

STUDENT SCHOLAR SYMPOSIUM

SPRING SESSION

May 1 - 2, 2024

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Greetings and welcome to the Spring 2024 Chapman University Student Scholar Symposium!

Student Scholar Symposium which is held once each semester celebrates the remarkable scholarship and creativity conducted by Chapman undergraduate students. Our student presenters reflect the diversity of academic and creative disciplines thriving within the Chapman community. The Symposium allows them multiple ways to showcase their research and creative projects.

Please take some time to stop by and wander through the vast array of student poster presentations or attend the oral discussions to discover the kind of work our students are engaged in here at Chapman University. Student Scholar Symposium is education in action, a true example that Chapman students are pursuing anything imaginable.

Student Scholar Symposium is sponsored by the Center for Undergraduate Excellence, which is the first stop and the central hub for students to learn about and engage in undergraduate research and creativity activity; and to discover the wide range of prestigious external scholarships available.

Our symposium would not have been possible without the extraordinary effort by the CUE staff, Lisa Kendrick, Operations Manager, and Audrey Lin, Administrative Assistant, and Cole Clark, Graduate Assistant, who have designed, developed, and organized the event. A special thanks to all of them!

Thanks to all the student presenters, their faculty mentors, our faculty moderators, and staff volunteers.

Enjoy the Symposium!

Dr. Julye Bidmead
Director of the Center for Undergraduate Excellence at Chapman University

Acknowledgements and Schedule

The Center for Undergraduate Excellence gratefully acknowledge the following individuals and program for their support:

Student Scholar Ambassadors

Oral Presentation Moderators:

| | | |
|-------------------|-----------------|----------------|
| Dr. Julye Bidmead | Dr. Ana Palomar | Dr. Anna Leahy |
| Dr. Kelli Fuery | Dr. John Hunter | |
| Dr. Lisa Leitz | Micol Hebron | |

Staff Volunteers:

| | | |
|----------------|-----------------|--------------|
| Adena Hamlin | Carmen Chavez | Dana Dacier |
| Erika Martinez | Hilary Anderson | Jackie Coyne |
| Mary deVlugt | Nicole Olguin | Lisa Beesley |
| Erika Orejola | | |

Presentation Schedule

Wednesday, May 1

| | | |
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| Poster Session 1 | Sandhu Conference Center | 9:30 – 11:00 AM |
| Poster Session 2 | Sandhu Conference Center | 12:00 – 1:30 PM |
| Poster Session - Graduate | Argyros Forum 209C | 5:00 – 6:00 PM |

Thursday, May 2

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| 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 |
| Visual Arts Session 1 | Argyros Forum 209C | 1:00 – 2:15 PM |
| Visual Arts Session 2 | Argyros Forum 209C | 2:30 – 3:45 PM |

Biochemistry and Molecular Biology**1. Investigating the Roles of the Two Initiator tRNAs in the Oxidative Stress Response of Escherichia Coli****Presenter(s):** Alyssa Agoado, Gabriella Suarez**Advisor(s):** Dr. Michael Ibba, Dr. Lorenzo Leiva

When bacteria experience changes in their environment such as differences in temperature, availability of nutrients, and the presence of stress-inducing compounds like heavy metals, they can adapt to their new environment by altering protein levels. Regulation of translation in bacteria is essential for protein level changes. Translation consists of three main steps: initiation, elongation, and termination. Since initiation is the slowest and most regulated step, any alterations to this step will greatly affect protein synthesis overall. Initiation begins with the formation of the 30S pre-initiation complex which consists of the 30S ribosomal subunit, the three initiation factors, mRNA, and aminoacylated and formylated initiator tRNA (fMet-tRNA_i). Escherichia coli and many other Enterobacteria have two tRNA_i, tRNA_{imetZ} and tRNA_{imetY}, which only differ by a single nucleotide. Various in vitro studies have tried to characterize the differences between these two tRNA_i, but no differences have been observed. In this work, we set out to investigate the importance of tRNA_{imetY} in vivo, under oxidative stress conditions. To analyze the role of tRNA_{imetY}, we deleted the corresponding gene and measured protein synthesis using fluorescent reporters in mutant and wild type Escherichia coli. Under oxidative stress conditions, we found that protein synthesis was greater in E. coli without tRNA_{imetY} than with it. To determine if this difference in protein synthesis was due to differences in the stability of tRNA_{imetY} versus tRNA_{imetZ}, we standardized a method using qRT-PCR to measure the levels of each of the tRNA_i. Our data suggests that this difference between tRNA_{imetY} and tRNA_{imetZ} is only present under oxidative stress conditions.

2. Effects of Oxidative Stress on tRNA_i in E. Coli**Presenter(s):** Gabriella Suarez, Alyssa Agoado**Advisor(s):** Dr. Michael Ibba, Dr. Lorenzo Leiva

In their natural environment, bacteria are often exposed to various conditions that can induce stress including lack of nutrients, extreme temperatures or pH, and exposure to harmful substances. Although exposure to these conditions can harm the bacteria, they are able to adapt their proteome, allowing them to survive. During the synthesis of new proteins, the first step of translation, initiation, is highly regulated. Initiator tRNA, together with other initiation factors and the ribosome, are necessary to start translation in the bacteria. Escherichia coli contains two initiator tRNA, tRNA_{imetZ} and tRNA_{imetY} which have a one base difference in position 46. Previous research has been unable to find differences between these two tRNA_i in terms of their function. In this project, we decided to take a closer look into tRNA_{imetY} and examine its functionality under oxidative stress conditions. We began with a deletion of the tRNA_{imetY} and examination in swimming plates of this mutant bacterial strain under oxidative stress conditions

induced by paraquat. We discovered that the removal of tRNA^{AimetY} led to slower swimming of the bacteria under stress conditions. To determine if there are changes in the transcription of tRNA^{AimetY} and tRNA^{AimetZ} under stress conditions, we cloned the promoters upstream of the reporter *gfp* and measured their activity under stress conditions. Our data showed that under oxidative stress conditions the promoter activity of both initiator tRNAs is initially inhibited, but over longer periods tRNA^{AimetY} showed a higher promoter activity. These results suggest that the phenotypes observed in short periods of stress are not a consequence of differences in promoter activity.

3. Engineering Indole Prenyltransferase Enzymes for the Modification of Tryptophan and other Indole-Containing Compounds

Presenter(s): Ashley Alexander, Tae Ho Kim, Ahmed R Aoun, Nagaraju Mupparapu

Advisor(s): Dr. Sherif Elshahawi

Abstract not public.

4. Thin Film Composites of Microgel “Pastes” and Collagen for Application as Wound Sealants

Presenter(s): Abbygail Caine

Advisor(s): Dr. Andrew Lyon

In this work, we focused on the fabrication of thin film pastes made of ultra-low crosslinked (ULC) microgels containing collagen. In the field of bioengineering, a number of applications are required for customizable matrices conducive to cell proliferation, especially where wound healing and tissue growth are needed. The ultimate goal of this work was to advance tunable tissue sealants that lead to optimal healing processes and reduced scar tissue. To achieve this goal, we have focused on thin films composed of microgel pastes, which represent a highly tunable gel construct with potentially advantageous mechanical properties. We then designed methods to impregnate those pastes with collagen fibrils, which provide additional structural, chemical, and mechanical cues associated with the native extracellular matrix. Following composite fabrication, microgels can be dissolved from the matrix, producing voids that should promote cell infiltration. Throughout the studies, analysis was conducted using optical microscopy to assess the overall structure and integration of microgels and collagen. Atomic force microscopy (AFM) was used to visualize surface topography and make estimates about the mechanical properties of the composites. Confocal microscopy will be used in the future to fluorescently label microgels and collagen through chemical reactions, image their three-dimensional structures, and witness collagen growth in real time. My work in this field illustrates that collagen pastes are highly tunable materials with mechanical properties that make them potentially useful in various biotechnologies, including as tissue sealants. By obtaining a better understanding of their structure-function relationships, we can adapt them to more effective applications.

5. Cloning, Expression, and Purification of FdxN from Gluconacetabacter Diazotrophicus**Presenter(s):** Estevan Harris**Advisor(s):** Dr. Cedric Owens

Biological nitrogen fixation is the conversion of dinitrogen gas to ammonia. This process is catalyzed in nature by diazotrophic bacteria, which contain the enzyme nitrogenase. Nitrogenase uses the biological energy carrier ATP and biological reducing equivalents to reduce N_2 to NH_3 . The protein ferredoxin (FdxN) interacts with nitrogenase during biological nitrogen fixation and transfers electrons to nitrogenase. FdxN has two Fe-S clusters and it is unclear if FdxN transfers one or two electrons to nitrogenase at a time.

The goal of this project was to express, purify and characterize FdxN from the diazotroph *Gluconacetobacter diazotrophicus*. Initially, FdxN was obtained as a coproduct during nitrogenase purification. Native FdxN had two Fe-S clusters, as expected, and UV/vis and CD signals that resembled that of other di-Fe-S cluster ferredoxins. However native FdxN was only obtained in very low yields, preventing further biochemical and structural analysis. Therefore, fdxN was cloned into a pET28a expression plasmid, and FdxN was expressed recombinantly in *E. coli*. Recombinant FdxN expression was optimized and the protein was purified using a two step Ni^{2+} and gel filtration chromatography scheme. Recombinant FdxN is purified as an apo-protein (lacking its Fe-S clusters), and work is ongoing to reconstitute the clusters on recombinant FdxN.

6. Counter-ion Effects on Sulfur(VI) Fluoride Exchange Mediated by Mixed Anion Calcium Salts.**Presenter(s):** Kurt Horney**Advisor(s):** Dr. Maduka Ogba

This research centers on the investigation of how modifying the counterions in a Lewis acidic calcium bistriflimide salt, denoted as $[Ca(NTf_2)_2]$, influences its ability to catalyze SuFEx reactions with nitrogen-based nucleophiles. It is worth noting that prior literature had proposed that replacing the bistriflimide anion with hexafluorophosphate, resulting in $[Ca(NTf_2)(PF_6)]$, would heighten the Lewis acidity at the calcium center. However, in the study of SuFEx reactions, it is found that the inclusion of PF_6^- doesn't entirely inhibit the reaction but does diminish the yield of the desired product. To shed light on this apparent discrepancy in the impact of the PF_6^- counterion on Ca^{2+} reactivity, computational techniques were employed to elucidate the probable SuFEx mechanism and activation barriers associated with $[Ca(NTf_2)(PF_6)]$, and these results were compared with previously reported findings from the OMO Lab's investigation of the SuFEx mechanism using $[Ca(NTf_2)_2]$. This poster will present the current hypothesis concerning the observed effects of counterions, drawing from our computed reaction coordinates and Ca^{2+} activation modes.

7. Utilizing Red-Edge Excitation Shift Spectroscopy to Measure Protein Folding and Aggregation**Presenter(s):** Simi Lauwers, Kellie Omori**Advisor(s):** Dr. Cedric Owens

Red-edge excitation shift (REES) spectroscopy is a powerful technique for determining conformational states of proteins. While methods such as NMR can be used to determine a protein's structural properties, it is both expensive and time-consuming. REES is a useful alternative since it provides information on protein flexibility, aggregation, and folding using only a spectrofluorometer. For example, REES has been used to determine the stability and aggregation state of monoclonal antibodies. This project investigates if REES can be used as a general-purpose technique for determining the folding and aggregation state of diverse proteins. REES works by exciting a fluorophore such as Tryptophan (Trp) and measuring the shift in the emission intensity maximum when Trp is excited near its low energy excitation limit. The degree of red-shift correlates to the rigidity of the region surrounding Trp. In this work, REES was used to determine the folding and aggregation states of four different proteins: Ferulic acid esterases (FAEs) from *A. shahii* (As-FAE) and *L. buchneri* (Lb-FAE) and the nitrogenase protective protein CowN from *G. diazotrophicus* (Gd-CowN) and *A. vinelandii* (Av-CowN). These proteins were chosen since they display complex folding and aggregation behavior, making them excellent test cases to compare REES data to complementary biophysical methods. REES analysis was able to distinguish folded, monomeric protein from aggregated protein. However, REES was unable to distinguish between folded and unfolded CowN. This poster will furthermore present ongoing work on the biophysical comparison of all four proteins and suggest possible limitations when using REES to analyze protein structure.

8. Understanding Calmodulin and HIV Matrix protein interactions through Circular Dichroism Spectroscopy**Presenter(s):** David Nguyen**Advisor(s):** Dr. Jerry LaRue

HIV-1, or human immunodeficiency virus type-1, is a virus that is important to study because it attacks the immune system can lead to AIDS, which is a life-threatening ailment. HIV-1 matrix proteins (MA) are a crucial component to the replication cycle of HIV-1. Calmodulin (CaM) is an important messenger protein present in all eukaryotic cells and is upregulated in calcium. The purpose of this project is to use Circular Dichroism (CD) spectroscopy to observe and analyze the interactions between Calmodulin and HIV Matrix proteins, which have been found to occur in calcium conditions. In CD spectroscopy, left and right polarized light are shined through the proteins, resulting in a graph that can be analyzed using Molar Ellipticity to determine if left or right polarized light was absorbed more. This information can be used to evaluate the structures of the proteins, such as alpha helices and beta sheets, as they bind together which would improve understanding of the binding process.

9. Essential Genes in Protein Synthesis Play a Pivotal Role in a Resistance Phenotype Against Various Clinical Antibiotics

Presenter(s): Jin Nathan Swun, Aubrey Yokota

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

Antibiotic resistance is a growing clinical problem. In 2019, more than five million deaths were related to antimicrobial-resistant infections worldwide (CDC, 2024). The most common mechanisms of bacterial antibiotic resistance are efflux pumps, enzymes that inactivate the antibiotic, and point mutations in the antibiotic binding site. However, bacteria also have intrinsic mechanisms that allow them to regulate metabolism and reduce damage caused by antibiotics. Random mutagenesis has been used for many years to identify critical genes involved in intrinsic antibiotic resistance. Unfortunately, this methodology created a bias toward non-essential genes, leaving a large portion of the genome unanalyzed, since mutations to essential genes lead to cell death. Using a CRISPRi system, we created a knockdown library of aminoacyl tRNA synthetases (AARS), a family of essential enzymes responsible for the binding of each tRNA to its cognate amino acid, a key step in the translation of the genetic code of nucleotides into amino acids. Briefly, each strain contains one copy of the dCas9 gene, inducible by anhydrous tetracycline (ATC). In addition, each strain contains a plasmid that encodes a guide RNA (sgRNA), specific for the promoter region of each AARS. Binding of the dCas9-sgRNA complex to the promoter region of AARS blocks RNA polymerase binding, knocking down the AARS levels. In this work, we utilize the knockdown library of AARS-encoding genes to find synergic effects with the intrinsic tolerance of *Escherichia coli* to antibiotics found in clinical settings. Knocking down each AARS with ATC, we measured the IC50 for all the strains in presence of erythromycin, nalidixic acid, and ampicillin. This new data set of the IC50s of the AARS knockdown strains will help us identify essential AARS's that are closely related to intrinsic resistance mechanisms as potential targets for drug design to increase the efficiency of current antibiotic treatments.

10. Exploring the Subterranean Microbiome: Investigating Fungal Diversity in Oak Soil Ecosystems"

Presenter(s): Julian Vlad, Kevin Nguyen

Advisor(s): Dr. Hagop Atamian

Oak trees (*Quercus*) are some of the oldest and largest trees on our planet. The extraordinary size and extensive lifespan exhibited by Oak trees prompted further investigation into their subterranean ecosystem. Understanding the intricate relationship between Oak trees and their subsurface fungal diversity is essential for understanding ecosystem dynamics and plant health. In this study, the microbiome within Oak tree soil samples obtained from regular, mulch, turf, and compact soil types and further investigated. High-throughput sequencing was done to profile fungal species present in each sample. Statistical analysis techniques were utilized to discern significant variations in species abundance across the different soil types. The observed differences in fungal communities were subsequently compared with physiological variances to unveil potential correlations between soil composition and fungal diversity. These findings shed

light on the complex interplay between soil characteristics and fungal communities, providing valuable insights into ecosystem functioning and plant-microbe interactions.

Biological Sciences

11. Investigating Undergraduate's Perceptions of Teamwork in STEM: A Comprehensive Analysis Among Students from Different Identities

Presenter(s): Camilla Acosta

Advisor(s): Dr. Gregory Goldsmith

The ability to work in a team is cited as a key outcome for many undergraduate Science, Technology, Engineering, and Mathematics (STEM) programs, both as a method for improving learning and as a highly desired trait for employers. Despite a growing focus on teamwork, there remains a lack of studies regarding what students in higher education settings know about teamwork, what skills they believe are involved in teamwork, and their perceptions of participating in teamwork. This study aims to answer the following: 1) what are incoming STEM students' foundational knowledge, skills, and attitudes (KSAs) towards teamwork, and 2) how do these KSAs differ based on their identity? To address these questions, we employed a mixed-methods survey to a large cohort of incoming first-year STEM undergraduate students (n = 206 students), including the collection of information on gender, ethnicity, Pell grant eligibility, status as a first-generation college student, and major. We found no significant difference in reported knowledge of teamwork, or teamwork skills, among respondents from different identities. Overall, respondents reported being highly skilled at contributing to meetings, facilitating teammate contributions, fostering a constructive team climate, contributing to teamwork outside team meetings, and managing potential conflicts. Participants reported an overall positive attitude toward teamwork, although teamwork attitude scores varied significantly across ethnicities. Such self-reported results are at odds with pedagogies developed for teaching teamwork, which are almost universally a reaction to instructors' observations of poor teamwork skills and attitudes. The results indicate that while students may know what good teamwork is and why it's important, they do not yet possess the sophistication to carry it out themselves.

12. Effects of Chemical and Physical Properties of Water on Hagfish Slime Structure

Presenter(s): Dylan Burstyn

Advisor(s): Dr. Douglas Fudge

Hagfishes are elongate saltwater fishes that defend themselves using thick slime composed of skein threads and mucus vesicles that clogs the gills of predators. The 3D structure of hagfish slime is currently unknown due to the slime's extremely dilute nature, flash freezing then freeze-drying (lyophilizing) slime could allow for traditional microscopy methods to help determine the 3D structure of the slime. Using seawater to produce hagfish slime causes salt crystals to form which makes it difficult to view lyophilized slime under the scanning electron microscope. For this reason, deionized (DI) water was used along with varying ethanol (EtOH) concentrations and

water temperatures to produce slime from pacific hagfish (*Eptatretus stoutii*). It is hypothesized that slime in DI water forms too quickly causing the threads to tangle on themselves. Varying EtOH and water temperatures might help slow down unraveling and produce a slime structure that is more representative of natural slime. Although there were no obvious directional effects of 0%, 1%, 5%, and 10% EtOH on mucus fiber diameter, there was a significantly different mucus fiber diameter between the 5% EtOH (0.339 μm) samples and the 10% EtOH (0.524 μm) samples ($p < 0.05$). Furthermore, mucus threads at 35°C were significantly thinner than the 1°C and 20°C samples ($p < 0.05$). Despite no obvious directional effects between the EtOH and temperature treatments, higher EtOH concentrations and higher temperatures seem to have an effect on hagfish slime structure.

13. Examining Students' Preferences and Cognitive Processes with Variable Assessment

Question Subject Framing in an Undergraduate Biology Course

Presenter(s): Noelle Clark

Advisor(s): Dr. Jeremy Hsu, Dr. Kate Hill

In college biology courses, exams and quizzes are often used to assess students' knowledge. Here, we explore how different wording of assessment questions (i.e., how questions are presented) impacts students' attitudes, STEM identity, and visualization of the question. Past work from our group has revealed that different framings of isomorphic questions may cause significant differences in student affect. However, such work was conducted using surveys, so to investigate further, we interviewed students in an introductory molecular biology class. Participants were given three isomorphic scenario-based questions that varied who conducted the experiment: one version used authentic scientist names, the second used classmate names and the third used the self-referential 'you' to place the student in the question. After each question, we probed students' attitudes, visualization of the question, and ability to relate to the subject. Most students indicated they preferred the self-referential version and did not like the authentic question format. Students cited a range of affective impacts depending on the question version. For instance, the students who preferred the self-referential version noted a decreased cognitive load and found it easier to visualize the experiment. In contrast, others found that being the subject led to a higher pressure and stress to answer the question correctly. Additionally, students who did not prefer the authentic version cited that they were intimidated by the excess information. Overall, we found variation in the question versions that students preferred, and they cited a range of other affective and cognitive impacts, demonstrating that the framing of assessment questions can substantially affect students' thinking. When writing assessments, it is crucial that instructors are aware that who they put as the subject of the question can impact their students' attitudes and STEM identity to promote an equitable and inclusive learning environment.

14. Exploring the Impact of Subject Placement on Exam Questions**Presenter(s):** Briana Craig**Advisor(s):** Dr. Jeremy Hsu

Quizzes and exams are crucial elements of undergraduate biology courses; however, little research has been done exploring the importance of the phrasing used in the questions on these assessments. Question framing has the potential to impact student performance and sense of belonging greatly. In this study, we conducted an experiment where we created three versions of the exact same question except for the framing for the experimental scenarios. One version was written with self-referential framing using the term “you,” simulating the student conducting the experiment; another version used classmate-referential framing, placing one of their peers in the experiment; the third version, referred to as authentic framing, included names from a diverse variety of scientists. All students and sections received the exact same questions for each assessment, with the phrasing varying between the assessments given throughout the semester (the first quiz used self-referential, the second quiz used classmate referential, etc.). This study is the second iteration of a similar study that used the same framework but instead gave each section a different assessment framing (Hsu, Clark, Hill, & Rowland-Goldsmith, 2023). Across all sections, our results indicate no significant change in students’ grades, self-reported stress, or sense of belonging. Students reported a strong preference for the self-referential version of the assessment question, followed by classmate-referential framing and authentic framing as the least preferred version. When we asked students why they preferred certain versions, we received a variety of responses that were similar to the first iteration of this study, indicating that question framing can affect a student’s attitude towards questions.

15. Examining Student Affect and Experiences in STEM Course Office Hours**Presenter(s):** Gabriella Dauber**Advisor(s):** Dr. Jeremy Hsu

Office hours - a critical element of nearly all STEM courses - are meeting times outside class where students interact with instructors to seek course help. Small changes in how office hours are framed can have large influences on student attitudes toward office hours, potentially reducing equity gaps between minoritized and non-minoritized students (Smith et al. 2022). However, there have been few studies examining student experiences in office hours, especially in STEM (Hsu et al. 2022). Doing so is crucial to understand what factors shape student motivation and feelings towards office hours. We conducted semi-structured interviews with 20 undergraduate STEM majors to explore students' perception of and experiences in their STEM course office hours. Our research questions include: 1) How do students perceive different instructor communications of office hours? 2) What motivates students to first attend and/or continue attending office hours? 3) What makes students feel included and welcomed at office hours? We used open coding to find emergent themes and develop a codebook. To ensure reliability, two coders conducted iterative discussions and calculated inter-rater reliability with 50 random utterances across five interviews. Our results reveal that syllabus language influences students’ perceptions of office hours. Students are more inclined to attend if office hour norms are

described, such as not needing a question to attend. Students also show differing levels of office hour knowledge upon starting college, demonstrating the importance of instructors highlighting benefits of office hours. Students indicate higher engagement when instructors provide frequent reminders about office hours and are less engaged when they perceive an instructor as unwelcoming. Students report that the structure of office hours and instructors' identities influences their attitude toward and engagement in office hours. Our work brings awareness to students' knowledge of office hours, their motivations for attending, and their attitudes toward office hours.

16. Hagfish Egg Morphology**Presenter(s):** Caroline Gallagher**Advisor(s):** Dr. Douglas Fudge

Hagfish are benthic marine animals with unknown reproductive behavior and methods. Females deposit oval-shaped eggs with unique anchor filaments at the poles of the egg capsule, facilitating attachment. We conducted micro-CT scans on unfertilized eggs from several species to investigate the mechanics and morphology of hagfish egg structure and attachment. Using 3D Slicer software, we analyzed these scans to visualize and study the egg structures in detail. Additionally, we created 3D-printed models at various scales to further examine attachment structures. Our findings include observations on anchor filament diameter, filament stalk diameter, lobe count, and filament count, allowing for the categorization of egg morphology traits across four different species.

