in Carbon Monoxide desorption peaking around 450 K. Analysis of these results suggests that a methoxy mediated pathway occurs predominantly. This pathway includes a rapid dehydrogenation which produces carbon monoxide as the final adsorbate (later desorbing at higher T). Importantly, while this conclusion does coincide with one of the pathways suggested by the literature, it rejects the existence of any other competing pathway, providing a clearer mechanistic model with implications on both catalyst and surface reaction design.

28. One-Pot Tandem Oxidative Boron-Heck/Mizoroki-Heck Reactions to Generate Disubstituted Arenes

Presenter(s): Nyssa Arai
Advisor(s): Dr. Justin O'Neill

Substituted arenes are fundamental scaffolding in the synthesis of complex, highly functionalized fine chemicals such as pharmaceuticals, agrochemicals, polymers, and advanced intermediates used in their manufacture. The Pd-catalyzed C–C coupling reactions Suzuki and Heck are among the most widely used industrially to build and functionalize carbon skeletons due to their selectivity and relatively mild reaction conditions. Despite their suitability, these reactions suffer from high upfront costs and waste generation which continue to limit the scope and scale of production. The development of one-pot tandem processes in which multistep synthesis occurs without isolation of intermediates between steps is critical for scaling up but there are no general solutions. The successful implementation of one-pot multistep synthesis in a given case is highly dependent on specific reaction parameters, choice of solvent, ligands, and substrate and thus

rarely transferable. The discovery of compatible reactions and conditions that generate desired products in acceptable yields via a one-pot tandem process is a largely empirical science. Innovation begins in academic environments where novel high risk approaches are explored in small scale experiments. In a 2008 work O'Neill and coworkers reported the preparation of biaryl derivatives in good to moderate yields via a one-pot tandem Pd-catalyzed oxidative boron-Heck/Suzuki reaction. In the same work O'Neill et al. demonstrated the selectivity of Suzuki, Mizoroki-Heck, and oxidative boron-Heck cross coupling reactions when controlling reaction conditions. This work draws on the findings and methods of O'Neill et al. 2008 to investigate the performance of one-pot tandem oxidative boron-Heck/Mizoroki-Heck reactions and collect preliminary results to assess the viability for further research. Disubstituted arenes were obtained for all olefins tested but in lower than expected yields. The low yields were likely due to protodeboronation of the reagent 4-iodophenylboronic acid and the tandem reaction warrants further study.

29. **Developing a Low-Volume NMR Method for Determining pKa of Morphine-like Molecules**

Presenter(s): Mia Sharma
Advisor(s): Dr. Matthew Gartner

This study utilizes nuclear magnetic resonance (NMR) to determine pKa values using minimal analyte quantities, serving as a follow-up to prior work on experimentally determining the pKa of a morphine-like molecule. Accurate pKa determination is essential for understanding protonation-dependent binding behavior in opioid derivatives designed to selectively target inflamed tissue while minimizing central nervous system (CNS) effects. Conventional NMR-based pKa measurements require multiple samples and direct pH measurements, which can be resource-intensive and impractical when analyte availability is limited. To address this limitation, this project investigates an indirect approach that leverages a reference buffer with a known pKa to estimate solution pH through its chemical shift response. The experimental method involves preparing a single NMR sample containing both the analyte and the reference buffer, initially at basic conditions. Small, incremental additions of hydrochloric acid are made, and NMR spectra are collected after each addition. The buffer's known chemical shift–pH relationship is used to calculate the effective pH at each step, eliminating the need for direct pH measurement and reducing total sample requirements. These calculated pH values are then correlated with the analyte's chemical shift changes to determine its pKa. By establishing a replicable protocol, computationally determined pKa values can be validated experimentally for different analgesics and morphine-like molecules while significantly reducing analyte consumption. This research can pave the way for designing new and potentially non-addictive opioid derivatives.

Communication Sciences and Disorders

30. Early Word Production and Comprehension in Hearing Infants and Infants with Cochlear Implants

Presenter(s): Kyle Okazaki, Meghan Bourque

Advisor(s): Dr. Mary Fagan

Early word production and comprehension are important markers of development during infancy. However, many infants with profound hearing loss, even those with cochlear implants, can show delays in both areas compared to their hearing peers. Specifically, infants who receive cochlear implants at 12 months of age and beyond continue to be at risk for delays in word production and comprehension even after several years of cochlear implant use. For example, prior research has shown that infants who received cochlear implants at 12-14 months of age produced significantly fewer words after one year of implant use than age-matched hearing peers. This study extends previous research by examining word production and comprehension in infants who received cochlear implants before 12 months, following approximately 6 months of implant use. Two groups of 8 infants, 8 hearing infants, and 8 infants with cochlear implants were included in the study. To document infant word development, mothers of all participants completed the MacArthur-Bates Communicative Development Inventories, word checklists, when infants were approximately 13.6 months old and again 6 months later. Data analyses in progress are expected to reveal significant differences between groups in word development, with fewer words produced and comprehended by infants in the cochlear implant group.

Communication Studies

31. La Persuasión Emocional en la Política Contemporánea: Peronismo, Trump y la Construcción de Lealtad

Presenter(s): Ana Romanczuk

Advisor(s): Dr. James Hirsch

Most people do not support political leaders because they read a policy brief but rather because of the emotional connection they form. That is the starting point for this paper. Looking at Peronism in Argentina and Donald Trump's movement in the United States, the paper explores how emotional messaging shapes political loyalty and why that matters for how citizens respond to executive power. The Elaboration Likelihood Model by Petty and Cacioppo helps explain the difference between people who carefully evaluate political campaigns and people who respond more to tone, symbols, and feeling. In reality most people move between both, depending on the situation.

Perón gave the Argentine working class real material benefits, better wages, stronger unions, more rights. But scholars point out that the emotional dimension was just as important (Baer, 2023; Craig, 1976). Being called a descamisado became something to be proud of. The identity

shift was critical for how loyal people became towards movements, even when specific policies were hard to defend (Smith, 1969; Teichman, 2022). Something comparable shows up in how Trump supporters responded to law and order messaging and National Guard deployments. Research shows how those measures were framed in ways that felt reassuring to some groups without requiring much policy analysis from them (Nunn, 2021; Cohen & Stevens, 2022; Katz, 2021).

The paper ultimately argues that when loyalty is emotional rather than deliberate, people tend to give leaders more benefit of the doubt on controversial decisions. That is worth paying attention to, not because emotion is bad, but because accountability depends on people asking harder questions sometimes.

Computer Engineering

32. A Full System Co-Simulation Platform for Evaluating Edge Machine Learning Inference using Compute-in-Memory

Presenter(s): Belsen Lee

Advisor(s): Dr. Tom Springer, Dr. Peiyi Zhao, Dr. Mark Harrison

We present a full-system co-simulation platform for evaluating embedded machine learning (ML) inference using compute-in-memory (CIM). CIM architectures aim to reduce data movement overhead by performing matrix operations in memory, but end-to-end benefits depend on system-level integration costs that are difficult to assess with isolated hardware models or instruction-set simulation alone. To address this gap, we develop an integrated RISC-V-based QEMU–SystemC co-simulation environment that allows unmodified embedded Linux software to interact with a transaction-level CIM accelerator model through memory-mapped I/O, DMA transfers, and interrupt-driven synchronization. To evaluate performance, we use an MNIST inference workload and synthetic fully-connected neural networks to compare CPU-only execution with CIM-offloaded execution. Through this evaluation, we demonstrate the platform's ability to profile instruction-count reductions, compare cache utilization, and project system-level energy savings. Overall, the proposed co-simulation framework provides a practical, full-stack approach for studying CIM integration trade-offs in embedded ML systems and for identifying when CIM offload becomes beneficial under realistic constraints on software and device interactions.

Data Analytics

33. How bad habits can affect your mood and well-being

Presenter(s): Oona Kaestner

Advisor(s): Dr. Oliver Lopez

In this project, I tracked basic factors in my life, including how many meals I ate, how many hours I slept, my screen time, how much time I spent driving, if I went to the gym, my daily steps, the amount of time I spent on homework, and my overall mood each day. I was able to track screen time and the number of steps I took per day conveniently by using the Health and Settings app on my phone. For my other data, I would note my overall mood, hours slept, etc., every day to get accurate data on my lifestyle. This project inspired me to reflect on my lifestyle and see how my different behaviors and habits would impact my mood and well-being. It was interesting to see if certain factors would negatively affect me. Before tracking this data, I presumed certain behaviors I had, like not sleeping enough or spending a lot of time driving, would negatively affect me, and it was very interesting to analyze the data I have and see proof of these behaviors having an effect on me.

Digital Arts

34. Listening to the Landscape: Designing a Conversational Agent for Native Botanical Literacy

Presenter(s): Lucy Periale, Elizabeth Bork

Advisor(s): Eric Chimenti

This project investigates how physical devices integrated with conversational AI can support botanical literacy and encourage engagement with the natural world, with a particular focus on increasing awareness of California native plants. It asks: how can tangible, voice-interactive devices facilitate place-based learning without disrupting direct outdoor experience? Existing plant identification tools rely on screen-based interaction, which can distance users from their natural surroundings. This research contributes to interaction design and human-computer interaction discourse by exploring embodied learning through devices that prioritize environmental immersion. This project developed multiple design concepts and developed three prototypes namely Buddy Bot, Radio Agent and Plant Pod through iterative design research stages including research on conversational agents, sketching, paper prototyping, 3D modeling, and digital fabrication techniques such as 3D printing. We ran a pilot user study and used Autobiographical Design and Wizard of OZ methods to test usability, interaction dynamics, and user perception, with attention to clarity, trust, and accessibility of AI responses. Findings indicate that physical form and interaction design significantly influence engagement and trust in conversational systems. Participants responded positively to intuitive interactions and demonstrated increased curiosity about nearby plant life, while also identifying challenges

related to unclear controls and transparency of device behavior. The results suggest that these devices can support environmental learning by increasing familiarity with California native plant species. Future work is needed to better understand the sustained desirability of these designs for actual end users, as well as the robustness and appropriateness of their interaction modalities over time.

Electrical Engineering

35. 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 nanopowder or liquid suspension sample to facilitate coherent backscattering experiments performed on the sample. The automated device shakes a cell containing these samples, where the intensity, duration, and interval between activations are programmable. At the end of each activation, the cell is returned to its original position with high precision so that the experiment can be performed again without human intervention. We test the effectiveness of the vibration in randomizing the aggregation of nanoparticles. We start by performing the vibration on a sample of plastic beads of diameter 0.4-0.8 mm, using image processing to determine how much the orientation of the beads changes after activations of the device. Then, we perform the same procedures using a water suspension of lithium niobate particles and the following nanopowders: titanium dioxide, zinc oxide, and aluminum oxide to determine the effectiveness of the device on the materials used in the optical experiments. 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.

36. Optimizing Braille Dimensions for Tactile Readability in Children with Visual Impairments

Presenter(s): Dane Haket
Advisor(s): Miyuki Weldon, Dr. Maryam Etezad, Dr. Rajeev Joshi, Dr. Franceli Cibrian

Braille literacy remains a critical foundation for educational development among blind and low-vision children, yet standardized Braille cell dimensions are largely derived from adult usability data, leaving a gap in research addressing the tactile needs of younger learners (Etezad et al., 2024). This study investigates how variations in dot height, diameter, and inter-dot spacing affect tactile readability and comprehension in child users, with the goal of identifying optimal parameters for pediatric Braille learning tools. Research in tactile perception suggests that fingertip size significantly influences tactile spatial acuity in children, with larger fingers associated with poorer acuity due to reduced mechanoreceptor density (Peters & Goldreich, 2014), meaning a one-size-fits-all approach may not be appropriate for pediatric Braille education. To explore this,

functional Braille pin push-up mechanisms and modular tactile stencils representing letters, shapes, and patterns were designed using CAD software and fabricated via 3D printing, allowing different dimensional configurations to be systematically tested and compared. Usability testing with blind and low-vision child participants is planned, with results to be analyzed to identify which dimensions produce the clearest tactile reading experience. It is anticipated that dot spacing and height tailored to children's finger size and sensitivity will yield improved readability outcomes compared to current adult-derived standards. These findings could inform the design of low-cost Braille learning tools and contribute to accessibility guidelines for pediatric tactile literacy education.

Peters, R. M., & Goldreich, D. (2014). Tactile spatial acuity in childhood: Effects of age and fingertip size. PLOS ONE, 9(1), e84650. https://doi.org/10.1371/journal.pone.0084650

M. Etezad, R. Joshi, R. Alexander, and F. L. Cibrian, "3D-Printed Models for Optimizing Tactile Braille & Shape Display," in IEEE Transactions on Haptics, vol. 17, no. 4, pp. 782-793.doi: 10.1109/TOH.2024.3433582.

English

37. Sean Baker's Tangerine– Friend or Foe to Representation?

Presenter(s): Bronte Yelle

Advisor(s): Dr. Ian Barnard

Tangerine, directed by Sean Baker, is a comedy-drama shot entirely on an iPhone. It starred two trans women of color, Alexandra (played by Mya Taylor) and Sin-dee (played by Kitana Kiki Rodriguez). We get a look into a day in their life as Sin-Dee, who was recently released from jail, tracks down her pimp boyfriend on Christmas Eve. The film has gotten a lot of controversy based on who the audience is supposed to be, the violence within the film, and one of the other main characters, Razmik. Two articles that reflect on the film are Morgan Collado's "A Trans Woman of Color Responds to the Trauma of 'Tangerine'" and Mey Rude's "'Tangerine' is Hilarious, Beautiful, Authentic, Casts Trans Women to Play Trans Women Leads". Collado appreciates the way the film shows the sisterhood between trans Black women, and she's glad that the film stars actors who fit the profile of the characters they're representing. However, she finds the film to be voyeuristic and believes there is too much violence and trauma for a comedy. Rude praises the representation and the authentic way that the sisterhood between the characters was represented, and believes Tangerine sets a new standard for how transgender characters should be portrayed in media. My opinion aligns more with Rude's– although there are some things I found to be problematic with the film, I believe that it takes an important step towards revealing the issues that Black trans women face and confronting the way that they're shown on the screen.

38. Displaced Anger and Male-Centered Dependency: Interpersonal Conflict in Tangerine

Presenter(s): Sophia Valdez
Advisor(s): Dr. Ian Barnard

This project analyzes how Sean Baker's film Tangerine displays the relationship between socioeconomic marginalization and interpersonal conflict among trans women. Specifically, in what ways does male-centered dependency under patriarchy foster expressions of anger and violence between women in the film? Scholarship on the relationship between gender-based violence and patriarchal values contributes to the examination of how structural inequality influences relational dynamics among marginalized groups. Drawing on feminist film critiques of media representation and audience attitudes towards violence, this project breaks down scenes from Tangerine featuring the main character, Sin-Dee, and her interactions with the other women in the film, Dinah and Alexandra. Sin-Dee's behavior exemplifies her relationship with control and perspectives on violence. The film's narrative structure, characterization, and depictions of violence reveal the influence of broader institutional power structures on interpersonal behavior. Dependency on men for economic survival is further reinforced by patriarchal norms that minimize male accountability and normalize conflict and blame among women. This project concludes that the constraints of structural inequality restrict full agency and redirect conflict laterally. Ultimately, the analysis of the film suggests that Tangerine displays violence between women not as individual hostility, but as displaced anger shaped by shared socioeconomic marginalization and vulnerability.

39. Intimacy or Spectacle: Looking Closer at Tangerine

Presenter(s): Renata Bascope
Advisor(s): Dr. Ian Barnard

This project dives into how Tangerine represents trans women of color, and more specifically, whether the film is invested in telling their stories or primarily focused on creating something visually engaging for an outside audience. Working within larger conversations in film and queer studies about representation, authorship, and power, I draw on scholars like Moran Collado, Meagan Malone, and René Esparza to understand how the film both advances and falls short when it comes to trans visibility. Although Tangerine is recognized for casting trans actresses and for its use of iPhone cinematography, which creates a sense of closeness and immediacy, I question who that intimacy is really for. My purpose in this project is to look beyond the surface of the film and analyze how its stylistic and narrative choices shape the way these women are seen and understood. Through analysis of key scenes and scholarly perspectives, I focus on the film's visual style, storytelling, and character dynamics. I highlighted Esparza's idea of "communal intimacy," as well as the way the film centers male perspectives and places women in conflict with each other. I argue that while Tangerine offers moments that feel raw and human, those moments are often tied to trauma rather than growth, limiting the characters' agency. The lack of full credit for the trans women whose experiences shaped the film also raises questions about ownership

and voice. Ultimately, I view Tangerine as a film that moves toward authenticity but doesn't fully get there, offering visibility while still holding onto control of the story.

40. Exploring Motherhood in Alice Diop's Saint Omer

Presenter(s): Anna Kinzer
Advisor(s): Ian Barnard

The media has long critiqued mothers and their raising of children, despite a lack of support for the complex emotional labor felt by mothers. Saint Omer, directed by Alice Diop, explores the depth of motherhood through the struggles of Laurence Coly, a woman on trial for the murder of her 15-month-old, and Rama, a pregnant woman struggling with her own concept of motherhood. Diop draws connections between the women and their own mothers, with the reflection of intergenerational pain. Rama and Laurence are significantly shaped by the feelings of their mothers, haunting them into their own future of motherhood. Diop utilizes other sources, such as Euripides' Medea, to help convey the suffering felt by a mother in an ignorant society. Many women struggle with their emotions after giving birth and deal with poor mental health. The healthcare systems lack resources for women, leading to cases of postpartum depression. Through Saint Omer, Diop creates a thoughtful, reflective film on motherhood, morbidity, and postpartum.

Environmental Science and Policy

41. Soil Greenhouse Gas Dynamics across Depth, Space, and Time in a Tropical Forest

Presenter(s): Natalie Peterson-Hunt
Advisor(s): Dr. Christine O'Connell

Tropical forests play a disproportionate role in regional and global greenhouse gas budgets, exchanging significant amounts of carbon dioxide and methane with the atmosphere in comparison to other terrestrial biomes. Accurately characterizing tropical soil gas dynamics is therefore critical for ensuring meaningful greenhouse gas budgets, yet these dynamics can vary extensively across depth, space, and time. In this study, I assess how surface carbon dioxide and methane fluxes, and subsurface carbon dioxide and methane concentrations, vary across time of day, slope position, and for the latter, soil depth profile, in a tropical forest in eastern Puerto Rico across a five-week time period. Surface fluxes were measured from soil collars arranged along a topographic gradient using an automated gas flux analyzer, and subsurface concentrations were determined from gas wells at the same location via direct injection into a trace gas analyzer. I find that time of day has no effect on carbon dioxide and methane fluxes, but the topographic position from which the gas was extracted does. I find the same pattern for carbon dioxide and methane concentrations, along with differences in greenhouse gas concentration appearing along depth. These findings highlight the importance of accounting for spatial variability within study sites to ensure accuracy of greenhouse gas budget and broader ecological research.

42. Comparative Analysis of Machine Learning Predictions for Plant Biodiversity Using NEON, EMIT, and ECOSTRESS Data

Presenter(s): Fares Alhezaimi

Advisor(s): Dr. Joshua Fisher, Dr. Gabriela Shirkey, Dr. Rajeev Joshi

Background: Traditional methods for identifying and examining non-linear drivers of plant biodiversity, such as spatial regression and Generalized Additive Models (GAMs), lack sufficient accuracy. Recently, there has been growing interest in applying Machine Learning (ML) techniques to analyze and identify non-linear variables and improve biodiversity modeling testing.

Methodology: four machine learning models were used as follows: 1) Random Forest, 2) XGBoost, 3) LightGBM, and 4) Neural Networks for predicting plant biodiversity at three spatial scales: plot-level alpha diversity, inter-plot beta diversity, and site-level gamma diversity. The dataset combined field data from 29 NEON sites with environmental variables from EMIT and ECOSTRESS. All models were evaluated using spatial block cross-validation for predictive performance and to address nonlinear ecological relationships. Model performance was assessed using R-squared (variance explained) and Mean Absolute Error (MAE, prediction error).

Results: show that predictive accuracy and key ecological drivers vary with spatial scale. Neural Networks consistently outperformed tree-based models across most targets. Accuracy was highest for Plot-level gamma diversity (R-squared = 0.67, MAE = 11.50). Fine-scale (1-m resolution) beta diversity was moderately predictable (R-squared = 0.53, MAE = 1.15), and the model fit declined at coarser scales. Feature importance analysis found that gamma diversity is mostly dependent on climate (temperature, precipitation) and energy (solar radiation), beta diversity on precipitation variability and spatial heterogeneity, and alpha diversity on vegetation structure, particularly canopy height.

Conclusion: Integrating multi-sensor remote sensing (EMIT, ECOSTRESS) with Neural Networks is a robust approach for estimating regional biodiversity. Neural Networks' strong performance likely reflects their ability to model complex ecological interactions. This system can help fill gaps in biodiversity surveys, guide future sampling, and support ground-based validation.

Film

43. Complaints from the Ballroom

Presenter(s): Lucy Low

Advisor(s): Dr. Ian Barnard

As a student, I have found little space to really question and challenge the academic readings I have engaged in. As a Film and Media Studies student, I have had the privilege of spending a lot of time with these authors and have a well-rounded understanding of their arguments across various subjects. bell hooks is a renowned film critic and scholar and has paved the way for contemporary feminist thinkers. However, after reading her chapter on the 1990 documentary Paris is Burning (Jennie Livingston), from her book Black Looks: Race and Representation, I

couldn't help but put her argument in comparison with the other works of film theory she has written. Despite the film being beloved among fans and the queer community, hooks argues that Livingston's directorial voice as a white lesbian negatively impacted the authenticity of the Black ballroom scene in New York. Drawing on hooks' argument of oppositional spectatorship, I analyze how personal background can impact the audience experience. Livingston takes a more hopeful, optimistic angle in her film, but the testimonies and interviews she conducts are still honest and authentic. In my poster, I argue against auteurship in the documentary medium and examine how personal experience shapes our experience as an audience.

44. System, not Spectacle: An Examination of Paris is Burning

Presenter(s): Tessa Pollicino

Advisor(s): Dr. Ian Barnard

Paris is Burning is one of the most heavily debated documentaries of all time, both within the queer community and across the film industry as a whole. The documentary, made by Jennie Livingston, examines and seeks to show ballroom and drag culture within Black, queer communities in New York during the early 90s. There are many critiques against the film itself, including Jennie Livingston and the intentions that she had while making the film, specifically considering her role as a white lesbian within the queer community. There are also critiques about how the documentary glamorizes rich whiteness as being a pinnacle of society, and the ways in which the drag queens and women within the film are looking up to rich white, and only white, society. Despite these incredibly valid critiques, Paris is Burning continues to be one of the most widely talked about documentaries, and it seems as if this film is always being brought back into the conversation. Its legacy and influence on the queer community itself should not be ignored, and the media, art and music that followed this film would not exist without it. The ways that this film paved the way for queer people for years to come should be talked about within the queer community and the film industry, but the valid critiques should also be discussed as well.

45. From Primetime to Playtime: The Discursive Construction of Animation as a "Children's Genre"

Presenter(s): Allison Mandel

Advisor(s): Emily Carman

Animation is a medium, not a genre. However, with the emergence of television in the 1940s, American animation went from a medium for all audiences to a children's genre. Understanding Jason Mittell's theory of discursive genre, animation's classification as a children's genre can be analyzed discursively through historical, industrial, and cultural practices, rather than by the medium's inherent qualities. Following the golden era and the 1948 Paramount decision, animation's historical context shifted from high art theatrical animation on television to low art in reruns or cheap replicas. Network distribution practices were another leading cause in the medium's genre transformation. The big three networks during this time, NBC, CBS, and ABC, did not care for animation and saw it simply as a filler for their scheduling, delegating it to the

Saturday morning slots. The Flintstones (1960), however, transformed animation's potential as ABC's first primetime animated show. With cross-generational recognition, many networks followed suit and imitated the prehistoric sitcom; however, unsuccessful animated attempts were scrapped or moved to the Saturday Morning block. With the intent of crafting Saturday morning programming for children, many shows fell short in terms of artistic and cultural balance. Simultaneously, advertising increasingly targeted child-led audiences, validating children as consumers. Subsequently, The Flintstones (1960) began airing in primetime with cigarette sponsorship, appealing mostly to older audiences. They closed out their final seasons with juice and cereal advertising, airing on Saturday Mornings. Advertising-led demographics would solidify animation as the children's genre we know today. Together, these discursive functions, like animation quality, scheduling, and marketing demographics, shifted animation from a universal medium into children's programming, a perception that continues to mold cultural understandings of animation today.

46. Is My Entertainment a Job? Audience Infiltration and Labor in Big Brother

Presenter(s): Emory Harms
Advisor(s): Emily Carman

This paper examines the dynamic between audience participation and producer control in the first two seasons of the American reality television program Big Brother (CBS, 2000–2001), asking whether fan labor in convergence-era media ultimately empowers audiences or serves the commercial interests of producers. Drawing on Henry Jenkins' framework of convergence culture and participatory culture alongside Mark Andrejevic's cultural economy critique of reality television, the paper positions Big Brother's early seasons as a foundational case study in the tensions between fan agency and media industry power. The research methodology is primarily textual and archival, analyzing broadcast episodes, archived fan websites, live feed documentation, and contemporaneous press coverage to trace the evolution of audience participation across the two seasons. In Season 1, the show's format granted audiences formal voting power over houseguest elimination, inadvertently enabling fans to organize through chat rooms, message boards, and fan blogs into a collective force capable of disrupting the program's intended narrative. Producers responded by restructuring Season 2 to strip audiences of formal voting power, yet fans continued to intervene through banner planes, megaphones, and live feed monitoring. The paper argues that while fans in Season 1 functioned as co-producers of the show's narrative, by Season 2 their acts of resistance had been absorbed and commodified by producers, reducing them to unpaid laborers whose interventions fueled the show's authenticity and dramatic value without granting them meaningful control. Contrary to Jenkins' optimistic reading of convergence culture as democratizing, this analysis demonstrates that increased opportunities for audience participation were systematically exploited by producers, a dynamic that continues to define reality television production today.

47. 9/11, Hollywood & "The Dark Knight"

Presenter(s): Shaan Sylvain
Advisor(s): Emily Carman

Batman, Warner Bros. Pictures' long-revered hero and company powerhouse, underwent a major franchise reboot, tonal change, and reworking of the character entirely, during the 1990s and through the late 2000s. The studio successfully sold Christopher Nolan's Dark Knight by aligning the reboot's tone, iconography and marketing with post-9/11 American fears. Warner achieved this success by executing a groundbreaking marketing campaign that reflected the interconnectedness and self-reflexivity of the ever-growing American superhero genre at the time. By examining the works of Liam Burke, Tom Pollard, Brian Neve and other political and historical scholars, I argue that the capitalization of national trauma and the unveiling of the true representation of the political climate of America post-9/11 were crucial to the success of The Dark Night's marketing campaign. This reinvention of Batman has had a resounding effect on the superhero genre and stands as a time capsule of an immortal moment of American culture represented through cinema.

48. Religion in Film: David Fincher's "Seven" and Mel Gibson's "The Passion of the Christ"

Presenter(s): Ellie Galen-Bisping
Advisor(s): Emily Carman

Modern religious films are able to explore religious themes and engage with Christianity through what many scholars describe as "anonymous religiousness" rather than relying on overt biblical narratives; this allows for the presence of theological themes in films that appear to be secular works. Through the comparison of Mel Gibson's 2004 film The Passion of the Christ and David Fincher's 1999 film Seven, this paper will examine the role of religion in contemporary cinema and argue that Seven is a deeply religious film despite its crime thriller framework. This is due to its use of the seven deadly sins, visual style, and narrative design that convey concepts of sin, judgement, and moral decay. In contrast, The Passion of the Christ is presented as an explicitly Christian narrative as it is centered on the suffering and crucifixion of Jesus Christ. It employs religious iconography, historic languages, and aesthetic choices that develop a sacred environment and devotional cinematic experience. Through the textual analysis of cinematography, production design, sound, and the uses of the extreme violence in both films, this paper demonstrates how The Passion of the Christ and Seven construct religious meaning in distinct ways. The analysis of both films further shows how violence can create religious meaning. Ultimately, this comparison between both films reveals how symbolic and explicit forms of religious expression coexist in contemporary cinema.

49. Under the Silver Lake: Hyperbolic Self-Reflexivity Through a Detective-Noir Parody

Presenter(s): Justin Choi
Advisor(s): Emily Carman

Director David Robert Mitchell's Under the Silver Lake (2018) is a surreal neo-noir mystery that follows Sam (Andrew Garfield), a dissatisfied and curious young man living in Los Angeles. The film observes Sam as he becomes obsessed and dedicated to uncovering the secrets of the Hollywood area and solve the mystery of Sarah's disappearance. Sarah is a young woman whom Sam has a one-off encounter with. While not as well-regarded or praised as Mitchell's previous film, It Follows (2014), Under the Silver Lake draws heavily upon stylistic and thematic elements from noir films such as the Coen Brothers' The Big Lebowski (1998), Stanley Kubrick's Eyes Wide Shut (1999), David Lynch's Blue Velvet (1986) & Mulholland Drive (2001) and Ryan Johnson's Brick (2005). Through its layered narrative about pop-culture, nostalgia, conspiracy theories, subliminal messages and Hollywood culture, this film presents a deep and intricate detective story about contemporary art. My paper argues that Under the Silver Lake examines the relationship between audiences and the various art forms that surround them. I pose the question of whether media should be consumed passively or actively. By analyzing the narrative of the film and Sam's character arc, this essay explores how the film suggests that engaging with film, music, and the industry around them can provoke deeper thoughts and introspection of their own cultural identity and urban lifestyle. Ultimately, the film serves as a critique of contemporary media consumption by how the film highlights how many individuals fail to actively engage with the entertainment and digital media mediums that shape 21st-century American culture.

50. Politics of Society: What the Oscars Really Reward

Presenter(s): Wesley Cunningham
Advisor(s): Emily Carman

Outcomes at the Academy Awards occur at the intersection of artistic merit and wider cultural, political, and institutional motivations. Within the conception of the mass public, in which the Oscars crown the "best" films of the year, voters make choices based on the films that they can view easily, targeted media narratives, and the social demographics of the academy itself. Through the work of scholars who piece together how Oscar voting occurs and how Oscar winners emerge from the collusion of these three systems, I analyze the loss of The Grand Budapest Hotel to 12 Years A Slave in 2014 and additional case study best picture matchups of Parasite/1917, Moonlight/La La Land, and Crash/Brokeback Mountain. By developing a close analysis of film form, narrative strategy, and historical context in conjunction with the results of awards voting decisions, I argue that films "win" on the basis of their resonance with conversations happening outside cinema and the ease of translation of social concerns by the film into culturally legible forms. Ultimately, I analyze the Oscars are less reflective of an objective metric for evaluating cinema and more like many cultural institutions that reproduce the dominant social order of their times. While this system may empower movements towards access and visibility, it carries

systematic bounds on those filmmakers prioritizing new styles of filmmaking over easily intelligible social representations.

Food Science

51. Evaluating the Effect of Heat Treatment on Protein Secondary Structure in RTD Lattes

Presenter(s): Jack Bruneel

Advisor(s): Dr. Anuradha Prakash

Ready-to-drink (RTD) lattes are increasingly popular among coffee consumers. These beverages can be high-temperature-short-time (HTST), ultra-high-temperature (UHT), or retort-processed. RTD lattes consist of a complex mixture of chemical compounds, including polyphenols, proteins, sugars, and fats. Of particular significance are polyphenols and proteins, which can interact to influence product shelf-life. Protein denaturation and aggregation can cause various defects that shorten shelf-life, including gel-formation and sedimentation. These processes occur naturally during heat treatment, but protein-polyphenol interactions have also been shown to influence denaturation and aggregation. During denaturation and aggregation, the secondary structure of proteins changes significantly. The aim of this study was to evaluate the extent of protein denaturation and aggregation in a model RTD latte formulation subjected to HTST, UHT, and retort treatment via Fourier transform infrared spectroscopy (FTIR). Through analysis and deconvolution of the Amide I band (1600-1700 cm-1), changes in the relative proportions of key protein secondary structures were evaluated. Samples were prepared with conventional milk (CM) and lactose-free milk (LF) and analyzed at 30-day intervals to determine structural changes during typical shelf life. HTST and UHT samples exhibited minimal differences, while retort samples exhibited slight denaturation and aggregation, evidenced by increases in β-sheet band intensity and decreases in α-helix and random coil bands. CM samples exhibited similar levels of aggregation to LF samples. Few differences between samples were observed over time, though retort samples showed slightly greater age-related aggregation than HTST samples. These findings are important for RTD latte shelf-life considerations, as they indicate that retort lattes are more susceptible to protein-aggregation-related defects than UHT and HTST lattes.

52. Optimization of DNA Extraction for Tuna Species Identification

Presenter(s): Haeun (Grace) Cho, Adriana R. Ten Cate

Advisor(s): Dr. Rosalee Hellberg

Canned tuna is susceptible to species mislabeling, which poses health risks and fosters distrust among consumers. DNA extraction is fundamental in the species identification process; however, long incubation times significantly impact efficiency. By reducing the time required for DNA extraction, tuna species can be analyzed more efficiently while still maintaining the ability to properly identify samples. This study aimed to optimize DNA extraction of canned tuna by comparing the current protocol to one that uses a shorter incubation time. A total of 24 tuna samples, including albacore, skipjack, light, and yellowfin, were analyzed in duplicate for each

respective incubation time. DNA extraction was performed using the DNeasy Blood and Tissue Kit (Qiagen) using two different lysis incubation times: 2 h and 20 h. PCR was performed on the DNA extracts, followed by gel electrophoresis to determine the success of amplification. PCR amplification results indicated comparable amplification success for skipjack and yellowfin tuna DNA extracted using 2-h and 20-h incubation times. No observable differences in amplification presence or intensity were detected for skipjack tuna, while yellowfin samples are still under analysis.The findings suggest that shorter DNA extraction incubation times may be sufficient to support reliable and efficient PCR amplification for tuna species identification. This optimization in the incubation protocol could reduce the testing time while also maintaining analytical effectiveness in canned tuna authentication. Analysis of remaining samples is ongoing to confirm the consistency of these results across multiple tuna species.

Health and Strategic Communication

53. Sips and Shopping: How Spending Habits Influence Daily Outcomes

Presenter(s): Amber Mayo-Llamas
Advisor(s): Dr. Oliver Lopez

This project is a personal endeavor to analyze the relationship between daily habits and overall day quality through a semester-long data analysis. Data was collected over a three-month period, in which I recorded various variables daily, such as money spent, hours of sleep, distance walked, screen time, matcha consumption, social interaction, reading activity, and perceived day quality. Out of these 8 things, I wanted to determine if there was a relationship between my spending behavior, particularly on matcha, and a more positive daily outcome. I used Excel to collect, organize, and analyze my data.

54. Lifestyle Trends and Habits: Tracking and Observing Daily Habits of the Spring 2026 Semester

Presenter(s): Hewan Tafari
Advisor(s): Dr. Oliver Lopez

This study tracks and observes the relationships between different daily behaviors and habits focused on the undergraduate experience. Data was collected daily over the course of the spring 2026 semester across a number of different variables, such as physical activity, social engagement, financial spending, time management, and mental and physical health. By tracking these daily behaviors, this research attempts to map out correlations between these factors, such as the relationship between time spent on social media and time slept, and how they impact variables like emotional state. The findings aim to observe the daily habits of an undergraduate student and how the choices a student makes can influence productivity and well-being throughout the semester, using data.

55. An Oura Ring and Anxiety: A Semester Long Analysis of Lifestyle and Mental Health

Presenter(s): Mackenzie Morgan
Advisor(s): Dr. Oliver Lopez

Throughout the course of the semester, I tracked various habits and data points in order to examine the relationship between daily habits and my anxiety levels. I collected data from both an Oura Ring as well as logging my own observations. The variables that an Oura Ring was able to track were sleep duration and quality, physical activity through the form of steps, readiness scores, and daily stress levels. In addition, I measured my mood and busyness, interactions with my family, and whether I took my anxiety medication. By combining these methods, I was able to analyze both objective and subjective data to better understand how lifestyle factors influence mental health.

This data was tracked daily and was constantly being analyzed to identify patterns over time. I was able to compare the patterns between my physiological metrics and mental-well being. I decided to track habits outside of the Oura Ring as well to make it as personal as possible since biometric feedback cannot capture all aspects of daily experience. My analysis suggests that lower sleep quality and higher amounts of stress correspond with lower mood levels and increased anxiety. I also noticed a more structured day with more physical activity led to better sleep scores across the board. Lastly, busyness would trigger high stress and low sleep would lead to a lower mood score.

The goal of this project was to better understand how my habits influence my mental health. I made sure not to change my habits and daily routine, this way, when the study comes to a close, I can see what changes truly need to be made. Looking beyond a personal level, this study shows how self-tracking tools can increase self awareness to encourage viewers to be more intentional on a daily basis.

Health Sciences and Kinesiology

56. The Impact of Habits on My Mood

Presenter(s): Elise Aylward
Advisor(s): Dr. Oliver Lopez

This semester, I have been collecting data on my daily habits to understand their impact on my mood. The habits I am focusing on are sleep, caffeine intake, social interactions, screen time, physical activity, and self-reflection through journaling. I track these by recording how much of each activity I engage in each day. For example, I log the number of hours I sleep each night, whether I consume caffeine, my level of social interaction (such as phone calls or spending time with friends), my participation in physical activity like going to the gym, and whether I journal. My goal for this project is to analyze how my various habits affect my mood. I hope to find patterns that will help me adjust my habits to improve my overall mood.

Honors

57. We're All in Drag: Gender as Performance and Parody

Presenter(s): Amir Trinidad-Vidal
Advisor(s): Dr. Ian Barnard

This paper examines live drag performances and the reality television show "RuPaul's Drag Race" through the theoretical framework of Judith Butler's "Gender Trouble", arguing that drag renders the performativity of gender visible and tangible. Butler's claim that "the gendered body is performative" suggests that gender is not an innate identity but a series of repeated acts that create the illusion of stability. The performances observed demonstrate how drag both reflects and destabilizes these norms, even when not overtly political.

A key mechanism through which drag reveals gender's constructed nature is exaggeration. Hyper-feminine aesthetics like large wigs, dramatic makeup, and stylized bodies expose the artificial standards imposed on femininity by amplifying them to an extreme. This aligns with Butler's argument that drag does not merely imitate gender but reveals that gender itself is already imitation. Certain performers exemplify this by embodying an exaggerated femininity that reads as both celebration and parody, illustrating how gender is assembled through stylized elements rather than naturally occurring.

At the same time, variation in performance styles complicates a singular understanding of drag. Some drag performances subverted expectations through a more understated presentation, challenging the notion of a "correct" form of femininity. Similarly, other performances highlighted the skill and intentionality behind gender presentation, demonstrating how convincingly gender can be constructed through performance alone.

However, contemporary drag complicates Butler's original framework, particularly as performers across gender identities participate in the art form. This raises questions about whether drag continues to subvert gender or, at times, reinforces it. Despite this, Butler's central argument remains applicable: drag exposes the instability of gender by revealing it as a constructed and repeatable performance. Ultimately, drag highlights that gender is not an inherent truth, but an ongoing act.

58. Identity or Product: Heteronormativity and Queerness as a Measure of Utility

Presenter(s): Reese Dlabach
Advisor(s): Dr. Ian Barnard

In "The History of Sexuality Volume 1," Michel Foucault dives into the convergences of seemingly separate areas of life that make up the heteronormative societal expectations we live by. This project focuses on these intersections, including how power mechanisms are a crucial hinge upon which sex, sexuality, gender, race, and ability are measured and categorized to shape personal and productive utility ideals. It's also key for establishing systems that uphold and promote capitalism. Essentially taking stock of bodies and establishing a baseline of what people might consider "normal" has implications far beyond, and intersecting with, gender and sexuality.

Disabilities become ostracized through creating the concept of a "normal" body in the pursuit of productivity. Race, gender, and ability are all categorized within the mindset of the workforce, and these categorizations often allow for people who don't fit into the categories of white, straight, cis, and/or privileged by wealth to be awarded the short end of the stick. With the way sexuality (and gender) is so entwined with the systems that impact us daily, there are a lot of questions about how to disentangle all of it. What is the first step in dismantling heteronormativity? Do we need to start in the conversations of sexuality and gender? Would it be easier or harder to try and tackle the problems that seem more loosely related – workforce, productivity, ability? As sex in general and the discussions around sex became more normalized, it seems as if "otherness" was shifted toward queer people, relationships, and identities. The "otherness" of queerness in these conversations creates a vacuum for discomfort to be associated with that queerness. What is the better solution: detaching from the personalization of queerness the way people have detached themselves from their heteronormativity? Or having everyone reconnect to their identities and reclaim their personhood from systems that have commodified it?

59. Balance of Power and Desire in Isaac Julien's The Attendant

Presenter(s): Valeria Lara
Advisor(s): Dr. Ian Barnard

Isaac Julien's The Attendant explores the tension between historical trauma and contemporary sexual agency. Specifically, exploring the dynamics of using S/M visuals and imagery of slavery in the same context and how this may reinforce racial hierarchies or transgress beyond social status to disrupt a historical system that allows reclamation in Black queer communities. In Julien's work, "Confessions of a Snow Queen," he explains his vision of the short film, where he argues that the conversion of public punishment into private pleasure disrupts historical ways of power. Conversely, another theorist, bell hooks, believes that the setting of the museum only enhances racial hierarchies and blends into the bedroom, as shown in the film. The analysis of these two opinions will reveal that it is important to prioritize the autonomy of consenting adults partaking in S/M dynamics involving possible racial power structures. Ultimately, we coincide with both arguments shown by Julien and hooks as each have unique remarks that allow different values to be seen. In hooks' opinion, she critiques how the environment of the museum only invites how racial hierarchies reinvent themselves in modern spaces and therefore may never be entirely absent in a bedroom setting. Essential iconography in the film incorporates the recreation of Slaves on the West Coast of Africa and roles being reversed that act as a way of resistance to historical slavery. We conclude that these sexual dynamics do not result in pathological tendencies or a form of self-hatred, but a complex arrangement of consenting adults partaking in their sexual desires.

Physics

60. Comparative Study of Type-I and Type-II Superconductors in Proximitized Systems with Different Normal Metals

Presenter(s): Daniel Yaacov

Advisor(s): Dr. Armen Gulian, Dr. Sonja Cwik

This work investigates the superconducting proximity effect in one-dimensional superconductor–normal–superconductor (S–N–S) systems. In this phenomenon, Cooper pair correlations from a superconductor remain coherent as they diffuse into an adjacent normal metal, analogous to a wavefunction developing a decaying tail through a potential barrier. As a result, the normal metal can exhibit superconducting-like transport over a finite distance. To explore this behavior, we employ finite element modeling based on the time-dependent Ginzburg–Landau (TDGL) equations, which describe the evolution of the superconducting order parameter and the associated current. These equations are implemented into COMSOL Multiphysics' General Form partial differential equation interface within its Mathematics Module. We incorporate realistic material parameters within their physical limits of validity to more directly assess how material choice influences proximity-induced superconductivity. We consider Aluminum and Niobium as representative Type-I ("soft") and Type-II ("hard") superconductors, respectively. We expect these distinctions to manifest in the magnitude and spatial distribution of both superconducting and normal currents through the system, and to help identify parameter regimes most suitable for practical applications such as detectors, qubits, logic elements, and other components of superconducting electronics. For the normal metals, we examine Copper, Silver, Gold, and Aluminum. By comparing current profiles and order parameter behavior across these material combinations, we identify how the choice of superconducting type and of the normal metal influences the proximity-induced behavior.

Political Science

61. Constructing Consent: Propaganda, Fear, and Public Support in the U.S. Foreign Policy

Presenter(s): Hannah Rice

Advisor(s): Dr. Andrea Molle

"FAKE NEWS": A phrase many Americans can not escape no matter how hard they try. It differs from the idea that the mass media or government is lying to the general public regarding a specific event or actions but how is this accomplished? The simple answer is propaganda. This thesis looks at the way the United States federal government used propaganda to convince the American people that drastic military acts are necessary. Rather than scaling propaganda down to misinformation, this research portrays it as a strategic, deliberate act done by the government to create a narrative that justified military action. The central focus of the paper will be on how state actors use propaganda to convince the public that their actions in the case studies are just. To

answer the research question, the text will look at varying case studies and compare what the official state rhetoric was at the time of the initial interventions, public opinions, both domestic and international, as well as any strategic messaging they may have used to help the aggressor gain public support. Through a qualitative examination of the different case studies such as the Invasion of Panama and the War on Terror, the thesis determined how each state created persuasive arguments that worked in reframing public opinion from negative to positive. The findings illustrate the way propaganda is an internal and deliberate tool for states to ensure the public remains on their side. Ultimately, this thesis demonstrates propaganda as a powerful tool of persuasion that can turn public support on an international conflict quickly in favor of military action.

62. The Divided World-How Media Coverage Shapes Immigration Opinions

Presenter(s): Andrew Viveros

Advisor(s): Dr. Ann Gordon

This research design will explain how media and news outlets' coverage immigration can shape people's attitudes towards immigration. There are mainly claims that different media outlets have different coverage on immigration whether it's positive or negative. This claim also provides media that not only provides information but also frames issues that can trigger others emotional state. The dependent variable in this study provides how the attitudes may switch depending on which media outlet you're watching it on. Fox News has been criticized for covering Immigration in a negative way. Due to this others have a bad attitude towards immigration and can see it in a bad way. Not only that with people that are immigrants they can see these negative coverage of what is going on in this world and it can spark fear around all Mexican cultures. It can leave Hispanics to have fear of being questioned. Yet there are other news outlets that will cover the downside of it showing how it can affect families and the economic state of the US after deporting many immigrants. Using different articles will help strengthen my claim and furthermore be a call out to different news outlets. Not only does media coverage shift peoples attitude towards immigration, it also changes the way people treat others for what they support.

63. Climate Change and Linkage to Climate Disasters

Presenter(s): Claire Gresham

Advisor(s): Dr. Ann Gordon

This research examines the extent to which humans attribute environmental disasters to climate change and the influence of climate literacy, political affiliation, and the region of residence. Central to this paper is the idea of climate change denial, and how the population of humans, despite overwhelming scientific consensus, remain disbeleieving. The objective of this paper is to analyze the factors that drive this denial and question the sources for lack of public understanding. Current research in environmental communication and political psychology suggests that denial does not purely stem from a lack of information. Thus, my research will aim to highlight how political identity, literacy rates, and where you grew up factors into this lack of

acceptance, as well as the inability to attribute climate change to disasters. Researchers recently found that distrust in science is strongly influenced by polarization and politics. This study builds on that body of work by incorporating political identity, literacy rates, and regionality. The methodology uses data from the Chapman Survey of American Fears and applies statistical analysis to examine correlations between levels of concern about environmental issues and the prevalence of climate change denial. Variables such as political affiliation, media consumption, and demographic factors are included to identify patterns and predictors of denial. Expected results indicate that lower levels of concern about environmental risks and higher levels of distrust in institutions will be associated with a greater likelihood of denial, highlighting the role of perception and belief systems rather than knowledge deficits. The study concludes that addressing climate change denial requires strategies that engage public concerns and perceptions, offering insights for more effective communication and policy approaches.

64. Through a Partisan Lens: How Political Identity Shapes Economic Evaluations

Presenter(s): Daniel Shin
Advisor(s): Dr. Ann Gordon

People often disagree about the state of the economy, even when faced with the same facts. These differences are especially highlighted during times of inflation, changing employment trends, and public debate over the economy. Relying on data from the American National Election Studies (ANES), a representative survey of U.S. adults, I examined how general partisan alignment, along with other factors, shapes perceptions of the national economy and influences citizens' judgements about economic conditions. The results show that partisanship strongly biases economic evaluations, demonstrating that people who align with the incumbent party express greater optimism, with the opposition partisans showing greater pessimism. I also examined the extent to which perceptions were shaped by one's personal financial situation and education level and found that both traits follow partisan lines. These findings further support the idea that economic evaluations are extensions of political identity rather than objective evaluations of current conditions. Such biased evaluations have real consequences, as they directly shape voting behavior and support for policies. Ultimately, biased perceptions compromise citizens' ability to truly understand the economy, allowing partisan loyalties to override facts, and posing potential risks to how debates are framed and understood, as collective decision-making becomes shaped more by identity than by reality.