17. Synthesis of Thermoresponsive Poly(N-isopropyl acrylamide) Based Core-Shell and Hollow Shell Nanogel with Tunable Core and Shell Thickness.**Presenter(s):** Mohamad Hijazi**Advisor(s):** Dr. Molla Islam

Nanogels have emerged as a notably safer and more effective means for drug delivery, primarily due to their adjustable drug-loading capabilities. Hollow-core nanoparticles offer some unique properties that are desirable for drug delivery applications. Initially, silica core nanoparticles were synthesized using the Stöber process at different temperatures where Tetraethoxysilane (TEOS) undergoes hydrolysis in the presence of ethanol and then a condensation reaction to form silica nanoparticles. Scanning Electron Microscopy (SEM) and Optical Microscopy (OM) analysis revealed that the size of silica core particles varied with the synthesis temperature (300 nm at 30°C to 150 nm at 60°C). The core silica particles were first coated with 3-(Trimethoxysilyl)propyl methacrylate (MPS) layers and used as seeds to grow ultra-low-cross linked thermoresponsive poly(N-isopropyl acrylamide) (NIPAm) shells using surfactant-free emulsion polymerization reaction. SEM and OM (differential contrast Interference Contrast) confirmed the addition of the NIPAm shell. The core was dissolved to get hollow shell nanogels. These hollow shell nanogels are very good candidates for drug delivery applications due to the presence of a hollow compartment in their structures.

18. Energetics of Atlantic Hagfish (*Myxine limosa*)

Presenter(s): Renata Spinelli, Lakshita Babburi

Advisor(s): Dr. Douglas Fudge

Hagfishes are agnathans resembling eels that live in the deep waters of the world's oceans and are best known for producing slime when threatened to ward off predators. It is interesting to look at how temperature affects the metabolic rate of hagfishes because they live in deep water, where the water temperature is fairly stable, so they might not be as tolerant as other species to changes in temperature. Previous observations show that hagfishes die when transferred directly from 11°C to 1°C water temperatures, indicating they do not tolerate excessively cold temperatures. Some research has been conducted on the effects of temperature on the metabolic rate of Pacific hagfish (*Eptatretus stoutii*), but less is known about how the metabolic rate of Atlantic hagfish (*Myxine limosa*) changes with temperature. In this series of experiments, metabolic rate will be measured by monitoring the oxygen consumption rates of Atlantic hagfish over a range of temperatures from 11°C to 1°C in increments of 2°C. To carry out these experiments, individual hagfish are placed in a custom respirometry chamber for two hours at 11°C and the temperature is decreased in 2°C increments over the course of two days. Because hagfishes live in stable thermal environments, we hypothesize that their metabolic rates will be more sensitive to temperature than fishes that live in more variable environments.

Business

19. Celiac Disease in Native American Communities

Presenter(s): Jolea Hutt

Advisor(s): Dr. Cristina Nistor

This study investigates the prevalence of celiac disease among populations. It examines the interplay between celiac disease and other autoimmune diseases, the role of wheat consumption, and the significance of HLA-DQA1 and HLA-DQB1 gene variants. This investigation highlights the need for targeted screening, especially among individuals with other autoimmune diseases. My work underlines the need for better data collection and a need to focus on Native American individuals who are underrepresented in health surveys and patient trials.

Chemistry

20. Sequential One-Pot Boron-Heck and Heck Reactions to Generate Disubstituted Arenes

Presenter(s): Nyssa Arai

Advisor(s): Dr. Houston Cole

The Heck reaction, described generally as the vinylation or arylation of olefins is extensively used in chemical synthesis owing to its efficiency, versatility, and simplicity. Heck methodology can accommodate a wide variety of olefins, catalysts, and other reaction parameters making it adaptable to diverse synthetic needs. Ongoing interest in optimizing Heck reactions in specific

applications have brought about improvements such as the reduction of synthesis steps, the elimination of protection/deprotection procedures, increased selectivity, efficiency and yield. In particular, procedures for one-pot tandem processes in Pd-catalyzed oxidative boron-Heck type and Suzuki reactions have been developed to circumvent the need for purification or additional catalyst between steps. O'Neill et al. (2008) reported moderate to good yields of biaryl derivatives synthesized via this approach with substrate variability. One-pot synthesis of biaryls can further benefit from using appropriate mechanisms in each step. In a similar work, O'Neill found that asymmetric coupling between trisubstituted linear olefins and arylboronic acids via oxidative Heck-type chemistry along with the use of chiral bidentate nitrogenous ligands resulted in yields and enantioselectivities superior to previously known studies at the time. In this study, the potential to similarly optimize a sequential boron-Heck and Heck reaction is explored with these prior works on boron-Heck and Suzuki serving as a foundation.

21. Hot Electron Chemistry on Bimetallic Titanium Nitride Core-shell Nanoparticles

Presenter(s): Stephanie Hoang, D'Angelo Alvarez

Advisor(s): Dr. Jerry LaRue

The increase of CO and CO₂ pollution has become a prevalent global climate issue. CO pollution can be mitigated by converting CO or CO₂ into CH₃OH (methanol) through catalysts. Plasmonic photocatalysis can be used to assist in creating green fuels. Our plasmonic photocatalysts are bimetallic transition metal core-shell nanoparticles. These nanoparticles' unique optical and catalytic properties contribute to their photocatalytic abilities that efficiently generate hot electrons for use in excited state chemistry. This project focuses on bimetallic core-shell nanoparticles with Titanium Nitride (TiN) as the core metal. As of now, ruthenium (Ru), rhodium (Rh), and nickel (Ni) have been used as the shell metal. The TiN/Ru and TiN/Rh nanoparticles (NPs) are synthesized using reflux reactions, washed using a centrifuge, and characterized using Scanning Electron Microscopy (SEM), Energy-dispersive x-ray spectroscopy (EDS), Transmission Electron Microscope (TEM), and Ultraviolet Absorption Spectroscopy (UV-Vis). Characterization of the synthesized bimetallic core-shell NPs depict favorable size, shape, and elemental distribution. The photocatalytic efficiency of the bimetallic core-shell NPs will be assessed through the combustion of oxygen and CO oxidation and hydrogenation reactions using a reactor chamber equipped with mass spectrometry and Raman spectroscopy in the near future. Through the use of bimetallic core-shell nanoparticles, we aim to understand their properties and use these promising catalysts to assist in creating renewable fuel.

22. Ketone Hydrosilylation Using Carbodiphosphorane Catalysts

Presenter(s): Gabrielle Montgomery

Advisor(s): Dr. Allegra Liberman-Martin

Our research group is studying how carbodiphosphoranes behave as catalysts for a variety of reduction reactions. Carbodiphosphoranes provide a very electron-rich central carbon with two lone pairs that can behave as an organocatalyst. This poster presents results on the hydrosilylation

of ketones by a series of carbodiphosphorane catalysts. The ketone and silane substrate scopes are currently being explored.

23. Effect of Lewis Acidity in Activating C—F Bonds of Benzyl Fluorides

Presenter(s): Mac Nelson

Advisor(s): Dr. Yiran Wang, Dr. Allegra Liberman-Martin

Fluorinated alkyl compounds present a significant environmental and biological challenge. The strength of the C—F bond makes these compounds difficult to degrade and are therefore problematic for disposal. The amination of benzyl fluorides can break the C—F bond and introduce a C—N bond, which is bio-degradable. Previous research has shown that Lewis acids can activate S—F bonds and promote the amination of fluorides (Ball et al. 2020). The goal of the project is to investigate the mechanism of the amination reaction of benzyl fluorides and the role of Lewis acids in the reaction. Six Lewis acid candidates, Calcium, barium, zinc, lithium, and potassium were investigated in an amination reaction of 1-bromo-4-(fluoromethyl)benzene. H1 NMR analysis suggests that the Lewis acidity can significantly influence the yield of the reaction and stronger Lewis acids resulted in a higher yield of the reaction. Among tested Lewis acids, Calcium provides the highest yield given identical reactants and reaction time. Later, Calcium was examined in reactions with a variety of amines, including indole, imidazole, and adamantylamine. H1 NMR analysis indicates that with the involvement of Calcium as a Lewis acid, all the reactions had a high yield (>60%) despite the low reactivity of some of the amines examined. The results indicated that the mechanism of the amination reaction of benzyl fluoride is closer to the Sn1 mechanism in which the first step, the step involving the Lewis acid, is the rate-determining step. This work demonstrates that the introduction of strong a Lewis acid can improve the yield of the amination reaction of benzyl fluorides, providing a feasible route to convert C—F bonds to C—N bonds.

24. Mechanistic Insights into Fluorocarbon Amination by Calcium Bistriflimide

Presenter(s): Paul Rosa

Advisor(s): Dr. Maduka Ogba

We investigate how the nature of the metal ion affects the capacity of Lewis acidic salts to act as catalysts in metal-mediated sulfur(VI) fluoride exchange (SuFEx). Previous reports suggest that calcium bistriflimide $\text{Ca}(\text{NTf}_2)_2$ promotes efficient coupling of sulfur(VI) fluorides to amines. However, a systematic investigation into ion-pair effects in promoting sulfur(VI) fluoride activation has not been reported. Therefore, we lack mechanistic data that enables rational experimental redesign to improve reaction efficiency. In this work, we present a computational analysis of the likely SuFEx mechanism and activation mode mediated by zinc bistriflimide $\text{Zn}(\text{NTf}_2)_2$. We hypothesize that $\text{Ca}(\text{NTf}_2)_2$ is more effective than $\text{Zn}(\text{NTf}_2)_2$ due to its larger atomic radius, thus allowing better accommodation of the key salt-substrate interactions that promote SuFEx. We compare our findings to previously reported work with $\text{Ca}(\text{NTf}_2)_2$. Our results lend insights into how steric and electronic factors affect the Lewis acid reactivity of group II salts, and their capacity to facilitate the activation of fluorinated compounds.

25. Carbodiimide Hydroboration Reactions with Carbodiphosphorane Catalysts**Presenter(s):** Julie Tran**Advisor(s):** Dr. Allegra Liberman-Martin

The Liberman-Martin group is exploring how carbodiphosphoranes act as a fuel-efficient catalyst as an alternative to transition metals for hydroboration reactions. While transition metals act as efficient catalysts for carbodiimide hydroboration reactions, carbodiphosphoranes are more economically synthesized. Carbodiphosphoranes have a unique property of being extremely electron rich as they are formally zero valent and have two lone pairs. Due to this unique property, they are capable of stabilizing electron deficient main groups. The nucleophilicity of the carbodiphosphoranes are studied in carbodiimide hydroboration reactions. This presentation will focus on how a variety of carbodiphosphoranes will act as a catalyst for carbodiimide hydroboration reactions and different hydroboration reactions compared to each other.

Computer Science**26. Designing a Novel Interface that Supports Musical Interaction****Presenter(s):** Ellie Nguyen**Advisor(s):** Dr. Franceli Cibrian

Our research centers on HarmonicThreads, a novel musical interface developed using a flexible display with Arduino circuitry that allows users to create music by touching a fabric surface. Currently, it uses a capacitive sensor to sense touch from conductive threads, and its software is hard-coded to associate each thread to a specific piano note. Our research goal focuses on personalizing music therapy to support the development of children facing motor and sensory differences. Hence, we plan to implement an unsupervised deep learning model called the Generative Adversarial Network (GAN) to generate music based on the user's unique styles and movements with the fabric. To capture a broader range of interactions for parameters to the GAN, we will test fabric-based Arduino sensor technologies and design an updated interface prototype. In the next stage, we will develop the GAN architecture suitable for producing music using the prototype. Through this work, we will evaluate different ways a GAN model can be adapted to produce music from various sensor inputs. This considers a range of musical parameters, such as tempo, melody, and dynamics, as well as additional sensor possibilities, like flex or pressure sensors. In our future work, we will conduct user studies and refine HarmonicThreads to address the specific needs of individuals across diverse backgrounds. We aim to produce developments that broaden the possibilities for inclusive and creative musical production, regardless of skill or experience.

27. Connecting Diverse Identities through Celebratory Technology to Reduce Social Stigma in College Students

Presenter(s): Daniel Dinh, Evelyn Lawrie, Sav Avalos, Spencer Au, Paige Caskey, Sarah Fieck, Cyrus Faamafoe, Briana Craig, Ray Tan, Jack DeBruyn

Advisor(s): Dr. LouAnne Boyd

While social stigma remains a complex phenomenon of humanity, disability remains a pertinent target of physical, cognitive, and emotional scrutiny. Assistive technologies are intended to combat this stigma by directly changing how the disabled user interacts with the world around them. Current technologies often sensationalize, objectify, and reduce individuals to their disabilities, ironically perpetuating negative stereotypes of disabled individuals. Rather than view disability as a deficit, Celebratory Technology seeks to mitigate social stigma by celebrating every form of individuality. This novel paradigm provides a framework that addresses bias and calls for all individuals to participate in inclusionary works. This framework includes 30 traits that represent various multiplicities of human characteristics. Implemented in a web application containing a 30 question survey to represent these traits, Celebratory Technology aims to give users a multifaceted view of their unique manifestations and demonstrate their connections with others who complete the survey. In this study, we can compare user interactions with three differing matching algorithms based on the survey responses (random, highest total number of matches, and complimentary collaboration styles). The participants were grouped based on these criteria to perform multiple team-building activities in an effort to observe body language and interactions between participants. Observations in each matching group were then compared, with the hypothesis that this novel Celebratory Technology framework will facilitate open communication between participants who shared similar survey answers and communication styles. The goal of this study is to reduce stigma, especially during first impressions and group exercises, facilitating cooperation between all individuals through their connections to similar survey responses.

28. Copyright & Modding in the Modern Gamespace

Presenter(s): Josephine Railston

Advisor(s): Dr. Ian Barnard

In the modern gamespace, modding has become an excellent opportunity for video game enthusiasts to express their creativity and love for a game; but what happens when that passion is stifled by a major company? My poster presentation will examine the ethics behind modding and ROM hacking, from both the perspectives of major video game corporations as well as their fanbase at large. We will analyze this issue using the case study of Pokémon Prism, a Pokémon Crystal ROM hack, which was canceled days prior to its release following a cease and desist by Nintendo. More specifically, we will investigate the potential value mods hold in improving overall game quality, as well as the opportunities lost by preventing these passion projects.

Creative Cultural Industries - CCI**29. Selfies as Cultural Objects****Presenter(s):** Sophia Mall**Advisor(s):** Dr. Kelli Fuery

My project submission focuses on the creative and cultural industries, exploring the interrelationship between self, image, and digital culture through various representations of “selfies” or self portraits. Drawing on Susan Sontag's *On Photography*, I argue images as crucial cultural artifacts express various connections to personal identity and sense of self; further, I use Jean Baudrillard's theory of simulacra and simulation to explore the relationship between an original object and an image. Here I propose a novel interpretation for simulacra: rather than viewing images solely as devalued replicas or exact equals of their subjects, I suggest that deliberately unreliable and manipulated images such as selfies can serve as crucial tools for shaping one's sense of self. Through my own collection of selfies, I demonstrate how previous ideas and theories of simulacra lack an interpretation of image in the modern digital age in regards to purposeful unreliability. I conclude by noting Jose Van Dijck's research on the impact of digital technology on image and how this connects to my proposed theory of simulacra: the subject of an image, such as a selfie, can intentionally create unreliable representations of themselves which contributes to the creation of their desired "sense of self" portrayed through their images.

Dance**30. Harmful vs Helpful: A GenZ View On Dance Fitness****Presenter(s):** Sarah Maloney, Peyton Winsett**Advisor(s):** Robin Kish

Having experienced the peak of the COVID-19 pandemic as GenZ, this research is a means to explore a topic that is relevant to current collegiate dance students and their studies. With the increase in fitness media influencers during the mass isolation periods of the Pandemic, many dancers gravitated toward these unique forms of cross-training. The unlimited access to these abundant resources raises the question of the quality of training dancers were/are getting in mass consumption. This study includes an exploration of the validity of these exercises and the frequency of use within the dance community. These topics will be explored through past peer-reviewed studies and the inclusion of a qualitative research study via a survey through a university's dance department. The survey questions individual dancers about their experiences with dance education through the limitations of the Pandemic and beyond. The survey and research explore curriculums such as CLI, social media fitness influencers, Zoom dance intensives, and other considerable online programs. Conclusions can be drawn to comprehend the experiences of current collegiate dancers and how cross-training within the media has influenced physicality and personal performance. Specifically, understanding the findings through a GenZ

lens can then be transferred into an educational setting to provide instructors with practices that are efficient and beneficial to the longevity of a dancer's career with this rising influence of media and accessibility. The research defines helpful vs harmful cross-training practices regarding consumption and type.

Digital Arts

31. Global Warming is Not Cool

Presenter(s): Bella Fraher

Advisor(s): Micol Hebron

The background is a clip of outer space, the middle ground is engulfed in flames, and the foreground includes a tiger stuck in a pile of wood. The tiger additionally has a red drop shadow in order to draw attention to the fire. Trees hang upside down and have a fiery red drop shadow. In the middle of the collage, our world, Earth, is on fire. Surrounding the flaming planet are three news articles regarding forest fires, placed on the lines of a rule of thirds grid. In the high center of the piece reads a statement, "Global warming is not cool" in order to draw attention to the focus point of the piece. I sourced my collage assets from Google Search and Adobe Firefly.

This collage draws attention to global warming, specifically forest fires. As the planet heats up, wildfires become more common, burning down forests and eliminating habitats for thousands of species of animals. I included a visual of the tiger's death to illustrate its home being burned to the ground. There is an image of the Earth on fire in the center of the piece. It is impossible for the Earth to catch on fire, so it serves as a metaphor that global warming is real and increases the Earth's temperature by dangerous amounts. Wildfires are becoming too common, the news articles in the collage draw attention to this fact. It is up to our world to work on reducing the pollution we emit into the atmosphere. But until then, the Earth will continue to get hotter and hotter.

Economics

32. Examination of the Relationship Between Economic Job Postings and Programming Languages

Presenter(s): Dominic Brugioni

Advisor(s): Dr. Sarah Bana

Our project involved scraping tweets from the econ_ra Twitter account and examining the text of these Research Assistant job postings. We were mainly interested in the distributions of programming languages requested in the posting: were they looking for R, Python, Matlab, etc.; the graduation year of the lead professor and how that related to the languages they required; the fields in which the jobs were specified and the programming skills expected for that.

Electrical Engineering**33. Mechanical Properties of 3D Printed Calcium Carbonate Composites****Presenter(s):** Joseph McWherter**Advisor(s):** Dr. Nicole Wagner

Many photopolymer resins used in 3D printing are petroleum products that are unsustainable and non-recyclable. Also, experiments have shown that particulate fillers can improve the mechanical properties of polymer matrices. The goal of this experiment was to create composites that would reduce the amount of photopolymer resin used while improving mechanical properties. Photopolymer composites consisting of methacrylate resin and calcium carbonate powder were printed as dog bone-shaped specimens of dimensions specified by ASTM D638 by digital light processing (DLP) using a Prusa SL1 3D printer. The CaCO₃ contents used were 0, 2, 4, 8, 12, 16, 20, 25, 30, 40, and 50 wt%. Each composite was cured in four sets, one of each at room temperature, 40°, 60°, or 80°C. An Anton Paar Visco QC 300 viscometer was used to measure the viscosity of the composite resin, and the mechanical properties of the cured composites were measured with an Instron universal testing machine. The viscosity increased as more calcium carbonate was added. The UTS of the composites tended to be higher when cured at higher temperatures, and overall, it decreased with increasing CaCO₃ content. However, the highest UTS was observed in the composites with 4 wt.% calcium carbonate at 32 MPa. The stress at yield was near constant across all composites around 19 MPa on average. The Young's modulus increased from an average 1,444 MPa with neat resin to 3,896 MPa at 50 wt%, and the total elongation decreased from 4.0% to 1.4% at 0 and 50 wt% respectively.

English**34. Unveiling Deception: Discourse Analysis of Sora and the Impact of AI on Misinformation****Presenter(s):** Kellen Edwards**Advisor(s):** Dr. Jan Osborn

In today's era of information abundance, combating the proliferation of misinformation is paramount. The growing concern within the release of artificial intelligence–AI models–have exemplified concerns through Open AI's new text-to-video learning language model: Sora, heightening the ever-present issue of how artificial intelligence will be a detriment to society. This project is a culmination of a comprehensive analysis regarding the ongoing discourse of the effects of this language learning text-to-video model and its impending effects of deception. Implementing James Paul Gee's meticulous discourse analysis tools, I was able to effectively examine online discussions spanning diverse social media platforms to unearth underlying concerns and themes. Specifically, by scrutinizing the ramifications of Sora-related misinformation, crucial issues, such as the erosion of public trust, copyright integrity, and authenticity challenges come to the fore. Illuminating these prevailing themes and areas of contention within the discourse, this study provides major insights for designing targeted

interventions and educational initiatives aimed at fostering media literacy and critical thinking skills among society. This research contributes invaluable insights to a deeper comprehension of the intricate interaction between social media discourse and the magnification of misinformation in the domain of AI, providing valuable insights for mitigating its potential adverse effects and promoting more informed public discourse.

35. "Shades of Ownership: Unveiling the Disparity in Copyright Criticism between African American and Western Authors"

Presenter(s): Alana Firsty

Advisor(s): Dr. Ian Barnard

In 1968, Yambo Ouologuem published his novel "Bound to Violence". While this novel received a large amount of criticism for its dark and explicit depictions, critics also called it a "great African novel." Ouologuem's novel was even awarded one of France's most prestigious literary prizes. But, when he was accused of plagiarism (there is no question that Ouologuem copied, adapted and rewrote phrases, sometimes entire paragraphs, from many sources), the extreme hostility he faced from the world provides insight into one of the deeper rooted issues within copyright lawsuits -- racism.

My poster will explore the plagiarism found within the novel, whether or not it is "copyright" or "an artistic technique", the criticism he faced, and the great discrepancies between the criticism African American novelists face vs Western authors. If the roles were reversed, would western authors have faced similar criticism?

36. How does Allen Ginsberg's "Howl" Reimagine Walt Whitman's "Song of Myself" in the 20th Century?

Presenter(s): Grace Song

Advisor(s): Dr. Joanna Levin

Walt Whitman's "Song of Myself" and Allen Ginsberg's "Howl" provide a critical voice to the social issues in American democracy, ranging from politics, sexuality, and the inclusion of minority individuals in their poems. Walt Whitman was a significant influence on Ginsberg due to the embodiment of avant-garde literary traditions, such as the invention of the free-verse technique, and challenging the traditional literary tradition of the dominant culture during their historical period. Both Whitman and Ginsberg are countercultural poets who sought to connect the self to the larger collective of American society. In Ginsberg's "Howl," he cries a painful and noticeable "howl" to the social problems of the 20th century, challenging the acceptable notions of American society to pursue a more idealistic nation. By using the cultural studies theory, I will analyze how Ginsberg's "Howl" reimagines Whitman's "Song of Myself" in the 20th century by addressing how he provides a significant voice of highlighting the voices of marginalized people in his poetry to challenge the acceptable notions of the American dominant society.

37. Peoples Perspective on Torture

Presenter(s): Ahna Wittkow

Advisor(s): Dr. Jan Osborn

This project is a discourse analysis that is focused around torture. Discourse analysis requires an understanding of the relationship between language and ideology. Ideologies are foundational social beliefs of a rather general and abstract nature. Different types of ideologies are defined by the kind of groups that have an ideology, such as movement, political parties, professions, or churches, among others. Throughout analyzing data, we can see what language is being used and then see what they believe. This research corpus includes; the definition of language and ideology, theory, methods used, analysis, and an interpretive perspective. Within each section, Purvis and Hunt, Van Dijk, and James Paul Gee are referenced to showcase what discourse is. This project also showcases data such as news articles, documentaries, social media, and scholarly articles. Within the analyzed data we can see who is for and who is against torture methods. The language from the data will allow us to see what ideologies and beliefs there are. This project will highlight the different beliefs and viewpoints on torture. These beliefs will contrast one another and showcase why they believe their group ideologies since they cannot be individual beliefs. Overall, this paper analyzes the discourse to determine the world view on torture.

Environmental Science and Policy

38. It's in Their Genes: An Analysis of Epigenetic Patterns and Thermal Tolerance in Juvenile Mussels

Presenter(s): Riya Belani

Advisor(s): Dr. Richelle Tanner

Climate change is increasing the frequency and intensity of extreme temperatures for organisms worldwide. The effects are especially felt in the marine intertidal zone where organisms like *Mytilus californianus* mussels already live near their thermal limits. The thermal plasticity of physiological traits is well-understood in mussels, but there is a lack of studies examining the inheritance and the epigenetic mechanisms underlying these traits. We explored whether DNA methylation levels in juvenile mussels varied between sites with different thermal variances in an intertidal zone at the Hopkins Marine Station in Monterey, CA. *M. californianus* Juvenile mussels were exposed to protected (warm) and exposed (cool) wave conditions in a field acclimation experiment. Previous studies from this experimental design showed higher growth rates and survival in exposed (cool) juvenile mussels after one month. In this study, gill tissue was collected from these same individuals to undergo reduced representation bisulfite sequencing (RRBS) to evaluate methylation at CpG islands in the genome. We quantified, visualized, and compared DNA methylation profiles between the treatment conditions using Bismark and SeqMonk against the *Mytilus trossulus* reference genome. We discovered that global methylation levels were not significantly different between the cool and warm sites, however, we found some patterns related to genes involved in key cellular stress pathways and growth. This research is a first investigation

into the role of epigenetic modifications that influence physiological tolerance under heat stress in highly dynamic environments and can contribute to maintaining biodiversity in intertidal ecosystems.

39. Modeling Post-fire Flood Risk Considering Infrastructure Sedimentation Across Riverside County, CA

Presenter(s): Citlalli Madrigal, Alyssa Kimura

Advisor(s): Dr. Ariane Jong-Levinger

Over the past 50 years, California has seen a fivefold increase in annual burned area due to wildfires, causing indelible damage and leaving many communities vulnerable to major flooding. Wildfires can increase erosion and runoff during storms by removing vegetation that stabilizes soil and creating a hydrophobic layer on top of soil that decreases infiltration. Current models that estimate the impacts of post-fire floods do not consider the flood control infrastructure present in areas vulnerable to these hazards. This flood control infrastructure is generally effective at protecting communities from floods but is not typically designed to handle the sediment-laden flows that are common during post-fire storms, which leaves communities unaware of the threat that post-fire flooding poses to them. Jong-Levinger et al. (2022) developed a stochastic model that explicitly considers interactions between rainfall, wildfires, and flood control infrastructure design and maintenance. Using both remotely sensed and gauge observations, we applied this model to nearly 30 watersheds located in Riverside County, California, across the Santa Ana, San Jacinto, and San Bernadino Mountain ranges. We present a map of the spatial distribution of present-day post-fire flood risk (the probability of post-fire floods occurring over a 100-year period) designed to identify the areas of Riverside County with the greatest risks. These hazard estimates can be used by flood control agencies to inform infrastructure siting, design, and maintenance in hotspot areas prone to post-fire flood risks. This study contributes to community resilience and improved public safety in Riverside County in the face of increasing post-fire flood risk.

Film

40. The Angry Bitch: The Restraints of Female Rage bound by the Revenge Narrative

Presenter(s): Kiara De Gouveia

Advisor(s): Dr. Emily Carman

There has been celebrated discourse on aggression as a complex social behavior exhibited by men, while scholars continuously ignore the manifestations of women's anger. Laura Mulvey and Claire Johnston explore how the cinematic image of woman has been constructed by man, her ability to think, feel, and look subjugated by the patriarchal ideologies thrust upon her. And though the display of women's anger and rage in contemporary cinema is described to be subversive to this imaging, it is apparent that it does not manage to break the boundaries of the patriarchal gaze. By narrativizing women's anger and rage towards injustice in the context of

revenge, Hollywood continues to punish woman's power. An angry man seeking justice is the hero, while an angry woman doing the same is an anti-hero. Her actions are portrayed as malicious and cunning, narrating her pursuit for justice as a search for vengeance. By exploring the use of narrative to characterize the angry female protagonists of contemporary cinema in *Gone Girl* (David Fincher, 2014), *Promising Young Woman* (Emerald Fennel, 2020), and *Set it Off* (F. Gary Gray, 1996) it is evident that the angry woman is a disruptor whose actions are only deemed acceptable under the precipice that she is seeking revenge; by doing so Hollywood continues to illustrate woman's anger as unacceptable, questioning her ability to make sound judgements and thus effectively silencing her. This condemning narrative influencing American society's reaction to women who act out in violence. As shown in the statistics of battered woman serving long-term sentencing for inflicting violence on their abusers.

41. Feeling the Familiar: Locating Cinema's Transformation in the Nostalgia Machine of Hollywood

Presenter(s): Antony Post

Advisor(s): Dr. Emily Carman

Hollywood's reliance on nostalgia reached an all time high during the previous decade, with the inception of the 'requel' or reboot-sequel controlling the creative and financial markets (such examples of this trend are *Star Wars: The Force Awakens* and *Top Gun: Maverick*). More so than ever, the dependence on brand identification was integral to success, leading to nearly every major studio creating their own streaming service. Understanding nostalgia's role in American culture offers a perceptive insight into how we engage with visual media, starting from our first interactions with visual storytelling during childhood; The Walt Disney Company conditioning their younger viewers to be passionate patrons for the company are the kingmakers at this principle. I argue that nostalgia is the primary force within the American film industry, with the cyclical journey of nostalgic appreciation, ambivalence, and eventual dissatisfaction the reason for Hollywood's transitions throughout the past half-century. This paper will take a historical and analytical dissection of the use of genre in Hollywood history, comparing the fall of the 1960s big-budget musical that led to the rise of New Hollywood to the fall of the 2010s superhero epic and the dawn of a new period of prestige blockbusters (such as *Oppenheimer* and *Dune*). The ideas of Sara Ahmed, James Naremore, and several postmodern theorists will structure this inquiry that clarifies why Hollywood transforms and how its audiences engage with mass cinematic ventures.

42. The Hand That Feeds: The Failure of Capitalist Critique in Hollywood Cinema

Presenter(s): Mado Wade

Advisor(s): Dr. Emily Carman

Using the Ideas proposed by Theodor Adorno and Max Horkheimer in "The Culture Industry: Enlightenment as Mass Deception," this paper deconstructs the ways in which Hollywood films fail to critique capitalist structures. Using *Barbie* (Gerwig 2023), *Avatar* (Cameron 2009), *Black Panther* (Coogler 2018), *The Wolf of Wallstreet* (Scorsese 2013), and *The Batman* (Reeves 2022) as case studies in which different capitalist structures are targeted (patriarchy, environmental

decline, white supremacy, the American dream, and the police respectively), this paper proposes that a capitalist product cannot meaningfully critique the systems that created it. While each of these films takes a different approach and achieves different results, none of them are able to convey a truly anti-capitalist message. In many cases, the point of failure is the critique of the origins of the film itself, such as the Mattel CEO in Barbie. This research and analysis will demonstrate that when the goal of art becomes making as much money as possible, the things that make art effective become secondary. Like a snake eating its own tail, Hollywood relies on the funding of capitalist structures and will therefore reify those same structures within our society through the media.

Food Science

43. Optimization of PCR-based Methods for the Detection of Canned Tuna Species

Presenter(s): Chloe Castanon

Advisor(s): Dr. Rosalee Hellberg

The susceptibility of canned tuna species mislabeling can be attributed to high consumer demand, complex global supply chain, and diverse price range. Previous studies have optimized sequencing-based techniques for species identification by targeting a short fragment of DNA known as the mitochondrial control region (CR), commonly referred to as CR mini-barcode. However, the limited retrieval of DNA from canned tuna products reduces the effectiveness of sequencing. This study aimed to optimize canned tuna species identification by evaluating whether the use of species-specific PCR combined with sequencing is more effective than sequencing alone. Two species-specific PCR methods were compared: real-time PCR and multiplex PCR. A sample set of 24 commercial canned tuna products was collected, including cans labeled as albacore tuna, skipjack tuna, yellowfin tuna, and light tuna. DNA was extracted in duplicate from each can, followed by analysis with DNA mini-barcoding, real-time PCR and multiplex PCR. DNA mini-barcoding enabled tuna species identification for 33% of the 24 canned samples. Multiplex PCR allowed for tuna species identification in 33% of samples, while real-time PCR was able to detect tuna species in 100% of canned samples. Overall, real-time PCR emerged as the most effective method for identifying tuna species in canned products, consistently detecting at least one species in each canned sample run thus far. The combination of real-time PCR and DNA mini-barcoding is recommended to allow for rapid screening of target species along with sequencing-based confirmation.

44. Optimization of Pre-Enrichment and Screening Methods for the Detection of Salmonella enterica in Meat Analog Products

Presenter(s): Isha Shingre, Kylie Sacapano

Advisor(s): Dr. Rosalee Hellberg

Meat analogs, popular for health, sustainability, and ethical reasons, have the potential for Salmonella enterica contamination. The current Food and Drug Administration (FDA) regulatory

methods for Salmonella detection in meat analogs follow the Bacteriological Analytical Manual (BAM) and are time-consuming and costly, requiring pre-enrichment using lactose broth with a surfactant (e.g., Triton X-100). This study aimed to optimize pre-enrichment and screening methods by assessing modified techniques against the FDA reference method. Meat analog samples were inoculated with Salmonella at three levels according to FDA validation guidelines: (1) fractional inoculated level (50% ± 25% of tests positive in at least one method), (2) +1 log inoculated level (100% positive results in at least one method), and (3) uninoculated control. The FDA reference method using lactose broth with Triton X-100 (LB-T) for pre-enrichment followed by culture confirmation was compared to alternative pre-enrichment methods using lactose broth (LB) or buffered peptone water (BPW). Additionally, the current screening method (VIDAS) was compared to rapid screening methods (LAMP and qPCR). Pre-enrichment with BPW exhibited the highest positivity rate for culture-based confirmation (24/25; 96%) compared to LB-T (23/25; 92%) and LB (22/25; 88%). Regarding screening methods, qPCR yielded the overall highest positivity rate (67/75; 89%) compared to LAMP (64/75; 85%) and VIDAS (63/75; 84%). No statistical difference ($p > 0.05$) was found among the three broths or the three screening methods based on a Pairwise Test of Equality of Proportions. These results suggest that surfactants are unnecessary for the detection of Salmonella in meat analogs. Furthermore, these findings suggest that LAMP and qPCR are effective screening alternatives to VIDAS. The adoption of the modified, more efficient methods tested in this study will reduce the time and cost associated with Salmonella detection in meat analogs.

Health Sciences and Kinesiology

45. Structural Sensorimotor Adaptations in Young Adults with Low Back Pain.

Presenter(s): Isaac Chrisman

Advisor(s): Dr. Jo Armour Smith

Chronic low back pain (CLBP) is the largest cause of disability worldwide. There is evidence for regional structural brain adaptation in CLBP. Most studies have investigated middle-aged adults and show decreased grey matter density in pain processing regions. It is not clear if these adaptations are evident early in the lifespan of individuals with CLBP. The purpose of the study was to compare sensorimotor gray matter density in young adults with a history of CLBP with back-healthy controls. 53 young adults with a greater than 1-year history of CLBP and 29 young adults with no history of LBP participated. Clinical characteristics of the LBP group were quantified with measures of pain duration and intensity as well as pain-related fear and disability. Gray matter density was quantified with voxel-based morphometry. Whole brain and sensorimotor region of interest (ROI) comparisons between groups were made after covarying for age, sex, and total intracranial volume. ROIs were determined a priori. Associations between clinical characteristics and average gray matter density in sensorimotor ROIs comparisons were explored with Pearson's correlation coefficients. Individuals with CLBP reported an average duration of pain of 4.9 (± 2.2) years and average pain intensity of 5.0/10. The LBP group had greater gray matter

in the right primary somatosensory cortex, right inferior parietal lobule, and right midcingulate cortex (all $p < 0.05$ FWE corrected). There were significant positive associations between average gray matter and clinical characteristics in the anterior, mid, and posterior cingulate cortices, the supramarginal gyrus, superior parietal lobule and supplementary motor area (all $p < 0.05$). We demonstrate that in young adults, CLBP is associated with structural neuroplasticity in regions involved in sensory processing, motor control, and the sensory and emotional aspects of pain experience. Increased grey matter density early in the lifespan of individuals with CLBP may reflect an adaptation to ongoing nociceptive input.

Honors

46. All Originality Comes From Inspiration

Presenter(s): Avy Ludwig

Advisor(s): Dr. Ian Barnard

Every day, people sue others because they have taken their ideas and used them for their own monetary or social gain. This is why we have copyright laws to help place certain lawsuits in order of importance. When does Copyright laws go too far? Copyright law has been circulating since the early twentieth century and has continued to headline papers and go viral today. A Copyright lawsuit reached the Supreme Court recently for a silly dog toy that parodied a Jack Daniels liquor bottle. Copyright law has many different rules and specifications for something to be considered protected. But how do you know whether an idea is genuinely your own? As you grow up, you constantly learn new information from the people around you. So, who is to say that you have ever had an original thought? Along with original ideas, there is original writing. There are so many different languages and words that plagiarism is more challenging to avoid than you think. Sometimes in human history, someone has said the same thing you wrote. This is why a thinner copyright system would allow enough protection but allow creativity for artists, scholars, and writers. A thinner system would allow for fewer rules, unlike a thick copyright system, which would be more strict on people's creative outlets and cause less artwork and literature worldwide.

47. Copycat Couture: How the Fast Fashion Industry is Exploiting Copyright Law

Presenter(s): Lauren Szlosek

Advisor(s): Dr. Ian Barnard

The emergence of fast fashion has revolutionized the accessibility of runway-inspired trends, but it has also ignited a contentious discussion regarding the ethical and legal ramifications of copyright law within the fashion domain. This project will dive into the multifaceted interplay between fast fashion practices and copyright regulations, shedding light on the intricate dynamics shaping the industry's landscape. Fast fashion brands capitalize on legal ambiguities to swiftly replicate high-end designs, often overlooking the intellectual property rights of original creators

in the process. While championing affordability and trend democratization, this approach raises pertinent questions about the balance between innovation and imitation.

By challenging the rigidity of copyright enforcement, this project will advocate for a more nuanced framework that respects designers' rights while fostering a culture of creativity and accessibility. Additionally, it will explore the influence of consumer behavior on the demand for imitation goods and scrutinize prevailing perceptions of authenticity within fashion culture. "Copycat Couture: Navigating Fast Fashion's Copyright Conundrum" aims to stimulate critical discourse and propel the industry toward a more equitable and sustainable future.

Music

48. Modular Synthesis For Dummies: The DIY Journey

Presenter(s): Julian Berger

Advisor(s): Adam Borecki

Flashing modules and over fifty cables overlapping one another. What emits is an infinitely changing sound; moved by invisible hands. This mammoth electronic instrument is a modular synthesizer and has been around for over eighty years. Only over the last two to three decades has it become mainstream and used in compositions by everyday musicians. This paper examines the history of modular synthesis, from Buchla and Moog, to Doepfer and the Eurorack model, which is now the staple of modular synthesis. I teach you the fundamentals of sound synthesis, and why every musician in school should learn it. And finally, I provide a step-by-step guide to begin building your own modular synthesizer, using the site Aisynthesis.com as a framework. I've built multiple modules to showcase a basic routing of a sound wave that can be manipulated by an ADSR envelope. As modular is highly scalable, and Aisynthesis provides links to source the materials yourself, you will have no trouble starting and completing your first module for as little as fifty dollars in under an hour. Welcome to the world of modular.

49. Cultural Divergence: The Influence of Mexican Music in the South.

Presenter(s): Arnulfo Padilla

Advisor(s): Dr. Laura Loustau

This project analyzes the notable influences that Mexican music has on southern music. Through the lens of cultural accommodation theory, it can be seen that much of the musical style of the south of the United States has been borrowed from Mexico. This communication theory explains that whenever two cultures clash, the subservient culture tends to adapt to the communication style of the dominant culture. This is what is known as convergence. On the other hand, when someone refuses to adopt the communication style of the dominant culture, this is known as divergence. Hence, it is peculiar that even when the United States acquired its southern states through the Treaty of Guadalupe, the area remained divergent from the rest of the country and adapted a Mexican sound and rhythm to their music. This can be seen not only in similar lyrics about the simplicity of living and melancholic reflections on how short life is but also in the

technical structure of the songs and similar notes that are played. By exploring the concepts of convergence and divergence, this essay highlights the importance of music as a vehicle of cultural expression and a bridge between different societies connected by their shared past and interdependent present.

50. The Musics and Literatures of Protest: A Comparative Analysis of the Effectiveness of Music in Transmitting Protest Messages

Presenter(s): Julia Sapeta

Advisor(s): Dr. Laura Loustau, Dr. James Hirsch

The act of protesting has been a part of the human experience for centuries and continues to be an integral part of how modern societies mass communicate messages of dissent. This project aims to identify the most effective and accessible way of conveying protest messages on a grander scale. During the late 1950s and early 1960s, a movement called "la nueva canción" began to unfold in parts of South America, namely in Chile and Argentina. This movement aimed to contest the political dictatorships in these countries through music, particularly protest songs. This new style of songs combined indigenous instrumentation and traditions with European musical elements to create a hybrid form of music that united people with the same concerns, regardless of class. "La nueva canción" led Chile's first Socialist President to victory, Salvador Allende, whose campaign slogan held that "there is no revolution without songs." This project includes an analysis of primary sources, such as songs from this movement, along with their lyrics as well as protest literature of the time. In addition to primary sources, this project includes an analysis of a study on the effect of music on memory, which provides evidence of music, particularly its rhythmic aspect, aiding in the memorization of lyrics versus the memorization of text without rhythm or pitch.

Physical Therapy

51. Postural Control in Young Adults With and Without Recurrent Back Pain: Influence of Symptom Characteristics

Presenter(s): Rachel Berns

Advisor(s): Dr. Jo Armour Smith

Many individuals with low back pain (LBP) experience episodic symptoms. During symptomatic episodes, individuals with LBP have delayed trunk muscle activation during anticipated postural perturbations, though it's unclear if these postural control changes persist between symptomatic episodes. This study examined anticipatory postural muscle activation in adults with and without recurrent LBP to determine the influence of muscle fatigue and typical symptom characteristics on trunk muscle activation. 55 young adults with a greater than one-year history of recurrent LBP and 30 young adults with no history of LBP were recruited. Electromyography electrodes were placed on their thoracic and lumbar paraspinals, external obliques, internal obliques, and left deltoid. While standing, participants rapidly raised their left (non-dominant) arm as quickly as

possible in response to an auditory cue. Ten repetitions were performed before and after paraspinal fatigue was induced using the Sorensen test. Timing and amplitude of anticipatory trunk muscle activation, and abdominal/paraspinal co-contraction were calculated. Effects of fatigue and LBP status were investigated, as well as associations between pain characteristics and postural control. The results found that speed of arm motion did not change post-fatigue nor between groups. Timing, amplitude, and co-contraction did not differ between groups. In adults with and without LBP, adaptations in the timing and amplitude of postural muscle activation occurred in fatigued and non-fatigued muscles in response to fatiguing exercise. In individuals with a history of recurrent LBP, greater pain severity and impact during painful episodes were associated with delayed onset and reduced co-contraction of the trunk musculature during anticipated postural challenges. Due to the heterogeneity and symptom-dependence of postural control impairments in individuals with LBP, the prescription of rehabilitation exercises for the trunk musculature should be tailored for each individual based on their unique symptom-associated motor patterns.

Political Science

52. The Socioeconomic Dimensions of Environmental Awareness: Income, Politics, and Proactivity

Presenter(s): Alessandro Demoreno

Advisor(s): Dr. Ann Gordon

Does wealth blind us to the planet's plight, or does it empower action? In this research, I examine the extent to which people's income and political affiliation have affected their fear of environmental crises. Utilizing a mixed-methods approach, I will analyze data from the Wave 7 American Fears Methodology Report 2021 alongside targeted outside articles; I hypothesize a strong positive correlation between income and concern for environmental issues. I will also examine the correlation between party affiliation and the level of concern. I hypothesize that those who identify as Democrats will score higher when it comes to fears relating to environmental issues, and those who identify as Republicans will score lower. Finding a correlation between these two categories will provide a strong basis to continue my research. and support the hypothesis that political affiliation plays a strong factor in environmental concerns. Although citizens' environmental outlook is case-by-case, examining the correlation between income, political affiliation, and environmental concerns is a worthwhile endeavor. These findings could be valuable for environmental conservation movements, as identifying populations who are less concerned with environmental crises could allow for more effective and efficient message targeting.

53. Unraveling the Theory: The Influence of Conspiracy Beliefs on Political Perspectives**Presenter(s):** Alexandra Der Boghosian**Advisor(s):** Dr. Ann Gordon

Conspiracy theories have reshaped history and the concept of politics through generations. Adults either believe in these theories or they resent them. So how does the matter of believing these conspiracy theories influence their political beliefs? This paper will evaluate conspiracy theories towards the U.S. government, including the 9/11 attacks and the JFK assessment, and demonstrate how and why it has affected those who believe in it and how it has influenced their perspective on U.S. politics. By relying on the Chapman University Survey of American Fears in Wave 3, a representative national sample of adults was recorded and questioned if they believe the government is concealing information about the 9/11 attacks and the assassination of former President John F. Kennedy. I intend to uncover the reasoning behind the development of these conspiracy theories and determine how it has influenced U.S. politics, whether it will be a negative or positive attribution. By using the relationship between age and political party, as well as determining their beliefs in conspiracy theories, this paper will determine if political beliefs are influenced by one's belief in conspiracy theories. Doubt, skepticism and age are all factors I have hypothesized. As well as Americans who are republican and driven by strong conservative motives. The riots on January 6th is an example of how democracy today can be threatened by people who are motivated by belief in conspiracies. Conducting and investigating conspiracy theories is crucial because it will allow myself and fellow researchers to thoroughly understand current politics and how it can be threatened.

54. The Gender Divide: Exploring Gender Patterns of Perceived and Realistic Risks of Murder by Unknown and Known Perpetrators**Presenter(s):** Haley Forth**Advisor(s):** Dr. Ann Gordon

In a society where vulnerability is often associated with femininity, women are depicted as helpless victims, which in turn underscores the gendered challenges faced by both men and women. It is thought that gender disparities among women increase the likelihood of fear and risk of murder victimization. Rather, both men and women face homicide at significant rates where gender vulnerability is correlated to different types of violence. In this paper, I examine the complexities of gendered perceptions of perceived and realistic risks behind the fear of being murdered by someone you know and murdered by a stranger. Relying on the Chapman Survey of American Fears, a representative national sample of U.S. adults, I find a strong relationship between the fear of being murdered by someone you know and murder by a stranger to be significantly higher among women respondents, compared to male respondents. However, I find that men are more likely to be victims of stranger homicide, while women are more likely to be victims of intimate homicide. Based on the vulnerability theory, potential intimate partner violence perceives a higher risk of vulnerability among women than men. Along with this, the media covers cases of violence against women disproportionately, emphasizing perceptions of vulnerability to be higher among women compared to men. While women are perceived to have

higher risks of murder victimization due to gender disparities and media influence, the differentiation I find is that while the majority of intimate-related homicides are women, the majority of homicide victims are male. Understanding the disconnect between gender dimensions related to fear of being murdered by someone you know and by a stranger enables a nuanced understanding to develop gender-sensitive approaches to differential violence prevention.