65. Hate Crime Victimization: How Social and Political Identity Shapes Perceived Risk

Presenter(s): Denise Loaiza
Advisor(s): Dr. Ann Gordon

The objective of this research paper is to examine the way the fear of being victims of hate crimes varies across demographics and political characterization. Seeing as the most vulnerable group is women and people of color, this group reports higher levels of hate crimes compared to other populations. Using the Wave 11 fear survey, this paper analyzed the roles race and gender

influence people's perception of political violence and crime through the use of cross-tabs. This allows for a clear comparison between the data that highlights patterns and relationships. Unsurprisingly, the data found that women were more likely to fear being victims of racial/hate crimes compared to men, and that women were least in support of violence. Additionally, those who agreed to some extent that violence is an acceptable way to express disagreements mostly had some sort of fear of being victims of hate crimes. What was surprising was that the population most supportive of violence and fearful of hate crimes was white men. Exploring the way so many factors influence fear and perception is important in showing that perceived vulnerability is not only tied to objective risk, but it can be shaped by gender, race, political affiliation, and more. This study expands on the current literature that identifies the broader psychological impacts of hate crime and the perception of victimization that continue to shape fear in society.

66. Red, Blue, and Bordered: Understanding Public Opinion on Immigration.

Presenter(s): Estefania Morales Vilchis
Advisor(s): Dr. Ann Gordon

This paper will explore the various social and individual variables that will impact how people perceive immigration as either beneficial to society or a societal threat. Some of the primary variables that will be examined in detail are one's political affiliation, age, and geographical location; this will address the profound "why" behind our current beliefs on newcomers. The paper will particularly address the "Contact Hypothesis" versus "Group Threat Theory" through the lens of how one's personal experiences with immigrants, or lack of, will shape public opinion. Using the Chapman fears study this paper will focus on the rising psychological issue of "demographic anxiety", specifically, fears prevalent in the majority population that they are becoming part of a minority. This paper illustrates how the variables contribute to shaping polarized perspectives on a national identity. The paper will produce accessible information by the analysis of the extensive data used in this research, it will utilize an accessible framework which reflects how the environment and identity dictate one's position on immigration. Lastly, this study will highlight a need for increased discussion on both economic realities and symbols of cultural fear that are contributing to the contemporary debate surrounding immigration. In an era of rapid demographic flux, understanding these psychological triggers is no longer just academic, it is a prerequisite for social survival.

67. Headline Horrors: Myths Produced by the Media

Presenter(s): Libby Walzer
Advisor(s): Dr. Ann Gordon

This study analyzes and compares the extent to which women are afraid of sexual assault by a stranger in relation to their primary new outlets. In this article, I will examine differences in fears across women's prime news sources. Using various recent years of data from the Chapman University Study of American Fears, I will analyze the increases and decreases of college aged women's fears of sexual assault in Orange County by a stranger are affected by their usage of

social media, local news sources, and/or national news sources and compare to the past seven years, compared with actual rates of sexual assault crimes in the local area vs the national scale. The results of this analysis are important because they show how certain new outlets highlight rarer violent crimes, affecting women's fears. At the same time, the rate of being sexually assaulted by a stranger is much lower than the rate of being sexually assaulted by someone they know. It seems that the more national the news, the more horrific its headlines read. Cherrypicking and capitalizing on horrendous crimes is a new outlet's way of staying relevant. Tragic stories are more likely to make good headlines and captivate readers by making women afraid.

68. The "Big Three" of Presidential Approval: Faith, Funds, and Filtered Media

Presenter(s): Maggie Manning
Advisor(s): Dr. Ann Gordon

This paper examines how presidential approval is shaped by political perceptions among American citizens, with a focus on the roles of religion, economic conditions, and media consumption. While previous research has shown that economic conditions have historically significantly influenced approval ratings, less attention has been paid to how religious identity and media habits interact with these approvals. This study contributes to the literature by analyzing how these three factors jointly influence public approval of presidential performance. Using data from the American National Election Studies (ANES) 2024, a nationally representative survey of U.S. adults, this paper uses quantitative analysis to examine the relationships among religion, partisan media consumption, economic evaluations, and presidential approval. A preliminary analysis of the dataset showed a clear relationship between religiosity and presidential approval: Respondents who reported religion as extremely important in their lives are more likely to disapprove of the president, while approval rates increase with respondents who say religion is less important to them. Rising from around 30% approval amongst the most religious people, to around 56% for those who said religion was not important at all. I expect to find that individuals' religious identities and media consumption significantly shape their perceptions of presidential performance, while economic evaluations remain a strong predictor of approval. I anticipate that partisan-centered media and stronger religious identities will create stronger polarization in approval, whereas positive economic perceptions will increase overall approval levels. These findings have important implications for understanding political polarization, especially in the modern political scene. By highlighting the combined effects of religion, media, and the economy, which I will call the "big three" in my paper, this study provides a deeper analysis of the forces that shape public opinion and democracy itself.

69. News and Natural Disasters; Does Reporting Lead to Fear?

Presenter(s): Paul Chandler
Advisor(s): Dr. Ann Gordon

It is generally accepted that the media tends to sensationalize the news in order to ensure viewership, and it is a widely held belief that this sensationalism, especially in regards to the reporting of violent events such as natural disasters and extreme weather events, or at least the repeated exposure to news of such events, affects the public's opinion on such events, possibly leading to greater levels of fear than are reasonable. In this paper I investigate the relationship the consumption of different sources and amounts of news media has with the fear of various types of natural disasters and extreme weather events. Using data from the Survey of American Fears waves three through eleven, I have found that greater consumption of news coverage from some news outlets is associated with a greater fear of natural disasters while greater consumption from others is associated with a lesser fear of natural disasters. These results are somewhat confusing since, although it shows that news media consumption does connect, at least somewhat, to people's fear relating to natural disasters and extreme weather events, it does not provide clear evidence as to how because in some cases there appears to be a positive correlation and in others a negative correlation, therefore there is likely another factor at play, relating to the content of these sources or the beliefs of the people who listen to them, dictating the direction of the relationship.

70. Influencer or Imposter: Are Social Media News Sources Causing a Heightened Mistrust of Government?

Presenter(s): Suzanne Cibrowski
Advisor(s): Dr. Ann Gordon

Social media has been a defining aspect of how younger generations view news, politics, and current events. While news and commentary that arise on these platforms are usually seen as informational, increasingly hyperbolic and exaggerated rhetoric may influence the public's fear of corrupt and untrustworthy government leaders. In this paper, I plan to examine how consuming this harmful rhetoric from social media, specifically about politics, has heightened consumers' mistrust of government leaders in America. Using survey data that measures Americans' social media usage, their main news outlets, and their main source for information relating to politics, I plan to test whether people who get this information from more unreliable sources have a greater mistrust, and in some cases fear. I expect to find that, the more users consume news and politics on social media platforms, the more mistrust they have. I plan to find a relationship between the particular rhetoric used on these platforms, rather than professional news and journalistic sources, has a negative effect on the mental state and perception of the viewer. While media consumption alone does not determine perception, I believe that differences in fear caused by different media sources could open a door to understanding how social media is affecting society and politics.

71. Alone and Radicalized: The Hidden Link Between Isolationism and Political Violence

Presenter(s): Zaina Siddiqui
Advisor(s): Dr. Ann Gordon

As some socially isolated individuals come to view political violence as legitimate, what exactly draws the line towards political extremism? My findings examine the relationship between loneliness, social marginalization, and support for political violence through psychological theories on radicalization. Using Chapman University's American Fear Survey Wave 11, I examined the correlation between isolationism and a sense of belonging, with the latter leading to support for political violence and extremism. The project contributes to research on political extremism by focusing on loneliness as a loss of belonging and personal significance rather than on ideology or pathology alone. In my research, I find a moderate connection: those who spend more time on the internet experience greater isolation in the real world, which could help explain why they find deeper support online. I expect to find that individuals who report higher levels of loneliness and social isolation are more likely to express support for political violence, particularly when these experiences are accompanied by indicators of psychological distress such as anxiety or depression. I further expect that loneliness will remain a significant predictor of support for political violence even when controlling for demographic characteristics, political ideology, and partisanship, suggesting that social disconnection functions as an independent risk factor. These anticipated findings highlight loneliness as a critical but underexamined driver of political extremism and underscore the importance of social belonging for democratic stability. Ultimately, addressing isolationism may be essential not only for individuals' well-being but also for preventing the social conditions that enable political extremism and/or violence.

72. Pastor, Politics and Pulpit

Presenter(s): Jaelyn Mitchell
Advisor(s): Dr. Ann Gordon

This study examines whether the frequency of church attendance and levels of self-reported religiosity influence voters' reliance on pastoral guidance when making political decisions in the United States. The objective of this paper is to assess whether individuals who attend religious services more frequently and identify as highly religious are more likely to be influenced by their pastors' political messages, thereby shaping their voting behavior. Additionally, the study investigates how this relationship varies across political party affiliations, particularly among Republicans, Democrats, and Independents. Given that a majority of Americans self-identify as Christian, religion remains a significant social force in shaping political attitudes and behaviors. While existing scholarship has explored the connection between religion and political participation, this study contributes to the literature by focusing on behavioral and attitudinal measures of religiosity, such as church attendance and personal religious commitment, rather than denominational affiliation. Relying on data from the Chapman Survey of American Fears, a nationally representative sample of U.S. adults, the analysis evaluates whether individuals report that their voting decisions are influenced by their pastors and how this relationship interacts with

partisan identity. Among the expected findings is that individuals who frequently attend church and report higher levels of religiosity will be more likely to rely on pastoral political cues. Furthermore, it is anticipated that Republican identifiers who are more likely to identify as Christian and to attend religious services regularly will demonstrate a stronger association between religiosity and reliance on pastoral guidance than Democrats or Independents. These findings will provide valuable insights into the intersection of religion and political behavior, helping scholars, policymakers, and voters better understand the influence of religious leadership on electoral decision-making and the broader relationship between church and state.

73. Democratic Legitimacy and Data Governance: Data Privacy Philosophy and Regulatory Preferences in the U.S. vs EU

Presenter(s): Mia Truong
Advisor(s): Dr. Ann Gordon

The rapid expansion of artificial intelligence and large-scale data collection has intensified tensions between commercial innovation and consumer privacy, raising a fundamental democratic question: do Americans understand their data protections–and does this shape their demand for regulation? The EU and U.S. represent two fundamentally opposed approaches to data privacy regulation: the EU's General Data Protection Regulation (GDPR) treats personal data as a fundamental human right, rooted in post-WWII constitutional protections against state surveillance and authoritarianism, while the U.S. operates through fragmented, sector-specific state laws that treats personal data as a market commodity. This study is the first to empirically investigate the philosophical foundations of contemporary U.S. data privacy attitudes, examining the extent to which the Americans have internalized the market-based transactional framing embedded in the U.S. regulatory landscape relative to the EU's rights-based framework. Using Pew Research Center's American Trends Panel Wave 127 (May 2023) and binary logistic regression, this study identifies the key socioeconomic, political, and attitudinal drivers of data privacy philosophy—measured through whether individuals treat privacy policies as a transactional necessity or a meaningful, rights-based decision—and regulatory preference among U.S. adults. Findings reveal that 71.8% hold a transactional data privacy orientation, driven primarily by demographic vulnerability, digital habituation, and psychological overwhelm. Despite this, 74.2% favor increased regulation of corporate data practices, suggesting that Americans who feel most resigned to data commodification are the most likely to support federal intervention. These findings aim to ground federal privacy policy recommendations in empirical public opinion, contributing the first individual-level empirical evidence of the rights vs. transaction divide that comparative legal scholars have theorized at the institutional level.

74. Surveilling American Fear Over Government and Corporate Data Tracking

Presenter(s): Mia Truong
Advisor(s): Dr. John Compton

Fear of government and corporate data tracking has emerged as one of the most persistent anxieties in contemporary American political life. Especially during the age of AI and large-scale data collection, the tensions between commercial innovation and consumer privacy have raised fundamental questions about whether the U.S. should pursue a comprehensive, centralized data privacy framework, such as the EU's General Data Protection Regulation (GDPR). Using the Chapman University Survey of American Fears (CSAF) Wave 11 (2025), this paper aims to address three questions: What demographic and political factors predict fear of data tracking? How has this fear evolved since the 2013 Snowden revelations and the post-2022 rise of AI and large language models? And to what extent does political ideology structure concerns about surveillance? This study examines the drivers of Americans' surveillance concerns using a four-point fear scale ranging from "Not afraid" to "Very afraid." In 2025, 52.7% of Americans report being "afraid" or "very afraid" of government tracking of personal data, while 50.7% express similar concern toward corporate tracking. Grounded in surveillance theory, the analysis integrates Bauman et al. (2014) and Lyon's (2014) conception of Snowden as a rupture in citizen-state trust, Nam's (2019) framework linking ideological identity to privacy anxiety, and Elliott and Soifer's (2022) distinction between privacy and security fears. Through multivariate regression and longitudinal comparison, I argue that surveillance fear reflects not only responses to rapid technological change but also enduring patterns of institutional distrust and partisan identity formation.

75. How Do Criminal Charges Affect Voting Behavior

Presenter(s): Daliah Amarshi
Advisor(s): Dr. John Compton

Within today's society there are quite a few factors that influence voting behavior. Throughout this paper, I will be discussing whether criminal charges are one of the main factors that impact who an individual votes for. In order to examine this issue, I will be looking at how in-group loyalty as well as personal branding affect voting behavior when related to candidates being charged with crimes. While existing literature portrays the idea that political corruption can cause an individual to not vote for a candidate, other research on the topic supports my hypothesis that party loyalty and the way that the candidate chooses to brand themselves will outweigh other factors when one is debating on who to vote for. Ultimately, I hypothesize that these factors will play such a prominent role within voting behavior that criminal charges will not be as salient as many individuals may think that they are. To test this hypothesis, I will be using data from the 2024 American National Election Study. I expect to find that the majority of individuals who voted for Donald Trump valued party loyalty and were attracted to Trump's brand. Additionally, I believe that social media played a large role within the Trump brand. I theorize that the more active an individual is on social media the more likely they are to have voted for Donald Trump due to the

widespread of information portrayed on social media by the candidate himself. Lastly, I theorize that individuals who voted for Donald Trump also felt like the country needed a strong, tough leader who would do what needed to be done in order to protect the country, despite the rules that will be broken and consequences that they may face. By understanding what drives voters' behavior, we are able to determine what factors are most salient to the majority of Americans.

76. Abstract For Scholar Symposium

Presenter(s): Fiona Purnhagen
Advisor(s): Dr. Lewis Luartz

What impact do perspectives on women's issues have on voting for Joe Biden in the 2020 presidential election? Existing research on voting behavior tends to focus on aspects like socioeconomic status (income, education, and occupation), party identification (Democratic vs. Republicans), and political ideology (liberal, conservative, or moderate). Although these are a core set of factors known to shape how people vote, this approach neglects to examine how attitudes towards specific social issues shape who people choose to vote for. For this reason, I will be examining the roles of women's issues as a deciding factor in presidential elections. I argue that individuals who place higher value towards women's issues are more likely to vote for Joe Biden in the 2020 presidential election since voters are more likely to support candidates whose policies align with their personal needs and values. To test this argument, I use data from the 2020 American National Election Studies and conduct a logistic regression model. Preliminary findings suggest that voters who view women's issues as more important are significantly more likely to support and vote for Joe Biden. This indicates that attitudes towards specific issues, particularly women's issues, play an important role in shaping who people vote for in presidential elections.

77. An Exploration of the Drivers of Political Polarization

Presenter(s): Gia Pacioni
Advisor(s): Dr. Lewis Luartz

Many Americans have become more divided than ever when it comes to politics. This study investigates the impact of posting political content online on polarization compared to general political discussion in the United States. While political polarization is generally rooted in policy disagreements, existing literature suggests that with the rise of digital activism, affective polarization has become a battle over social identity and partisan animosity. However, there still remains a gap in understanding whether posting political content online is the actual driver of affective polarization. I argue that digital activism is an accelerator for affective polarization rather than a byproduct of general political discussion. Using the ANES 2020-2022 Social Media Study, I estimated this relationship using Ordinary Least Squares Regression. These results revealed an inconsistent relationship between posting political content on social media and partisan affect. This suggests that the phenomenon is more complex than initally theorized, as a gap in identifying the underlying drivers of polarization still remains.

78. The Limited Role of American Identity in Shaping Party Identification Among Native Americans

Presenter(s): Jesse Mauricio

Advisor(s): Dr. Lewis Luartz

For Native Americans, identity is something that is complicated by the two factors that shape their identity as Native Americans in relation to the United States: the sovereignty of their tribe and their citizenship in the US. This leads to the question, what impact does American identity among Native Americans in the United States have on party identification? Previous studies of Native American political behavior have focused on the socioeconomic, historical marginalization, and policy preferences of Native Americans, while fewer studies have examined how identity, particularly the identity of being an American, might influence someone's alignment with a political party. As a result, we do not have enough information to fully understand how individuals balance their tribal and national identities within their political decisions. I argue that the importance of American identity has minimal influence on party identification among Native Americans. I use an OLS regression analysis to examine the effect of the importance of American identity (Q560R8) on party identification (Q21), using data from the 2020 Collaborative Multiracial Post-Election Survey (CMPS). The results indicate that there is no statistically significant relationship between the importance of American identity and party identification among Native American respondents. Native Americans may not base their political affiliation on American identity because their political experiences are shaped more strongly by other factors, such as tribal sovereignty and the tribe's relationship with the federal government, among other things. Therefore, national identity alone cannot account for political behavior among Native American individuals, as their political decisions are more likely shaped by tribal sovereignty and their unique historical relationship with the United States.

Psychology

79. Social Desirability and Engagement in Sex Work-Related Activities: A Bogus Pipeline Study

Presenter(s): Elyse Tran

Advisor(s): Dr. Amy Moors

Research has shown that people hold high levels of stigma toward sex work and sex workers (Sanders, 2017). However, nationally representative research in the U.S. has documented that engaging in sex work-related behaviors, such as paying for nudes, going to strip clubs, or being a sugar baby is common (Herbenick et al., 2017). In the present study, we examined the extent to which people respond in socially desirable ways when answering questions about "taboo" sexual behaviors. Specifically, we implemented the bogus pipeline method (participants under the guise that truthful responses can be detected) to assess the extent to which social desirability may explain gender differences in engaging in sex work-related activities (e.g., selling nudes, going to a strip club). We expected to find that women will underreport their experiences with and interest

in sex work-related activities (e.g., going to a strip club, receiving money for a nude) and men will over-report these behaviors in the control condition. However, when participants are under the guise that truthful responses can be detected (bogus pipeline condition), we expect women and men will report similar interest in and prior experience with sex work-related behaviors. After data collection was complete, we found that there were no significant findings based on this data, however we discovered limitations that might contribute to why this might have occurred. Our age demographic was on average 19 years old and 27% of our participants had never engaged in sexual activity before. In conclusion, we took away that future directions of this study should include a larger sample size to include not only an older demographic, but a demographic that has more life and sexual experiences and the financial capabilities to pay for sex work-related activities.

80. **Personality Traits, Body Image, Social Support as Predictors of Emotional Eating: A Gender Based Mediation Analysis**

Presenter(s): Felyssa Kaplan
Advisor(s): Dr. Andrea Wolfs

Emotional eating, defined as eating in response to negative emotions, is a common maladaptive coping strategy that has been closely linked to body image dissatisfaction and psychological distress. While prior research has identified personality traits and social support as important contributors to eating behaviors, these factors are often examined in isolation. The present study aims to address this gap by investigating how personality traits and perceived social support jointly influence the relationship between body image dissatisfaction and emotional eating, and whether these relationships differ by gender. Using a correlational, cross-sectional design, data are being collected from adult participants through an online survey administered via Qualtrics. Measures include validated self-report instruments assessing emotional eating, body image dissatisfaction, Big Five personality traits, and perceived social support. Planned analyses include correlation, regression, and mediation and moderation models to examine how personality traits and social support may shape or buffer these relationships. It is expected that higher levels of neuroticism, lower levels of conscientiousness, and greater body dissatisfaction will be associated with increased emotional eating, while social support will serve as a protective factor. Additionally, gender differences are anticipated, with stronger associations expected among women. By examining these variables within an integrated model, this study contributes to a more comprehensive understanding of emotional eating and may inform future interventions aimed at promoting healthier coping strategies and improving psychological well-being.

81. Phenotype Bias in Juror Decision-Making: The Role of Skin Tone and Perceived Indigeneity in Judgments of Latino Defendants

Presenter(s): Maria Cancino

Advisor(s): Dr. Andrea Wolfs

This study examines how phenotype bias influences juror decision-making in legal contexts, specifically focusing on Latino male defendants with varying degrees of perceived indigeneity. Prior research shows that Latino defendants often receive harsher punishments than White counterparts and that individuals with more Indigenous features experience worse life outcomes, yet little work has examined how these phenotype differences shape legal judgments. Drawing on literature on colorism, implicit bias, and racialized punishment, this project investigates whether darker skin tone and more Mesoamerican Indigenous facial features increase perceptions of guilt, culpability, dangerousness, and deservingness of punishment. Participants will be presented with a standardized criminal case and an image of a mock Latino defendant whose appearance is experimentally manipulated using AI-generated variations in skin tone and facial features. All defendants will be male to account for intersecting stereotypes related to race and gender. Participants will rate the defendant across multiple legal judgments, and an implicit bias measure will assess whether individual bias levels moderate these effects. It is expected that defendants with darker skin and more Indigenous-typical features will receive harsher evaluations across all outcomes, regardless of juror ethnicity, reflecting both intergroup and intragroup bias. Findings will extend existing research by demonstrating how phenotype and implicit bias interact within a single ethnic group to shape legal decision-making. This study contributes to broader discussions of intersectionality, intra-ethnic discrimination, and fairness in the justice system, highlighting the need for bias-reduction interventions and more equitable legal practices.

82. Identifying Stigmas Affecting Perceptions of Cross Training and Injury Prevention in Dancers

Presenter(s): Katherine Hijar

Advisor(s): Dr. Desiree Crevecoeur-MacPhail

Dance stigmas generated by culture or studio environments go on to shape the choices that dancers make which influence their individual health or professional careers. These stigmas arise based on traditional aesthetic looks given to dancers by self, audience members, or teachers. Modern deviations from aesthetics have influenced dancers to make performance enhancement choices such as adopting methods of cross training or injury prevention. Cross training or injury prevention refers to the practice of incorporating different types of exercise to improve performance and prevent injury. The Theory of Planned Behavior helps identify behaviors and decisions informed by social norms surrounding an individual. Simply, some individuals exhibit certain behaviors or make choices based on what others may think of the behavior (Bosnjak et al., 2020). The presence of college-educated teachers or injury prevention education can create deviations from negative stigmas associated with cross training, shaping decisions dancers make. Understanding what aspects of an environment informs a dancer's decision to adopt methods of

performance enhancement, can inform researchers and educators on how to guide a dancer's proper artistic development. Assuming all hypotheses are supported, this could change how dancers train in preparation for performance, class, or auditions. Furthermore, these changes would benefit both the dancer and the career field by potentially preventing injury. Overall, this encourages the art form to adopt a more inclusive aesthetic.

83. Partners in Aging: Marital Satisfaction as a Resource for Positive Aging Views

Presenter(s): Linh Vu

Advisor(s): Dr. Desiree Crevecoeur MacPhail

Marriage is one of the most important relationships in adulthood and it affects how people feel in their daily lives and how they think about their future. At the same time, attitudes toward aging played a big role in one's mental health, physical health, and how people dealt with getting older. While both marital satisfaction and attitudes toward aging have been studied, there was still limited research on how they are directly connected. The purpose of this study was to examine whether people in more satisfying marriages had more positive attitudes toward aging and whether this relationship could be explained by loneliness, sense of purpose, and gender differences. Participants in long term relationships completed an online survey that measured marital satisfaction, loneliness, purpose in life, and attitudes toward aging. It was expected that higher marital satisfaction would be linked to more positive views of aging. It was also expected that higher marital satisfaction would be related to lower loneliness, which would be linked to more positive aging attitudes. In addition, sense of purpose was expected to strengthen this relationship, and the relationship was expected to be stronger for men than for women. These findings suggest that improving relationship quality may not only improve well-being in the present, but also change how people approach aging, which could influence how counseling, relationship support, and aging related interventions are developed in the future.