55. Anxiety Surrounding Mass Shootings**Presenter(s):** Jazmyne Harmon**Advisor(s):** Dr. Ann Gordon

In 2023 there were 632 mass shootings in the United States. Mass shootings have been the cause of people's everyday anxiety; as time goes on, that anxiety has intensified. Relying on the Chapman Survey of American Fears, which is a national survey, I am investigating how afraid people are of being a victim in a mass shootings. There is evidence of a correlation between certain groups and their fear of being a victim. In this paper, I will be examining if anxiety is more frequent in groups of younger people, people who live in more urban areas, and those who check the media more often. The results I expect are that each of these groups will have increased anxiety because of the external factors they are surrounded by. Although, at the moment, ending all mass shootings does not seem possible, somebody should bring to attention that they are causing increasing anxiety levels in several groups of people. Mass shootings kill thousands of people each year, and currently there are not many laws preventing them.

56. The Intersection of Law and Culture: Native Hawaiian Rights in the Hawaiian Homes**Commission Act****Presenter(s):** Leia Hernandez, Kiana Cablayan-Kennedy**Advisor(s):** Dr. Ronald Steiner

The Hawaiian Homes Commission Act (HHCA) of 1920 is a crucial legislation for Native Hawaiian rights. The HHCA addresses the socio-economic disparities that Native Hawaiians face, especially after the overthrow of the Hawaiian Monarchy by the United States in 1893. The HHCA entails over 200,000 acres of land for homesteading to Native Hawaiians to preserve Native Hawaiian culture and self-sufficiency. Despite the purpose of the HHCA, multiple challenges have accumulated over the years - precisely the landmark case of *Kalima v. State of Hawaii*. *Kalima v. State of Hawaii* brought forth issues from 1959 through 1988 but became a civil lawsuit in 1991-2023. The problems highlighted in the cases involved land ownership rights and the lack of fulfillment by government obligations towards the Native Hawaiian population. Our research methodology entails interviewing Native Hawaiians deprived of their land ownership rights and conducting an extensive meta-analysis of court documents and published articles. In our research, we hope to uncover the systemic issues that have prevented Native Hawaiians from fully benefiting from the HHCA. We aim to identify the root causes of these challenges and understand how structural barriers such as bureaucratic inefficiencies, lack of resources, and discriminatory practices have contributed to the failure of the Hawaiian Homelands program. By

shedding light on these issues, we seek to address and ensure Native Hawaiians can access their rightful land ownership benefits. We aim to amplify the voices of those directly impacted by these injustices and empower them to advocate for their rights within the legal system. Ultimately, our research is driven by a commitment to social justice and equity for Native Hawaiians. By exposing and addressing the structural barriers to accessing their land rights, we can contribute to a more just society where Native Hawaiians can thrive and preserve their cultural heritage.

57. Fear of China's Economic Power: Social Media and Party Affiliation on Public Opinion**Presenter(s):** Cloe Hughes**Advisor(s):** Dr. Ann Gordon

American fear of China has escalated in the past few years, ranging from cybersecurity and counterintelligence to the US-China trade war. American in-group bias against China has steadily increased over the past two decades with sinophobia hitting an all-time high during the COVID-19 pandemic. While trade decisions are ultimately up to policymakers, public opinion is a large factor in international policy decisions, and American biases against the Chinese may adversely affect both the American and Chinese economies. In this paper, I will examine how factors including media consumption and partisanship impact American attitudes towards China's economy overtaking the United States' economy. Previous research has studied the effects of media consumption on US attitudes towards China as a whole—particularly towards China overtaking the US's hegemony. Though there is existing literature on the effects of media usage on US attitudes toward the US-China trade war, more research needs to be done on how media consumption impacts attitudes toward China's economy and how these effects differ amongst individuals from different political parties.

Relying on the Chapman Fear Survey from 2023, I found that higher consumption of conservative television like Fox News is correlated with increased fear of China's political and economic power. Furthermore, Republicans and Independents who watch Fox News are more likely to be afraid of China's economic power than Republicans and Independents who do not watch Fox News. Few strong Democrats consume conservative news sources, and overall Democrats are less likely to be afraid of China's economic power. Although the United States has claimed economic hegemony, Chinese-American trade is a vital component of US economic success—not to mention global economic growth. Unnecessary fear of China's economic growth promoted by the media may dangerously escalate international tensions in a world in which US interests are interlocked with China's.

58. Peacekeeping the Commons: UN Peacekeeping Moderates the Effects of Climate Change on Intercommunal Conflict**Presenter(s):** Cara Hunter**Advisor(s):** Dr. Patrick Hunnicutt, Dr. Andrea Molle

The effects of climate change have been increasingly linked to the risk of intercommunal conflict, as climatic shocks have been shown to increase resource scarcity. Policymakers and academics agree that effectively designed institutions are critical variables in preventing and mitigating

conflict, particularly in ecologically-fragile areas. However, there is a lack of evidence on the specific ways to strengthen institutions in the face of climate change, especially in conflict-affected settings. We argue that UN Peacekeeping Operations moderate the effects of climate change on intercommunal conflict by strengthening institutions governing common-pool resources (CPRs) to increase cooperation between communities sharing scarce resources. We test our argument by investigating whether local deployments of UN peacekeepers prevent violence between agriculturalist and pastoralist communities during climatic shocks. Our statistical analysis leverages high-resolution data on the timing and location of local deployments of UN peacekeepers, rainfall shocks, and conflict events in Mali between 2014 and 2018—where drought increasingly degrades shared grazing lands and the institutions used to promote their cooperative management. We find that the local deployment of UN peacekeepers mitigates the increased probability of conflict in agriculturalist communities that the onset of drought in neighboring pastoralist communities otherwise generates. Our results provide scholars and policymakers with quantitative insight into effective interventions that help communities experiencing climate-related resource scarcity bolster their CPR institutions and promote cooperation, decreasing intercommunal violence. As climate change continues to progress, understanding the actions that advance intercommunal cooperation in the face of resource scarcity is vital to prevent a heightened risk of conflict.

59. The Findings of Fear of Crime

Presenter(s): Paytyn King

Advisor(s): Dr. Ann Gordon

Depending on how the different fears of crime tend to the different genders and where people live, and by providing examples of who and what creates the different levels of this type of fear, crime is a universal thing that people will experience a fear of no matter how closely it is related to them. In this paper, I will examine the statistics to which the different types of crime and what types of level of fear relating to crime depends on the person and location that is involved. According to the Chapman University data set of fears 2023, I have noticed a strong relationship between rape crimes and murder crimes and the gender female. That is not to discount the relationship between murder crimes and the association with the gender male. However, I do find that the relationship between these specific fears and being a woman is stronger than most people realize. The fear of murder crimes to be specific affect women, whether that be caused by a related trauma, or from hearing the different types of murder crimes that are committed against women by different people on news platforms, in a way that some could argue makes them “paranoid”. Although not being fearful of some form of crime being committed against you is not realistic in everyday life, there are many ways that a person of any gender can be less paranoid about it happening to them at any moment, and feel safer moving through every day life.

60. Examining Voter Motivation in the 2020 Election**Presenter(s):** Sophia Kondo**Advisor(s):** Dr. Lewis Luartz

Despite voting's privileged state as a civic responsibility for all citizens that helps define the quality of a democratic republic, voter turnout has historically remained low during presidential elections. Researchers attempting to observe and analyze what motivates citizens to the polls have found that many psychological factors such as altruism, selfishness, social approval, and discrimination significantly impacted previous voter turnout. However, many additional explanations suggest political motives that are closely related to a specific period in time, including age, general interest in politics, and the effect of current events. Recently, increased political polarization has divided voters on political matters and has influenced their attention or inattention to campaigns and elections and their perception on events such as the COVID-19 pandemic. I argue that people may be also motivated to vote during times of crisis after experiencing the hostility and specific attention turned to politics and policy that accompany tense times. Using the ANES 2020 Time Series Study, I estimated the relationship between a voter's interest in politics and their approval or disapproval with the handling of COVID-19 to voter turnout in the 2020 election and calculated the relationship between each variable using regressions. The variables' overall weak and positive correlations suggest that each of these factors had a significant role in motivating American citizens to the polls during a presidential election that saw the highest rate of voter turnout in the 21st century. I found that the public's increasing disapproval of the handling of COVID-19 and their following of politics and campaigns affected their motivation to vote. Voter turnout remains a crucial aspect of political science as it should be in the interest of politicians, activists, and other citizens to motivate their fellow peers to feel a similar urgency and responsibility to vote even in times of peace in order to uphold and preserve a nation that justly reflects the will of its citizens.

61. Suppressing Your Opinions: The Effects of Partisanship and Social Media on Hiding Political Beliefs**Presenter(s):** Julianne Martin**Advisor(s):** Dr. Ann Gordon

In a generation so strongly dominated by political discourse and media access, individuals struggle to grasp their unique opinions when surrounded by the widely publicized beliefs of others. While these platforms provide a place for individuals to express their opinions and speak with those with similar points of view, they also serve as home for hostility. In this paper I explore the different factors that affect how often an individual chooses to hide their political beliefs in order to avoid conflict. This includes exposure to media and partisanship. There has been limited research done on this topic in the past and further exploration into the effects of social media, partisanship, and concealing political beliefs will lead to a better understanding of how these factors influence the world of politics and individuals in the United States. Using a data set from the American National Election Studies in 2020, a representative sample of U.S. adults, I expect to find a correlation between an individual's willingness to share their political beliefs and their

party affiliation. Increased partisanship on social media platforms have created powerful political echo chambers that reinforce existing beliefs and discourage individualized thinking, leading to a less understanding society. This calls into question the partiality of social media platforms and regulations that threaten free speech and influence public discourse and democratic processes.

62. Navigating Islamophobia: Exploring Attitudes Towards Muslim Immigration and Policing**Presenter(s):** Devansh Mehta**Advisor(s):** Dr. Ann Gordon

Since the September 11th terrorist attacks, Islamophobic dispositions in the United States have surged within its political and societal arenas. In this paper, I will examine two specific dimensions of Islamophobia such as ceasing immigration from Muslim countries and increased police presence in Muslim neighborhoods and how those behaviors may be influenced by political affiliation, religious preference, education level, and race/ethnicity in addition to the ways respondents consume news. Relying on the Chapman Survey of American Fears, a representative national sample of U.S. adults completed a forty-question survey in which I tested the above independent variables to see their individual effects on the two dimensions of Islamophobia being researched. Among the interesting findings were that many respondents who identified as White, Republicans or Christians or both agreed that there should be increased police presence in Muslim neighborhoods, or the United States should cease all immigration from Muslim countries or both, proving a noticeable correlation between the aforementioned factors and Islamophobia. It was also discovered that education may not have as big of a factor on influencing Islamophobia as I had expected. Understanding Islamophobia, the role it plays in American politics and society, and the major influencers of this hateful behavior are crucial towards preserving the freedom and equality of all citizens and noncitizens of the United States.

63. Fear of Walking Alone at Night**Presenter(s):** Janet Virk**Advisor(s):** Dr. Ann Gordon

Do you ever feel afraid to step outside when it's dark outside? In this research, I will dive deeper into what aspects make individuals afraid of walking alone as I expect to find that fear has risen as violence in both the U.S. and globally has increased in 2023. In this research, I expect to find that your gender, where you live, income, if you have children, and what type of home you live in will affect your fear of walking alone at night. Using data sets from the Winnipeg Area Study of 4050 randomly selected adults, I find a strong relationship between the rising crime rate and individuals fearing walking alone at night. This is why I expect the gender of an individual can cause them to be more afraid because you can be considered more of a target to criminals if they view you as inferior. The vulnerability aspect of being a target due to gender is something I expect to find in my research. Other aspects, such as age, can also make an individual seem like an easier target since they are less likely to fight back against criminals. By completing this research, I will contribute to understanding why and how accurate individuals' fears are about walking alone at

night. This research will show why certain individuals feel more afraid to walk alone at night, how factors about them contribute to their fears, and how society is affected by fears.

64. From JFK to the Moon Landing: Conspiracy Theories and Voting Behavior in the U.S.

Presenter(s): Grace Nordini

Advisor(s): Dr. Ann Gordon

Conspiracy theories are deeply rooted in distrust towards societal institutions, such as the government, and are a method by which a group of individuals attempt to understand concepts that are otherwise inexplicable. The execution of one's civic duty by registering and voting is an essential factor in a democratic society; thus, a lack of trust in the government or democratic system may act as a deterrent to individual civic involvement. In this research, I examine the extent to which an individual's belief in conspiracy theories impacts their political involvement in the form of voting and voter registration. Relying on the Chapman Survey of American Fears, a representative national sample of U.S adults in 2019, I find a moderately strong relationship between an individual's belief in conspiracy theories and their voter participation. I find that among individuals who believe in conspiracy theories, their likelihood of voting, evident both within voter registration and intent to vote, significantly decreases. I also find that belief in one conspiracy theory increases the likelihood of believing in other conspiracies, displaying deeply rooted distrust of the government embedded into this behavior. Conspiracy theories pose a serious threat to democracy as they question the trust and integrity of the government and thus discourage individuals from participating in their civic duty.

65. The Effects of Media on COVID-19 Attitudes

Presenter(s): Aizzy Portillo

Advisor(s): Dr. David Shafie

This paper will investigate the impacts of exposure to various media sources on political beliefs, trust in government, and willingness to participate in the political process. In a time when social media and internet information are abundant, it is critical to recognize the consequences of coming across deceptive political content to mislead democratic systems. Understanding the impact of disinformation on people's views and behaviors is essential, especially in light of its growing accessibility in the digital age. This study explores the effects on knowledge and attitudes about COVID-19 by analyzing national public opinion data collected by the University of California, Irvine (UCI) COVID-19 Study during the pandemic in 2020-2021. Additionally, I will examine the relationship between the use of social media about COVID-19 and its effect on trust in public health. This will help us understand the exposure to political misinformation and disinformation during the COVID-19 pandemic. The expectation for this research is that people who rely on social media during the pandemic are less likely to trust public health institutions. As the vast and often unregulated dissemination of information on these platforms may lead to confusion and misinformation of confidence in established health authorities.

66. A Cross-National Analysis of Support for Climate Action in Europe

Presenter(s): Lucy Preston

Advisor(s): Dr. David Shafie

Climate change has been called the most significant challenge of this generation, yet it is not a priority for many people. Some of this variance has been attributed to ideology and partisanship. The literature on the effects of wealth (both individually and nationally) on climate concern is particularly unclear. Part of the issue at hand is constructing a model that distinguishes knowledge and belief in climate change from true concern— that is, the extent to which someone believes that climate change presents a real threat and that climate action should be a key political priority. To address this gap in the literature, I will construct an index of climate change concern based on data from the Eurobarometer Survey, incorporating respondents scores on questions about how climate change should be prioritized, including the EU’s role in fighting climate change, if combating climate change should be a policy priority, if it should be a focus of upcoming elections, and if they considered climate change to be the most serious problem facing the world. The Eurobarometer survey is a multinational public opinion survey conducted in the 27 countries of the European Union along with Croatia, Turkey, the Turkish Cypriot community, and the Former Yugoslav Republic of Macedonia. Scores from this index of climate concern will then be analyzed alongside both income as a measure of personal wealth, and against GDP for their country as a measure of national wealth. This analysis aims to answer the question: what explains varying concern about climate change, even given belief that it is happening? I anticipate that people from wealthier countries will be more likely to score high on the climate concern index as economic policies and other policy priorities may be less pressing but that individual wealth will be negatively correlated with concern as wealth can insulate individuals from climate change’s effects.

67. Which Orange County Cities Prioritize Climate Action Plans, and How Does Environmental Justice Influence Their Agendas?

Presenter(s): Lesly Perez

Advisor(s): Dr. David Shafie

This study will examine the environmental agenda set in all different cities in Orange County and explore the role of environmental justice. The central research question focuses on identifying which cities are more environmentally conscious and analyzing the extent to which environmental justice principles are integrated. I hypothesize that cities with higher education rates and higher voter turnout will be more proactive when making climate action plans. This research will contribute to a broader area of environmental politics by bringing awareness to local government in Orange County and if there are any social equity concerns. The method approach will be to qualitatively look at the current climate action plans and environmental policies in Orange County cities. A quantitative approach will be taken by looking at each city’s population for Orange County. I will also examine factors such as race, income, political involvement, and education, and I will be conducting a data set based on data provided by the city and census data. The expected results of this study will include identifying

which cities have environmental climate actions and giving an insight into environmental justice. I will also examine the relationship of quantitative factors and how they relate to cities with climate action plans. The study will contribute to sustainable development by identifying gaps and prompting fairness in Orange County. I will also reference literature on sustainability and add to their past studies. The study will conclude by emphasizing the importance of integrating environmental justice into local environment agendas in Orange County cities to promote equitable and sustainable development.

68. Factors in the Decision-Making of the Party Representation**Presenter(s):** Levi Ramirez Garcia**Advisor(s):** Dr. Lewis Luartz

What factors impact the decision to run as non-partisan over one of the major US parties? It is essential to analyze this phenomenon because it concerns everyone as a society to determine the real motivations of candidates and the party they represent. The candidates' ideologies and how the candidates feel representing the parties' ideologies are the main reasons for choosing non-partisan over one of the major US parties. This happens because humans tend to work where they feel comfortable and in a place with the same values and ideologies as them; in the case of candidates, it is the same; they look to represent a party with the same ideologies as them. The dataset is Campaign Finance in Local Elections: An Eleven City Study, 1989-2007, which, thanks to this dataset, people can be able to understand more about politics and aspects around it. It is essential to know how politics works because it concerns everyone; it is necessary to analyze how the money is spent on campaigns and how much is done to benefit us because politicians work for us, which means we need to have a good representative. Data shows that the likelihood of candidates running non-partisan might decrease according to the increase in office, with a robust regression between independent and dependent variables of -0.035738 . The data suggest that higher-level offices require more power, resources, support, and visibility, which may lead candidates to align with a political party for increased popularity and with intentions to align with the most likely to win the party.

69. An Examination of the DMCA's Legal Shortcomings and a Case for Reform**Presenter(s):** Daniel Rodriguez**Advisor(s):** Dr. Ian Barnard

This presentation critically evaluates the Digital Millennium Copyright Act (DMCA), spotlighting its exploitation and abuse across various sectors. This presentation reveals that a significant fraction of DMCA takedown notices are deployed competitively rather than for copyright defense, with a notable portion targeting rival businesses and incorporating baseless copyright claims. The presentation delineates three predominant misuses of the DMCA: the vague legal status of fair use leading to inconsistent jurisprudence, an overemphasis on DMCA enforcement that disadvantages smaller entities through erroneous content removals, and the absence of punitive measures for false allegations, which facilitates censorship and unfair competitive practices. Through this analysis, the need for urgent legislative reform is articulated, aiming to balance

copyright protection with fair use, curtail abuses, and establish mechanisms for redress in cases of unjust takedown actions. This presentation advocates for a recalibration of the DMCA to ensure it serves its original purpose of copyright protection while preventing its misuse for competitive advantage or censorship.

70. The Effect of Media Engagement and Age on Voter Turnout**Presenter(s):** Erick Rodriguez Cervantes**Advisor(s):** Dr. Lewis Luartz

How do differing levels of media engagement affect voter turnout with regards to age? Previous research and data collection has focused on local media and its role, media's role on local government, and media in developing countries and their effects on voter turnout. This differentiates itself by placing a focus on people's engagement to general media and its impact on presidential election voter turnout with the additional focus of age. I argue that the more engaged an individual is in the media, the less likely they are to vote in elections. The older the individual is, however, the more likely they are to vote. An ordinarily least squares regression was used on data from The Comparative Study of Electoral Systems, module 5, for the election year 2020 in the United States. The findings suggest that when individuals are more engaged in media, they are less likely to vote, yet the older they are, the more likely they are to vote.

71. What Impact did Perceptions of Wealth Disparities Have on Voter Turnout in the U.S. 2020 Election?**Presenter(s):** Melissa Rosario**Advisor(s):** Dr. Lewis Luartz

What Impact did perceptions of wealth disparities have on voter turnout in the U.S. 2020 election? Existing literature regarding the U.S. 2020 election has extensively explored factors such as demographics, political attitudes, and other campaign strategies, yet it often overlooked the influence of the perception of inequality. By neglecting to analyze the impact and influence of income gap perceptions, existing research fails to truly capture how socioeconomic disparities may shape vote behavior and contribute to electoral outcomes, thus leaving a crucial gap in our understanding of democratic participation dynamics. I argue that the perception of income inequality significantly influenced and impacted voter turnout regarding the U.S. 2020 election, as individuals experiencing a heightened awareness of income disparities were more motivated to participate in the electoral process to address these socioeconomic concerns and advocate for change. In this research, I utilized Ordinary Least Square regression to investigate the impact of income gap perception on voter turnout in the U.S. 2020 election using the ANES 2020 time series study, employing correlation analysis to explore the strength and direction of the relationship between voter turnout (U.S. 2020 election) and the perception of income inequality. The empirical findings suggest a negative and weak correlation between these variables. This implies that as the perception of income inequality increases, voter turnout tends to decrease slightly, although the relationship is not particularly strong. The relationship between income gap perception and voter turnout sheds on the complex dynamics shaping democratic participation,

policymakers, and advocacy groups aiming to address socioeconomic discrepancies and enhance civic engagement for future elections.

72. Disentangling Trump's Electoral Support in 2016 and 2020

Presenter(s): Timea Steingart

Advisor(s): Dr. Lewis Luartz

How have perceptions of economic conditions and immigration attitudes changed Donald Trump's electoral support between the 2016 and 2020 presidential elections? In 2016, many Americans were caught by surprise when Donald Trump became the President of the United States, winning the election against former Secretary of State Hillary Clinton. Since then, many theories have been put forward trying to explain these election results. Many have left scholars with more questions than answers. Recognizing that a multitude of variables need to be taken into account, a narrower focus could be helpful. This study argues that Donald Trump utilized declining perceptions of economic well-being and fears of rising immigration to get people to vote for him in 2016, but this did not work out in 2020 because he was the incumbent during that election. Declining economic perceptions and fears of immigration can drive people toward political figures who promise change and protection, but the effects should differ by incumbency. By examining the connection between public perceptions of economic conditions and immigration attitudes and their influence on Trump's election results between 2016 and 2020, the research aims to uncover the extent to which these factors contributed to his electoral success. I examine the data from the American National Election Studies (ANES) Time Series Cumulative Data File for 2016 to 2020. Preliminary findings suggest that perceptions of worsening economic conditions helped Donald Trump in 2016, but it hurt him in 2020. However, perceptions of immigration helped him in both elections. Since Donald Trump will be running in the upcoming 2024 presidential election, this research can offer valuable insights into what factors could be relevant in driving voter support.

73. Hairitage: The Dynamics of Hair in Afro-Latinx Culture

Presenter(s): Emily Veloz

Advisor(s): Dr. Minju Kwon

In countless Afro-Latinx households, curls are depicted as offensive and unruly hairstyles. A deeply rooted history with turbulent colonial connections has shaped the textured hair experience today, creating a troublesome relationship between Afro-Latinx individuals and their hair. How has colonization influenced modern prejudices surrounding textured hair in the Afro-Latin Caribbean and how have current movements developed in rejection of these standards? Along with celebrating the rise of movements to embrace the *pajón* (Colloquial Spanish for “messy” or “big” hair), this project aims to deconstruct the historical narratives, cultural influences, and contemporary contributors that have influenced the construction of this negativity.

Through an exploration of the dynamics of Afro-Latinx culture, I argue that in light of colonial influence on the Afro-Latin Caribbean, emerging movements have found community and

empowerment through using curly hair care as a collective challenge of previous norms. By navigating current motions towards empowerment through a postcolonial lens, the project contributes to the literature of the Afro-Latinx identity by demonstrating the impact of colonial legacies, societal norms, and beauty standards on perceptions of curly hair and how contemporary movements have developed curls as a symbol of independence.

74. Being Ill Comes at a Price**Presenter(s):** Zoe Zadah**Advisor(s):** Dr. Ann Gordon

The purpose of this paper is to relate Americans' fear of becoming seriously ill with their fear of financial vulnerability (i.e., high medical bills, unemployment, and paying rent). While there are systems in place meant to absorb the shock of rising healthcare costs in certain communities, financially vulnerable populations bear the effects more heavily than the rest. Using data gathered from the Chapman Survey of American Fears, a representative sample of U.S. adults, I have compared the fear of becoming seriously ill to other fears centered around the economy, income, and finances. The results suggest that financially vulnerable Americans, Americans who fear their ability to afford to pay rent, are afraid of high medical bills, and scared of unemployment, are more afraid of becoming seriously ill. Research supports this link with evidence of costly medical insurance and unaffordable hospital bills in American society. The fear of illness remains a continuous threat for people with more financial vulnerability. My goal is to draw light on the dilemmas that many Americans face and inspire an argument for closing in on the income inequality gap, which is so that all people can be healthy contributors to our society and help our nation grow strong.

Psychology**75. Alcohol Use Disorder: Behaviors and Comorbidities in Recovery****Presenter(s):** Ryann Schochet**Advisor(s):** Dr. Desiree Crèvecoeur-MacPhail

The purpose of this study was to determine the connection between length of sobriety, for people with alcohol use disorder, and their experience with related disorders and traits. Impulsivity, compulsions, obsessions, generalized anxiety, panic attacks, and neuroticism have all been researched in relation with the development of alcohol use disorder and drinking behaviors. This study strived to determine the presence of these symptoms and behaviors within one's recovery, and their effect on one's overall sobriety. This study compared self-reported symptoms of Alcoholics Anonymous members to their current length of sobriety and past relapses. Symptoms of Attention-deficit/hyperactivity disorder, Obsessive Compulsive Disorder, Generalized Anxiety Disorder, and Neuroticism were recorded. Assuming the results are significant, the data indicates that the longer someone with Alcohol Use disorder is sober, they will experience more symptoms of OCD and ADHD. As a person's sobriety time increases, they will become less neurotic. Those

with untreated anxiety disorders are more likely to relapse than those in treatment for anxiety or do not show symptoms of anxiety. These results could reveal that symptoms of OCD, ADHD, and neuroticism significantly change as someone with alcohol use disorder is experiencing recovery. If these symptoms were monitored in immediate rehabilitation (within the first couple weeks of recovery) and throughout recovery (as one's sobriety time grows), stress related relapses could be prevented. Results could also indicate that people with alcohol use disorder, suffering with untreated anxiety are much more likely to relapse. This supports the importance of substance use and anxiety-based therapy for those in recovery. This study requests that alcohol abuse rehabilitation services provide accessible therapy and consistent personality, ADHD and anxiety-related disorder screenings to aid in one's recovery.

76. The Relationship between Pornography and Socially Dysfunctional Behaviors

Presenter(s): Gabriel Tolo

Advisor(s): Dr. Desiree Crevecouer-MacPhail

Technology and internet use have become more common and impactful for adolescents, and therefore, sexual maturation and exploration have been increasingly influenced by online pornographic content. Though the relationship between pornography and mental health issues has been researched, pornography's impact on social development is not entirely understood. Prior research has found a correlation between pornography and socially dysfunctional behaviors, such as worse mental health, decreased relationship satisfaction, and increased acceptance of attitudes that perpetuate violence against women (Perry, 2018) (Dwulit & Rzymiski, 2019). (Haid et al., 2010). However, it remains undetermined whether pornography use is a causal, reciprocal, or resulting behavior from inadequate social function. Wery et al. (2020) outline the Self-Esteem and Online Sexual Activity theory, which explains that the rate of consumption of online sexual activities (such as pornography, sex webcams, looking for sexual partners online, playing sexual video games, etc.) correlates with low self-esteem, social anxiety, and prevalence of OSA use. The current study will investigate factors correlating to increased pornography use and how pornography use can perpetuate socially dysfunctional behaviors (i.e., isolation and decreased social relationships). By better understanding how pornography can impact social behaviors, in particular, how pornography use impacts adolescents, we can more effectively manage and discuss pornography use. As it currently stands, most individuals see pornography as either a healthy form of sexual expression or as a harmful, corrupting force. By understanding the effects pornography has on social behavior, we can create a strategy to enhance the positive effects on social behavior or mitigate the harmful effects of pornography. Furthermore, we can also impact how the rise of internet pornography will impact the sexuality and sexual expression of younger generations.

77. The Perception of Children as Reliable Eyewitnesses

Presenter(s): Shelby McDonald

Advisor(s): Dr. Desiree Crevecoeur-MacPhail

Eyewitness accounts have been integral to the criminal justice system. However, given that not every criminal case has physical forensic evidence that is available or admissible, the reliance on eyewitness accounts conjures questions about believability. This is an important area of research because the over-belief of witnesses may lead to wrongful convictions, yet under-belief may leave the victim without justice. The current study investigated how child-witness age, race, role as a witness (bystander versus victim), and the gender of the juror influenced the perception of child eyewitnesses through the lens of the Witness Credibility Model. Participants were presented with the testimony of a child bystander or victim, who varied in age and race, and were asked to rate how believable they found the child to be. This study hypothesized that participants would find the younger children, the Black children, and the child bystanders as less believable than the older children, the White children, and the child victims. Additionally, female participants were predicted to believe the child eyewitnesses more than the male participants. The results of this study suggest that the belief of eyewitness testimony may be circumstantial and that the reliability of eyewitnesses depend not only on the eyewitness themselves, but also the people perceiving them, which calls forth the need to eliminate bias in the criminal justice system by enforcing diverse juries.

78. Factors of Childhood Exposure to Intimate Partner Violence and Recurrence in Later Life

Presenter(s): Clara Hunt

Advisor(s): Dr. Desiree Crevecoeur-MacPhail

Intimate partner violence (IPV) is a historically taboo subject despite its prevalence in society. As of 2022, research by the CDC suggests that 47.3% of American women and 44.2% of American men have experienced some form of physical violence, contact sexual violence, and/or stalking. Given these numbers, it is likely that many individuals have had similar experiences or know someone who has. The social learning theory has consistently been applied to explain why IPV behaviors tend to be cyclic. Thus, this theory aids in the understanding of possible factors that may contribute to the likelihood of a child later perpetrating or becoming a victim of IPV following childhood exposure. Possible variables that could influence whether a child is likely to perpetrate or fall victim to IPV could be the role of the same-sex parent as perpetrator or victim, the role of the parent the child feels greater identification with as either perpetrator or victim, the child's age at first exposure to IPV, and if they were raised in a home with someone who had symptoms corresponding to an alcohol use disorder (AUD). Given these factors of IPV and its widespread presence, it is valuable to better understand the traits that impact the intergenerational transmission of IPV. Once potential statistically significant relations between these factors and IPV perpetration/victimization are determined, it will be possible to better implement policies, allocate funding, and create more targeted programs to minimize the implications of these risk factors in the perpetuation of IPV.

79. What Else Can Teachers Teach Us? Burnout & Compassion Fatigue in High School**Teachers****Presenter(s):** Laney Logue**Advisor(s):** Dr. Desiree Crevecoeur- MacPhail

Teaching is a profession that is incredibly valuable to society; however, education is often underfunded, understaffed, and under-resourced (Department of Education, 2019). Thus, it is important to consider how teachers' job satisfaction and self-efficacy levels may be affected by factors such as burnout and compassion fatigue. Not only are job satisfaction and self-efficacy important for well-being and contentment but they have also been shown to have a large effect on one's ability to perform well in their occupation (Rachman, 2021). This study took a cue from Bakker and Demerouti's (2006) Jobs Demand-Resources Model, which proposes that burnout and stress result from a combination of high demands and low resources. According to this model, in a career as demanding as teaching, this occupational demand must be balanced by sufficient resources to minimize burnout and maximize one's job performance. The goal of this study was to investigate how teachers' self-efficacy, burnout, and compassion fatigue are affected by the support they receive from the school at which they work. In order to achieve this goal, an online survey was administered to teachers at Orange County high schools. The resulting data gave insight into the relationship between stress and well-being in high school teachers. In particular, the data elucidated the various factors that can impact teacher burnout and job satisfaction, thus providing school board members, school administrators, and teachers with the tools to improve the experiences of both students and teachers.

80. The Negative Impacts of Workaholism on the Physical and Psychological Well-Being of**University Students: A Comparative Analysis of Two Samples****Presenter(s):** Brian Walker**Advisor(s):** Dr. John Hunter, Dr. Desiree Crevecoeur-MacPhail

In recent years, there have been elevated pressures in the workplace that have led to the increased prevalence of a phenomenon referred to as workaholism. Workaholism is defined as excessively working to the point of disturbance and/or interference in areas of physical health, mental health, and interpersonal relationships. Undergraduates may be placed under similar, if not greater, pressures than those in the workforce and might be experiencing negative psychological and physical effects of workaholism. To determine the relationship between workaholism and well-being among undergraduates, two studies of demographically-diverse college students were conducted. The first study was conducted through Prolific with a sample that was nationally representative of the current population of the United States in terms of both ethnicity and sex. The second study was conducted through Chapman University's Research Experience Management System with solely Chapman University undergraduate students. Results for both studies are pending. These were two of the few studies that looked at the impacts of workaholism in a collegiate population or academic setting. Furthermore, prior to these studies, there were almost no studies that looked at the relationship of workaholism and physical health. These findings could demonstrate that workaholism impacts both psychological and

physical health in undergraduate college populations. This association may serve as a foundation for the development of novel interventions that may lessen negative impacts of workaholism on the well-being of college students.

81. Triangulating Neural Correlates of Consciousness**Presenter(s):** Sarah Quach**Advisor(s):** Dr. Aaron Schurger

For decades, neuroscientists have been trying to find a plausible explanation for how our subjective experience could emerge from processes in the brain. Early work by Christof Koch and Francis Crick on the neural basis of consciousness argued that consciousness can be approached empirically by identifying the neural correlates of consciousness (NCCs). Past experiments attempted to identify the NCCs using common manipulations like backward masking to interfere with conscious perception. Although the use of this method suggests many different candidate NCCs, in theory using any one manipulation alone to identify the neural processes that define consciousness is limited. It becomes difficult to determine which candidate NCCs are specific to the manipulation, and which are general properties of consciousness. The primary aim of this project is to identify more generalizable NCCs, by using a different and more innovative approach: the “triangulation” method. Using electro-encephalography (EEG) to record brain data, this approach will compare the results of three different manipulations of visual perception: backward masking, dichoptic color fusion, and inattention blindness. By triangulating across these three, we will assess the overlap in putative correlates in response to the very same visual stimuli and in the same human subjects. In particular, this project will focus on the representational stability of neural responses to sensory stimuli as a candidate correlates to classify data from individual trials as “seen” or “unseen.” Preliminary data shows that neural stability for certain paradigms may triangulate, specifically certain features of evoked potentials. Generally seen stimuli for certain paradigms seem to be more stable than unseen. The data will provide us with a unique assessment of the overlap among NCCs and allow us to identify NCCs that triangulate across all manipulations of visual perception. Using data-driven machine-learning analyses, this approach may lead us one step closer to identifying the genuine neural correlates of consciousness.

82. The Impact of Childhood Trauma on Adult's Attachment Style in Romantic Relationships.**Presenter(s):** Luella Rubin-Wylie**Advisor(s):** Dr. Desiree Crevecoeur-MacPhail

Repeated and complex childhood trauma can have devastating effects on individuals and their future relationships. Attachment styles are developed in the early years of an individual's life, and adverse experiences during these early years can negatively affect the attachment style that an individual develops. Various traumatic experiences during childhood, such as abuse/neglect, death/separation of parent, or witnessing domestic violence, may lead individuals to develop insecure attachment styles in their future romantic relationships. In many instances, experiencing childhood trauma can result in the development of an insecure attachment style of anxious, avoidant, or disorganized. The aim of this study was to examine the impact of repeated childhood

trauma on the attachment style of adults in their romantic relationships, their relationship satisfaction as well as their likelihood of experiencing intimate partner violence. To investigate this, approximately one hundred college students participated in completing a series of surveys based on their childhood experiences and current dynamics within their romantic relationships. The implications of this study could offer therapists insights into the correlation between childhood trauma and attachment style in adulthood. By understanding the devastating effects of childhood trauma on attachment style in adult romantic relationships, therapists can develop more effective strategies to work with patients through their childhood trauma, possibly alleviating the development of insecure attachments within adult romantic relationships.

83. Effects of Childhood Emotional Abuse on Eating Behaviors and Body Image: The Role of Self-Discipline

Presenter(s): Kayla Queen

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

Many children are mistreated by their caregivers and authority figures in the form of verbal abuse, emotional rejection, and exceedingly high expectations. The child begins to internalize the abusive comments which instigate feelings of shame, unworthiness, and self-critique, which eventually manifests into body dissatisfaction and the associated disordered eating patterns that come with that. In response to these emotionally abusive authoritative figures, some children develop rigid self-discipline tendencies in an attempt to exert control and cope with the negative feelings that arise. People with restrictive eating disorders abuse their extreme self-discipline to restrict food intake as a way to avoid processing traumatic memories and trigger a short-term sense of relief by losing weight and feeling in control. The purpose of this study is to examine whether past childhood experiences of three subtypes of emotional abuse - verbal abuse, emotional rejection, and exceedingly high expectations - lead to increased dietary restraint and body image concerns and whether self-discipline mediated these outcomes. Adult women (N=813) completed validated measures of these constructs via MTurk. Consistent with the hypotheses, each of the three types of abuse were associated with lower body satisfaction, higher preoccupation with weight, increased eating restraint, and greater self-discipline ($r_s = .12-.28$). In regression analyses, recollections of abuse and self-discipline were significant predictors of appearance evaluation and eating restraint. Utilizing therapeutic techniques designed to help work through childhood trauma (e.g., EMDR) might reduce the client's urges to cope through restrictive eating and improve body image as the unhealthy experiences of the past become less debilitating.

84. Active Coping and Positive Reframing are Associated with Positive Emotions

Presenter(s): Catelynn Ruelos, Shannon Gerdts

Advisor(s): Dr. David Frederick

The COVID-19 pandemic was an unprecedented stressful event that required people to utilize coping skills to manage their distress. Research on coping strategies has emphasized the importance of utilizing adaptive strategies to manage distress around negative life events. The

purpose of this study is to investigate the relationship between positive emotions and coping strategies, particularly focusing on problem-focused coping. In Spring 2021, one year into the COVID pandemic, we examined which specific coping behaviors were linked to positive emotions during this stressful period among N = 1817 MTurk participants. Specifically, we used the State Adjective Questionnaire as a measure for positive emotions and select items from the Brief-COPE to assess coping strategies. We found that two specific coping strategies were most strongly associated with experiencing positive emotions: positive reframing and active coping. Surprisingly, some well documented coping strategies, such as seeking informational support, were less associated with positive emotions. These findings expand our understanding of the relationship between specific coping behaviors and positive emotions. There may also be practical applications for these findings, such as teaching people to focus more on the positive reframing and active coping skills rather than the use of informational support when trying to manage some types of emotional distress.

85. Speak Up! Challenging Microaggressions Against LGBTQ+ Individuals by Intervening as an Ally

Presenter(s): Sean McCallum, Amber Sharma, Quindon Robinson, Manya Dhupar, Shelby Rende

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

Background

Individuals with LGBTQ+ identities encounter microaggressions on a daily basis, which has been linked to low self-esteem and academic performance (Keels et al., 2017). As such, efforts to reduce microaggressions on college campuses have become increasingly emphasized. Unfortunately, responses to improve campus climate often lack a theoretical basis. This study tests the effectiveness of a new workshop intervention that teaches college students evidence-based strategies to engage as an ally (Moors et al., 2020). We examined participants' ability to identify microaggressions and their willingness to engage in helpful allyship behaviors before and after the workshop. We hypothesize that participants will report greater awareness of microaggressions towards LGBTQ+ individuals and will be more willing to engage in ally behaviors towards LGBTQ+ individuals when witnessing a microaggression after completing the workshop.

Method

A total of 133 students took part in the workshop. We surveyed participants about the perceived benefit of reducing microaggressions and their ally behaviors before and after the workshop. In addition to pre-post surveys, we also conducted semi-structured in-depth interviews with six workshop attendees (5 women, 1 man) to understand learning outcomes and ally behaviors better. In these interviews, we provided a case study aimed at addressing participant's responses to a misgendering scenario of someone who identifies as non-binary. Participants were asked about how they would respond.

Results

Preliminary results from the pre-post surveys indicate a slight increase in awareness about LGBTQ microaggressions and a greater willingness to intervene as an ally for LGBTQ+ victims of

microaggressions after attending the workshop. Across the interviews, participants were able to identify a microaggression related to misgendering as a part of the case study. Moreover, participants were able to articulate several evidence-based strategies from the workshop for how they would intervene if confronted with microaggressions based on LGBTQ+ identities.

86. Empowering Voices: Utilizing a Workshop-Style Intervention to Encourage Ally Behaviors among College Students

Presenter(s): Amber Sharma, Sean McCallum, Quindon Robinson, Manya Dhupar, Shelby Rende

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

BACKGROUND

Efforts to reduce microaggressions on college campuses have become increasingly emphasized. Unfortunately, responses to improve campus climate often lack a theoretical basis. This study tests the effectiveness of a new workshop intervention that teaches college students evidence-based strategies to engage as an ally (Moors et al., 2020). We examined what participants perceived as social benefits of reducing microaggressions and their willingness to engage in helpful allyship behaviors before and after the workshop. We hypothesize that participants will report greater awareness of the benefits of reducing microaggressions and will be more willing to engage in ally behaviors when witnessing a microaggression after completing the workshop.

METHOD

133 students have taken part in the workshop. We surveyed participants about the perceived benefit of reducing microaggressions and their ally behaviors before and after the workshop. In addition to pre-post surveys, we also conducted semi-structured in-depth interviews with six workshop attendees (5 women, 1 man) to better understand learning outcomes and ally behaviors. In these interviews, we provided two case studies describing a scenario where someone commits a microaggression about another person. Then, participants were asked about how they would respond.

RESULTS

Preliminary results from the pre-post surveys indicate an increase in awareness of the social benefit of reducing microaggressions (pretest mean was 6.00 (SD = 1.14) and posttest mean was 6.13 (SD = 0.99), and a greater willingness to speak up and defend victims of microaggressions after attending the workshop (pretest mean was 2.75 (SD = 1.23) and posttest mean was 3.39 (SD = 1.07). Across the interviews, participants who identified with the marginalized identity of the victim were likely to speak up and defend the victim as well as articulate the benefits of ally engagement. Another theme identified from the interviews was that participants who were intrinsically motivated to be an ally tended to speak up for the victim.

87. The Associations of Colorism to Body Image and Disordered Eating Among Indian Americans

Presenter(s): Amber Sharma

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

Body image theories tend to use the experiences of White women as a framework for measuring body dissatisfaction, and do not incorporate the unique experiences of racial minorities as a core component of the theory that are central to understanding their body images. Few studies have examined the unique processes related to racial identity that are also involved in body dissatisfaction among racial minority populations. This study not only investigates the relationship between colorism and disordered eating among Indian Americans, but also examines how this relationship is moderated by BMI levels, and can further exacerbate the minority stress experienced by Indian Americans, ultimately leading to more weight gain and discrimination. Using multiple regression analysis, we tested a model that combines key elements from objectification theory, minority stress theory, and the cyclic obesity/weight-based stigma model to examine the association between colorism and binge eating, the mediating effects of body shame and stress in this association, and the moderating effects of BMI levels. We found a strong positive correlation between colorism and binge eating, and BMI moderated this link.

88. A Content Analysis of Common Relationship Challenges Among People Who Practice Polyamory

Presenter(s): Kalyn Su, Sophie Camilleri

Advisor(s): Dr. Amy Moors, Dr. Patrick Boudreau-Alguire

Approximately 1 out of 9 people in the U.S. have engaged in polyamory (Moors et al., 2021), a relationship type in which all involved agree to have multiple romantic and/or sexual partners. Despite the commonness of polyamory, there are many assumptions about the disadvantages of polyamory. However, research has yet to examine common challenges that people engaged in polyamory endure. The goal of the present qualitative study was to identify the disadvantages and stressors of polyamory in order to shed light on the unique experiences of people in these relationships. 219 adults who were currently in a polyamorous relationship were asked “what are the disadvantages of polyamory” and asked to report a maximum of five responses. The study team developed a codebook of 14 identified themes (e.g., jealousy, emotionally demanding type of relationship, stigma and negative evaluations, and health concerns). Two independent coders were trained on the codebook and iterative feedback was provided after the first 30 participants’ data were coded. Content coding is currently ongoing and expected completion is mid-April; current inter-rater reliability is at 74%. The goal of this study was to identify common disadvantages of engaging in a polyamorous relationship. The results of the present study will benefit mental health professionals who are attempting to treat and support individuals who engage in polyamory, as many of these challenges may be presenting concerns in a therapeutic setting.

89. The Moderating Effect of Socioeconomic Status and Walkability on the Efficacy of Physical Activity Intervention Strategies**Presenter(s):** Analisa Vavoso**Advisor(s):** Dr. Vincent Berardi

To enable physical activity (PA) interventions to better tailor procedures to participant characteristics, we investigated the role of neighborhood socioeconomic status (SES) and walkability on the differential effectiveness of adaptive versus static activity goals (AG vs. SG) and immediate versus delayed (IR vs. DR) reinforcement in a PA trial.

Data was collected as a part of the WalkIT Arizona study, where healthy, inactive adults ($n = 512$) were instructed to wear an accelerometer daily for one year and were provided with daily goals for moderate-to-vigorous PA (MVPA). The intersection of goal types (adaptive and static) as well as reinforcement types (immediate and delayed) created four groups. Participants were block-randomized into one of four groups according to high/low neighborhood walkability and high/low neighborhood income. A linear regression model was fit to the data to predict mean daily MVPA based on the interaction of intervention condition and neighborhood walkability/income quadrant.

Each neighborhood walkability/SES quadrant level and intervention group interaction was statistically significant. In high walkability/high SES and low walkability/high SES groups, daily MVPA was highest for the AG/IR intervention and lowest for the SG/DR intervention ($\beta = 12.18$, $p < .001$; $\beta = 9.11$, $p < .001$, respectively). In the low walkability/low SES group, MVPA was also lowest for the SG/DR intervention but was highest for the SG/IR intervention. ($\beta = 9.12$, $p < .001$). Results were qualitatively different in the high walkability/low SES group, where the most MVPA was seen for the SG/DR intervention, while the least was observed for AG/DR ($\beta = 5.66$, $p < .001$).

The results show that in a low-income/high-walkability environment, static goals and delayed reinforcement were most effective, which is the opposite of what was seen in other neighborhoods. These findings can be used to customize future physical activity interventions so that intervention strategies are most appropriate for participants' demographic/environmental settings.

Software Engineering**90. DANCETAG: Using Sensors to Improve Feedback Given to Dance Students****Presenter(s):** Yanelly Mego**Advisor(s):** Dr. Franceli Cibrian, Dr. Hector Camarillo Abad

The structure of dance classrooms has remained unchanged for several years. Very little, if any, technology has been incorporated to improve the quality of teaching. This has motivated our research project, whose goal is to capture dance movements with wearable sensors, to develop DANCETAG (Data Analytics and Notation with Captured Event Tagging). This is a platform that allows the gathering of data captured by Sony's Mocopi sensors and annotating them with the

dancer's movements. The Mocopi sensors make up a motion capture system. It is comprised of six small, round sensors that can be attached to velcro straps and clips. An individual can wear the sensors and connect them to the app provided by Sony. Afterward, the Sony app can be connected to DANCETAG to gather data captured by the sensors in a Biovision Hierarchy (BVH) file. We conducted a pilot session to evaluate the procedure, data collection, and functionality of the app. We performed the study in a space where the participant was able to move freely. Researchers told the participant which movement to perform and then captured the motion. Based on these results, we have determined changes needed to be implemented in future versions of DANCETAG in order to test it with a higher number of participants. We hypothesize that by collecting and annotating the movement, we will be able to compare dancers' data and provide feedback accordingly. With this type of feedback, dance students will be able to improve their dancing abilities through a more accessible technological tool.