84. Shared Intoxication: Examining the Effects of Joint Substance Use on Relationship Quality

Presenter(s): Braylan Enscoe

Advisor(s): Dr. Desiree Crevecoeur-MacPhail

Substance use has often been studied as an individual behavior, yet many individuals use substances such as alcohol and marijuana with their romantic partners. This makes substance use a shared experience rather than a solitary one. This study examined how shared patterns of substance use in romantic relationships related to relationship functioning, including satisfaction, conflict, and communication quality. Drawing on Social Learning Theory (Bandura, 1977), behaviors can be modeled and reinforced between partners, influencing substance use patterns. Prior research suggested that when partners engaged in similar substance use behaviors, relationship satisfaction tended to be higher, while discordant patterns were associated with greater conflict and less satisfaction. However, little research has examined how differing substance use patterns influence relationship dynamics. This study used a quantitative survey

design to investigate how concordant and discordant substance use behaviors influenced relationship satisfaction and communication quality among undergraduate students. Approximately 100 Chapman University students completed an anonymous online survey through Qualtrics that included demographic questions, the Couples Satisfaction Index, and a modified Drinking Motives Questionnaire for Adults to assess motivations for alcohol and marijuana use. Additional researcher-developed items assessed how frequently partners used substances together, separately, or in discordant patterns. Results were expected to show that concordant substance use behaviors were associated with higher relationship satisfaction, while frequent shared intoxication was associated with poorer communication quality. These findings may provide insight for couples therapy and substance use treatment by emphasizing the importance of addressing substance use within relationships.

85. Acculturation Pressures and Substance Use Among Latino Populations in the U.S.

Presenter(s): Julie Misiewicz

Advisor(s): Dr. Desiree Crevecoeur-MacPhail

In 2001, the Office of the Surgeon General released Mental Health: Culture, Race, and Ethnicity, which classified Latinos with substance use disorders as a vulnerable population (Villalobos & Bridges, 2018). Although Guerrero et al. (2013) found that rates of substance use among Latinos were comparable to or exceeded those of other ethnic groups, disparities remain in access to and quality of treatment. Early adulthood is considered a high-risk period for substance use, yet Latino individuals may face additional pressures during this developmental stage. Many begin contributing financially to their families or taking on caregiving roles earlier than peers while exploring identity and navigating acculturation (Unger et al., 2014). Acculturation is defined as "the process of cultural change that occurs when individuals from different cultural backgrounds come into prolonged, continuous contact with one another" (Celenk & van de Vijver, 2011, p. 3). Despite documented links between acculturation pressures and substance use, little was understood about how these pressures affected Latinos during emerging adulthood and whether the relationship between acculturation pressures and substance use differed across communities with varying Latino population densities. Guided by acculturation theory, this study hypothesized that higher acculturation pressures would be associated with greater substance use among Latinos in the United States. The relationship was expected to be stronger among younger Latino adults and men, and weaker among those in high-density Latino communities. Participants recruited from Chapman University and Amazon Mechanical Turk completed a correlational survey including the Short Acculturation Scale for Hispanics to assess acculturation stress, and the DAST-10 and AUDIT-C to evaluate substance use. Assuming hypotheses were supported, these findings helped address systemic inequities in healthcare and substance use treatment, particularly among Latino youth, by highlighting how limited access to culturally supportive communities exacerbates disparities.

86. Can Psychosocial Well-Being Help Prevent Arthritis? Exploring the Connection Between Well-Being and Arthritis Diagnosis Later in Life

Presenter(s): Darby Lyons, Chloé den Hartog

Advisor(s): Dr. Julia Boehm

Arthritis is a chronic inflammatory condition that can cause pain, redness, heat, and swelling in the joints, and affects 18.9% of the American population. Existing research has investigated the biological processes involved in arthritis onset and post-diagnosis psychosocial well-being, but little is known about how pre-diagnosis psychosocial well-being may influence the likelihood of diagnosis. The present study will examine 8 aspects of psychosocial well-being and their associations with arthritis diagnosis 12 years later. We hypothesized that individuals with higher well-being scores would be less likely to be diagnosed with arthritis later in life. Data was pulled from the 1958 National Child Development Study (NCDS). Our study used data from age 50 and 62 assessments and included 3,505 participants (42% male, 58% female) that had complete data responses related to well-being and arthritis. Well-being was assessed using eight psychosocial aspects: optimism, purpose, satisfaction, social connections, positivity, enjoyment, agency, and growth. Each was coded based on participants' responses at age 50 to a prompt asking them to describe their lives at age 60. Arthritis was measured based on participant reports of a diagnosis since their last interview in 2013. Logistic regressions were done with each individual psychosocial aspect and arthritis. Results revealed statistically significant (p < .05) associations between higher scores in optimism, life satisfaction, positivity, and agency with a lower chance of arthritis diagnosis 12 years later, after adjusting for sociodemographic characteristics. Purpose, social connections, enjoyment, and growth are not associated with arthritis risk. These findings are important as they contribute to research on arthritis development and may offer target areas for psychological screenings and interventions to reduce likelihood of arthritis diagnosis. Limitations include that all variables were self-reported and the results do not account for individuals who develop arthritis after 62.

World Languages and Cultures

87. Music as Language: Encoding and Decoding Emotion Across Cultural Contexts

Presenter(s): Liliana Reigart

Advisor(s): Dr. James Hirsch

Bad Bunny's 2026 Super Bowl Halftime show garnered varying responses from Hispanic and non-Spanish-speaking audiences alike. While some critiqued the presence of Spanish music at an American sport, others argued that the message and emotional significance transcended the language barrier. Ethnomusicology posits music as a form of human expression that exists within a cultural context. One integral part of this context is language. Stuart Hall's encoding and decoding theory explains how meaning is constructed and interpreted by audiences. This thesis aims to investigate the function of language in the encoding and decoding of meaning within music, exploring how audiences derive meaning from Bad Bunny's songs without understanding

the lyrics. The emotional interpretation of music is derived from its tonal and rhythmic contrast, in addition to the literal significance of the lyrics. Because languages, like music, differ in their tonal and sylabic properties, different languages evoke distinct emotional responses in audiences regardless of their denotative comprehension, although understanding the language results in a more accurate interpretation of the intended meaning. Therefore, non-Spanish-speaking listeners decode emotional significance from the tonal and rhythmic patterns present in Bad Bunny's lyrics, albeit less accurately than native speakers.

88. A Car for Every Purse and Purpose: The French and American Auto Industry

Presenter(s): Charlie Sisk
Advisor(s): Dr. Veronique Olivier

France and the United States both have an interesting relationship with cars and car culture. The French often focused on lightweight cars with a lot of agility, viewing performance through the lens of motorsport and autocross. In contrast, American automakers often focused on raw power and torque, creating a culture with NASCAR and drag racing being predominant in the 1960s, 70s, and 80s. This project will look at three main periods of time in order to better draw comparisons between the two industries. The first section will look at the pre-WWII era cars, often larger and showcasing the "trial phase" of the two nations as they try to create more utilitarian cars for mass production. The second section focuses on the 1945-2000 era cars, where the automotive industry boomed. Automotive designs often mirrored various social trends throughout the two nations. Vehicle paints, interior designs, and even tires can be used to see various changes socially and economically between the two nations, reflecting a distinct culture in their respective countries. The third and final section looks at globalization, and its effects on the auto industry. With multiple expanding enterprises, and mergers throughout the latter half of the 20th century, vehicles are not as distinct between the US and France as they once were. Companies such as Ford that would create two separate models for France and the American markets now use "one size fits all" models and tactics in order to cut costs and drive production. These expansions are blurring the lines and slowly erasing the cultural identity of both nations. By visiting France and conducting field research, I was able to interview and get first hand evidence of a lot of these changes. My research is focused on both the positives and negatives of the changing vehicular industry.

89. Multilingualism and Everyday Life in Brussels

Presenter(s): Karina Atkins
Advisor(s): Dr. Veronique Olivier

This thesis aims to explore the role that multilingualism plays in everyday life in the city of Brussels, Belgium. Specifically, it asks how language in Brussels has changed over time and what the major determinants of that change have been. As the capital of Europe and home to the European Union, Brussels is one of the most linguistically unique cities in the world, with Dutch, French, and German as Belgium's official languages. Scholars have analyzed multilingualism in

relation to globalization, institutional versus everyday language use, and identity; this thesis builds on this research by examining how these dynamics manifest within the specific sociolinguistic context of Brussels. By looking at language through a lens of historical, educational, and sociolinguistic analysis, this study seeks to develop a deeper understanding of both the challenges and advantages of multilingualism. Additionally, it considers how immigration into Brussels has shifted its relationship to language as a whole, and what effects this has had on Belgium's shared identity as a multinational country. This research draws on academic sources, including studies on linguistic diversity within the Belgian education system, politically informed perspectives from Belgian and non–Belgian nationals, and observational insights from a semester at the Brussels School of Governance. Through this qualitative approach, the thesis analyzes both institutional frameworks and everyday language practices. The findings are expected to show that multilingualism in Brussels has been shaped not only by formal language policies, but also by immigration, globalization, and social interaction, resulting in a dynamic and evolving linguistic landscape. Ultimately, this thesis argues that multilingualism plays a central role in shaping identity in Brussels while also creating both opportunities and challenges for communication.

90. Integrating Traditional Mayan Medicine with the Western Biopsychosocial Model to Improve Health Outcomes in the United States

Presenter(s): Jacqueline Carney

Advisor(s): Dr. James Hirsch

The purpose of this thesis is to establish a connection between two medical paradigms, western and traditional, through an investigation of the medical systems in the United States and Maya culture. The connection will be explored through an examination of the biopsychosocial model of health in the United States and the relationship between societal beliefs, customs, and health in Maya indigenous culture. This provides the foundation for proposing a more integrated approach to medical practices which combines the two systems to improve health outcomes in the United States, particularly among Indigenous peoples. Upon analysis of the role of medicine in both societies, this paper will demonstrate that while the two paradigms differ in methods and perspectives, the objective remains the same: to improve the health and well-being for all individuals in society. Using this objective as a framework, an integrated model of the medical systems of the United States and Maya culture can be proposed.

91. The Social and Infrastructural Problems Major French Cities are Facing Due to an Increasing Number of French Citizens Moving to the Suburbs and Countryside

Presenter(s): Charlotte Miller

Advisor(s): Dr. Veronique Olivier

The research begins with an examination of the effects of COVID-19, specifically noting how the pandemic reshaped global functioning. Greater access to online resources, which allowed people to connect without having to come into offices or schools, led many to believe that cities were no longer necessary. The reasons for which cities were initially created are also briefly examined. The

second part explores five major cities in France: Paris, Marseille, Lille, Bordeaux, and Lyon, and the reasons why the citizens of these cities want to leave. Examining the different city landscapes, the research focuses on the most prominent problems in each city, based on factors such as location, the industry the city is known for, and environmental conditions, all of which contribute to citizens' dissatisfaction. In Paris, the research focuses on rising prices and crowds. In Marseille, the research explores the negative effects of tourism. In Lille, the smaller size and less favorable global image are studied. In Bordeaux, the decline in the wine industry, driven by fewer young people drinking and by climate change, is explored. In Lyon, the negative impacts of living with increased violence are studied. The final part explores the methods that can be used to revive the five previously discussed cities. First, looking at past examples of cities successfully revived, then turning to initiatives put forth by local governments, ultimately discovering what can be done to bring back cities that are essential to French life and culture.

AF209A

Moderator: Dr. Allison Fisher

Biochemistry and Molecular Biology

Examining Viral HIV Matrix Protein Interactions with Calmodulin through Mixed Techniques

Presenter(s): Al Hassan Gamal El-Din
Advisor(s): Dr. Jerry LaRue

Human Immunodeficiency Virus (HIV) is a virus which attacks the human body's immune system and impacts the body's ability to fight disease. If left untreated, HIV has the possibility of turning into AIDS, which is a chronic disease with a high fatality rate. The HIV virus's ability to replicate is regulated by HIV Matrix Protein (MA). MA is known to interact with many proteins, including Calmodulin. Calmodulin (CaM), found in all eukaryotic cells, is a calcium-binding sensor protein which has the potential to disrupt the viral replication of MA. The specific details regarding the interactions between CaM and MA are still unknown, but there is research to suggest that the interactions are calcium (Ca^{2+}) dependent. CaM is upregulated by HIV infection, meaning that levels of CaM inside the cell increase when in the presence of MA. When MA is bound to CaM, it decreases MA's compact structure, opening up the MA binding sites. Hindering the MA binding sites is predicted to lead to a decreased rate of HIV replication. By completing a series of titrations and examining them through fluorescence spectroscopy, the interactions between these proteins (CaM and HIV-1 Matrix Protein) can be further investigated. Fluorescence spectroscopy utilizes the ability of certain amino acids to emit light under an excited state to analyze samples. MA contains an amino acid called tryptophan, that fluoresces after being excited by a wavelength. By titrating CaM into the MA protein solution, we can monitor changes in the absorption spectrum of tryptophan which is usually buried under the core conformation of the MA protein. The changes in intensity of the tryptophan emission spectrum peaks can be analyzed to further understand the protein-protein interactions of CaM and MA. Other molecular biology techniques may be used to further analyze these protein interactions. By understanding the mechanism implicit in these protein interactions, we can yield a clearer understanding of the HIV reproductive process in order to learn how to hinder it and treat HIV.

A Ruthenium-Labeled MoFe-Protein Variant for Light-Driven, Fe-Protein-Independent Nitrogenase Catalysis

Presenter(s): Jack Martinson
Advisor(s): Dr. Cedric Owens

Nitrogenases are the only enzymes in nature capable of catalyzing the reduction of nitrogen into ammonia. Molybdenum-dependent nitrogenase composes the Fe-protein (FeP) and MoFe-Protein (MoFeP). FeP couples MgATP hydrolysis to electron transfer, reducing MoFeP's iron-sulfur cluster (the P cluster), and ultimately the catalytic molybdenum cofactor (FeMoco). It has been suggested that during the reduction cycle, one sulfur in FeMoco becomes loosely bound and spontaneously released, potentially needing replenishment during catalysis. Additionally, MoFeP has rarely been shown to catalyze substrate reduction without FeP. Despite having lower or comparable redox potentials to FeP, sacrificial electron donors like dithionite (DT) cannot support MoFeP catalysis alone. However, photosensitizer-labeled

MoFeP variants have been shown to catalyze proton and acetylene reduction without the help of FeP. Ruthenium photosensitizers like Ru(bpy)2(5-iodoacetamido-1,10-phenanthroline) (Rubpy) enter a highly reductive state upon photochemical MLCT excitation and reductive quenching with DT. Interestingly, replacing DT with other sacrificial reductants diminishes catalytic activity. It is unknown whether this is due to DT's photochemical properties or DT's ability to replenish FeMoco's lost sulfur. To activate MoFeP turnover with light and probe DT's roles in catalysis, we synthesized Rubpy and validated it with proton NMR and UV-Vis spectroscopy. A MoFeP variant was covalently labeled with Rubpy at a P cluster-proximal cysteine. Labeling was confirmed with fluorescence SDS-PAGE and UV-Vis spectroscopy. Rubpy-labeled MoFeP demonstrated FeP and DT-dependent catalytic activity half that of unlabeled MoFeP. Rubpy-labeled MoFeP demonstrated no light-driven catalytic activity, possibly due to Rubpy photobleaching or improper laser parameters. Current investigations will troubleshoot the light-driven turnover assays. Future experiments will test if DT can be replaced with sulfur-containing and sulfur-lacking electron donors, supporting the theory that DT can replenish FeMoco's lost sulfur.

Biological Sciences

Gender Expectations and Academic Performance Among Eldest Daughters

Presenter(s): Lyndsay Carey
Advisor(s): Dr. Desiree Crevecoeur-Macphail

This study examined how societal, familial, and gender expectations disproportionately affect the academic performances of oldest daughters in Western families. Previous research on birth-order shows that firstborns often have higher levels of academic achievement, possibly due to higher parental investment. However, emerging literature on parentification and gendered caregiving suggests that female offspring potentially experience unequal responsibility in the family in comparison to males due to societal gendered expectations manifesting the family. This study integrated these perspectives by looking at whether eldest-daughter status amplifies the relationships between parentification, perfectionistic tendencies, and academic outcomes. Using a quantitative, cross-sectional design, participants will complete validated self-report instruments measuring birth order, caregiving responsibility (parentification), perfectionism, and academic self-efficacy. It is anticipated that eldest daughters will report higher levels of academic performance compared to male and later-born female siblings, but also report higher levels of parentification and perfectionistic stress. Additionally, parentification is expected to mediate the relationship between eldest daughter status and academic functioning, with higher caregiving demands predicting increased burnout academically. These findings aim to emphasize how gendered family roles may create concealed inequalities in regarding mental health, perfectionism, and academic performance and self efficacy of eldest daughters, providing implications for clinicians and educators supporting students.

Computer Engineering

An Empirical Study on Techniques for Enhancing ML-Based Performance Prediction of TLM DNN Models

Presenter(s): Maha Bhatti
Advisor(s): Dr. Emad Arasteh

Transaction-Level Modeling (TLM) is a system-level modeling approach used to estimate the performance of deep neural networks (DNNs) during design space exploration. However, exploring many possible system configurations with simulation can still be slow and computationally expensive. Our prior work shows that machine learning can predict the execution time of TLM-based DNN models accurately. This work investigates techniques to enhance the robustness of machine learning-based performance prediction by addressing sources of non-determinism in the training pipeline.

To achieve this goal, randomness in the train-validation split and related parameters were extensively examined. In addition, we extend the configuration space to better reflect realistic system behavior, and apply stratified sampling to ensure a balanced representation across the expanded simulated time range. Supervised learning models are then trained and evaluated using accuracy metrics such as mean absolute error (MAE) and mean absolute percentage error (MAPE). The results demonstrate that the revised pipeline produces consistent outcomes while maintaining strong predictive accuracy across a broader and more representative configuration space. These findings further signify that ML-assisted performance prediction is a viable alternative to exhaustive simulation for early DNN system-level design space exploration.

AF209B

Moderator: Russell Schwartz

Film

Title: Reeling In The Years: Linklater, PTA, and Nostalgia

Presenter(s): Benjamin Price
Advisor(s): Emily Carman

This paper delves into the works of Paul Thomas Anderson (PTA) and Richard Linklater, specifically honing in on a time and place they'd explore and later return to, the San Fernando Valley and Austin, Texas, respectively, of the 1970s and early 1980s. Drawing upon scholarship surrounding the careers of both filmmakers, it explores how they each explore the same era onscreen. By analyzing a selection of films—Dazed and Confused, Boogie Nights, Everybody Wants Some!!!, Licorice Pizza—it investigates the distinction between Anderson's and Linklater's approaches to depicting the period. In both Boogie Nights and Licorice Pizza, PTA and the characters within the films resist not just the larger machinations of the world they live in but the passage of time itself. Linklater, on the other hand, has frequently made time and the effects of its passage a part of his process, whether it's been chronicling growing up in real time in Boyhood or returning to the central romance of the Before Trilogy every nine years. Ultimately, this paper highlights what each film and the years that separate them have to say about each filmmaker and how these films, and other period pieces, refract rather than reflect their period, yet are nevertheless foundational in a culture's relationship to its history.

Project Working Title: O'ahu Untitled Documentary Thesis

Presenter(s): Mary Tess Price, Josiah Mendoza

Advisor(s): Jeff Swimmer

This 15-minute observational documentary explores Hawai'i's unaffordable housing crisis and the rise of houselessness through the lives of residents of Pu'uhonua O Wai'anae, an unhoused village on O'ahu's west side. Hawai'i ranks as having the highest rate of homelessness when standardized by population, with Native Hawaiians disproportionately affected. Failed by systemic negligence and priced out of Hawai'i's rising housing market, many individuals find support through one another. Pu'uhonua O Wai'anae has grown into a self-governing community that houses around 250 individuals and continues to work toward building permanent homes. Set during a period of transition, this film explores community responses to the looming government demolition of their units through the lens of Kala, a longtime leader in the village and single parent raising three children. Balanced with the perspective of his children, the film explores themes of coming of age within a community-based village. While poverty within paradise has long existed, representation of the Islands' unhoused community in film is often limited or sensationalized. This documentary aims to deconstruct these narratives by capturing day-to-day experiences and the dynamics of a village that redefines what it means to be unhoused. This project reflects a commitment to capturing community and what it means to feel at home from an insider perspective.

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Political Science

Ideology, Identity, and the Polarization of American Attitudes Towards Aid to Israel and Palestine

Presenter(s): Jolina Hamdan

Advisor(s): Dr. John Compton

What factors drive support or opposition to foreign aid? And do these factors apply equally to all countries or foreign aid recipients? Using data from the 2024 American National Election Studies (ANES) survey, I compare public opinion on two related issues: support for US military aid to Israel and support for U.S. humanitarian aid to Palestinians. Each model includes predictors for party identification, education, group attitudes (feeling thermometers toward Muslims and Jews), and perceptions of discrimination against Muslims. I expect Republicans to overwhelmingly favor military aid to Israel and oppose humanitarian aid to Palestinians, while Democrats will show the reverse pattern. Higher education levels may predict higher rates of support for humanitarian aid to Gaza as well. Warmth toward Jews should predict greater support for military aid, while warmth toward Muslims should predict humanitarian aid support. By directly comparing these two types of aid within the same dataset and analytic framework, this study examines whether Americans apply consistent moral and political principles or divergent double standards when evaluating foreign policy. The results will contribute to understanding how ideology, identity, and humanitarian values structure polarization in U.S. attitudes toward the Israel–Palestine conflict.

Symbolization, Hyperreality, and the Validation of Political Power in American Journalism

Presenter(s): Sage McCarty

Advisor(s): Dr. Gordon Babst

This project provides a new theory on the processes behind how American political media validates the use of political power, with special attention given to media about American involvement in conflicts in the Middle East. This project uses political scientist Murray Edelman's seminal work, The Symbolic Uses of Politics, as a starting point for understanding the types of emotional-political symbols that exist in media. This project analyzes political theory surrounding symbols' relationship to reality. Symbolization is presented as a necessary precursor for the development of communal understandings of sociopolitical realities. The project also explores the intersection between political theory, philosophy, and cultural theory on the subject of media's production of collective understandings of reality, and on the subject of these understandings' relationships with reality. The end result of this project is a new theory on the semiotic processes behind how American political media validates the use of political power, through the construction of collective understandings of reality. The theory's main argument is that emotional-political symbols in media produce collective understandings of reality, and these collective understandings validate the use of political power. Ultimately, the theory's usefulness is demonstrated through applications of this theory to media produced about American military involvement in conflicts in the Middle East.

AF209C

Moderator: Dr. Desiree Crevecoeur-MacPhail

Psychology

Indexing Nonconscious Processing Using Galvanic Skin Response

Presenter(s): Corwin Golian

Advisor(s): Dr. Aaron Schurger

The project "Indexing Nonconscious Processing Using Galvanic Skin Response" examines how surprise might reveal non-conscious processing of sensory stimuli. It specifically investigates whether people show measurable signs of surprise when they perform better than they believe they should have on a visual perception task. To study this, my project focuses on the perception of near-threshold visual stimuli. When an object recognition task is performed near this threshold, participants may feel as though they are guessing even if their responses are correct more often than not. In other words, participants may achieve performance levels that exceed their subjective expectations. Whether or not this occurs in normally-sighted individuals has long been a matter of debate. In order to study this in an objective manner, participants complete a near threshold perceptual decision making task while their GSR and respiration are recorded. The basic scientific question is what the default assumption under uncertainty is as to whether a given guess is correct or incorrect. Our two hypotheses are (1) when presented with their aggregate score, subjects will express surprise (in the GSR) when their score is better than chance, and (2) on individual trials, we predict that the default reported assumption (even if irrational) in regard to a perceptual guess will be "I got it wrong," and that on trials where this is the reported assumption, subjects will express surprise (in the GSR) upon learning that their guess was correct. The significance of this research lies largely in its potential to deepen our understanding of the boundary between conscious

and non-conscious sensory information processing in the brain. If the findings support our hypothesis, it would provide further evidence that unconscious processes and sensations can shape our behavior without our awareness.

Split Reflections: Racial Identity Conflict and Body Image Among Multiracial Women

Presenter(s): Kaylee Campana
Advisor(s): Dr. David Frederick

Multiracial women experience internal struggles focused on their feelings of racial belonging in response to discrimination (Chen et al., 2019). Stress from stigma and bicultural acculturation pressures uniquely shape multiracial women's self-esteem (Chammie et al., 2010). Multiracial women often possessed physical features that did not align with stereotypical traits of their racial groups, and the resulting stigma and exclusion created unique pressures to conform to the conflicting body ideals of multiple racial identities. The current study aims to examine these experiences through the tripartite influence model, which emphasizes the roles of peers, parents, and media in shaping appearance concerns (Thompson et al., 1999), and objectification theory (Fredrickson & Roberts, 1997), which examines the impact of racialized sexual objectification on body image. Participants were recruited from the Prolific survey panel and completed validated measures of racial identity conflict (Chen et al., 2019), multiracial identity pride (Christophe et al., 2022), appearance surveillance (McKinley & Hyde, 1998), racialized objectification (Lewis & Neville, 2025), and sociocultural appearance pressures (Schaefer et al., 2015). The key outcomes will be body satisfaction (Brown et al., 1990) and interest in appearance modification (Henderson-King & Henderson-King, 2005). Correlational and multiple regression analyses examined how racialized objectification and sociocultural appearance pressures were associated with body dissatisfaction and interest in appearance modification. Multiracial pride and lower racial identity conflict are expected to buffer against these negative associations. This study provided a unique perspective on body image by focusing on the understudied experiences among minority populations. These findings can inform more inclusive prevention programs incorporating racial identity into body image interventions and better equip clinicians to navigate culturally sensitive treatment options.

Am I Actually Hungry? Adverse Childhood Experiences and Stress Eating

Presenter(s): Chloe den Hartog
Advisor(s): Dr. Julia Boehm

Adverse childhood experiences can alter an individual's stress response system, making them more vulnerable to daily stressors and predicting overeating and binge eating, resulting in a higher risk of obesity and other poor health outcomes. Few studies have separated adverse child experiences into categories that identify which type of abuse or neglect has the strongest association with adult stress eating. Limited studies have explored whether positive affect moderates associations. This study hypothesized that adults who experienced emotional or physical abuse as children would be prone to stress eating as adults, and predicted that positive affect would moderate the relationship. Data from waves I (1995-1997), II (2004-2006), and III (2013-2014) of the Midlife in the United States (MIDUS) Study were used. Child abuse was self-reported at wave I and included items related to emotional, physical, and severe physical abuse. Positive affect was also self-reported at wave 1. Stress eating was measured at waves 2 and 3 with two items 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"). Linear regression models examined associations and found that emotional (b=.42, p<.001), physical (b=.37,

p<.001), and severe physical (b=.51, p<.001) abuse were significantly associated with greater stress eating at MIDUS II. Results were maintained when controlling for age, sex, race, education, marital status, and income. Similar patterns were evident at MIDUS III, except severe physical abuse was no longer associated with stress eating. However, positive affect was not a significant moderator. These findings revealed that both forms of abuse are connected to stress eating, but positive affect does not moderate the relationship. Limitations were that all variables were self-reported, and child abuse was retrospectively reported.

AF209A

Moderator: Emily Carman

Art

A Methodical Dismantling: Manet's Olympia and the Rupture of the Western Reclining Nude

Presenter(s): Abigail Van Hoak
Advisor(s): Dr. Justin Walsh

The question is whether Manet was shaped by his era or doing the shaping, and Olympia answers it. It was not an accident but a methodical dismantling of a centuries-old tradition, and by refusing to look away from modern life he forced everyone else to reckon with it too. The reclining nude has never recovered. For centuries, artists from Titian to Ingres constructed a genre around idealized bodies, mythological distance, and an uncontested male gaze that rendered real women into timeless passive objects. Manet inherited that tradition and refused to perpetuate it. Through the theoretical frameworks of Berger and Mulvey on the male gaze, Clark and Nead on idealized form, and Nochlin on Realism, this thesis conducts a close formal analysis of every deliberate choice Manet made in Olympia, the confrontational gaze, the foreshortened hand, the Black maid, the black cat, the iconographies, demonstrating how each decision systematically dismantled the conventions that preceded it. That analysis is anchored in the social and political volatility of Second Empire Paris: the revolutions of 1848, Haussmann's gutting of the city, the sharpening visibility of class and the sex trade. All of it made Olympia possible, but Manet is the one who actually painted her. The reception history stretches from the explosive 1865 Salon response through Cezanne, Duchamp, and modern ad campaigns, tracing how Manet fundamentally destabilized what the reclining nude could represent. Nobody could put it back.

Encountering the Oracle at Chavín de Huantar: Reframing the Lanzón through Experience and Perception

Presenter(s): Forest Delaney
Advisor(s): Dr. Amy Buono

This paper examines the Lanzón monolith at Chavín de Huántar (900–200 BCE) through integrated analysis of architecture, landscape, and embodied experience, arguing that the Lanzón was designed to be encountered as an animate oracle rather than viewed as a static image. While Chavín has long been understood as a deliberately engineered ceremonial center, the Lanzón is frequently discussed in isolation from the architectural and environmental systems that surround it. Moreover, traditional iconographic approaches—focused primarily on visibility and formal analysis—are limited in their ability to account for a monument intentionally designed to be difficult to see. This study instead centers the monolith within the spatial, sensory, and material conditions that structured pilgrimage and ritual ceremony at the site. Focusing on movement through the sacred landscape and the pilgrim experience, the paper explores how sound, light, and bodily perception were manipulated to produce disorientation, heightened awareness, and receptivity. Architectural features such as canals, ducts, and narrow passageways shaped

acoustics, illumination, and motion, reinforcing religious authority while animating the stone monolith itself. The Lanzón's placement within this sensorially charged environment encouraged interaction and communication rather than visual comprehension alone. By synthesizing architectural analysis with phenomenological and sensory approaches, this paper reframes the Lanzón as a focal point of experiential meaning embedded within a sacred landscape, offering a holistic interpretation of Chavín de Huántar as a ritual environment constructed to facilitate divine encounter.

Film

Unmasking the Adult in Alice Rohrwacher's Trilogy of Youth

Presenter(s): Julian Romano
Advisor(s): Dr. Federico Pacchioni, Emily Carman

This paper examines Alice Rohracher's first three feature films - Corpo Celeste (2011), Le Meraviglie (2014), and Lazzaro Felice (2018) - as a collective "Trilogy of Youth" which critiques contemporary Italian society through the lens of adolescence. Rohrwacher utilizes youth and the coming-of-age narrative as a framework for exposing systemic failures within societal institutions, which include the Church, the family unit, and late-stage capitalist economic structures. Situated within emerging scholarship on Rohrwacher, as well as existing research on contemporary Italian cinema, this analysis engages with post-secularism, ecocinema, and auteurism to position this trilogy within a broader critical context. This paper argues that Rohrwacher constructs adolescence as both a liminal and revelatory state, in which young protagonists 'unmask' the moral, spiritual, and ideological stagnation of the adult world. Across all three films, youthful figures uncover contradictions between institutional values and their lived reality; at the same time presenting alternative modes of being which contrast against these structures. Through this unmasking, the youth begin to uncover a new way of being which is grounded by spiritual, ecological, and emotional awareness. Ultimately, this paper seeks to posit that Rohrwacher's films frame youth as both a site of critique and as a fragile, fleeting pathway forward. In doing so, Rohrwacher's work contributes to the greater tapestry of contemporary Italian poetic cinema.

"Handsome, Clever, and Rich": The Resurrection of Jane Austen's "Emma" in the Twenty-First Century

Presenter(s): Nora Konrad
Advisor(s): Emily Carman

"Emma" (1816) is a beloved Jane Austen novel that has had multiple screen adaptations, including Amy Heckerling's "Clueless" (1995), Douglas McGrath's "Emma" (1996), and Autumn de Wilde's "Emma." (2020). Many media scholars have noted the "Jane Austen boom" in the 1990s and how these films adapted Austen's characters with the sensibilities of modern day women. However, there is a lack of scholarship about the most recent "Emma" and how it is influenced by previous film adaptations. This paper analyzes "Emma." (2020) based on foundational texts in adaptation studies as well as archival resources, such as film scripts, press kits, and studio publicity materials.

Through an intertextual analysis of three adaptations of "Emma", I argue that the "Emma." (2020), relies on intertextuality not only with Jane Austen's 1816 novel but also with the 1990s films, "Clueless" (1995) and "Emma" (1996), to appeal to contemporary audiences. Hollywood uses adaptations like "Emma" as an opportunity to create ingénue roles for A-listers like Alicia Silverstone, Gwyneth Paltrow, and Anya Taylor-Joy at the beginning of their careers, while simultaneously packaging high-brow, cultural products for consumers. In the era of streaming, where every version of "Emma" is available at the click of a button, audiences of de Wilde's film will compare it to all other versions. In fact, even the screenwriter Eleanor Catton said she rewatched "Clueless" multiple times before writing the 2020 adaptation. In this way, "Emma." (2020) reveals that when a source material has multiple adaptations there is a cumulative effect of intertextuality between, text, film, and audience. Given that twenty-five years passed between "Clueless" and "Emma."(2020), I infer there is a generational pattern where producers need to remake adaptations so they are palatable to audiences and the current historical moment.

AF209B

Moderator: Dr. Anna Palomar

History

The Spectacle of Suspicion: McCarthyism, Political Theater, and the Silencing of Dissent

Presenter(s): Hannah Rice

Advisor(s): Dr. Jeff Koerber

In the mid-twentieth century, Hollywood's most influential actors, writers, and journalists were summoned before Congress and publicly asked: "Are you now or have you ever been a member of the Communist Party?" During the McCarthy era, named for the champion of the "red scare," Senator Joseph McCarthy of Wisconsin, the House Un-American Activities Committee (HUAC) hearings could, and often did, destroy reputations that had taken years or decades to build. My research examines how McCarthyism and HUAC members used propaganda to reshape America's public opinion. It explores how fears of communism and expanding federal agencies allowed individual members of Congress to gain significant political power. Historians have contentiously debated Cold War politics, particularly whether or not the federal government acted in a justified manner in response to communism. Traditionalist historians argue that the federal government was completely justified in events like the Venona Project, which uncovered Soviet espionage activities in the United States. Revisionists argue the opposite, asserting that this era demonstrates government overreach through agencies like the FBI. Over the years, post-revisionist historians have emerged, stating that this era of politics is a deeply nuanced period of history and that while there was general national anxiety, the government completely overstepped its position. Using congressional hearing transcripts, memoirs, news articles, cultural response, plays, and a plethora of other historical documents of the events in question, this thesis analyzes how fears surrounding communism were systematically implanted by the government to ensure the public feels that the House Un-American Activities Committee was justified.

Ultimately, the hearings not only reshaped public opinions but also the public's opinion on the federal government itself.

Political Science

NetzDG's Regulatory Paradox: Private Messaging Apps, Perceived Censorship, and the Rise of AfD Support in Germany

Presenter(s): Jackson Campbell
Advisor(s): Dr. Alessandro Del Ponte

This study examines how political engagement on social media influences support for Germany's Alternative für Deutschland (AfD) party, testing the unintended consequences of the 2017 Network Enforcement Act (NetzDG). We hypothesize that heightened content moderation on mainstream public platforms displaced anti-establishment and anti-immigration discourse into private, encrypted messaging apps, creating echo chambers that amplify AfD support. Using the 2021 German Longitudinal Election Study pre-election cross-sectional survey (N = 5,119 weighted respondents), we estimate logistic and binomial regression models reporting log-odds coefficients and standard errors. Models control for a rich set of socio-demographic and attitudinal variables.

We find significant positive associations between AfD support and political use of private messaging platforms—Telegram (the strongest predictor) and WhatsApp—while political use of Facebook and YouTube shows weaker or null effects. General platform use follows a similar pattern: Telegram and WhatsApp are positively linked to AfD support, whereas general use of TikTok, Twitter, Instagram, and Facebook is not. Belief that "there is no freedom of expression" is also positively and significantly associated with AfD support. Causal mediation analyses further illuminate the underlying mechanism, revealing that feelings of censorship drive political migration to Telegram, which in turn channels and reinforces support for the AfD.

All hypotheses are strongly supported. These results demonstrate a regulatory paradox: policies designed to curb hate speech on public platforms appear to have pushed politically discontented users into harder-to-reach private spaces where low-visibility, high-intensity sharing fosters radicalization.

The Political Runway: How Fashion Trends Reflect the Rise of Conservatism in the 2020s

Presenter(s): Jolina Hamdan
Advisor(s): Dr. Tess Buckley

Fashion operates as a visible social signal—encoding norms about class, gender, and belonging—while also responding to broader political climates. In the 2020s, U.S. style discourse and consumer aesthetics have shifted toward "conservative-coded" looks associated with restraint and tradition (e.g., quiet luxury, old money, and "trad wife" femininity). This study tests whether that cultural shift corresponds with measurable political movement toward conservatism. Using pooled American National Election Studies (ANES) Time Series data across 2012, 2016, 2020, and

2024, I pair individual-level political party identification with year-level indicators of conservative fashion salience derived from Google Trends "Shopping/Apparel" search intensity for keywords related to quiet luxury, old money fashion, and trad wife. Linear regression assesses the association between party identification and conservative fashion trend salience, and year-by-year comparisons evaluate whether fashion salience intensifies alongside ideological changes. Results show (1) a statistically significant, positive relationship between Republican identification and conservative fashion trend salience, though with a small effect size, and (2) a pronounced increase in conservative fashion trend salience in 2020 and especially 2024 compared to 2012 and 2016. I interpret these patterns through theories of social identity, norm diffusion in digital environments, and the historical use of fashion to reinforce or contest gendered and class-based order. Taken together, the findings support the view that conservative-coded aesthetics function as a cultural barometer: they spread broadly through platform-driven trend cycles while remaining modestly patterned by partisan identity. This project advances fashion-as-politics scholarship by integrating election survey data with digital trace indicators to empirically evaluate fashion's alignment with contemporary ideological climate.

Psychology

Social Connection and Loneliness Among Consensual Non-Monogamy-Inclined Men and Monogamy-Inclined Men

Presenter(s): Bryan Jorden
Advisor(s): Dr. Amy Moors

Loneliness has become a national public health concern, with the former U.S. Surgeon General warning its health consequences rival smoking 15 cigarettes per day (Murthy, 2023). Men and women experience comparable levels of loneliness — yet lonely men face disproportionate consequences, including increased suicidal ideation and alcohol misuse (Maes et al., 2016; Ernst et al., 2021; Johar et al., 2023; Barreto et al., 2025). Though loneliness has been studied across sociodemographic factors, relationship orientation remains unexamined. Men are increasingly likely to name their partner as their sole source of social connection (Wahring et al., 2024). Research suggests practitioners of consensual non-monogamy (CNM) benefit from broader social networks (Conley & Piemonte, 2021), which may be particularly meaningful for men. The present study compares CNM-inclined and monogamy-inclined men on loneliness and meaningful social interactions, examining whether traditional dating norms endorsement explains any differences. Data were drawn from a U.S. Census-based quota sample of single American adults (N = 5,035). The survey included measures of meaningful social interactions (4 items; 1 = Never, 5 = Very Often), perceived impact of loneliness across social domains, and an index assessing men's dating expectations, reflecting traditional dating norms endorsement. CNM-inclined and monogamy-inclined men will be identified from this sample.

Preliminary analyses suggest men with CNM experience more frequent meaningful social interactions and a more positive relationship with loneliness than men without CNM experience.

We expect these effects to hold in a refined sample, with traditional dating norms endorsement explaining differences between groups.

This study challenges mononormative assumptions in loneliness research by introducing relationship orientation and traditional dating norms as meaningful variables. Findings lay the groundwork for future primary research examining how broader masculinity constructs shape loneliness differently across relationship orientations.

AF209C

Moderator: Dr. Desiree Cevecoeur-MacPhail

Psychology

Testing Reverse-Hierarchy Theory as a Framework for Social Cognition

Presenter(s): Natalia Keshishian
Advisor(s): Dr. Aaron Schurger

Social cognition involves the integration and pruning of details across sensory-perceptual domains in order to represent the gist of social interactions. Social cognition aptitude is not all-or-none, but rather exists on a spectrum. The field of social cognition lacks a theory that can account for the inter-individual variability in social-cognitive aptitude. Using reverse hierarchy theory (RHT) as a theoretical framework, we posed the question: what factors explain variability in social cognition across this spectrum? According to RHT, perception starts at the top of the perceptual hierarchy, pointing to perceptual abstraction as a potentially unifying factor that can explain the variance in social cognitive aptitude across individuals, including those with autism. Abstraction, roughly speaking, maps onto how high in the cortical hierarchy a representation is processed. Our hypothesis is that this hierarchy is stunted in autism, to varying degrees depending on severity. Thus, we proposed to test the correlation between measures of social cognition and experimental indices of perceptual abstraction. The first index looks at the way in which visual gist formation interacts with receptive field size, yielding a measure of the function of the cortical perceptual hierarchy. We presented Mooney face stimuli at different retinal sizes to estimate the probability of perceiving a low-contrast face as a function of the size of the stimulus on the retina. We predicted that the slope of this function would act as an indicator of social-cognitive aptitude and would covary with social cognition scores across individuals. We have confirmed that reaction times vary based on image size across all participants. For instance, larger images take slightly longer to recognize. Data analyses focused on differences in face perception depending on retinal image size and social-cognitive aptitude are in progress, and we expect to have final results in time for the symposium.

Body Image and Perceived Desirability Within Bisexual and Lesbian Women

Presenter(s): Nicole Malinoski
Advisor(s): Dr. David Frederick, Dr. Desiree Crevecoeur-MacPhail

Body image research has shown that social expectations strongly shape perceptions of attractiveness and self-evaluation, yet differences within sexual minority groups remain underexplored. This study examined whether perceived desirability and body image differ between lesbian and bisexual women, and whether perceived desirability predicts body image outcomes. Prior research suggests bisexual women may face greater sexualization and pressure to conform to conventional beauty standards, whereas lesbian women may experience less pressure tied to heterosexual male approval. Adult women identifying as lesbian or bisexual were recruited through the Prolific online platform and completed survey measures of body image, perceived desirability, sexual identity, and community-related factors, including belonging, gender expression along a femme–masculine continuum, and outness, along with demographic variables. Analyses tested group differences and whether perceived desirability predicted body image outcomes. It was hypothesized that bisexual women would report higher perceived desirability alongside greater appearance-related pressure, resulting in a stronger association between perceived desirability and body image. In contrast, lesbian women were expected to show weaker associations due to the reduced relevance of heterosexual male standards.Findings contribute to body image literature by highlighting meaningful variation within sexual minority groups and identifying perceived desirability as a key social mechanism shaping body image. More broadly, this study underscores the importance of examining intra-group differences in psychological research and suggests that interventions addressing body image concerns may need to be tailored to the distinct social pressures experienced by different sexual minority identities.

Comparing the Relative Contribution of Perceived Support from Friends, Family, and Spouses on Epigenetic Aging

Presenter(s): Theo Moran, Maverick Morales, Alina Kushner
Advisor(s): Dr. Jennifer Robinette

The population of older adults in the United States is expanding rapidly. At the same time, individuals vary considerably in their rates of biological aging, with accelerated biological age serving as a risk factor for morbidity and mortality. Given the consequences of accelerated aging, identifying factors associated with variations in biological aging is of utmost importance. Social support received from friends, family members, and spouses has been consistently linked to improved health and longevity. The present study examined whether perceived support from these social network members is associated with biological aging, as measured by three epigenetic clocks. Using data from the Midlife in the United States (MIDUS) study, we tested the hypothesis that greater perceived support would be associated with decelerated epigenetic age. Results indicated no significant associations between perceived support from these sources and any of the three epigenetic aging measures. Parallel analyses using the larger Health and Retirement Study database will be conducted to strengthen findings

Navigating Cultures:
Psychosocial Stressors in Immigrant Populations

Presenter(s): Yeraldy Gonzalez-Corona
Advisor(s): Dr. Desiree Crevecoeur-MacPhail

The United States has a growing immigrant population. Immigrants and their children contribute to the country's economy, culture, and many of the country's future voters. Many immigrants face challenges such as adapting to a new culture, discrimination, and language barriers that may affect their well-being. Drawing on Cultural Stress Theory, this study examines how psychosocial stressors such as cultural stress, bicultural identity, and language barriers influence the well-being and behavioral outcomes of immigrants and children of immigrants in the United States. Participants completed a survey measuring psychological well-being, cultural stressors, identity development, and substance use. The survey included modified versions of established measures, such as the World Health Organization–Five Well-Being Index (WHO-5), Alcohol, Smoking, and Substance Involvement Screening Test (ASSIST), Stephenson Multigroup Acculturation Scale (SMAS-32), Language Brokering Scale (LBS), and the Bicultural Self-Efficacy Scale (BSES). Potential findings suggest that particular stressors, whether poor bicultural identity or higher identified stress from language brokering, will report higher levels of substance use. Assuming the hypotheses are supported, the results of this study imply that workshops, support groups, and training materials should be developed to help counselors better recognize and address the cultural stressors experienced by immigrant populations. School counselors and mental health professionals will be better equipped to understand the macro- and micro-level factors affecting immigrant populations.

AF209A

Moderator: Dr. Anna Palamar

Computational Science

Towards Enabling Computer Vision Inference on Bare-Metal Embedded Platforms

Presenter(s): Josiah Liao

Advisor(s): Dr. Emad Arasteh

Deploying deep neural networks (DNNs) on resource-constrained embedded systems has become increasingly critical for enabling artificial intelligence (AI) on edge and Internet-of-Things (IoT) devices. Computer vision applications like image classification rely on DNNs to achieve state-of-the-art results. However, existing computer vision libraries face significant deployment challenges in bare-metal environments, where no operating system is present. A key barrier is the dependency on serialization libraries that require operating system features such as file systems, threading, and standard input/output streams, making them incompatible with bare-metal embedded systems. Despite the growing demand for embedded AI, limited prior research has addressed this challenge.

This work presents a systematic workflow enabling computer vision-based DNN inference on bare-metal embedded platforms. We successfully cross-compile a widely used computer vision library for a bare-metal embedded architecture lacking conventional operating system services. A key contribution of this work is a proposed text-based intermediate file format that eliminates the serialization library dependency, enabling direct DNN model storage on the embedded platform. Experimental evaluation demonstrates successful execution of a well-known image classification network, with inference of a 224×224 pixel image requiring 38.9 billion instructions. These results confirm the feasibility of running complex DNNs on bare-metal embedded systems and establish performance benchmarks to guide real-world deployment in resource-constrained environments.

Environmental Science and Policy

The Intersections of Fast Fashion, International Environmental Law, and Sustainable Policy

Presenter(s): Catriona Dobert

Advisor(s): Dr. Ron Steiner

The global fast fashion industry is a multibillion dollar industry that continues to grow at an alarming rate due to the detrimental environmental impacts associated with the industry. This paper will examine the critical relationship between the fast fashion industry's linear "production-use-disposal" business model and the evolving landscape of international environmental law and policy. The study will analyze the industry's significant global impacts—including its responsibility for 8–10% of global carbon emissions, 20% of industrial water pollution, and the generation of 92 million tons of annual textile waste—while evaluating the efficacy of current regulatory

frameworks such as the European Union Strategy for Sustainable and Circular Textiles and the United Nations Fashion Industry Charter for Climate Action. On top of that, this paper will delve into the cultural shifts around fashion, how the fashion industry has changed throughout the years, and cultural norms regarding fashion and consumption. My research has shown that although many countries (EU nations, APAC nations, and North American nations) have started to address fast fashion by issuing various fashion regulations, however these regulations are relatively new and the effectiveness and implementation of these regulations greatly varies. Additionally, there has been a cultural shift within the past few decades from valuing clothing as a durable investment to treating it as a disposable and low cost commodity with an emphasis on "throw-away culture". Taken together, the findings suggest that meaningful change in the fast fashion industry depends on the alignment of effective international regulation with evolving cultural norms that prioritize sustainability over disposability.