91. Advancing Microgel Analysis with Improved Video Processing on Bright Field Microscopy

Presenter(s): Arian Tajvar

Advisor(s): Dr. Andrew Lyon

Quantitative image analysis of microgels via bright field microscopy faces significant challenges due to the low refractive index contrast between the microgels and their surrounding aqueous medium, and the anisotropic image contrast that often results. This low contrast often results in ambiguous particle identification within images, leading to inaccurate assessments of microgel size and diffusion coefficient. Conventional image analysis tools often fail to reliably identify particle positions, necessitating the development of specialized algorithms and tools.

To address this gap, our research introduces an innovative Python-based image/video processing methodology leveraging the OpenCV library. This approach is specifically designed to perform analysis of microgel images captured in low-contrast conditions inherent in bright field microscopy. By focusing on comprehensive image-to-image operations, our method advances traditional particle tracking techniques, which falter amidst low contrast and high particle density. The core of our methodology lies in comparing frame numbers and analyzing the progression of randomness (random diffusion) between them, enabling a determination of the diffusion rate for samples with reduced computational demand.

Our project not only aims to refine the quantitative analysis of microgel properties but also to broaden the applicability of bright field microscopy in biomaterials research. By overcoming the challenges posed by low refractive index contrast, our work promises to provide a more accurate, efficient, and accessible tool for the characterization of low refractive index colloids. The implications of this research extend beyond microgel analysis, offering potential advancements in the broader fields of biomedicine, soft matter physics, and materials science.

World Languages and Cultures**92. "And Then There Were None:" The Silencing and Censorship of Translated Works under Francisco Franco****Presenter(s):** Avery Austin**Advisor(s):** Dr. Laura Loustau

We tend to live under the assumption that translations will always attempt to be faithful to their original texts, blindly believing in the infallibility of the translator. However, in doing so, we ignore how translation can be used to take advantage of the reader – how can one know that a change has occurred in a translated work if they have no knowledge of the text's original language? This paper studies the power dynamics of translation, and how it can be used as a tool to aid censorship. By focusing on translated literary works under the Franco regime, this work seeks to understand how authoritarian censorship can manipulate translations and how this unique interaction between the two can serve to silence the voices of marginalized groups and political opposition. Particularly, omissions and substitutions in the translations of Charlotte Brontë's "Jane Eyre" and George Orwell's "1984," as well as the Catalan translation of Vercors's "Le Silence de la Mer," are studied, analyzing their effects on the representation of women, criollos, Spanish Republicans, and Catalonians. This knowledge is then contextualized through contemporary forms of fascism in Spain and political censorship in the United States, urging that we are wary of the spread of neo-fascism and the use of censorship as a means of silencing others, such as the LGBTQ+ community.

93. The Language of Mental Health: The Case for Mandatory Bilingual Education**Presenter(s):** Katherine Hayde**Advisor(s):** Dr. Laura Loustau

The United States is known as a "melting pot" of cultures and ethnicities. So why is it that the majority of our country only speaks English? By failing to provide our children with bilingual education, we are robbing them of an essential skill to thrive in today's globalized society. Along with each generation, going out into the "real world" appears to be more and more daunting. The COVID pandemic made this evident, as the effects of social isolation have proven to have a lasting impact on well-being and success. Could bilingual education be the key to improving mental health and well-being? The research suggests that yes, it can, which is all the more reason bilingual education should be mandatory throughout primary education. This research project explores the potential of bilingual education as a strategy to enhance mental health outcomes among children in the United States. The research methodology involves a comprehensive review of existing literature on bilingual education and mental health, synthesizing findings from neuroscientific studies, longitudinal research, and cross-cultural comparisons. Additionally, personal narratives and anecdotal evidence supplement scholarly discourse. It is time for the United States to join the rest of the world in terms of language comprehension abilities. Through

understanding the numerous advantages of bilingual education, a more inclusive and supportive environment can be cultivated, promoting the well-being of our future generations.

94. Unveiling Harmful Gender Norms in Advertising: A Study of Spanish- Speaking Societies

Presenter(s): Ruby Marchand

Advisor(s): Dr. Laura Loustau

This research explores the implications of gender roles in Spanish-language advertising, aiming to understand how advertisements perpetuate traditional gender norms and stereotypes in Spanish-speaking societies. Drawing upon scholarly literature and empirical evidence, this study investigates the complex connection between advertising, machismo, and societal perceptions of gender. The central research question examines how gender representation in advertisements influences consumer behavior and social attitudes towards gender roles. Scholarly context demonstrates a growing concern over the reinforcement of gender stereotypes in advertising, particularly in Spanish-speaking contexts. Previous research has highlighted the pervasive influence of machismo on gender advertising, emphasizing traditional notions of masculinity and femininity. However, there remains a need for more research to understand the specific mechanisms through which advertisements shape societal attitudes and behaviors related to gender. Methodologically, this study uses a qualitative analysis of Spanish-language advertisements, examining the portrayal of men and women and the messages conveyed about gender roles. Additionally, it draws upon theoretical frameworks such as social learning theory and social role theory to contextualize the findings within broader sociocultural contexts. Expected results include insights into the prevalence of gender stereotypes in Spanish-language advertising, the impact of these representations on consumer behavior, and the perpetuation of traditional gender norms. Conclusions will highlight the need for more inclusive and progressive representations in advertising to challenge traditional gender roles and promote gender equality in Spanish-speaking societies.

95. An Environmental Leader: How Legislation has Shaped Costa Rica's Sustainable Practices

Presenter(s): Grace Strobel

Advisor(s): Dr. Laura Loustau

In a world where climate change has become one of the most prevalent issues at hand, it is critical that countries work towards meeting goals aimed at becoming a more sustainable planet. While many countries are not on track to achieve such goals set forth in the UN 2030 Agenda for Sustainable Development, Costa Rica has emerged as a world leader in environmentally friendly practices. Much of their success can be attributed to the legislature they have put in place to create a sensation of respect and responsibility for their vast biodiversity. Laws work to shape a country's understanding of what is right and wrong and allow for a more cohesive population with similar attitudes in regard to values. Two laws in particular have proven to be the most beneficial to Costa Rica's progress: the Biodiversity Law and the Regulations on the Efficient Use of Energy. These two laws have worked together to cover large areas of environmental protection in Costa Rica. They have educated the population and encouraged participation at all levels, while

implementing restrictions to further promote the correct treatment of their resources. Through the close examination of these laws, and the practical implications they have had, this study will prove the effectiveness of Costa Rica's legislation on the country's ability to become renowned for its eco-friendly practices, to grow its biodiversity, and to become a world leader in sustainability.

96. Immigration in the Hospitality Industry Through a Literary Lens**Presenter(s):** Gustavo Vazquez**Advisor(s):** Dr. Laura Loustau

It comes as no surprise that immigration is a positive reinforcement to the U.S. economy. Considering that the U.S. is a first world country, it is logical that many latino immigrants migrate North looking for new opportunities, chasing the american dream. One of the most popular industries that Latin Americans choose to work in when they first arrive in the U.S. is the hospitality industry which includes restaurants, hotels, and bars. This is especially true in cities that are next to the border or close to the border. I was born and raised in San Diego just 15 minutes from the busiest border in the world and also worked in the hospitality industry for three years which led to my sparked interest in the subject as well as me being able to find similar trends in both subjects. My research studies latino immigrants working in the hospitality industry through the use of literature. There are many literary pieces that have to do with the experiences of latino immigrants and why they allocate to the hospitality industry as well as their experiences which often times are far more complex than what most people can imagine. Through my research I would like to prove how important latino immigrants are for the hospitality industry in the United States.

97. Computational Linguistics and Multilingualism: A Comparative Analysis with Spanish and English Data**Presenter(s):** Evelyn Lawrie**Advisor(s):** Dr. Laura Loustau

Computational linguistics is an increasingly ubiquitous field, serving as the basis for artificial intelligence and machine translation. It aims to analyze the syntax and semantics of individual words and phrases. While there have been in-depth advancements in computational linguistics strategies for the English language, others have not been developed as thoroughly. This lack of emphasis on multilingualism has contributed to the disappearance of Hispanic perspectives in the digital world. Especially those of indigenous heritage, as the decline of many indigenous languages has been exacerbated by the lack of digital translation services. Sentiment analysis is a branch of computational linguistics that analyzes the sentiment of a word or phrase on a scale of positivity and negativity. As with computational linguistics as a whole, the majority of resources for analyzing sentiments of text are developed using the English language. There exist methodologies for performing analyses on multiple languages, such as parallel corpora for performing translations with English as well as the incorporation of multiple languages in one data set. Regardless of the method of implementation, it is proven that utilizing multiple

languages in data can increase the accuracy of the resulting sentiment scores. A comparative analysis is performed on multiple data sets containing tweets in English and Spanish from the social media platform Twitter. These analyses result in sentiment scores for each group of data. The accuracy of each analysis is then compared, with the hypothesis that English tweets will provide a higher accuracy than Spanish tweets, given the robust resources for analyzing the sentiments of English texts. Finally, both English and Spanish tweets will be analyzed together, demonstrating the strength in multilingual sentiment analysis in increasing accuracy of results.

98. La Gentrificación: Un Estudio Comparativo Entre la Ciudad de Santa Ana, California y la Ciudad de México

Presenter(s): Evelin Delgado

Advisor(s): Dr. Laura Loustau

Gentrification has increased within the Latino community. Two examples of this process occurring today include cities like Santa Ana and Mexico city. Capitalistic views facilitate gentrification as companies with more purchasing power are able to buy areas and maintain their ability to stay there. Residents from Mexico city and Santa Ana provide their side of the story of the changes they are witnessing and how they are being affected. The globalization of businesses has further facilitated the process of gentrification as companies are motivated by capital led development in urban spaces. After Mexico signed the NAFTA, WTO, and OECD, it marked the country's entrance into globalization which led to the flow of foreign capital and investment into urban infrastructure affecting Mexico City. Santa Ana's residents began to feel the effects of gentrification when a street trolley began to be built in the downtown area without warning ahead of time making it difficult for local businesses to maintain open. Modern, aesthetic, and trendy infrastructure and businesses depicting an image of luxury brought in people with more spending power into these areas which have been taking over the local communities making it harder for existing residents to stay in areas that they have been living in for years.

Art**1. Balzac Unrobed: A Comparative Analysis of Rodin's Study of Balzac****Presenter(s):** Katerina Wagner**Advisor(s):** Dr. Allan MacVicar

This project delves into Auguste Rodin's dual artistic interpretations of Honoré de Balzac, examining the differing receptions of "Naked Balzac" and "Monument to Balzac" by the literary elite of La Société des Gens de Lettres. Commissioned by the writer's group to immortalize Balzac in sculpture, Rodin faced vehement criticism for both renditions. While "Monument to Balzac" has garnered widespread appreciation in contemporary discourse, this poster contends that "Naked Balzac" presents a superior representation of Balzac's multifaceted personality.

Rodin's obsessive seven-year study of Balzac, far exceeding the initially agreed-upon year, serves as a pivotal backdrop to this exploration. The sculptor's prolonged and arguably obsessive study of Balzac's life and character showcases a relentless dedication to capturing the writer's essence. Despite threats of legal action from La Société des Gens de Lettres, Rodin's commitment to his artistic vision prevailed, resulting in a sculptural masterpiece that transcends mere representation.

By meticulously analyzing the artistry employed in capturing the nuances of Balzac's physique and posture, this project argues that "Naked Balzac" unravels Balzac's identity beyond his occupation as a celebrated writer. The piece captures the charisma and confidence that made him the wisecracking womanizer at the center of attention in the most prestigious Parisian salons. The choice to depict Balzac in his undraped form serves as a bold artistic statement, inviting viewers to connect with the raw essence of the man behind the literary legacy.

This project seeks to contribute to a nuanced appreciation of Rodin's sculptural genius and challenge prevailing perspectives on the dichotomy between the celebrated "Monument to Balzac" and the overlooked masterpiece, "Naked Balzac."

Biochemistry and Molecular Biology**2. Optimization of 5% Ultra Low Crosslinked Microgel Pastes as a Bioink for Extrusion Based Bioprinting****Presenter(s):** Hatte Hamilton, Anne Marie Santich**Advisor(s):** Dr. Andrew Lyon

This project is focused on the optimization of experimental parameters for the bioprinting of ultra low crosslinked (ULC) microgel pastes. Current commercially available bioinks have had challenges arise surrounding certain physical characteristics such as porosity and printing fidelity. This poses a challenge to many current biomaterial researcher's for they are unable to fine-tune the bioinks to their specific experiments in the context of immunological niches, cell proliferation, and bioprinted tissues (Chen et al, 2021). The aim of this research is to optimize the parameters in which the ULC microgel pastes are stored and printed under, to achieve a better printing fidelity

as well as more tunable mechanical characteristics of these bioinks. ULC microgel pastes have shown great promise in the area of tunability, through parameters such as temperature, which is what makes them a key interest in our research (Bachman et al., 2015). We proposed that the optimization of 5% ULC microgel paste bioink will allow for greater modulation of the physical characteristics of the bioink, such as porosity and printing fidelity. These two physical characteristics are of high interest currently in the larger field of bioprinting (Zhang et al., 2018). We aim to further understand the behaviors of ULC microgel paste bioinks when printed via an extrusion bioprinter, as well as the effect of history on mechanical and physical properties of the bioink. Preliminary experiments found the history of the bioink played a role in some of the physical properties of the bioink, leading us to want to further investigate to allow for a better optimization of the bioink for extrusion based bioprinting. By understanding the effects that history and different printing parameters have on the ULC microgel paste bioink, we can better modulate it to more specific experiments surrounding cell proliferation, immunological niches, and printing of multi-layered scaffolds.

3. PRMT7 Substrate Methylation and Stress Induction in Breast Cancer Cells

Presenter(s): Lorenzo Pessi

Advisor(s): Dr. Marco Bisoffi

Metastasis results in over 90% of tumor-associated deaths and is caused by gene dysregulation. This is the case for the gene corresponding to PRMT7. PRMT7 is an enzyme that plays a key role in certain intracellular processes and is normally expressed at low levels. Overexpression of PRMT7 has been associated with EMT and metastatic behavior in breast cancer cells. PRMT7 causes EMT by increasing the expression of MMP9. However, there has yet to be a defined mechanism of action for how MMP9 induction occurs. Additionally, PRMT7's effect on a broad range of cancer-associated proteins is unknown. Finally, it is unclear how various cellular stressors influence PRMT7 expression. Our investigations include the following: (i) Assessing PRMT7 expression levels upon cellular stressors, notably UVR and EtBr, by qRT-PCR and western blotting. (ii) Identifying whether PRMT7 mediates MMP9 expression through the induction of p65 and AP-1 transcription factors via western blotting. (iii) Determining the expressional regulation of 84 oncology-associated proteins upon PRMT7 over-expression using antibody arrays and ImageJ software. These experiments were conducted on MCF-7 and MDA-MB-231 epithelial breast cancer cell lines. Results indicate that PRMT7 is induced exclusively via DNA-associated stress in breast cancer cells, giving us clues about the nature of its dysregulation. Additionally, PRMT7 influences a wide range of cancer-associated proteins, down-regulating the majority. With this, we can identify downstream mediators of metastasis, which are potential therapeutic targets for treating aggressive breast cancer.

4. Development of Colloid-Collagen Composites for Bioengineering Applications**Presenter(s):** Kyle Choy, Anne Marie Santich**Advisor(s):** Dr. Andrew Lyon

Extracellular matrix-derived materials have proven pivotal in bioengineering applications, especially in applications like tissue scaffolding. Of these materials, collagen stands out for its exceptional biocompatibility and biodegradability. But, due to collagen's weak mechanical properties, it has been limited in bioengineering applications. Our group develops ultra-low crosslinked poly(N-isopropylacrylamide) microgels that have advantageous mechanical properties for tissue engineering applications. The Lyon group has been doing research to use different materials with the incorporation of these microgels. They have already demonstrated a way to incorporate these extremely soft microgels into fibrin and collagen composites. Now, we have developed a way to incorporate colloidal "paste" that our group develops into collagen composites. When integrated within collagen gels, we observe that uniform composites can be formed, creating a new material that might expand the utility of collagen in bioengineering. These highly rigid paste gives the collagen composites an improvement in its mechanical properties. To investigate these composites more quantitatively, fluorescently labeled collagen was synthesized and used in the assembly of collagen:microgel composites. Fluorescence microscopy was then used to quantitatively assess the collagen matrix and compare its properties to those formed in the absence of microgels. The next step in our research is to study on the seamless integration of microgels in collagen composites. To accomplish this, we will conduct fluorescent labeling experiments on microgels and incorporate them into the collagen composites. This will allow us to observe the integration of microgels in the collagen composites, which will help better characterize these collagen:microgel composites that will help advance bioengineering applications.

5. Gels of Gels: Using Ultrasoft Colloids to Create New Gels for Bioengineering**Presenter(s):** Anne Marie Santich**Advisor(s):** Dr. Andrew Lyon

Soft colloid particles have been demonstrated to be useful in bioengineering applications such as tissue engineering, drug delivery, and bioprinting; the development of these biomaterials continues to be an active area of research. Importantly, the mechanical properties of those particles play a key role in their integration with, and impact on, biological systems. The mechanics of materials have been shown to impact a diverse range of processes, including hemostasis, cell proliferation, stem cell differentiation, and inflammation. Herein, I describe likely the softest and most porous colloid particles ever synthesized. Ultra-low crosslinked (ULC) microgels were synthesized via free radical polymerization of N-Isopropylacrylamide (NIPAm) and acrylic acid (AAc) in the absence of a crosslinker in a large-scale synthetic format. Without an added crosslinker, the reaction yields ultra-soft, highly deformable particles composed of greater than 99% water. ULC microgels can then be packed into highly compressed arrangements called microgel pastes, which are gel-like colloidal materials. Tunable paste behavior and stability with varying methods of preparation/ composition and the external conditions are described; as well

as the role that ions play in their phase transition temperature and dissolution properties. Overall, understanding and exploiting the tunable properties and behavior of ULC microgel pastes has potential importance of bio integration for applications like subcutaneous drug delivery and regenerative medicine.

6. Extracellular Vesicles from Bovine Milk Mitigate the LPS-Induced Reduction in Gut Barrier Integrity in C2BBE1 Cells

Presenter(s): Sarelle Franco, Jordan Skolnick

Advisor(s): Dr. John Miklavcic

Inflammatory Bowel Disease (IBD) is a gastrointestinal (GI) tract disease which is characterized by inflammation of the tissues. IBD diseases generally are diagnosed in the form of ulcerative colitis (UC) and Crohn's disease (CD). Current frameworks of treatments are moderately effective causing an overall decrease in the quality of life for the patient. This increases the demand for novel therapeutics. This investigation into EVs has opened a promising alternative for improving how IBD treatments are administered. It used a model of induced intestinal inflammation to show the beneficial effects of EVs. The EVs were extracted from bovine milk, and went through a series of incubations with C2BBE1 cells upon differentiation. Using transepithelial electrical resistance (TEER) analysis and cell viability assessments, the cell barrier integrity and the proportion of healthy cells were examined. Based on these assessments, it was found that EVs are critically important for enterocyte function. Additionally, depletion of EVs from culture medium reduced cell viability and impaired barrier function. Lastly, supplementation of EVs from bovine milk had a protective effect on maintaining cell viability and membrane integrity when exposed to inflammatory stimuli (LPS).

7. Ferulic Acid Esterases

Presenter(s): Sophia Hickel

Advisor(s): Dr. Cedric Owens, Kellie Omori

The utilization of agro-industrial waste to extract bioactive compounds has gained significant interest in recent years due to its potential for sustainable resource management. Current chemical synthesis methods of ferulic acid (FA) for the cosmetic industry prevent clean label designation, consume large amounts of solvent, and produce low yield. Many methods exist to extract FA from natural sources, including solvent extraction and alkaline/acidic hydrolysis, which require high consumption of toxic and flammable solvents. We propose FA esterase-based enzymatic extraction as a more environmentally green method to extract FA from pineapple peels, which contain high levels of FA. Pineapple peels are a large source of biomass and food waste in developing countries. In pineapple peels, FA is found covalently linked to cell wall polysaccharides through ester bonds, which can be cleaved by ester bond hydrolysis. Enzymatic FA extraction utilizes xylanase so the xylan chain can be broken down into smaller pieces so the FA esterases can more readily access the esterified FA. The main focus of this presentation is the optimization of extraction parameters, including enzyme concentration, pH, temperature, and incubation time. Additionally, the influence of solvent systems on FA recovery to enhance

extraction efficiency was investigated. Three FA esterases (FAEs), *L. helveticus* ChIE, *A. shahii* FAE, and *L. buchneri* FAE, were expressed and purified to homogeneity. They were then used to extract FA from pineapple peels. Compared to alkaline extraction, FAEs produced a higher-purity extract, likely due to the high selectivity of the enzymes. Furthermore, the relative activities of the three enzymes were tested, *L. helveticus* and *L. buchneri* FAE performing best. Overall, the success of FAE-based extraction represents a promising approach for obtaining FA from pineapple peels. Further research is warranted to address challenges related to optimization, cost-effectiveness, and scalability, thereby unlocking the full potential of FAE-assisted extraction for industrial applications.

8. A Role for PRMT7 in the Regulation of CapG and p53 in Breast Cancer

Presenter(s): Evan Hughes, Lorenzo Pessi

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

Protein Arginine Methyltransferase 7 (PRMT7) is the only member of the protein arginine methyltransferase protein family that monomethylates its target motifs. PRMT7 is found in both the nucleus and cytoplasm of breast cells and is believed to play a robust role in the tumorigenesis and metastasis of breast cancer. The goal of this project is to uncover possible pathways for PRMT7 to promote cancer progression. A preliminary antibody array was performed to determine the regulation of known cancer-related proteins by PRMT7. An early-stage human breast cancer cell line, MCF-7, was transfected with plasmid pCDH1-hPRMT7-GFP to over-express PRMT7. Qualitative and quantitative analysis of detectable expression changes compared to sham transfection revealed a repression of CapG and p53, two proteins not previously associated with PRMT7. CapG is an actin-filament capping protein that regulates cell motility. p53 is a tumor suppressor gene that negatively regulates cell proliferation. Our current research aims at identifying the mechanisms of action by which PRMT7 regulates the expression of CapG and p53. We hope that a detailed insight into novel pathways of PRMT7 may identify targets for therapeutic intervention.

9. Developing a Method for CRISPR-Cas9 Mediated Knockout in Primary Human Airway Smooth Muscle Cells for the Study of AC9 Function and Localization

Presenter(s): Alexandra Osterloh

Advisor(s): Dr. Rennolds Ostrom, Jordyn Margolis

Human airway smooth muscle (HASM) plays an active role in bronchoconstriction in asthma and chronic obstructive pulmonary disease (COPD). β AR agonists are the first-line therapies in treating these diseases. Activated β AR generates an increase in cyclic 3',5'-adenosine monophosphate (cAMP) via adenylyl cyclase (AC) stimulation, leading to activation of protein kinase (PKA) and subsequent bronchodilation. Various G-protein coupled receptors (GPCR) couple to different AC isoforms in HASM cells, producing cAMP signals which elicit distinct physiological responses. In HASM, two distinct cAMP compartments have been distinguished, one characterized by AC6 activation by β AR, and the other characterized by AC2 activation by EP2/4 receptors. Although the general function and compartmentalization of AC2 and AC6 are understood, little is known

about the exact role and localization of the AC9 isoform in HASM. This project sought to develop a method to knockout AC9 using CRISPR-Cas9. Only a few previous studies have used CRISPR-Cas9 to knockout protein expression in primary cells, and none have reported using this approach in HASM. We attempted targeted knockout of β AR, AC9, and AC6 using CRISPR-Cas9 in separate conditions in order to validate the method. This was achieved by delivery of a ribonucleoprotein (RNP) complex via nucleofection, followed by selection with diphtheria toxin (DT) and infection with a novel biosensor, cADDiS. Knockout was then assessed by measuring cAMP production stimulated by forskolin, a direct activator of all AC isoforms except AC9, or isoproterenol, a β AR agonist, in each knockout condition. We expect to observe reduced cAMP responses to forskolin if AC6 expression is reduced, and reduced responses to isoproterenol when β AR expression is reduced. However, it is unknown how cAMP responses will change when AC9 is reduced. We hope our results will demonstrate that CRISPR-Cas9 mediated knockout is a feasible method for the future determination of AC9 function and localization in HASM.