Interdisciplinary

An Artistic Exploration: How Roman Renaissance Shaped the Scientific Study of Anatomy

Presenter(s): Sofia Robé
Advisor(s): Dr. Federico Pacchioni

This study aims to examine how Roman Renaissance artists contributed to modern understandings of anatomy and the human body. Anatomy is often thought of as a purely scientific field, yet this research supports that it is heavily indebted to artistic forms of inquiry. Specifically during the Renaissance period, opportunities arose for figures such as Leonardo da Vinci and Michelangelo to perform dissections as a means of creating more anatomically accurate works of art, despite many taboos surrounding the practice. Combining scholarly sources and field research throughout Rome, Italy, this study compares the anatomical detail displayed in works from before and during the Renaissance. From the Vatican Museums, the Galleria Borghese, the Museo Nazionale, and other key institutions of Rome, prominent and obscure pieces alike were analyzed in detail, especially in terms of musculature, positioning, movement, and realism, to see how the age of the Renaissance advanced the study of the human body. Findings suggest that Roman Renaissance artists acted as early anatomists, translating their empirical observations into physical representations. A distinct deviation in accuracy and precision was determined between pre- and post-Renaissance art. Additionally, further examination and research on the topic of bodies represented historically uncovered a broader issue of female bodies being underrepresented when compared to the male body. This project ultimately aimed to reveal the often-underrecognized aspects of how anatomy and the study of the human body were discovered and developed, highlighting Roman Renaissance artists as architects of our modern knowledge.

Philosophy

Institutional Guidance and Student Engagement: University Responsibility in Polarized Discourse

Presenter(s): Sarah Irenshtain

Advisor(s): Dr. Keith Hankins

Universities face a challenge: how do they support diverse perspectives on polarizing issues while remaining neutral about which ideas are correct? This presentation examines what institutional responsibility in communication might look like during periods of campus polarization.

I argue that universities have a communicative responsibility to provide active guidance on how to engage across disagreement while remaining content-neutral, taking no stance on which political views are correct. This approach, calls universities to support diverse student organizations equitably, create spaces where different perspectives coexist, and model through faculty and administration how to disagree respectfully and substantively. This is distinct from forcing dialogue or choosing sides; it is about institutional presence and support rather than intervention in the substance of disagreement.

Institutional absence shapes how students participate in campus discourse. Some students, particularly those with perspectives that do not fit neatly into dominant campus narratives, experience this absence as a barrier to participation. These students may self-silence not from censorship, but from lack of institutional guidance on how to engage safely and substantively.

This paper explores what institutional guidance might look like and how it differs from both active censorship and complete non-interference. By examining university responsibility in communication, it addresses how institutions can support the intellectual virtues such as epistemic humility, good faith engagement, and comfort with complexity that democratic pluralism requires.

AF209B

Moderator: Dr. Vincent Berardi

Psychology

Gender, the Emotional Victim Effect, and Perceptions of Plaintiff Credibility

Presenter(s): Audrey Simmons

Advisor(s): Dr. Desiree Crevecoeur-MacPhail, Dr. Andrea Wolfs

Complainants in rape trials often struggle to obtain justice due to a perceived ambiguity of evidence against the perpetrator. Literature suggests how a victim behaves while providing said testimony can significantly impact a case's ruling: jurors may hold misconceptions of how a "real" rape victim behaves while describing the acts committed against them, favoring stereotypically emotional victims in a phenomenon known as the emotional victim effect (EVE). This study presented undergraduate students and community participants with a transcript of a mock sexual

assault trial, examining the influence of a victim's gender (male/female) and their levels of affect (sad/neutral) on their assessment of victim credibility and acceptance of male/female rape myths. Participants also received various forms of jury education instruction: no instruction, standard instruction, and a specialized instruction designed to mitigate the EVE and dispel common rape myths. Under what conditions the EVE manifests is a subject of current research; similarly, male sexual assault victims remain an underrepresented demographic. This study aimed to address these gaps in literature while examining the efficacy of juror interventions, on which current findings are mixed. Assuming the hypothesis are supported, results provide further guidance on how to reform the justice system to reduce the attrition rate of rape trials, illuminating which plaintiff characteristics lead to biased evaluations, and what methods of intervention are most effective.

The Role Religion Plays in Sexual Identity Development

Presenter(s): Elizabeth Proescholdt
Advisor(s): Dr. Desiree Crevecoeur-MacPhail

A wide range of religions are taught all around the world, each group and denomination having its own unique beliefs, practices and traditions. As of 2020, within the United States alone, there are 372 distinct faith groups (U.S. Religion Census, 2023). However, despite this, often times individuals overlook the distinctions between different religions and even the differences between their denominations. Additionally, the lack of acknowledgment of the differing views being taught within different religions regarding homosexuality and individuals in the LGBTQ+ community is a common issue and misconception in today's society. This study was guided by Cass's Model of Homosexual Identity Formation (1979), which is a stage model of sexual orientation development that helps to examine how an individual discovers and comes to terms with their sexual identity. Ultimately, the purpose of this study was to examine the role that religion plays in identity development and how growing up in different religious groups can influence the development of an individual's sexual identity. Participants both inside and outside of Chapman University were recruited in an attempt to best reach LGBTQ+ individuals from diverse religious backgrounds and beliefs. Assuming all hypotheses are supported, LGBTQ+ individuals who were raised in a conservative religious environment experienced more significant challenges while developing and accepting their sexual identity compared to those raised in more progressive religious environments. Given the results of this study, these findings demonstrated how the religious beliefs and social messages conveyed in these environments contribute to variations in how LGBTQ+ individuals experience and construct their identities, and highlight the importance of religious context as a factor in psychological well-being. This also suggests the need for increased awareness within educational and community settings regarding religious diversity, as well as the implementation of greater cultural and religiously informed mental health support for LGBTQ+ individuals.

All or Nothing: How Relationship Volatility Contributes to Disordered Eating

Presenter(s): Hibah Ali
Advisor(s): Dr. Desiree Crevecoeur-MacPhail

Emotional eating is an extremely prevalent yet often overlooked coping mechanism, particularly among adolescents facing a variety of stressors. A 2025 meta-analysis reported a 44.9% global prevalence of emotional eating among overweight and obese individuals (Chew et al., 2025), highlighting its emergence as a public health concern. Researchers identified declines in physical health associated with emotional distress, with intimate relationships serving as a significant contributing factor. Focusing on heterosexual relationships, manipulative behaviors such as love-bombing were associated with feelings of shame and rejection. These negative emotional experiences, along with low perceived partner responsiveness, were linked to individuals seeking control in other areas of their lives, including their dietary behaviors. The Control in Relationships Scale (CIR; Naydenova, 2007) was used to examine the relationship between perceived control and emotional well-being in abusive relationships. Additionally, Emotion Regulation Theory (Gross, 2008) provided a framework for understanding how individuals managed and responded to emotional experiences. This study examined the relationship between emotional distress within intimate relationships and disordered eating patterns, with the goal of identifying key behavioral and psychological mechanisms underlying maladaptive coping strategies. Assuming support for the hypotheses, findings would have highlighted the occurrence of restrictive eating patterns and obesity due to emotional dysregulation. Rather than focusing solely on the impact of sociodemographic variables and lifestyle factors on eating behavior, researchers must also prioritize the influence of interpersonal relationships. Incorporating the development of adaptive coping strategies related to diet and relational dynamics may be essential to better addressing this health crisis.

Sexual Healthcare Discrimination Against the "Non-normative" Body

Presenter(s): Sarah Perkovic
Advisor(s): Dr. Desiree Crevecoeur-MacPhail

Within society, cultural narratives often equate the supposedly “unattractive” or non-normative body with sexual devaluation, reinforcing stigma, and contributing to negative healthcare experiences. These rigid standards of attractiveness are deeply rooted in gross ideals of ableism and weight stigma and not only marginalize those deemed conventionally unattractive but also harm self-worth, body image, sexual self-esteem, and sexual efficacy. Body image theory and elements of the social model of disability reveal how people with non-normative bodies are disproportionately affected by these stigmas, contributing to discrimination within sexual healthcare. The aim of this study was to analyze how societal norms around attractiveness and sexuality affect the sexual healthcare experience. This study also aimed to better understand how to improve sexual healthcare practices, so they affirm the sexualities and dignity of fat, disabled, and/or physically disfigured individuals. This study was conducted using an electronically distributed survey, analyzing and comparing experiences within sexual healthcare settings of

people with different body types. Assuming the results reflected the hypotheses, people who identify as visibly disabled and/or overweight experience more discrimination within the sexual healthcare system, and are more likely to avoid seeking out care for a sexual health-related issue. Furthermore, the results would reveal that ideas of self-perceived sexual desirability have an impact on body image, self-perception, and sexual healthcare avoidance. Understanding this discrepancy in patient experience helps healthcare professionals be more aware of their potential inherent bias and move toward a standard of sexual healthcare that rejects assumptions of sexuality and promotes sexual self-efficacy. Making all patients, regardless of disability or appearance, feel understood and respected when inquiring about their sexual health is essential to fight the stigma that these marginalized communities face.

AF209A

Moderator: Dr. Anna Palomar

Biochemistry and Molecular Biology

Calcium-Dependent Mechanism of Calmodulin Binding to the HIV-1 Matrix Protein

Presenter(s): Al Hussein Gamal El Din
Advisor(s): Dr. Jerry LaRue

This study investigates the calcium-dependent interaction between calmodulin (CaM), a key cellular signaling protein, and the HIV-1 matrix (MA) domain of the Gag polyprotein, which plays a central role in viral assembly at the host cell membrane. While previous studies have established that CaM binds MA in a calcium-dependent manner and induces conformational changes that expose the myristoyl group required for membrane association, the precise mechanism of this interaction remains unclear. In particular, it is unknown whether binding is initiated through a specific MA domain and whether it follows a sequential, two-step process involving CaM's N- and C-terminal lobes. To address this, fluorescence spectroscopy will be used to monitor conformational changes in MA during CaM binding under both calcium-present and calcium-absent conditions. Tryptophan fluorescence within MA provides a sensitive probe for detecting binding-induced structural changes, allowing quantitative analysis through titration experiments. In addition to full-length MA, isolated N-terminal and C-terminal domains will be examined independently to determine whether binding is domain-specific or cooperative. It is expected that calcium-dependent shifts in fluorescence intensity and wavelength will be observed under calcium conditions but not under calcium-absent conditions, supporting the role of calcium as a regulatory trigger. Furthermore, differential responses between domains may reveal a hierarchical or sequential binding mechanism. Overall, this work aims to establish a mechanistic model of CaM-MA interaction, providing insight into how host calcium signaling regulates HIV-1 assembly and identifying potential targets for disrupting viral production.

Biological Sciences

An EGFR-Targeted Peptide Drug Conjugate Platform for Enhanced Drug Delivery in Triple-Negative Breast Cancer

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

Characterized by the absence of estrogen receptor (ER), progesterone receptor (PR), and human epidermal growth factor receptor 2 (HER2) expression, triple-negative breast cancer (TNBC) accounts for approximately 10–15% of all breast cancer cases and is associated with disproportionately poor clinical outcomes, including a five-year survival rate of less than 30% in metastatic disease. The absence of well-defined molecular targets primarily restricts treatment options to systemic chemotherapy, often resulting in dose-limiting toxicities and high relapse

rates. Targeted drug delivery strategies, including peptide drug conjugates (PDCs), have emerged as a promising approach to enhance tumor-specific accumulation while minimizing off-target effects. In this study, we report the design, synthesis, and analytical characterization of a novel EGFR-targeting peptide drug conjugate, D-Cys-PEG5-YHWYGYTPERVI–MCC-DOX, developed to exploit epidermal growth factor receptor overexpression in TNBC. The targeting peptide was synthesized via Fmoc-based solid-phase peptide synthesis on Wang resin, incorporating a PEG5 linker to improve solubility and pharmacokinetic properties and a terminal D-cysteine residue to enable site-specific conjugation. Doxorubicin (DOX) was modified to introduce a maleimide functional group and subsequently conjugated to the peptide through thiol–maleimide coupling, enabling controlled and site-specific drug attachment. Analytical characterization by reverse-phase high-performance liquid chromatography (RP-HPLC) and mass spectrometry (MALDI-TOF, LC-MS) confirmed the identity, purity, and successful formation of the final conjugate. This work presents a modular and scalable platform for receptor-mediated drug delivery in TNBC and underscores the critical role of linker chemistry and targeting specificity in overcoming the limitations of conventional chemotherapy, with the potential to improve therapeutic index and advance the next generation of precision oncology therapeutics.

Chemistry

One-Pot Tandem Oxidative Boron-Heck/Mizoroki-Heck Reactions to Generate Disubstituted Arenes

Presenter(s): Nyssa Arai
Advisor(s): Dr. Justin O'Neill

Substituted arenes are fundamental scaffolding in the synthesis of complex, highly functionalized fine chemicals such as pharmaceuticals, agrochemicals, polymers, and advanced intermediates used in their manufacture. The Pd-catalyzed C–C coupling reactions Suzuki and Heck are among the most widely used industrially to build and functionalize carbon skeletons due to their selectivity and relatively mild reaction conditions. Despite their suitability, these reactions suffer from high upfront costs and waste generation which continue to limit the scope and scale of production. The development of one-pot tandem processes in which multistep synthesis occurs without isolation of intermediates between steps is critical for scaling up but there are no general solutions. The successful implementation of one-pot multistep synthesis in a given case is highly dependent on specific reaction parameters, choice of solvent, ligands, and substrate and thus rarely transferable. The discovery of compatible reactions and conditions that generate desired products in acceptable yields via a one-pot tandem process is a largely empirical science. Innovation begins in academic environments where novel high risk approaches are explored in small scale experiments. In a 2008 work O'Neill and coworkers reported the preparation of biaryl derivatives in good to moderate yields via a one-pot tandem Pd-catalyzed oxidative boron-Heck/Suzuki reaction. In the same work O'Neill et al. demonstrated the selectivity of Suzuki, Mizoroki-Heck, and oxidative boron-Heck cross coupling reactions when controlling reaction

conditions. This work draws on the findings and methods of O'Neill et al. 2008 to investigate the performance of one-pot tandem oxidative boron-Heck/Mizoroki-Heck reactions and collect preliminary results to assess the viability for further research. Disubstituted arenes were obtained for all olefins tested but in lower than expected yields. The low yields were likely due to protodeboronation of the reagent 4-iodophenylboronic acid and the tandem reaction warrants further study.

AF209B

Moderator: Dr Adwoa Opong

Film

The Qualities of Film and Its Origin in Theatre

Presenter(s): Julius Anderson
Advisor(s): Emily Carman

The transition of storytelling from live theater to screen engaged audiences in a reimagined style of performance, nuance, and plot structure. In the theater, an actor portrays a character's emotions and actions in an exaggerated way. Research by Eileen Bowser examines the cause: the great distance between performers and viewers. Emotions and actions must be seen by the audience and, therefore, are made more theatrical. In early films (i.e., silent era, Vaudeville, etc.), the camera maintained this distance largely because of the film quality at the time. Henceforth, actors continued to act in ways similar to those in live theater. More research delves into the nuances of theater and film, specifically what each form offers differently and how film provides elements that live theater cannot. Theories from Hugo Münsterberg, Ludo de Roo, and Tom Gunning are analyzed to help understand the differences between live and filmic entertainment, specifically the influences of one on the other. The question of what unique aspects of storytelling each offers and how the two styles can intersect is widely discussed across sources. Ultimately, we are faced with the question of how a stage production can be adapted into a film, while still considering the subtlety of filmic entertainment, as opposed to the original source.

Interdisciplinary

Women Encoded: Exploring Generative Artificial Intelligence Output in Relation to Gender Bias

Presenter(s): Malyssa Shaw
Advisor(s): Micol Hebron

This project, "Women Encoded: Exploring Generative Artificial Intelligence Output in Relation to Gender Bias", aims to answer the question: to what extent do various generative artificial intelligence (AI) models exhibit gender bias in their output? Rapid development and integration of generative AI is revolutionizing the way we interact with technology. However, many people are unaware of how these models are trained and of the harmful stereotypes often perpetuated by them. With recent upticks in technology-facilitated gender-based violence (TFGBV), rapid and constantly changing development of AI tools, lack of legislative measures, and limited

representation of voices from marginalized identities within conversations surrounding this technology, it is crucial for us to examine this area critically.

Political Science

Constructing Consent: Propaganda, Fear, and Public Support in the U.S. Foreign Policy
Presenter(s): Hannah Rice
Advisor(s): Dr. Andrea Molle

"FAKE NEWS": A phrase many Americans can not escape no matter how hard they try. It differs from the idea that the mass media or government is lying to the general public regarding a specific event or actions but how is this accomplished? The simple answer is propaganda. This thesis looks at the way the United States federal government used propaganda to convince the American people that drastic military acts are necessary. Rather than scaling propaganda down to misinformation, this research portrays it as a strategic, deliberate act done by the government to create a narrative that justified military action. The central focus of the paper will be on how state actors use propaganda to convince the public that their actions in the case studies are just. To answer the research question, the text will look at varying case studies and compare what the official state rhetoric was at the time of the initial interventions, public opinions, both domestic and international, as well as any strategic messaging they may have used to help the aggressor gain public support. Through a qualitative examination of the different case studies such as the Invasion of Panama and the War on Terror, the thesis determined how each state created persuasive arguments that worked in reframing public opinion from negative to positive. The findings illustrate the way propaganda is an internal and deliberate tool for states to ensure the public remains on their side. Ultimately, this thesis demonstrates propaganda as a powerful tool of persuasion that can turn public support on an international conflict quickly in favor of military action.

Psychology

Queerness and Juror Bias: The Influence of Sexual Orientation on Guilt Judgments
Presenter(s): Alyssa Attard
Advisor(s): Dr. Andrea Wolfs

With increasing polarization in the United States, preestablished negative views on homosexuality are bleeding into many different aspects of life, including the courtroom. Prior research suggests that LGBTQ+ people, especially butch lesbian women, may hesitate to disclose their sexual orientation in legal settings due to concerns about deviance, credibility, bias. Relatively little experimental research has examined the interaction between perceived physical queerness and confirmed queerness and how it influences juror decision-making. The present study investigates whether a defendant's perceived sexual orientation affects jurors' guilt judgments and whether misdemeanor assault against an ex-partner is evaluated more harshly when the defendant is

confirmed or disconfirmed as queer. We hypothesized that defendants perceived as queer would receive higher rates of guilty verdicts, with the strongest effects occurring when both cues were present. Mock jurors were randomly assigned to read testimony describing a defendant charged with misdemeanor assault against an ex-partner, in which the ex-partner's gender was either explicitly stated or left ambiguous. Each testimony was paired with an AI-generated image that varied by gender and perceived sexual orientation. This 2x2x3 factorial design manipulated defendant gender, the gender of the defendant, the defendant's perceived queerness through visual markers, and the defendant's confirmed queerness through contextual information in the scenario. Participants then completed measures assessing their judgments of guilt, innocence, and character. One notable finding emerged among female defendants whose sexuality was explicitly confirmed as straight but visually appeared queer. These women were found guilty at significantly higher rates compared to those who appeared straight. This pattern suggests a penalty for gender nonconformity, where deviations from traditional expectations may lead to harsher judgments. These findings highlight the role of perceived queerness in shaping juror decision-making.

BH 100

Moderator: Dr. Louise Thomas

I'm Not Afraid of Anything from Songs for a New World by Jason Robert Brown

Performer: Alexa May

Advisor: Nick Gabriel

Throughout my experience at Chapman University, I have been able to further unleash the joy of creativity through performance. Over these four years, I have diligently learned how to practice drama and what it truly means to perform. Drama originates from the Greek word meaning "to do" or "to act." Because of this simple meaning, I have retained the importance of truly doing, striving for truth in any moment, whether replicated for performance or lived in each instant of my life. I aim for presence, which is easier said than done, that's for sure.

Traversing numerous creative mediums, such as acting and singing, I attempt to inform my art through the study of strict technique, hard work, and consistent practice. Enlightened by preparation and discipline, I perform for an audience in hopes of eliciting an emotional response, demonstrating vulnerability through the mask of a character.

Truth is at the center of this work. And truth is scary. It scares me at times, which is why I chose to sing "I'm Not Afraid of Anything" from Songs for a New World by Jason Robert Brown. I selected this piece as my final performance at Chapman University.

As a graduating senior, I am ready to step into the world and make a name for myself. And in truth, I do not feel fear in the way I once did. I have fears, many of them, but moving forward is not one of them. My character feels immense fear but does not say it. It is hidden and you know, fake it till you make it, am I right? And in reality, both of us can proudly say: I am not afraid of the world and its challenges.

I face adversity head-on and persevere. I trust myself and the tools I have learned throughout my life. Everything happens for a reason, so why be afraid?

And that is what I am currently practicing, my "What, Why, How?"

My statement is inspired by this quote:

"I have faith now… and when I think of my vocation, I'm not afraid of life."

—Nina from The Seagull by Anton Chekhov

Trio for Trumpet, Piano, and Violoncello Mvt. 2, by Eric Ewazen

Performers: Cadence McMillan, Josephine Velez, MK Ku

Advisor: Tim Hall

Eric Ewazen's Trio for Trumpet, Violoncello, and Piano was premiered in 2007, written for trumpeter Tomislav Spoljar and his Velika Gorica Brass Festival in Velika Gorica, Croatia. Ewazen creates a mini chamber orchestra, using these three instruments to create colorful sounds between these melodic phrases. The second movement is a slow, lyrical piece in which the cello and trumpet have alternating cantabile melodic lines, creating a rich, warm blend. The piano line creates a gentle, soft texture that expresses the emotional character of the piece and creates a

warm and resonant sound. Through this piece, we express these emotional moments and create a soft and warm atmosphere.

Trio for Oboe, Bassoon, and Piano - Francis Poulenc
Performers: Melissa McElroy, Aidan Chun, My Tran
Advisors: Elliott Moreau, Dr. Louise Thomas

Francis Poulenc was a French composer during the Romantic style time period. This Trio is one of his most well-known and highly performed pieces! The opening of this three movement work is characterized by a brooding dialogue between bassoon and oboe. Powerful and bold piano accompanies this dialogue as Poulenc transitions into the Presto section, where this movement gets its name. This fast-paced movement bounces back and forth between being playful and lively, and returning to the more morose and thoughtful sections. The second, Andante, is described by Poulenc himself as both sweet and melancholic. It is a lyrical movement that is filled with a mixture of major and minor modes to reflect the dichotomy between these two feelings. The third, Rondo, rounds out this piece with a jovial and dance-like melody, leaving the listener with a tune they'll be humming for hours afterwards!

Juliet from Romeo and Juliet Act 3 Scene 2
Proteus from Two Gentlemen of Verona Act 2 Scene 6
Hermia and Demetrius from Midsummer Night's Dream Act 3 Scene 2
Performers: Cate Goglia, Landon Smith
Advisor: Nick Gabriel

Gathering from a smattering of Shakespeare's work, we are performing monologues from Romeo and Juliet and Two Gentlemen of Verona as well as a short scene from Midsummer Night's Dream. Both of us have grown in our love for classical text since being at Chapman. The BFA Theatre Performance track has a strong emphasis on classical work and technique. Through our faculty we have been exposed to external programs to deepen our knowledge. Cate discovered Prague Shakespeare Company's summer program after her freshman year getting to then perform and work abroad with leading Shakespeare scholars. This past summer, we jointly attended London Academy of Music and Dramatic Arts' eight week Summer Shakespeare intensive in which we performed Shakespearean and Jacobean work. We are now both receiving our graduate degrees from LAMDA in a Classical Acting MFA. We would not have pursued this opportunity without Chapman's support. In Juliet's monologue, she eagerly anticipates Romeo's visit the evening after their secret marriage, not knowing of Tybalt and Mercutio's deaths. Proteus deals with an internal emotional conflict over his feelings for the woman he once loved, Julia, and the woman he now loves, Sylvia. He debates his responsibility to loyalty or new lust and potential happiness. Finally, an in love Demetrius attempts to evade murder accusations from Hermia who thinks she killed Lysander in their competitive pursuit for her from our Midsummer Night's Dream selection.

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"Is My Team Ploughing?" from Ralph Vaughan Williams' *On Wenlock Edge*

Performers: Evan Richards, Jackson Forte

Advisors: Dr. Louise Thomas, Patrick Goeser

For the symposium, Jackson Forte and I are presenting "Is my team ploughing?" from Ralph Vaughan Williams' song cycle, On Wenlock Edge (1909). This work has a special home within the English Art Song repertoire, setting A.E. Housman's A Shropshire Lad with an exciting impressionistic twist.

Any approach to this performance accounts for Vaughan Williams' unique compositional lineage– a synthesis of English Folk Music (which he collected, furthering the field of ethnomusicology) and the French Impressionism he studied under Maurice Ravel. This fusion utilizes a haunting quasi-recitative style to represent the ghost of the deceased narrator. This is juxtaposed with the piano, increasingly frantic and teeming with "life," in contrast to the vocalist. While the folk-infused melodies reflect the narrator's passing, the impressionist melodic planing in the piano echoes this "team" of those who continue on. This parallel motion evokes the Shropshirian atmosphere and whistling wind, supporting the narrator's hollow timbre through extraordinary register shifts and psychological tension.

As an opera singer and conductor, I am quite drawn to Vaughan Williams' ability to evoke these rich emotions through his specific instrumental and vocal colors, distinct dynamic waves, and folk-motifs. Today's selection from On Wenlock Edge is a masterclass in this exact musical storytelling; the stark contrasts between life and death are visceral, transcending the typical pastoral language one expects. Performing this work demonstrates how 20th-century British music evolved beyond those folk tunes Vaughan Williams collected into a profound exploration of human morality and irony.

It has been a privilege to study and showcase this expansive repertoire, which can bring the humanity of these stories to life. Through intersecti ng these techniques with musical expression, the poetry of Housman can feel more relevant to audiences today.

String Quartet No.19 in C major, K.465 "Dissonance" - I. Adagio – Allegro by W.A.Mozart

Performers: Sarah Schmainda, Joshua Von Bruenchenhein, Krista Lombardi, Ella Magen

Advisor: Dr. Yoshika Masuda

Mozart's String Quartet No. 19 in C major, K. 465 is the last composition in a set of quartets dedicated to Joseph Haydn. The two giants of the Classical period reciprocated respect for each other, even while having vastly different compositional philosophies. Haydn, in conversation with Mozart's father, Leopold, remarked: "Before God and as an honest man I tell you that your son is the greatest composer known to me either in person or by name…" Mozart was not commissioned for these set of quartets, nor was it standard to dedicate it to a non-aristocrat. Mozart referred to these quartets as his "children" that he is sending "out into the great world," and that these works are the result of a "long and laborious endeavour…"

The "Dissonance" quartet was named because of its strikingly chromatic opening. The opening sets the mood with quiet repetitions in the cello, which evolves with tense entrances of all instruments. Each entrance suspends and imitates, all while maintaining the brooding

characteristic of the introduction. The first violin ends the introduction with a sigh, and after a pause, starts again. The first theme is established, which almost jokingly arrives in the harmonious realm of C major in a faster, livelier tempo. A jaunty second theme then arrives in a triplet fashion before quickly transitioning into the development, where the themes become minor and are woven with dissonance and constant movement. After the turbulence of the development, the first theme is reintroduced in the first and second violins, and a calm washes over the rest of the movement as it comes to an eventual close.

Space Age Bachelor Man – Brooke Maxwell and Jacob Richmond

Performer: Matthew Layton

Advisor: Nick Gabriel

Space Age Bachelor Man is a glam-rock single, featured in the 2009 hit musical Ride the Cyclone. The song features a mix of 80's pop culture and comic book absurdism, told through the lens of a socially awkward imaginative juvenile, Ricky Potts. Ride the Cyclone, rising to popularity in the later years of the Covid-19 Pandemic, became an instant cult favorite, exploring themes of morality, purpose, and self-worth. The ensemble-based plot is driven by heavily flawed, yet passionate teenagers as they discover and debate over why they deserve to live over their peers. Ricky uses the "Space Age Bachelor Man" as an alter ego, exploring his hyper-sexualized masculine ideas in a response to his physical limitations. I selected this number out of my 2025 Chapman performance of Ride The Cyclone due to its optimistic and absurdist tone. The stark contrast between the body Ricky inhabits and the playful, often ridiculous abandon of his imagination, brings sympathy, awe, and bewilderment. This performance explores the surprising disparity between the constraints of life and freedom of the mind.

Techno-Parade by Guillaume Connesson

Performers: Matthew Chandler, Jorden Enderton, Jackson Forte

Advisors: Tim Hall, Mary Palchak, Dr. Louise Thomas

Guillaume Connesson's Techno-Parade reimagines the pulsating energy of electronic dance music through the acoustic lens of a chamber trio. Scored for piano, clarinet, and flute, the work transforms the rhythmic drive and layered textures of techno into a vivid, virtuosic interplay between instruments. This performance explores how repetition, momentum, and timbral contrast can evoke the immersive atmosphere of a dance floor without the use of electronic amplification.

At its core, Techno-Parade is an exploration of motion—both physical and sonic. The piano acts as a percussive engine, establishing propulsive grooves that anchor the ensemble, while the clarinet and flute weave intricate melodic lines that oscillate between hypnotic loops and expressive gestures. The result is a dynamic tension between mechanical precision and human spontaneity, reflecting the intersection of technology and artistry.

This interpretation emphasizes clarity of rhythm and color, highlighting the ways acoustic instruments can mimic, reinterpret, and expand upon electronic idioms. Rather than imitating

techno music directly, the trio embraces its spirit—its insistence on forward drive, its layering of patterns, and its capacity to induce a trance-like state in listeners.

Ultimately, this performance invites audiences to reconsider the boundaries between genres. Techno-Parade becomes not just a translation of electronic music into classical form, but a celebration of their shared energy. By bringing the concert hall into dialogue with the club, the piece challenges expectations and redefines what chamber music can communicate in a contemporary context.

AF209C

Moderator: Micol Hebron

Losing Reality

Presenter(s): Emma Paige Gorelick

Advisor(s): Micol Hebron

Losing Reality. Gorelick's Narrative collage combines the use of Adobe Firefly images to depict the changing effect humans have on nature. The piece of work is laid out horizontally as if it is a timeline. Using the rules of three to show the timeline effectively, she guides the audience through the scene. Bringing the drop shadows into the picture gives the collected items that are pasted in a greater depth to give the environment an aspect of three dimensional space. She also creates a sticker effect on the different items by flattening the colors that were put on the items to give a contrasting effect between the background and the foreground. The faded images as background show the change over time with humans to make the audience follow through the story line very clearly. The mix of clipart and real photos moving around the work of art creates a dynamic visual. In order to read the work, the audience scans from left to right as if reading a piece of text to see the storyline progress. The colors stay in the same tone and family keeps everything tied together making the piece uniform. The different animals are wandering around the scene along with the humans who are stuck on their cellphones no longer paying attention to what's going on around them. When going across the artwork, Gorelick brings the viewer into this world where the environment changes due to human intervention. With the Anthropocene depicted, although it looks like a made up world, it was created to show our reality on Earth. As humans we have evolved and created amazing technology but in doing so we have destroyed the natural habitat around us taking away the home of so many animals. The success of humans creates the downfall of animals.

Life of a Leprechaun

Presenter(s): Sydney Monaco

Advisor(s): Micol Hebron

My collage serves as an autobiography, comprised of various elements relating to cultural history, relationships, and past versions of myself. I created a timeline by utilizing the rule of thirds to divide my narrative into 3 parts of equal importance. By compiling assets and arranging them into their respective third of the canvas, I created a story to accompany my life timeline. Certain elements, such as the flags at the top, are not confined to a single third; instead, they span the entirety of the timeline, bringing the pieces together. By using blend modes and drawing tools, I combined the skies of the landscapes in the background to create a more continuous narrative rather than keeping the sharp edges that exist between thirds. I used rules of perspective, drop shadows, and size differences to transform my 2 dimensional time line into one that has depth along the z-axis, emphasizing the foreground, middle ground, and background. Many elements of my collage extend off the canvas as a whole in different directions; these assets span further than the select timeline I have represented. I used adjustment layers and filters to help harmonize

my collage and create a more cohesive color scheme, allowing the elements to flow together in one horizontal storyboard rather than having rigid visual breaks between each section. I chose to use various selection tools to extract subjects from the personal assets I have collected. By using masks and selection tools, I could smoothly incorporate additional elements into the setting of the landscape background.

The collage I have created represents a condensed timeline of my life (as a leprechaun). I wanted to incorporate assets relating to my childhood, adolescence, and adulthood into their respective sections of the collage, with elements such as the Irish flag and Italian tiles breaking through the boundaries of time and spanning more than just one section of the collage.

Melting Pot

Presenter(s): Ellison Thompson

Advisor(s): Micol Hebron

The golden border is in an Art Nouveau style, with the images of a relicario at the bottom and top borders of the image. On top of the background, there are three layers on which the main subjects of the image are placed. The layer closest to the back is a drawing of trees, and the second and third layers are hills made of two different Ilocano patterns. The frontmost pattern has a design from Northern Luzon made with the pinilian technique, and the pattern of the hill behind is an Abel Iloco pattern from Ilocos Sur. On the frontmost hill is a house painted with a Mexican floral design and foliage surrounding the building. The interior of the house has a clipping mask over it of a biombo painting from the Spanish Colonial era titled “Folding Screen with Indian Wedding and Flying Pole.” On the second hill, the face of José Rizal is pasted onto a painted figure clothed in a traje de mestiza, or María Clara gown. The different plants are wood sorrel around the house and “hills,” lily of the valley behind the pinilian pattern, and blue cornflower on the top of the Abel pattern. Most of the items are on the sides of the frame or directly on the rule of thirds grid. The collage, in all of its eclectic imagery, embodies the diversity that is my heritage. I am Filipino on my mother’s side, and my maternal grandmother is Ilocano. On my father’s side, I am half Mexican and also a mixture of many different European cultures, namely German, Irish, and French. The hill patterns reflect my Ilocano roots, and the María Clara gown represents my Filipino culture in a broader sense. The house represents my Mexican heritage, and the painting within the house and relicario on the collage represent the intersection of Mexican and Filipino culture through centuries of Spanish colonization. Each of the plants represents a different country: the wood sorrel comes from Ireland, the blue cornflower from Germany, and the lily of the valley from France. The collage is noisy and colorful, as a simple, clean image would not be able to encapsulate the full breadth of my ethnic identity.

I Love Skeleton Piracy

Presenter(s): Neal Spurr

Advisor(s): Micol Hebron

This piece was meant to be a representation bridging the simulacra of both the idea of digital piracy and the false idea of skeletons quite literally becoming pirates. Most of the visual ideology around the work that I had created was to mimic internet-esc visuals which also were used in different parts of it. This is meant to mostly be a comedic piece relative to both of those ideas since living skeletons in my opinion are comedic ideas. some of the more low quality images in themselves also are a little low quality to reflect the piracy experience. Piracy as in old piracy is also a general theme but it just goes under the name. Overall I think it is a very interesting theme to include within the piece. The background is made of various images of beaches and oceans made to visually look like a coherent beach which does not exist in real life. Next are the mix of 3 skeletons strewn about the image. One in the foreground on the right one in the midground on the left and one in the background on the top middle-right. Additionally there are error messages next to the middle ground skeleton and a treasure chest held up by a mouse cursor emptying game cartridges onto the beach.

Beauty Age Narrative Collage

Presenter(s): June Sherman

Advisor(s): Micol Hebron

This collage shows the dark side of social media with the instagram border, inside is a picture I took in France, staged with the background of a beach picture from the internet in the middle of the composition. In the background of the post are the three changing elements. Beginning of the trees life, the healthy full grown line of trees, then to it being swallowed with flames in the result of climate change and global warming. I sized them so they stretch across the whole width of the frame and blended them together so it feels continuous instead of separate images. In the middle ground is the collage I created with assets of piles of money, a police icon logo, crumpled trash, United States emblem, and melting ice. I adjusted the opacity on the ice so they overlap without completely covering the pattern and add to ice's properties. As well as a digital image of a flower I drew for drawing class that adds to the environmental themes. In the foreground is a building, hotel specifically, taken from my downtown in Oregon. Followed with melting glaciers and a first person view of someone looking at their phone and being distracted with what's online, not right in front of them. The collage is split up into thirds by the background, middle ground, and foreground. I used layering, cropping, and sizing to separate each space. There isn't much negative space since most of the area is filled, which makes it feel visually busy. This collage is about how the media shows a modified version of reality while ignoring serious issues. The crowded composition reflects how overwhelming and distracting the media is. The elements I chose like ICE, money, wildfires, the police symbol, and people on their phones connect to real issues, but they are all combined to show how the media presents everything to you at once and fails to explain the deeper meaning and importance.

Trials of Joy

Presenter(s): Benito Ogletree

Advisor(s): Micol Hebron

This project explores the question: How do formative experiences - particularly those rooted in relationship, faith, and adversity - shape one's perception of meaning, identity, and growth over time? Through a narrative collage, I investigate the tension between chaos and order, and how joy is not separate from struggle but forged within it.

Drawing from visual traditions of surrealism and symbolic abstraction, the composition employs layered imagery, contrasting color treatments, and nonlinear spatial relationships to reflect the fragmented yet interconnected nature of human experience. Central to the piece is the Penrose triangle, a paradoxical form that challenges perception and represents the illogical yet deeply felt nature of life's trials. The moon, positioned as a guiding light, symbolizes illumination within darkness, echoing philosophical and spiritual interpretations of guidance amid uncertainty.

The inclusion of recurring father-child imagery serves as both subject and methodology - using personal narrative as a framework for broader inquiry. These moments, intensified through color saturation and distortion, represent memory as something emotionally encoded rather than objectively preserved. In contrast, desaturated imagery of faith and discipline suggests that traditionally "formative" domains may feel distant compared to the immediacy of lived relational experience.

Ultimately, this work concludes that growth is nonlinear and deeply experiential. Joy is not the absence of hardship, but its counterpart. Through layered symbolism and visual contrast, Trials of Joy proposes that meaning emerges through the integration of paradox, memory, and human connection.

Super Speed Bros

Presenter(s): Jaden Allmond

Advisor(s): Micol Hebron

I created this Narrative Collage, named "Super Speed Bros", using Adobe Photoshop and assets I made using AI and some of the assets that were made by Adobe Photoshop as well. It is horizontally oriented composition. The width of this image is 24 inches wide and the height of this image is 20 inches. This image features checkered flags on the upper left of the sky and on the upper right of the title in the sky and both of them in the upper left and upper right corners. This Collage shows the cars racing on the road with their exhaust pipes spitting out flames. On the left side of the road, we see some cars on the dirt. On the right side of the Collage, there are two cars racing on the dirt and the two buttes are also on the right side of the dirt. Also, it has the cars that have their exhaust pipes spitting flames going from the smallest cars to the biggest cars. The mountains used to be added on the right side of the extra space. The title, "Super Speed Bros", along with the big racing flags represent auto racing. From the front of the Collage, there are two big cars. As the road continues, the cars come from big, medium, to small. But starting from the further road, this starts from the smallest cars to the biggest cars. The Visual Elements

of the Collage are contributing to the car racing culture. It is supposed to represent the love of racing and how much people enjoy racing and watching cars races as hobbies.

The vibe of this piece is very fast. The race cars with exhaust pipes spitting flames in this Collage also symbolize the Cars going really fast in every racing motor sport. The fun fact about the behind the scenes of this Collage is that most of the cars' real names are inspired by and based on the characters from other TV Shows on Netflix. Another cool thing about this Collage is that I was able to input my signature on the yellow divider line on the road.

Superiority

Presenter(s): Erin Ohline
Advisor(s): Micol Hebron

My collage utilizes photos of polluted and damaged landscapes, including an orange sunset, billowing smokestacks, dirty runoff, oily water running down a grate, and bleached coral. The sky, land, and underwater portions split the collage into three rough sections. I also used photos of various animals, which I placed next to photos of hands, taken from online and personal sources, altered using Blend Modes and trimmed to look as though they were emerging from sections of the collage. There is also an artistic depiction of a fish over the photo of runoff, though most of the water's surface is left uncluttered in contrast to much of the rest of the collage.. The animals are larger in the foreground, towards the bottom of the collage, though all are small in comparison to the hands and parts of the background around them. In the top right corner, there is large text saying "PLAY GOD" with the image of a bird visible using Blend Modes. One of the animals in the collage is in black and white while the rest of the images are in color. The top of the collage is largely orange, with the inverted hands being blue, while the bottom of the collage is mainly blue or cool tones with the hands appearing orange.

My piece deals with the effects of human industry and behavior on other species and Earth itself. I chose these images as they exemplify the impact human activity has had on the planet. The pollution from the smokestacks leaks into and causes the sunset, while the dirty runoff reaches the grate and hovers ominously over the ocean. Each animal pictured has felt the effects of humanity. Above the runoff are the dodo bird and the thylacine. The flock of birds represents the taxidermied Martha – the last known passenger pigeon – in the "PLAY GOD" text. These extinct species are herded away towards the background by aging hands, becoming reminders of the past. Below them, Przewalski's horse and a right whale are toyed with by younger hands, representing how despite the damage humans have done to them, they persist and have time ahead of them.

AF209C

Moderator: Micol Hebron

Hae wa Dal

Presenter(s): Chrystal Han

Advisor(s): Micol Hebron

My narrative collage, "Hae wa Dal," meaning the sun and moon in Korean, is a self-portrait through cultural narrative, personal history, and folklore. The collage is inspired by "The Brother and Sister who became the Sun and Moon," a popular Korean folktale of how the sun and moon were created. The narrative moves from the background, right side, as the beginning, while the foreground, left is the end. It references the traditional Korean style of writing from right to left. The background is divided into parts, presenting a silhouette of Los Angeles at the top and images of Korean Traditional art called Minhwa at the bottom, blended through the smudge tool. On top of the scenery is a baby picture of me in our traditional clothing. The flooring is made from Dancheong patterns, which is a design used for the ceilings of Korean Palaces paired with adjustments making it look cement-like. The collage includes illustrations from my book copies of the folktale. They are scaled in different ways to mimic a distance and a play's cutout prop. From parts of roofs and doors of real houses or miniature sculptures, I constructed a Traditional Korean house with an 11-year-old me inside in the middle ground. The collage also features a quote from my book describing the unfamiliarity of the mother character in a linear light blend mode. In the foreground is the present version of myself climbing up the sky using a Norigae, which is a Korean charm accessory. At the background's far left side are images of huts with a pattern overlay of my modern approach to Dancheongs. The images transition into a building, which is one of my drawings of LA, and descend into the silhouette city with a sun and moon from Minhwa art. The collage is a representation of my Korean American identity.

The Burden

Presenter(s): Derek Jones

Advisor(s): Micol Hebron

In the Collage, I explore the idea of the Anthropocene in an oceanic setting. This collage shows an albatross traveling through the world from left to right. Moving from left to right, every third frame shows the albatross traveling into a world that is more and more polluted. Starting on the right side, there are tall green cliffs with clear waters below. There are birds in the sky and flying around the cliffs, and the albatross flies low to the water. Moving into the middle third, the landscape becomes more chaotic and is impacted by humans. Birds still fly in the sky, but they are joined by large wind turbines. On the horizon, the ocean is dotted with oil platforms, and the foreground is starting to fill with trash. The ocean has a Welsh pattern over it, giving it a digitized look. I used several filters and blend modes, and lowered the opacity on the different images to allow them to mix and overlap. The albatross flies through this chaotic world in the middle of the picture. To the right, the third landscape is more polluted. Dark smoke fills the sky, and only a few birds fly through it now. The oil platforms still sit on the horizon, but are now joined by more

smaller wind turbines overlapping them and the ocean. I used the subtract filter to get the negative effect on the wind turbines. In the foreground, there is even more trash filling it. Finally, we see the albatross at the end of its journey, dead and filled with the trash it had eaten.

The albatross symbolizes a burden, curse, or persistent problem in our society. It shares these ideas with climate change, a burden and persistent problem the world faces today. However, unlike the albatross was created these problems and polluted this planet. This pollution now threatens albatross communities worldwide. Through making the albatross the center of this narrative, I hope to make the viewer see the ideas that tie these things together.

The Sadie Henderson Tartan

Presenter(s): Sadie Henderson

Advisor(s): Micol Hebron

For my narrative collage, I wanted to create a kind of self portrait that is made up of me, my personal history, my family, my ancestry, and mythology.

My heritage is primarily Scottish and so I included mostly Scottish elements in the collage; my last name, Henderson, is a Scottish clan with its own tartan and so I included three different variations of the tartan pattern to make up the foreground, middle ground, and background. Additionally, the Henderson clan crest makes up part of the pattern in the background. Furthermore, I added some Will o the Wisps (a part of Scottish mythology) that led me from where I was to where I am now. Instead of being mischievous sprites, I made them into things and symbols that are important to me.

I also have a lot of family from England, most notably my great-great-uncle who was knighted by the queen and served as treasurer of the Middle Temple. Thus, I included the Middle Temple building in the middle ground and the Cantley crest in the pattern in the background.

I also wanted to include elements of my personal history as well as my family history. The natural elements in the very front and back are from a photo I took in Ashland, Oregon, one of my favorite places in the whole world. I also included my favorite piece of art (as an Art History major), as well as a piece of art I made while I studied here at Chapman.

While it is a narrative collage I centered around myself, I wanted to ensure that every part of who I am and how I got here was properly represented.

Infestation

Presenter(s): Shealyn Higgins

Advisor(s): Micol Hebron

This image is a digital collage, constructed to critique capitalism, state-sanctioned violence, and ecocide. Most eye-catching in the background is the red explosion, which contrasts with its surroundings and juxtaposes the soft greens of the forest to the left. Featured in the middle and foreground are various parasites, a leech, tick, flea, and louse, with the heads of Donald Trump, George W. Bush, Elon Musk, and Mark Zuckerberg, respectively. A tree stump also imposes in the foreground to the left, and is overlayed with a custom pattern that adds texture, using the pattern tool on Photoshop. A gradient of green to yellow to red is overlaid over the entire piece, using

the soft light mode, adding unity to the piece by creating harmony with all the colors of the disjointed elements. The only elements exempt from the color layer are the images of the bird's nest, the dove in the sky, and the dead dove in the middle ground of the street. The far left side of the image is left more conspicuously empty of added elements, while the second and third columns of the piece are more crowded, invoking the rule of thirds. A hand, buried in money, peeks out from behind the bush the leech and flea crowd around. Drop shadows are underneath each parasite, in order to provide a distinction between the parasites in the background. The drop shadows help delineate the parasites from their surroundings by providing them a more graphic quality through a striking use of line. Bombs fall from the sky in the upper right corner while a white dove graces the upper left. Bright skies shine in the upper left while smoke clouds the upper right. Trees and wild, untamed nature is harshly cut by the presence of the suburb, and violence and infestation (the smoke, bombs, and bugs) cloud the left two-thirds of the image.

Seeing Past in Present

Presenter(s): Izzy Fink
Advisor(s): Micol Hebron

I wanted to show parts of my family heritage in parts of this collage but also parts of my life as well. First, I used images of patterns I found that were tied to different cultures that my family is from and put them together to create one bigger pattern. I used a sunset landscape as my background that I thought would match nicely with the pattern I made and vibe I wanted. I then chose to add finches, as that is the meaning of my last name. Next I wanted to add parts of me into it and also work with the theme of threes. I took pictures of my own eyes in different positions and set them up. One is looking to the left, one more a bit to the right, and one looking straight ahead. I also wanted to convey a nostalgic feel and have memories to go with it. I chose to add pictures of me at different ages and one with my parents. I used different blend motions on each of the photos to give them a more faded look and changed the opacity just a bit on some of them. Then I also gave them all a drop shadow and in a blue that matches the background. For the photos of my own art work (paintings) I just made the opacity much lower so they would blend in more. I did the same thing with the photo of me in the bottom left corner after I removed the background on the image. Finally I added a window behind me and did the same thing with changing the blend mode and opacity.

The meaning for this college is mostly about nostalgia and the past but also with the present. All of the images that are lighter and floating in the sky are in the past. Me in the present is looking out of the window at all of these memories in the past. A big part of my life is also my family, which is why I included the finches and pattern design. The paintings also tie into the present as I am currently an art student so they relate to present me and give the illusion of also being in front of the window and not in the past. My eyes represent looking at the present and thinking about the future, but still being very aware of the past with the eye looking left.

Chapters

Presenter(s): Claire Honig

Advisor(s): Micol Hebron

This digital collage is arranged as a narrative composition that moves the viewer from left to right across the image and then back into the center. The layout follows the rule of thirds, dividing the piece into three sections so each part feels like its own stage while still remaining connected as one composition. Throughout the collage, images were cropped, resized, and layered to create depth and movement.

On the left side, several television screens are stacked and slightly overlapped, forming a dense foreground that immediately draws attention. The images inside the screens were adjusted in brightness and contrast so they stand out against the darker background. Smaller childhood photos are placed throughout the collage at different scales to draw the eye and help them fit naturally within the layered space. Other elements, such as background symbols and flag imagery, are blended using lower opacity so they do not overpower the composition but remain part of the background, reflecting my personal history.