10. Comparing the Activities of CowN from *A. vinelandii* and *G. diazotrophicus*

Presenter(s): Anthony Saadeh, Katie Sanders, Julie Takei, Neeraja Gajendran

Advisor(s): Dr. Cedric Owens

Nitrogenase is an enzyme found in bacteria that is capable of both nitrogen fixation and Fischer-Tropsch chemistry. Nitrogenase is a multisubunit protein that is made up of a reductase (Fe-protein) and a catalytic component (MoFeP). Carbon monoxide (CO) is both a mixed inhibitor of nitrogen reduction and a substrate for Fischer-Tropsch chemistry. A protein called CowN prevents CO inhibition but CowN's mechanism of action is poorly understood. CowN binds with MoFeP, diminishing the inhibitory impact of carbon monoxide on nitrogenase.

The aim of this study was to express and purify *Azotobacter vinelandii* CowN (Av-CowN) to compare it with CowN from *Gluconacetobacter diazotrophicus* (Gd-CowN). The motivation behind this research was to investigate whether the CO protection mechanisms are similar between these species. This work focuses on two aspects of CowN. First, it will determine if the interactions between CowN and nitrogenase are similar between species, second, it will determine if Av-CowN protects nitrogenase to the same extent as Gd-CowN.

Av-CowN was expressed in *E. coli* and purified in two steps. Av-CowN was soluble, however, circular dichroism experiments revealed Av-CowN may not be well-folded. While research is still ongoing, no crosslinking with nitrogenase or CO protection has been detected with Av-CowN, to date. The presentation will delve deeper into these findings, discussing new crosslinking at CO protection experiments.

Biological Sciences**11. Fractals and Filters: Using Fractal Analysis to Describe Function in Filter Feeders.****Presenter(s):** Anna Harner**Advisor(s):** Dr. Cassandra Donatelli

Fractal analysis is a mathematical method used to describe complex patterns that may be difficult to parse with other methods. The Fractal Dimension (FD) is a unitless value that describes complexity; the higher the FD, the more complex the system. This number describes how a physical system can take up space from a macro to a micro level. FD has been explored for image and signal processing, and even to describe morphology, but mainly in 2D. We have modified the 2D fractal dimension framework used in the past for 3D analysis of micro computed tomography (μ CT) scans. Using Python, we created a module in 3D Slicer that allows a user to calculate the Fractal Dimension of 3D μ CT scans. The module allows for a quick and consistent calculation of the fractal dimension of 3D morphology using the huge diversity of μ CT datasets available online through repositories. In this work, we have primarily focused on filter-feeding organisms, as we predict that the fractal dimension will correlate with other filter feeding metrics like filter mechanism, prey size, and Reynolds number (Re). In whales that use an oral filtration structure known as baleen to forage, we found a positive correlation between FD and Re and a negative correlation between FD and buccal volume. These results show that FD can be used to describe function as well as morphology.

12. The Circadian Clock's Role in Alfalfa-Rhizobia Interactions: A Molecular Insight**Presenter(s):** Kevin Nguyen**Advisor(s):** Dr. Hagop Atamian

Legumes mutualistically interact with the soil bacteria known as rhizobia that convert atmospheric nitrogen into usable forms like ammonia. Nothing is known about the role of the plant circadian clock, an internal biological timekeeper, in controlling this interaction. Alfalfa seedlings were entrained under 16 hours of light and 8 hours of dark cycles (16h Light/8h Dark) for two weeks. Following this entrainment, the alfalfa was moved to constant light for four days before inoculating with rhizobia at circadian time (CT) 0 (zero hours after lights on), CT4 (4 hours after lights on), CT8, CT12, and CT16 and were grown for an additional 2 weeks at 16h Light/8h Dark cycles. The efficiency of the alfalfa-rhizobia association was evaluated by counting the nodules developed on the alfalfa roots. Results showed that this interaction was most productive at early day (CT0 and CT4) and was regulated by the alfalfa's circadian clock. To gain insights into the molecular mechanisms underlying the circadian regulation of this interaction, the experiment was repeated with the time points CT0 and CT12. This time, the roots were collected 12 and 24 hours after inoculation at each time point, and the root transcriptome was sequenced using RNA-seq. Our analysis identified 1896 DEGs at 12 h and 411 DEGs at 24 h after inoculation at CT0, compared to 1413 DEGs at 12 h and 118 DEGs at 24 h after inoculation at CT12. The analysis identified specific enrichment for genes at CT0 involved in the immune system and hypoxia

responses that could explain the observed differences in nodulation. This is the first comprehensive analysis investigating the molecular mechanisms underlying the circadian control of the agriculturally important plant-rhizobia mutualistic interaction.

13. Variance of Biondi Body Amyloid Morphology in Human Choroid Plexus Epithelial Cells Demonstrates Alzheimer's Disease-Related Differences

Presenter(s): Todd Soo

Advisor(s): Dr. Cassandra Zalman, Dr. Brett Johnson, Dr. Edwin Monuki

The human choroid plexus produces the cerebrospinal fluid that provides nutrition and protection to the brain. However, the choroid plexus is susceptible to the formation of Biondi Bodies, fibrillar amyloid aggregates whose composition is similar to amyloids found in Alzheimer's disease. While some research has been done on their composition, their specific morphologies have not yet been fully elucidated. To fill this knowledge gap, we analyzed Biondi Body morphologies of 34 human choroid plexus samples stained with Thioflavin-S in 3-dimensional z-stack images. After observing these images, we noticed that individuals differed highly in their presentation of Biondi Body morphologies. So, we formed and quantified eight total categories of Biondi Bodies consisting of exclusive primary and non-exclusive secondary categories that correspond to the shape and characteristics of the Biondi Body. Additionally, these Biondi Bodies show distinct differences in morphological distribution between individuals diagnosed with Alzheimer's disease and those not diagnosed. Individuals diagnosed with Alzheimer's disease tend to possess higher distributions of ring-shaped Biondi Bodies while non-Alzheimer's disease individuals possess higher distributions of small, multiple Biondi Bodies. Individuals who possessed more ring-like Biondi Bodies were also found to contain a higher number of Biondi Bodies overall. The Biondi Bodies are of particular interest because they are composed of amyloid proteins, similar to those found in the hippocampus during Alzheimer's disease pathogenesis. They are also unique from other amyloids, as Biondi Bodies form distinctly from one another in highly ordered shapes from an autofluorescent lipofuscin core. With a significant relationship established between Alzheimer's disease and Biondi Body morphology, it is crucial to understand their function. Our quantification of the distribution of Biondi Bodies suggests that their development is related to the progression of Alzheimer's disease, implying a possible pathologic effect that can be further studied.

Business**14. “El Conocimiento Financiero de los Puertorriqueños y Posibles Soluciones Para Mejorarlo” or “The Financial Literacy of Puerto Ricans and Possible Solutions to Improve It”****Presenter(s):** Grace Han**Advisor(s):** Dr. Laura Loustau, Dr. James Hirsch

This project evaluates the level of financial literacy among Puerto Ricans, providing solutions for improvement based on the results of the analysis. The idea for this project was born out of the author's interest in finances and Puerto Rico, as well as a concern for personal finance management worldwide. For the sake of this project, “finances” will be referring to personal finances specifically (i.e., money used for living expenses, utilities, retirement, etc...). Upon a literature review of several articles, it was found that Puerto Ricans generally lack sufficient financial knowledge to make sound financial decisions. Possible causes for this were: 1) a lack of adequate financial education in Puerto Rican education systems 2) a preference for indulgence and a lax attitude towards financial savings and investment 3) shame or guilt in asking for financial assistance 4) lack of access to banking services which exacerbate generational wealth inequality. Solutions to decreasing the poverty rate in Puerto Rico and increasing its residents' financial literacy will focus on improving their financial education and increasing the accessibility of financial resources such as banking services, financial literacy workshops, and counseling resources to address any finance-related concerns.

Chemistry**15. Thermoresponsive poly(N-isopropylacrylamide) Microgels with Cheerios Structures****Presenter(s):** Nathan Mermilliod**Advisor(s):** Dr. Molla Islam

Thermoresponsive poly(N-isopropylacrylamide) (pNIPAm) microgels were synthesized by a three-step addition of monomer NIPAm within the first hour of the reaction. These microgels are designed to be larger and synthesized without any exogenous crosslinker making them ultra-low crosslinked in density. We found that the microgel particles are ~1.5 μm in diameter and form cheerios like hollowish structures. We also found that these cheerios like microgel particles are extremely robust and preserve their mechanical stability in a very high osmotic pressure. We hypothesize that these cheerios like microgels are formed during the subsequent addition of same monomers which effectively dominates the rate of the reaction at its critical growth phase. We are currently trying to understand how these particles are formed, shaped and stabilized during the reaction.

16. Decomposition of Methanol on Platinum Surfaces**Presenter(s):** Lauren Villegas**Advisor(s):** Dr. Jerry LaRue

Creating the molecules necessary to produce goods like fuel, plastics, and other synthetics involves the careful cultivation of specific chemical reactions. However, these reactions can require a great deal of energy, or produce unnecessary products in addition to the desired ones. Surface catalysts ameliorate some of these problems by providing sites for bond formation or breakage to take place, usually at a lower energy cost than would otherwise be possible. Currently, we are studying how the use of terraced, stepped, and mixed platinum surfaces affects the decomposition of methanol. Methanol is an ideal choice for study, both because of its importance as an intermediate in many synthesis processes and because it displays bond-breaking behavior contrary to most surface catalysts: typically, step sites are usually responsible for breaking strong bonds, like the C–O bond in methanol. On Platinum, though, terrace sites break the C–O bonds, while the step sites break the weaker C–H bonds. This unique aspect of methanol's decomposition may provide insight into why certain surface structures favor the reaction pathways they do.

Over the course of the study, temperature programmed desorption (TPD) experiments were performed in an Ultra-High Vacuum (UHV) environment. These studies measured the gaseous products of the decomposition as a function of surface temperature. When combined with previously obtained Sum Frequency Generation (SFG) Spectroscopy and X-Ray Photoelectron Spectroscopy (XPS) results, these data help form a complete picture of the reaction taking place on the Platinum surface, including reaction pathways, intermediate products, and final gas-phase products.

Although this study focuses on methanol adsorbed on platinum surfaces, the data obtained from the decomposition may be useful in understanding other catalysis reactions. In particular, observations made may elucidate the impact of different surface types (terraced vs. stepped vs. mixed) on these reactions, as well as the mechanisms of decomposition those surfaces favor.

Communication Studies**17. Drug Dealers, Criminals, Rapists: The Proliferation of Mexican Criminal Archetypes in American News Outlets****Presenter(s):** Meranthy Meza**Advisor(s):** Dr. Laura Loustau

This study explores the role that the U.S. media exercised in creating and proliferating the archetypal myths of Mexican illegitimacy and criminality within the United States. With a long history dating back to the Mexican Revolution, American newspapers laid the foundation for the enduring myth of the Mexican as barbarian and criminal, framing Mexicans as the antithesis of all that it meant to be American. This study aims to illustrate the continuity of the Mexican barbarian archetype from its origins in early twentieth century newspapers, to its evolution and

proliferation in the mid twentieth century and the place it occupies within modern news outlets today. Despite the antiquated and unapologetically racist origins of these stereotypes, damaging myths of Mexican criminality continue to find fertile ground in modern day through news coverage that simultaneously silence Mexican voices while emphasizing Mexican criminality. The consequences of the mythmaking perpetuated by overblown media coverage of criminality lends to enduring federal legislation that racially targets the Mexican presence within the U.S. Finally, this study aims to illustrate the importance of analyzing the process by which propaganda becomes entrenched as history, accumulating to find a place within modern nativist political campaigns such as MAGA, deportation rates, and the framing of Mexicans not just as a second-class citizen, but as cultural and moral contaminants within U.S. society.

Computer Science

18. Integrating Multi-Modality Data with Tensor Decomposition

Presenter(s): Mason Li Ariel Kuo

Advisor(s): Dr. Yuxin Wen

Deep Neural Networks (DNN) are computationally intensive. While methodologies to lower the complexity of Neural Networks already exist, one such technique, Tensor Decomposition, has yet to be thoroughly explored. We examine how Tensor Decomposition may be applied to DNNs, with one example demonstrating decomposition on a DNN performing regression and classification on Electronic Health Record data. Decomposition was performed mainly on the Convolutional Layers of Convolutional Neural Networks (CNN), which are used to encode X-ray imagery and other patient demographic data from the dataset. Variational Bayesian Matrix Factorization was utilized to estimate the target ranks of the original Tensor representing the weights of each convolutional layer. Tucker Decomposition was then applied to the Convolutional Layer weights in accordance with the estimated rankings. The resultant core tensor from the Tucker Decomposition was then utilized as the new Convolutional Layer. Two extra Convolutional Layers are added before and after the decomposed Convolutional Layer to handle dimensionality reduction and expansion. The resultant Neural Network exhibited notable performance improvements. VGG16, an established CNN for image recognition, requires 15.52 billion Floating Point Operations for a single forward pass. After performing Tensor Decomposition on a baseline VGG16 model trained for binary classification, the network reduces to 2.94 billion operations for a single forward pass—an 81.06% decrease. The decomposed VGG16 runtime also improves by around 20-30%. While the specific application of Tensor Decomposition to a DNN utilizing Electronic Health Records may be novel, the expected outcome of this study holds promise that Tensor Decomposition may significantly impact DNN performance in other use cases. Tensor Decomposition may hold promise in improving the performance of models other than CNNs, increasing the viability of these models in more varied conditions, such as applications where computing power is limited or prediction time is crucial.

19. Implementation of Residual Tandem Neural Networks for Photonic Inverse Design**Presenter(s):** Ponthea Zahraii**Advisor(s):** Dr. Nasim Mohammadi Estakhri

Residual Network (ResNet) represents an effective approach to traversing deep neural networks and addresses critical challenges in computing, particularly the vanishing gradient problem that arises in extremely deep models. ResNet resolves this issue by introducing “skip connections”, enabling the retention of information from previous layers. In this project we implement a ResNet tandem architecture to inverse design multi-layered photonic structures for desired reflection and transmission spectra (i.e., spectral filters). The tandem network [Liu et. al. ACS Photonics, 5, 2018.] introduces a unique architectural paradigm consisting of two interconnected models. These models collaborate, with one generating a spectrum from 11 input variables (thickness of layers in the photonic structure) to emulate a Maxwell's equations calculator (forward model), while the other looks at the spectrum as an input given from the user (generator network) and adjust its outputs to match the spectrum from the forward network. The tandem network proves valuable in addressing non-uniqueness problems in optical design typically hindering efficient training of networks for inverse design of optical structures. This problem is rooted in the fact that different optical structures can create similar spectrums, thus slowing down the training process. In the tandem architecture the output designed by the network is not required to be identical to the original training sample, if the correct spectrum is achieved. This allows the network to rapidly converge even while using non-unique training data. We report successful inverse design of layered structures using such networks.

Creative Cultural Industries - CCI**20. Protectionist to Open Source Video Games****Presenter(s):** Zachary Namimatsu**Advisor(s):** Dr. Ian Barnard

As creative and technological industries advance, their growing overlap has become hard to ignore. From the creation of photoshop, to leaps in 3D modeling, to the presenting field of “AI art,” creators of digital content have become increasingly cautious of how to protect their work from copycats. This is mostly seen in the art community, but what is often overlooked is this idea of “intellectual property” in video games. The video game industry has over quadrupled in the past two decades. This has allowed game developers to pump out games which are more polished and grander than ever before. But an unintended consequence of this increase of wealth in the industry is an increase in corporate greed as well as a decrease in fan/player collaboration. Companies like Nintendo have grown significantly, but accompanying this is their extreme protectionist mindset of their IPs such as Pokemon. I will be looking into the protectionist policies of Nintendo and their restriction of community creativity as well as their decrease in quality. Additionally, I will explore some other approaches in between protectionist and open policy such as DOTA and its subsequent birth to one of the biggest games in the world, League of Legends.

Finally, I will discuss how open source games can function and how they greatly benefit their player base. By examining the real world impacts of these open-source and protectionist practices in the video game industry, I will try to come to a conclusion on what the best way companies can simultaneously protect their property and best allow player interaction and creativity.

Data Analytics

21. Measuring Effort and Progress on Speedruns

Presenter(s): Alexis Reeves, Ruby Link, Kristen Ng

Advisor(s): Dr. Seth Benzell

Speedrunning is a popular online past-time in which participants attempt to complete a video game as fast as possible. We build a unique data set on millions of speedruns across thousands of games and speedrun categories, as well as “tool assisted” speedruns, and streams of speedrun attempts on Twitch. We characterize average progress in speedrun times by type of game, Twitch streamer attention, game popularity, and other covariates.

English

22. A Discourse Analysis of Shortening Trend Cycles

Presenter(s): Madison Goffney

Advisor(s): Dr. Jan Osborn

My project uses discourse analysis methodology to analyze fashion and beauty trend cycles in modern day media. It compares informed expressions of concerns surrounding the acceleration of the trend cycle with the vernacular of those who aim to profit from the same phenomenon. This composition’s theoretical underpinnings are rooted in the works of Trevor Purvis, Alan Hunt, James Gee, and Teun A. van Dijk, all of whom are published researchers in the field of Discourse Studies. The resource corpus for this work includes data from informational and editorial news articles, social media content, and examples of current online advertisements. This compilation also explores the history of fads and the increases in affiliate marketing in the digital age to help me to contextualize my arguments. I will be examining the recurring parlance within these sources to determine the ideologies present in the participants, supported by the work of the aforementioned theorists. I expect to find that those who wish to benefit from a fast overturn of fashion and beauty trends by producing income from their online content have formulated a distinct vocabulary and creed. I also expect to find that this dialogue works to increase the velocity of the cycle itself, which in turn spurs increased retaliation from those strongly in opposition.

23. Lifelong Film Fanatics, Hardworking Filmmakers, and the Oscars**Presenter(s):** Haley Kamola**Advisor(s):** Dr. Jan Osborn

This presentation focuses on the discourse surrounding the Academy Awards, often referred to as the Oscars. The differences between people working in the film industry and those who watch movies are analyzed, as they represent the supplier and recipient of films and filmmaking. These two groups offer varied perspectives on the topic. To many people, what makes a film “good” is quite subjective, so the Academy Awards are often a subject of discourse. The discourse of Academy Awards watchers has been analyzed through James Paul Gee’s methods. One particular focus of discourse will be regarding the 2024 Academy Awards. There were a variety of opinions on the film Barbie’s nominations - people were particularly upset that Margot Robbie was not nominated for the Best Actress category, and that Greta Gerwig was not nominated for the Best Director category.

24. "Pro-Woman, Pro-Life" Framing of the Anti-Abortion Movement.**Presenter(s):** Olivia Rivet**Advisor(s):** Dr. Jan Osborn

This project on the “Pro-Woman, Pro-Life” framing of the Anti-Abortion Movement uses James Paul Gee’s theoretical lens on discourse analysis. My research corpus is comprised of historical, legislative, news, editorial, and film data. This project focuses on when the term “Pro-Woman” first appeared in the anti-abortion discourse and how it has been used to reinforce the Pro-Life stance. I argue that the phrase— “Pro-Woman”— is a discursual strategy to appeal to women who are ideologically aligned with the Pro-Choice movement. According to the Pro-Woman, Pro-Life framework, no “feminist” would want to support a practice, such as abortion, that could physically or mentally harm women; therefore, Pro-Choice feminists and feminists in between Pro-Life and Pro-Choice are then left with the ethical dilemma of allowing other women to access a potentially dangerous, even fatal, procedure. Gee’s theoretical framework insists that language is used to build in distinct ways, such as making things significant or assuming a particular identity. These methods of analysis, alongside a selection of grammatical tools, help me analyze the use of “Pro-Woman” and argue how it builds and contributes to the Pro-Life discourse. My project aims to investigate how the charged term “Pro-Woman” has been extrapolated to the Anti-Abortion Movement and argue the guilt-driven draw it has on all feminists.

25. The Discourse of Mass Incarceration**Presenter(s):** Talya Somers**Advisor(s):** Dr. Jan Osborn

This project analyzes the discourse of mass incarceration within the United States and the underlying systemic injustices rooted in the prison system. To deeply analyze this discourse I used the theories of James Paul Gee and Teun A. Van Dijk. Both author’s theories include analytical tools to study the language and ideologies presented around this discourse. By implementing their ideas, I could deconstruct the narratives related and perpetuated to the mass incarceration

system. This project includes a variety of data from historical pieces, documentaries, legislation, and news articles. Having a variety of sources, allows the discourse to be analyzed in different ways and biases. Applying Gee's concept of discourses, the main narratives that justify punitive measures are identified. In addition, Van Dijk's theory discusses the language and strategies utilized in the discourse around crime and punishment. It reveals the racist and neoliberal ideologies surrounding the mass incarceration discourse. Additionally, the project includes voices of incarcerated individuals, affected communities, and advocates for social justice. However, it briefly analyzes more conservative news sources and the difference in language about the prison system. Overall, the theoretical frameworks of Gee and Van Dijk analyze the mass incarceration discourse and the ideologies surrounding it.

26. Children's Mental Health: A Discourse Analysis**Presenter(s):** Alyssa Stella**Advisor(s):** Dr. Jan Osborn

This project—"Children's Mental Health: A Discourse Analysis"-- examines the current conversation regarding mental health, specifically children's mental health. Understanding how discourse impacts our thinking about mental health is crucial to understand how language intersects with ideology (shared beliefs in social groups) to create a worldview. To analyze how language and ideology intersect in mental health discourse, I use Purvis and Hunt's "Discourse, Ideology, Discourse, Ideology. . . ", (1993) and Van Dijk's "Ideology and Discourse Analysis"(2006) as my theoretical grounding. Discourse reveals the shared beliefs of social groups. I have constructed a research corpus of first-use data (when the topic was first talked about), historical data, legislative data, legal data, social media data, television data, and podcasts/news data. I use James Paul Gee's (2008) discourse analysis tools to analyze the data. As a future educator, understanding the discourse on children's mental health is critical. This discourse analysis provides a better understanding of how society views mental health as it relates to children.

27. The Discourse of Teacher Pay**Presenter(s):** Lauren Stewart**Advisor(s):** Dr. Jan Osborn

This project focuses on a discourse analysis of the public conversations regarding teacher pay. Teacher pay is a popular topic, encompassing other discourses, including the increase of college loan debt and the overall economy shifting. To analyze teacher pay discourse, I used James Paul Gee's theoretical framework. Gee's theory includes specific analytical tools and questions the researcher asks of the texts to determine what the language of the discourse is accomplishing in the world. The project includes data from news articles, legislation, social media, podcasts, and television shows. Including multiple different formats of data, provides a well-rounded attempt at understanding what worldview the discourse communicates. Teacher pay discourse is engaged with important societal questions, such as whether or not teachers should be paid more, why or why not, and if there were to be a change in teacher pay how would that be played out by school districts, states, the country, and possibly even the world.