In the center section, a larger portrait of myself is placed in the foreground as the main focal point. This figure sits within an interior space that functions as both middle ground and foreground, while the window with autumn trees serves as the background. The colors of the leaves were slightly enhanced to bring out warmer tones that contrast with the cooler tones of the interior. Additional images, such as magazine cutouts, were cropped and layered to further build depth and visual interest across the composition.

"El Lago"

Presenter(s): Sofia Arevalo

Advisor(s): Micol Hebron

“El Lago” investigates how landscape can function as a repository of cultural identity, memory, and inherited folklore through the medium of digital collage. The central research question asks how visual composition and symbolic layering can communicate personal and collective narratives tied to place, specifically referencing Camercauro, Michoacan, Mexico. Drawing on traditions of self-portraiture and surreal landscape representation, the project contributes to ongoing discussions in art and visual culture about the relationship between identity, geography, and storytelling. The work engages with the idea that landscapes are not neutral settings but active carriers of cultural meaning, shaped by local histories, myths, and communal experiences. The methodology combines digital compositing techniques with principles of spatial organization, including foreground, middle ground, and background, to construct a cohesive yet layered environment. Elements are isolated through cropping and masking, then unified through adjustments in lighting, color balance, and contrast to simulate a shared atmosphere. The composition follows the rule of thirds, using a large tree and a seated self-portrait figure to anchor the foreground, while leading lines and scale variation create depth. Symbolic components, such as repeated raised hands in the lake, banners, and framed images, are integrated to evoke memory, presence, and cultural continuity.

The expected outcome is a visually unified yet conceptually complex image that communicates identity as inseparable from place and cultural narrative. The collage concludes that personal history is constructed through both lived experience and inherited stories, with the lagoon serving as a focal point where memory, folklore, and imagination converge.

Cyber Brick Road

Presenter(s): Ruby Smalheiser

Advisor(s): Micol Hebron

When creating my collage I originally had the idea to simulate the "internet spiral" that holds most beginners captive upon first discovery. The moment when one has spent so much time scrolling they become completely enthrawled in the world of digital media. I wanted to replicate the transection where a social media rabbit hole becomes a caged reality and to challenge the systems that manipulate us.

I layered the same image and edited each layer subtly differently adding an uncanny ombre to make the image pull you closer to the scene. I added drop shadows on each layer to add depth to the image. I separated the foreground of the main front image from the background and kept that layer towards the top. Layering was very important especially towards the middle because that's where I want the viewer to pay most of their attention. Behind it I added an adobe stock image of a robot that I had layered over itself repeatedly with different blending modes to emphasize the contrast in colors and intricacy of wires. I found the extra detail and emphasis of colors made the robot more complicated and monstrous. I incorporated a red stared pattern in the windows of the building to symbolize a nationalistic part of simulacra and my main fear in it: That our government will have complete control of us through censorship of technology. I added storybook looking clouds along the top to add the fantasy that I felt when first discovering social media and the different things you can see through the rabbit hole.

Student Name	Poster (P) Session/Poster # Oral (O),Visual Arts(VA),Performing Arts(PA) Session/Room	Page #
A		
Adams, Cara	P2 - 18	76
Agatep, Ashley	P1 - 53	36
Aghajani, Emily	P2 – 31	84
Aguirre Ramirez, Alejandro	P2 - 56	97
Aguirre, Elizabeth	P2 - 71	106
Ahn, Halle	P1 - 106	65
Al, Seif	P2 - 19	76
Alam, Jason	P1 - 13	14
Alderete, Carlos	P3 – 21	139
Alhezaimi, Fares	P3 - 42	152
Ali, Hibah	O3 - B	200
Allmond, Jaden	VA1 - C	215
Alvear, Jaylene	P2 - 76	108
Amarshi, Daliah	P3 - 75	170
Anderson, Julius	O4 - B	204
Andrade Zuniga , Aisha Linette	P1 – 59	40
Andrews, Madison	P1 - 100	62
Anum, Eryn Camylle	P1 - 71	46
Arai, Nyssa	P3 - 28, O4 - A	143, 203
Arevalo, Sofia	VA2 - C	220
Arguelles, Ramon	P1 - 61	41
Aryana, Wyatt	P2 - 82	112
Atkins, Karina	P3 - 89	178
Attard, Alyssa	O4 - B	205
Atwal, Kiranjot	P2 - 79	110
Ayala, Diana	P2 - 68	104
Aylward, Elise	P3 - 56	159
B		
Bacon, Sydney	P2 - 22	78
Bae, Iris	P2 - 11	72
Bai, Ding Ding	P1 - 24	20
Baker, Becca	P1 - 69	45
Barger , Kendall	P2 - 19	76
Bascope, Renata	P3 - 39	150
Bayha, Amelia	P2 - 13	73
Beardsley, Brooke	P2 - 67	104
Beck, Brian	P2 - 49	93

Student Name	Poster (P) Session/Poster # Oral (O),Visual Arts(VA),Performing Arts(PA) Session/Room	Page #
B cont.		
Beckerman, Ruby	P1 - 55	37
Bents, Robert	P1 - 63	42
Bhatti, Maha	O1 - A	183
Blatt, Benjamin	P2 - 105	125
Bork, Elizabeth	P2 - 24, P3 - 34	80, 147
Bourque, Meghan	P3 - 30	145
Bowers, Blaise	P2 - 53	95
Brandt, Ava	P2 - 55	97
Bravo, Ethan	P3 - 11	134
Brienza, Jaime	P2 - 18	76
Brisky, Mel	P1 – 25	21
Brookman, Sydney	P2 - 15	74
Bru, Juliette	P1 - 28	22
Bruneel, Jack	P3 - 51	157
C		
Cameron, Georgia	P2 - 57	98
Campana, Kaylee	O1 - C	186
Campbell, Jackson	P1 - 58, O2 - B	39, 191
Campbell, Jaclynn	P1 - 20	18
Cancino, Maria	P3 - 81	174
Cantwell-Nahrung, Joshua	P1 - 33	25
Carey, Lyndsay	O1 - A	182
Carney, Jacqueline	P3 - 90	179
Carpio, Annikah Mae	P1 - 31	24
Casasola Berrocal, Jimena	P2 - 95	119
Cayabyab, Gia Ylena	P2 - 40	89
Chandler, Matthew	PA1	209
Chandler, Paul	P3 - 69	167
Chandra, Manya	P3 - 4	129
Chen, Dafna	P1 - 89	56
Chen, Emily	P1 - 11	13
Chin, Matthew	P1 - 43	31
Cho, Abigail	P2 - 63	102
Cho, Haeun (Grace)	P3 - 52	157
Choi, Hannah	P1 - 6	10
Choi, Justin	P3 - 49	156
Chueh, Daniel	P1 – 44	31

Student Name	Poster (P) Session/Poster # Oral (O),Visual Arts(VA),Performing Arts(PA) Session/Room	Page #
C cont.		
Chun, Aidan	PA1	208
Cibrowski, Suzanne	P3 - 70	167
Clark, Kaitlyn	P1 – 96	60
Cochachin, Saori	P1 - 84	53
Cohen, Emrey	P2 – 72	106
Cook, Jewelz	P3 - 17	137
Cook, Zachariah	P2 – 45	91
Cox, Michaella	P1 - 37	27
Crockett, Andrew	P3 - 27	143
Cronin, Lucy	P1 – 26	21
Cunningham, Bailey	P2 - 33	85
Cunningham, Wesley	P3 - 50	156
D		
Dahms, Makaylee	P3 - 22	140
Danessi, Alexia	P2 - 101	123
Danner-Forde, Quinn	P2 - 35	86
Davis, Benjamin	P2 - 16	75
Dedeoglu, Ari	P3 – 20	139
Delaney, Forest	O2 - A	188
deLeon, Ariela	P2 - 102	124
den Hartog, Chloé	P3 - 86, O1 - C	177, 186
Depasquale, Mia	P2 - 87	115
Dhami, Palak	P2 - 98	121
Dlabach, Reese	P3 - 58	160
Dobert, Catriona	O3 - A	196
Downs, Dave	P1 - 45	32
Dunn, Tara	P1 – 51	35
Duong, Alan	P1 - 101	62
E		
Ellis, Emerson	P2 - 103	124
Enderton, Jorden	PA1	209
Enscoe, Braylan	P3 - 84	175
Erdkamp, Adam	P2 - 64	102
Escalante, Miya	P3 - 20	139
Escutia, Kyler	P2 - 104	125

Student Name	Poster (P) Session/Poster # Oral (O),Visual Arts(VA),Performing Arts(PA) Session/Room	Page #
E cont.		
Eskew, Taylor	P2 - 58	99
Evereth, Valeria	P1 - 1	7
F		
Fernandes, Silas J.	P2 - 89	116
Fink, Izzy	VA2 - C	219
Fischthal, Gabi	P2 - 52	95
Fluetsch, Chantal	P1 - 87	55
Foley, Brandon	P1 - 14	15
Forbes, Alexa	P2 - 5, P2 - 16	68, 75
Forte, Jackson	PA1	208, 209
Fosmire, Lily	P1 - 75	48
Fujikawa, Mason	P3 - 1	128
G		
Gabriel, Andrew	P3 - 16	137
Gajendran, Neeraja	P3 - 5, P3 - 6	130, 131
Galen-Bisping, Ellie	P3 - 48	155
Gamal El Din, Al Hussein	P3 - 12, P3 - 13,O1 - A, O4 - A	134,135,181,202
Gilbert, Kayleigh	P2 - 107	126
Gill, Brandon	P1 - 99	62
Goglia, Cate	PA1	210
Golian, Corwin	O1 - C	185
Gonzalez, Berenice	P1 - 4	8
Gonzalez-Corona, Yeraldy	O2 - C	195
Good-Smith, Taya	P2 - 16	75
Gorelick, Emma Paige	VA1 - C	212
Graham, Bella	P2 - 92	118
Granger, Grace	P2 - 41	89
Gresham, Claire	P3 - 63	163
Gunnarson, Daniel	P2 - 50	94
Gutierrez, Linda	P2 - 80	110
Guyette, Olivia	P3 - 26	142
H		
Habib, Arisha	P1 - 68	45
Haeckl, Madeline	P1 - 92	58

Student Name	Poster (P) Session/Poster # Oral (O),Visual Arts(VA),Performing Arts(PA) Session/Room	Page #
H cont.		
Hagen, Hazel	P1 - 90	56
Haket, Dane	P3 - 36	148
Hamdan, Jolina	O1 - B, O2 - B	184, 191
Han, Chrystal	VA2 - C	217
Hanson, Piper	P1 – 49	34
Harms, Emory	P3 - 46	154
Harvey, Jackson	P1 - 57	39
Hassan, Karim	P1 – 13	14
Heinecken, Lindsey	P2 - 17	76
Henderson, Sadie	VA2 – C	218
Hepburn, Amaya	P2 - 60	100
Hernandez, Alyssa	P1 - 34	25
Hernandez, Arielle	P1 - 56	38
Hernandez, Emily	P2 - 14	74
Hernandez, Melia	P1 - 8	11
Herrera Vargas, Sebastian	P3 - 6	131
Hicks, Megan	P3 - 3	129
Higgins, Shealyn	VA2 - C	218
Hijar, Katherine	P3 - 82	174
Holick, Grace	P2 - 8	70
Honig, Claire	VA2 - C2	20
Hopkins, Lily	P2 – 18	76
Huntley-Robertson, Liv	P2 - 19	76
Hyrkin, Andre	P2 - 90	116
I		
Igbokwe, Kelechi	P2 - 78	109
Irenshtain, Sarah	O3 - A	198
Irianto, Ethan	P2 - 6	69
Iribarren, Charlotte	P1 – 60	40
J		
Jackson, Simone	P2 - 19	76
Jackson, Colin	P3 - 18	138
Jacques, Janelle	P1 - 12	14
Jafari, Keon	O4 - A	202
Jaimes Castro, Julie	P1 - 81	51

Student Name	Poster (P) Session/Poster # Oral (O),Visual Arts(VA),Performing Arts(PA) Session/Room	Page #
J cont.		
Jo, Ashley	P2 - 91	117
Johnson, Andrew	P2 - 66	103
Jones, Aiden	P1 - 52	36
Jones, Derek	VA2 - C	217
Jorden, Bryan	O2 - B	192
K		
Kaestner, Oona	P3 - 33	147
Kaholia, Maahi	P3 - 13	135
Kaplan, Felyssa	P3 - 80	173
Karcher, Katelyn	P2 - 30	84
Kawafuchi, Kai	P1 - 47	33
Keshishian, Natalia	P1 - 82, O2 - C	52, 193
Kim, Abigail	P2 - 38	88
Kinzer, Anna	P3 - 40	151
Kochenderfer, Emma	P1 - 95	59
Kohli, Sanchi	P1 - 94	59
Konrad, Nora	O2 - A	189
Kraskouskas, Jeffrey	P1 - 14	15
Krauss, Cameryn	P1 - 3	8
Krikorian, Jack	P2 - 75	108
Ku, MK	PA1	207
Kundahl, Harrison	P2 - 73	107
Kushner, Alina	O2 - C	194
Kwan, Paige	P2 - 9	71
L		
Lalin, James	P1 - 50	34
Lam, Aleksander	P2 - 99	122
Lansing, Carolina	P1 - 102	63
Lara, Valeria	P3 - 59	161
Layton, Mathew	PA1	210
Le, Laura	P1 - 57	39
Lee, Belsen	P3 - 32	146
Lee, Kaitlyn	P2 – 29	83
Legaspi, Evan	P2 - 34	86
Levine, Mia	P1 - 93, P2 - 86	58, 114

Student Name	Poster (P) Session/Poster # Oral (O),Visual Arts(VA),Performing Arts(PA) Session/Room	Page #
L cont.		
Liao, Josiah	O3 - A	196
Lim, Kalli	P3 - 7	131
Lindberg, Annika	P1 - 67	44
Loaiza, Denise	P3 - 65	164
Lombardi, Krista	PA1	209
Lopez, Ethan	P2 - 20	77
Lopez, Vanessa	P1 - 39	28
Lothian, Kalika	P2 - 106	126
Low, Lucy	P3 - 43	152
Lozano, Carlos	P2 - 71	106
Lum, Kate	P2 - 77	109
Ly, Ethan	P1 - 5	9
Lyons, Darby	P3 – 86	177
M		
MacPherson, Mckenzie	P1 - 54	37
Magen, Ella	PA1	209
Magic, Dylan	P1 - 18	17
Makrom, Laila	P3 - 23	140
Makrom, Youssef	P3 – 15	136
Malebranche, Alice	P2 - 65	103
Malinoski, Nicole	O2 - C	194
Mandel, Allison	P3 - 45	153
Manell, Melody	P2 - 8	70
Manning, Maggie	P3 – 68	166
Marquis, Finnegan	P1 - 19	18
Martin, Julianne	P1 - 46	32
Martinez, Adel	P2 - 13	73
Martinez, Isis	P1 - 73	47
Martinson, Jack	P3 - 8, O1 - A	132, 181
Matadamas, Emily	P1 - 70	46
Matson, Landon	P1 - 48	33
Matuch, Sophie	P1 - 22	19
Mauricio, Jesse	P3 – 78	172
May, Alexa	PA1	207
Mayo-Llamas, Amber	P3 - 53	158
McCarty, Sage	P1 - 66, O1 - B	44,185

Student Name	Poster (P) Session/Poster # Oral (O),Visual Arts(VA),Performing Arts(PA) Session/Room	Page #
M cont.		
McElroy, Melissa	PA1	208
McMillan, Candence	PA1	207
McWherter, Joseph	P3 - 35	148
Mejia, Sophia	P1 - 80	51
Mendoza, Dylan	P2 - 70	105
Mendoza, Josiah	O1 - B	184
Miller, Charlotte	P3 - 91	179
Miller, Henry	P2 – 61	100
Mines, Sophie	P2 - 97	121
Misiewicz, Julie	P3 - 85	176
Mitchell, Jaelyn	P3 - 72	168
Moanes, Pasant	P1 - 38	28
Monaco, Sydney	VA1 - C	212
Montesi, Morgan	P2 - 16	75
Montiel Guzmán, Diana	P1 – 21	18
Morales Vilchis, Estefania	P3 - 66	165
Morales, Maverick	O2 - C	194
Moran, Theo	O2 - C	194
Morgan, Mackenzie	P3 – 55	159
Morrison, Marin	P3 - 19	138
Motamed, Daylen	P2 - 26	81
Mulvoy, Courtney	P2 - 17	76
Murden, Emily	P2 – 28	82
N		
Najera, Isabella	P1 - 96	60
Nakamura, Robin	P1 - 64	42
Newhart, Cody	P2 - 10	71
Nguyen, Sabrina	P2 – 12	72
Nguyen, Spencer	P1 – 27	22
Niswender, Molly	P2 - 1, P2 - 3, P3 – 22	66, 67, 140
Noria, Valerie	P2 - 84	113
Noriega, Alejandro	P1 - 7, P2 - 23	10, 79
O		
O'Connor, Riley	P1 - 62	41
Ogletree, Benito	VA1 – C	215

Student Name	Poster (P) Session/Poster # Oral (O),Visual Arts(VA),Performing Arts(PA) Session/Room	Page #
O cont.		
Ohline, Erin	VA1 – C	216
Okazaki, Kyle	P3 - 30	145
Orellana Mejia, Jacqueline	P3 - 14	135
Özbugutu, Dila	P2 – 69	105
P		
Pachura, Kaitlyn	P2 - 2	66
Pacioni, Gia	P3 - 77	171
Paradiso, Natalie	P1 – 95	59
Parrish, Samantha	P2 - 81	111
Periale, Lucy	P2 - 24, P3 - 34	80, 147
Perkovic, Sarah	O3 - B	200
Peterson-Hunt, Natalie	P3 - 41	151
Pollicino, Tessa	P3 - 44	153
Porter, Ethan	P1 - 40	29
Presti, Elissia	P2 - 27	82
Price, Benjamin	O1 - B	183
Price, Mary Tess	O1 - B	184
Proescholdt, Elizabeth	O3 - B	199
Purnhagen, Fiona	P3 - 76	171
Q		
Quan, Melanie	P1 - 10	12
R		
Raber, Cole	P2 - 94	119
Railston, Josephine	P2 - 96	120
Rammel, Celia	P1 - 15	15
Rand, Madeleine	P2 - 44	91
Randall, Stewart	P2 - 51	94
Rappoport, Abigail	P1 - 85	54
Ravel, Dylan	P1 - 14	15
Reeves, Alexis	P1 - 17	17
Reigart, Liliana	P3 - 87	177
Rice, Hannah	P1 - 41, P3 - 61, O2 - B, O4 - B	30, 162,190,205
Richards, Evan	PA1	208
Ricordel, Gwenn	P1 – 72	47

Student Name	Poster (P) Session/Poster # Oral (O),Visual Arts(VA),Performing Arts(PA) Session/Room	Page #
R cont.		
Riddle, Kristy	P1 - 30	23
Ridge, Coco	P2 - 100	123
Riedel, Yness	P1 – 13	14
Rinaldi, Joseph	P2 - 37	87
Risha, Shaikh	P3 - 13	135
Robé, Sofia	O3 - A	197
Romanczuk, Ana	P3 - 31	145
Romano, Julian	O2 - A	189
Romano, Mirabella	P1 – 11	13
Romine, Morgan	P2 - 62	101
Ross, Lindsay	P3 - 18	138
Roules, G. Chuli	P2 - 10	71
Roum, Caitlyn	P1 – 96	60
Rowe, Annabelle	P1 - 103	63
Rustia, Kailee	P2 - 42	90
S		
Salgado, Greg	P1 – 29	2
Salgado, Xitlalli	P1 - 13	14
Sanders, Katie	P3 - 9	133
Sawai, Chelsee	P1 - 35	26
Schamber, Luke	P1 - 42	30
Schmainda, Sarah	PA1	209
Schuda, Tate	P2 - 18	76
Schuneman, Celine	P1 – 23	20
Seiler, Caroline	P1 – 105	64
Sharma, Mia	P3 - 29	144
Shaw, Malyssa	O4 - B	204
Shelvankar, Arushi	P1 - 86	54
Sherman, June	VA1 - C	214
Shimakura, Sera	P1 – 81	51
Shin, Daniel	P3 - 64	164
Shirey, Katrina	P1 – 91	57
Siddiqui, Zaina	P3 - 71	168
Silfanus, Eusabeia	P1 - 83	53
Simmons, Audrey	O3 - B	198
Sinisi, Sofia	P1 – 78	50

Student Name	Poster (P) Session/Poster # Oral (O),Visual Arts(VA),Performing Arts(PA) Session/Room	Page #
S cont.		
Sisk, Charlie	P3 - 88	178
Smalheiser, Ruby	VA2 - C	221
Smart, Nikoline	P2 - 88	115
Smith, Ben	P3 - 24	141
Smith, Benjamin	P3 - 27	143
Smith, Landon	PA1	210
Smith, Liberty	P1 - 16	16
Snyder, Francesca	P2 – 39	88
Sobo, Ripley	P2 - 17	76
Soto, Josiah	P1 - 65	43
Spiegleman, Sophia	P1 - 22	19
Spurr, Neal	VA1 – C	214
Starr, Mia	P1 – 88	55
Steingart, Timea	P2 – 83	112
Stephens, Abigail	P2 - 48	93
Storms, Isaac	P2 - 16	75
Su, Kalyn	P2 - 85	113
Swansiger, Maddie	P2 - 43	90
Swart, Kailey	P1 - 74	48
Sylvain, Shaan	P3 - 47	155
T		
Tafari, Hewan	P3 - 54	158
Takei, Julie	P3 - 10	133
Tapay, Emily	P1 – 32	24
Tate, Michael	P1 - 13	14
Tejeda, Kevin	P1 - 9	12
Ten Cate, Adriana R.	P3 - 52	157
Thomas, Hunter	P2 - 74	107
Thomas, Mayeh	P2 - 36	87
Thompson, Ellison	VA1 - C	213
Thompson, Ruby	P2 - 32	85
Torres, Lexi	P2 – 18	76
Tran, Aidan	P2 - 7	69
Tran, Elyse	P3 – 79	172
Tran, My	PA1	208
Tran, Tumi	P2 - 10	71

Student Name	Poster (P) Session/Poster # Oral (O),Visual Arts(VA),Performing Arts(PA) Session/Room	Page #
T cont.		
Trang, Ocean	P2 - 4	67
Trinidad-Vidal, Amir	P3 - 57	160
Troiani, Natasha	P1 - 77	49
Truong, Mia	P3 - 73, P3 - 74	169, 170
Truong, Tyler	P2 - 47	92
Tsivkovski, Daniel	P1 – 14	15
V		
Valdespino, Mario	P1 - 76	49
Valdez, Sophia	P3 - 38	150
Valez, Josephine	PA1	207
Van Hoak, Abigail	P1 - 2, O2 - A	7, 188
VanderMeer, Scarlett	P1 - 104, P2 - 59	64, 99
Velez, Josephine	P2 – 25	80
Vicente, Corinne	P2 - 70	105
Vitan, Louie	P1 - 81	51
Viveros, Andrew	P3 – 62	163
Vo, Andy	P2 - 20	77
Von Bruenchenhein, Joshua	PA1	209
Vu, Linh	P3 - 83	175
W		
Wakefield, Gracie	P2 - 54	96
Waller, Ashley	P1 – 98	61
Walzer, Libby	P3 - 67	165
Warner, Elena	P2 - 73	107
Weiss, Anja	P2 – 1	66
Werner, Abbey	P2 – 19	76
Wieland, Chloe	P2 - 93	118
Wienke, Erin	P2 – 21	78
Williams, Julia	P3 - 2	128
Wong, Marissa	P1 – 27	22
Wooten, Wren	P1 – 79	50
Wright, Samantha	P3 – 16	137
Y		
Yaacov, Daniel	P3 - 60	162

Student Name	Poster (P) Session/Poster # Oral (O),Visual Arts(VA),Performing Arts(PA) Session/Room	Page #
Y cont.		
Yancey, Emily	P2 – 17	76
Yelle, Bronte	P3 – 37	149
York, Annabelle	P1 - 97	60
Young, Nalani	P1 – 36	27
Z		
Zadah, Zoe	P2 – 46	91
Zamora, Brianna	P3 – 25	142
Zavala Ramirez, Jazmin	P1 - 81	51
Zoumas, James	P3 - 13	135

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