28. Parental Rights: A Discourse Analysis**Presenter(s):** Peyton Stryker**Advisor(s):** Dr. Jan Osborn

This project analyzes “parental rights” discourse. The purpose of this project is to determine how the use of language reveals the underlying ideologies held by the participants in this discourse. Analyzing the language choices surrounding the topic provides this interpretive opportunity. This discourse analysis studies how the term “parental rights” intersects with guiding and/or controlling children. The study includes texts from various sectors, including historical data, legislative data, newspapers, social media and online use of the term throughout several decades. To analyze the texts, I use Purvis & Hunt’s “Discourse, Ideology, Discourse, Ideology. . .” (1993) and Van Dijk’s “Ideology and Discourse Analysis”(2006) as my theoretical lens. James Paul Gee’s (2008) discourse analysis tools comprise the method of data analysis.

29. Moral Panic and Satanic Ritual Abuse Hysteria; A Discourse Analysis**Presenter(s):** Sloan Watson**Advisor(s):** Dr. Jan Osborn

During the 1980s, moral panic erupted nationwide as allegations of satanic abuse of children were made public, sparking inflammatory headlines and sensational news stories that drove fear and doubt into the hearts of many. Known as Satanic Ritual Abuse Hysteria, this mass hysteria is now widely acknowledged to be absurd, as allegations were proven false and the mistakes made by those in positions of power were brought to attention. However, this still leaves us to question how society within this era so easily came to believe these now-proven falsities and outlandish claims of mass ritual abuse. Using Van Dijk’s “Ideology and Discourse Analysis” (2006) as a framework for understanding language and ideology, and using James Paul Gee’s tools for discourse analysis, this paper investigates the language used both within and around Satanic Ritual Abuse Hysteria in order to discover what ideologies are reflected in the discourse that surrounds this once majorly contentious topic. By analyzing the language used in historical, editorial, legislative, and other data resources, I examine how these sources contributed to the creation and reinforcement of public belief toward Satanic Ritual Abuse through fear and polarization. giving insight into how society both perpetuated and fell victim to its own claims. Conversely, I also examine how several sources, from the 1980s and onward, denounced, rejected, or cast suspicion upon the claims of Satanic Ritual Abuse, in order to understand how the language we use affects how we see this issue today.

30. Fake News: A Discourse Analysis**Presenter(s):** Kate Worsham**Advisor(s):** Dr. Jan Osborn

In today’s era, people are overloaded with more information than previously imaginable. The internet and social media have all of the world’s news at the tips of our fingers – but who is to say that what we are reading is true? Ten years ago, the phrase ‘fake news’ would not sound any alarms. It would be trusted as so: news that is obviously untrue. Even with unlimited access to

resources, it has become increasingly more difficult to distinguish between ‘fake’ news and ‘real’ news. It seems the news is weaponized by the political right and left – but seems is the key word. Has the news always been subject to doubt? Has fact checking always been a necessity? Have political agendas been played off as ‘fair and balanced’ journalism? This study looks at the discourse surrounding fake news and censorship in the mainstream media, comparing and contrasting the different ways that media organizations promote, reject, alter, or outright silence ‘news’ based on whether or not it aligns with their agenda. It will also beg the questions of just how much the news is working in the best interest of American citizens, and if trying to censor misinformation is an infringement on First Amendment rights. This study goes into the deep history of media censorship and sensationalism, tracing how we got to now.

Environmental Science and Policy

31. Impact of Various Rates of Temperature and Humidity Fluctuations on Arsenic Bioaccessibility in Mine Wastes

Presenter(s): Ratish Ragavendiran

Advisor(s): Dr. Christopher Kim

California has generated vast amounts of mine waste due to its extensive mining history, ranging from minerals like gold and mercury. Season weathering conditions during dry and rainy seasons can affect arsenic bioaccessibility, which may lead to chronic exposure for residents living near mine sites. Sediments from the Red Hill Mercury Mine in Tustin, California, and Empire Gold Mine in Grass Valley, California, were subjected to various simulated humidity and temperature fluctuations following a rain event based on weather data from Tustin, California, between 2022 and 2023. Eight simulated weeks were completed using 2,4,8,12, and 24-hour days and analyzed for arsenic bioaccessibility. Arsenic bioaccessibility for both mine sites was highly variable; the arsenic bioaccessibility was weakly to moderately correlated to the simulated days (Red Hill: $R^2 = 0.04 - 0.60$, mean = 0.21, Standard Error = ± 0.10 , Empire Mine: $R^2 = 0.01 - 0.80$, mean = 0.35, Standard Error = ± 0.15). These findings from arsenic bioaccessibility normalized to the control demonstrate variability based on the rate of temperature fluctuations and humidity during dry periods. However, more experimentation must be done to confirm the best rate of temperature and humidity that simulates arsenic mobilization in the environment due to weathering.

32. The Impact of Elevated CO₂ on Tropical Canopy Temperatures

Presenter(s): Juliatt Vazquez

Advisor(s): Dr. Joshua B. Fisher

One of the largest uncertainties in projections of Earth’s climate is how much CO₂ will rainforests absorb. There are many possible ecosystem impacts of CO₂ fertilization, including structural, compositional, and functional responses. This research investigates the impact of elevated CO₂ on canopy temperatures in tropical rainforests in Costa Rica. To do so, we leverage two unique datasets: 1) a recent map database of volcanic flank CO₂ hotspots in tropical rainforests at Rincon

de la Vieja; and, 2) the recently launched NASA ECOSTRESS mission, which measures land surface temperature and evapotranspiration at high resolutions, on board the International Space Station. We found that canopy temperature was significantly hotter at elevated CO₂ sites than ambient sites by approximately 2 Kelvin, supporting the ecophysiological hypothesis that canopies heat up with elevated CO₂ due to stomatal closure and suppression of evapotranspiration; the p-value was 0.01. We found that canopy greenness (normalized difference vegetation index, NDVI) was not significantly different among elevated and ambient CO₂ sites. Different results were concluded for emissivity, it proved to be significantly different from; the p-value was 0.1. Moreover, we found important patterns of evapotranspiration from ECOSTRESS with elevated CO₂. Our results present an important advance in understanding a key physiological response of the tropical CO₂ effect, especially over long time scales.

Film

33. A (Radical) Queer Essay: Understanding the Political Potential of Gregg Araki's Teen Apocalypse Trilogy

Presenter(s): Gabrielle Di Bernardo

Advisor(s): Dr. Emily Carman

This paper poses a queer intervention to the scholarship of Jacques Rancière; whose oeuvre has been centered around how art and politics are intertwined as well as how they shape the “distribution of the sensible,” what produces the system that determines what is permitted to be said, thought, and done within a society. Rancière posits that the distribution of the sensible establishes an aesthetic regime, but that art has the potential to challenge and disrupt this regime. Regarding this, Rancière writes extensively on cinema, analyzing high culture films such as *La Haine* (Mathieu Kassovitz 1995) and *La Strada* (Federico Fellini 1954); however, he has neglected a large body of films that practice the criteria he establishes. I focus on Gregg Araki's Teen Apocalypse Trilogy of the New Queer Cinema movement as a body of films that are radically political according to Rancière's theoretical framework. I express that the main political nature of the trilogy lies in their “explicit queerness.” In order to define what I consider art that is “explicitly queer,” I establish criteria as well as a timeline of radical queer art starting with Marcel Duchamp's *La Fontaine* and Andy Warhol's *Sex Parts*. Then, alongside my analyses of the films, I take a phenomenological approach based on Tarja Laine's *Feeling Cinema: Emotional Dynamics in Film Studies* (2011), positing my personal experiences with each film in order to understand their political nature according to Rancière's *The Emancipated Spectator* (2009). Through this paper, I assert that because of Araki's unconventional style, his engagement and challenging of the spectator, as well as his subversion of traditional aesthetics and storytelling techniques, Araki's Teen Apocalypse Trilogy reveals the epoch of America's queer youth in the 1990s, giving voice those refused one within the dominant order and therefore embodying the idea political art articulated by Rancière.

34. Sensorial Memories: A Cinema Speculum in "Petite Maman" and "Aftersun"**Presenter(s):** Tingyi Zhu**Advisor(s):** Dr. Emily Carman

In her 1975 article "Visual Pleasure and Narrative Cinema," Laura Mulvey used psychoanalysis as a political weapon to critique the issue of the male gaze in traditional Hollywood narrative cinema. Mulvey's work is pioneering for feminist film studies but was criticized and reexamined among film and feminist scholars. Building on the precedent of Mulvey and the feminist research of Luce Irigaray, contemporary scholar Lucy Bolton has proposed the camera as an "Irigarayan speculum," explaining how certain contemporary films delve into female characters' inner worlds, creating them with subjectivity and diversity. Drawing on contemporary feminist film theories and phenomenology theories, I argue that women in contemporary films have undergone a transformation from objects to subjects. Through an in-depth analysis of two films released after 2020, *Petit Maman* (2021) and *Aftersun* (2022), I will demonstrate how female filmmakers incorporate the "Irigarayan speculum" into films, exploring female characters' inner worlds and shaping their subjectivity. Both films integrate female characters' memories by breaking linear time, tracing back to their personal history, and validating the diversified shaping process of female characters in body, psyche, and personality while providing audiences with unique viewing experiences. As milestones in contemporary cinema post-2020, these two films affirm the process of women moving toward subjectivity on screen.

35. Sex, Race, and Money – The Underrepresented in Cinema**Presenter(s):** Thomas Ginn**Advisor(s):** Dr. Emily Carman

Contrary to popular belief, film is not an entertainment medium, it is a vessel that mediates experiences alien to one's own experiences. In this essay, I argue that due to film's unique ability to mediate experience, film is capable of being a medium to emotionally educate those who have never experienced oppression on the reality of how oppression impacts the "other". I will analyze the mediated experience of the other depicted in Robert Mulligan's *To Kill a Mockingbird* (1962), Audrey Diwan's *Happening* (2021), and Bong Joon-ho's *Parasite* (2019). *To Kill a Mockingbird* demonstrates otherness due to race, *Happening* portrays otherness due to sex, and *Parasite* examines otherness through economic class stratification. Although film is a mass art, which aims to generate as much profit as possible, due to films inherent narrative and symbolic nature, it is able to develop and convey perspectives of "otherness" to its audience. I am using these three films, set in three different time periods, and from three separate nations in order to demonstrate that films from other cultures and time periods are able to transcend cultural differences and effectively mediate perspectives of "otherness". The mediated experiences shared by these films, generate emotions within the audience, but the goal is to guide the audiences emotion to be empathy. This presentation will argue that the empathy created for the "other" as depicted in these three films, can emotionally influence the audience and change, or construct, their perception on the topics of race, sex, and economic stratification in their own environment.

36. Phenomenological Experiences Through the Independent Cinema of A24**Presenter(s):** Jovanna Vega-Albela**Advisor(s):** Dr. Emily Carman

This paper explores the way in which phenomenology influenced a new era of independent film. Phenomenology allows audiences to engage with film immersively, creating deeper connections with the narratives on screen. Going beyond watching film, it is also “feeling, sensing, thinking them through the body, senses and mind” (Fuery, Wk. 12). This phenomenology motivated a consciousness that audiences were uncomfortable with, causing spectators to call out the disparities the film industry had promoted after highlighting and rewarding problematic films [I will link this to moonlight], such as *Gone with the Wind* (Fleming, 1939). There was a dramatic shift in the film industry in the 2010s, with a sudden admiration for independent cinema. These independent films told stories that Hollywood had never seen before. Raw, authentic works with emotional recognition of themes in ordinary people’s lives. Stories of grief, growing up, and queerness being not only produced, but screened like never before. Emotionally connecting to these 21st century films spotlighting underrepresented voices in independent cinema inspired a new bond between viewer and film; this bond is closer to a possession of film because of the acknowledgment of truth afforded in the works. Feeling with film connects the subject to the audience, motivating them to change the culture, that culture being the abundance and overvalue of generic Hollywood cinema. It is essential to examine independent films and analyze how these elements come together to connect audiences significantly to these narratives in order to understand why film is so impactful. The films I will use as paradigms are *Midsommer* (Aster, 2019), *Lady Bird* (Gerwig, 2017), and *Moonlight* (Jenkins, 2016), all products of independent production company and distributor, A24. By showing the history of underrepresented voices and how they claim their independence through film phenomenology we can come to understand the shift of film culture, both within the industry and in the lives of spectators.

37. Melancholy and Masculinity in Film**Presenter(s):** Graham Hammond**Advisor(s):** Dr. Emily Carman

Melancholy and traditional masculinity have gone hand in hand for decades. The allure of this masculine facade assumes a constant sense of strength— as if one should be able to overcome any hardship no matter the circumstances. But as we all know, constant strength, especially in difficult times, is an impossibility in our lives. With failure imminent, this can lead to demasculation, and therefore, melancholy. But as much as recent understandings of the word want us to assume, is not just simple sadness in the face of failure, melancholy is much more complicated than that. If melancholy could be so simply defined as sadness, what would be the point of the term's existence in the first place? And, to go even further, why does it feel so right sometimes? After all, it was Victor Hugo who said, "Melancholy is the happiness of being sad." (Hepburn) The answer is that sadness, while playing a prominent role in the emotion, only tells half of the story. Melancholy is an emotion ripe with paradox, simultaneously consisting of two contradictory things: a sense of sadness, grief, or loss, and yet a comfort in the fact that one

has failed in the first place. Through close analysis of themes of suppressed emotions and unresolved grief in both *Aftersun*'s (Wells, 2022) Calum (Paul Mescal) and *Million Dollar Baby*'s (Eastwood, 2004) Frankie Dunne (Clint Eastwood), this paper will seek to understand how cinema can mediate the process of confronting and potentially overcoming the melancholic effects of traditional masculinity by way of better understanding the emotion's reflective and cathartic qualities through Freud's *Mourning and Melancholia*, and Martin Fradley's *Maximus Melodramaticus* in order to prove that film, in a paradoxical, yet formidable way, can help alleviate the pressures and melancholy that come with traditional masculinity by having viewers confront them head on through narrative, form, and subject matter.

38. Spectatorship in Girlhood: Examining the Patriarchal Gaze in Coming-of-Age Feminist Films

Presenter(s): Brynne Keisler

Advisor(s): Dr. Emily Carman

Girlhood is a complex time in a woman's development, serving as a pivotal moment in the transition to womanhood—marked by girls' growing awareness of gender norms. This paper canvasses the intricate dynamics of the representation of girlhood in cinema through the lens of feminist narratives and the patriarchal gaze within coming-of-age films. Drawing upon the foundational theories of Laura Mulvey, Simone de Beauvoir, Catherine Driscoll, and bell hooks, this research explores how media representations shape societal expectations and contribute to the construction of gender norms, particularly impacting the representation of young girls. Focusing on the portrayal of girlhood in films directed by both men and women, this paper examines the complexities of authorship, directorial perspective, and the perpetuation or disruption of patriarchal norms. By analyzing a selection of films—*Blue is the Warmest Color* (dir. Abdellatif Kechiche, 2013), *3 Women* (dir. Robert Altman, 1977), *10 Things I Hate About You* (dir. Gil Junger, 1999), *The Virgin Suicides* (dir. Sofia Coppola, 1999), *Cuties* (dir. Maïmouna Doucouré, 2020), and *Mustang* (dir. Deniz Gamze Ergüven, 2015)—it investigates the ways in which the patriarchal gaze influences the depiction of young girls and the negotiation of feminist themes within cinematic narratives. Ultimately, this paper underscores the importance of critically engaging with cinematic representations as both sites of reflection and transformation in conversations surrounding gender equality, highlighting the perpetuation of patriarchal structures that can exist even within feminist storytelling.

39. Plagiarism or Transformation? Rethinking Originality in Modern Films

Presenter(s): Kevin Le

Advisor(s): Dr. Ian Barnard

A common phrase heard about mainstream modern American films is "Hollywood is running out of original ideas" or "They don't make films like they used to." With subscription-based movie streaming services and a bombardment of fast-paced, big-budget, CGI blockbuster remakes and superhero franchise movies, it becomes apparent that mainstream modern films have substituted thoughtful storytelling with eye-popping visual appeal. These films also caused fatigue among

audience members who feel overloaded with flashy cinematography that tries too hard to create something “authentic, original, and new” without repurposing and transforming previously used story elements into new perspectives and cross-disciplinary ideas. This paper questions the obsession over “authenticity” and “originality” in 21st-century American films. This obsession is tied to five Western cultural values: individuality, strong work ethic, ownership, reputation, and societal contribution. The problem is not that films “recycle the same ideas” but the inability to combine and transform the same ideas into new perspectives and interpretations. Incorporating evidence of plagiarism/inspiration through analyzing multiple popular mainstream and indie films, their influences, film industry professional interviews, and academic discourse, this study emphasizes the creativity and acclaim of popular films made possible by “plagiarizing” prior works. Some films included are indie films, such as *The Plagiarists* and *Prelude to Axanar*, and mainstream films, such as *Star Wars Episode IV - A New Hope* and *Episode VII - The Force Awakens*. It argues for a new perspective on originality that liberates the creative process and focuses on familiarity, theme, message, and purpose.

**40. MGM Goes West in Westward The Women (1951) and The Harvey Girls (1946):
Rancher’s Daughters, Saloon Girls, and Matrimony in The Wild, Wild West**

Presenter(s): Ethan Padgett

Advisor(s): Dr. Emily Carman

The Western genre is known for being rugged and dangerous. When women come into focus within the genre, domesticity takes center stage in two distinct Western films. William Wellman’s *Westward The Women* (1951) takes MGM’s popular ensemble formula and elevates the Western genre with a nuanced depiction of women. George Sidney’s *The Harvey Girls* (1946) presents women with wit, class, and confidence in a musical environment that reimagines Western tropes. The films present contrasting views of American women during World War II through the lens of the Rancher’s Daughter and the Saloon Girl complex. These archetypes are both embraced and subverted as a sociological representation of women on the American homefront. My research takes a sociological, historical, and genre approach in understanding the Classical Hollywood period. These Westerns thematically represent domesticity’s necessity to demonstrate men and women can harmonize in the West without resorting to a “battle of the sexes.” Both films display creative approaches from Metro-Goldwyn-Mayer’s leading producers: the optimistic verisimilitude of Arthur Freed’s musical unit and Dore Schary’s realist touch. The Freed Unit showed the musical genre at its peak by telling cohesive stories. Schary implemented grit and realism without leaning into exaggerated melodrama. Both films display the versatility of the Western genre during its popularity with American audiences in the mid-20th century. It opens the door for the Western to be studied under genre hybridity during Hollywood’s Golden Age beyond the restrictions of iconic filmmakers like John Ford.

41. Timely Dissonance : Examining Uses of Anachronistic Music in Film**Presenter(s):** Ayda Tuncay**Advisor(s):** Dr. Emily Carman

Music in film is used as a tool that can psychologically transport the viewer and alter their perception of a narrative. It is a highly influential aspect of the mise-en-scene and can influence both our reality and the fictional world in the film, depending on whether it is non-diegetic or diegetic. The elaborate soundscapes of period films typically utilize period accurate scores and soundtracks to embed the audience in the environment of a different age. However, this paper will examine 'musical anachronism' and the correlation between music and emotion through an analysis of films such as *A Knight's Tale* (Brian Helgeland, 2001), *Marie Antoinette* (Sofia Coppola, 2006), and *Jojo Rabbit* (Taika Waititi, 2019), which deliberately incorporate anachronistic soundtracks to form a sense of temporal dissonance. These film examples create impossible, paradoxical situations as they explore how song choices can evoke familiar emotions from contemporary audiences. The use of anachronism is a stylistic choice that gives period films a new sense of resonance by eliciting certain emotions enhanced by the collaboration of visual and auditory senses. Using key scholars that include music and film psychology researcher Guido Heldt, and Professor of Philosophy, Dr. James O. Young, who focuses on art, language, and emotions, I will apply their findings along with many others in the field of music, film, and psychology to examine the correlation between music and emotion. This paper sheds light on the multifaceted role of soundtracks in shaping cinematic experiences, inviting audiences to reconsider the boundaries between historical accuracy and emotional responses in film.

42. Little Women: Exploring Adaptation Theory and Hollywood Perceptions of Female Autonomy Through Louisa May Alcott's Post-Civil War Novel**Presenter(s):** Charles Walker**Advisor(s):** Dr. Emily Carman

Complex by their translative nature, novel-to-screen adaptations, since the infancy of cinema, have recognized the allure and commercial potential of intertwining popular literary works with silver screen entertainment. Within this canon of literary classics, very few tales seem to resonate as profoundly as Louisa May Alcott's 1868 two volume novel, *Little Women*. The novel, although instinctually simple, has wielded an enchanting and rare power, not just within the pages of its highly studied original form, but also across the illustrious canvas of Hollywood's cinematic landscape. Yet, within this frame of cinematic adaptation, *Little Women* did not merely replicate its literary origin — rather, it unfolded much like a multifaceted jewel; each adaptation a new face, reflecting the novel's timeless allure. The most recent, and perhaps most profound in its attempt to globalize the tale, is Greta Gerwig's *Little Women* (2019). Alas this is not the sole adaptation of the classic work that relies on the political milieu of its respective era: its five Hollywood film, two episodic television (one anime), and several stage predecessors also possess this power. With the aid of several theorists and philosophers, such as Laura Mulvey, Jack (formerly Judith) Halberstam, Hugo Münsterberg, and the writings of Louisa May Alcott herself, it is in my best interest to (with a particular emphasis on the character of Jo March), unveil the nuanced shifts in perceptions of

female autonomy in the US across several renditions of a single story; with the intention of deepening our understanding of Adaptation Theory, and why Alcott's enduring tale continues to resonate with audiences globally.

Food Science

43. Use of DNA Barcoding to Detect Species in Ginseng Supplements

Presenter(s): Adri Ten Cate, Diane Kim, Donna Miranda-Romo

Advisor(s): Dr. Rosalee Hellberg

The COVID-19 pandemic led to significant increases in demand for dietary supplements, including ginseng supplements, to purportedly support immune health and provide other health benefits; however, this heightened demand has subsequently increased the risk of adulteration in these supplements. The objective of this study was to use DNA barcoding to identify species in ginseng dietary supplements. A total of 50 dietary supplement products containing ginseng (*Panax ginseng*, *Panax quinquefolius*, or *Panax notoginseng*) were tested with the following DNA barcoding regions: ITS2, *rbcl*, and *matK*. Two composite samples were tested per supplement. The consensus sequences were queried against GenBank to identify the species in each sample. Of the 50 products tested and confirmed via DNA barcoding, at least one species was identified in 68% of products (n=34), and the expected species was identified in 52% of products (n=26). Undeclared plant species, such as rice (*Oryza* spp.) and avocado (*Persea americana*), were detected in 11 products. The presence of undeclared plant species may be due to factors such as cross-contamination during harvest or processing, or intentional substitution for economic gain. Of the three genetic barcoding loci used, *matK* presented the greatest sequencing success when testing samples, with a sequencing rate of 60% (n = 31). Overall, these results reveal the challenges of using DNA-based methods to authenticate ginseng dietary supplements. The combination of DNA barcoding with a targeted approach may improve the species identification rates in ginseng dietary supplements.

Health Sciences and Kinesiology

44. Sex Disparities in Myocardial Infarction Care

Presenter(s): Vania Nasrieh, Vivian Nguyen, Thu Doan, Kelly Ung, Katie Sanders

Advisor(s): Dr. Christine Crispen, Dr. Michelle Cleary

Despite medical advancements, studies indicate that female acute myocardial infarction (MI) patients are more likely to experience fatalities and delays in healthcare compared to their male counterparts (Stehli et al., 2020). Recognizing the critical role of implicit biases and sex-specific symptoms is paramount for developing targeted interventions and improving the overall quality of care for female patients at risk for heart attacks. To conduct this study, an anonymous Qualtrics survey modeled after USMLE questions was created and sent to various MD, NP, and PA programs in Southern California. Participants were randomly assigned a survey containing a clinical profile

of either a male or female MI patient and distraction profiles to mask the survey's true objective. Study results will be analyzed and sent to the students' schools for appropriate adjustments to bias training and cardiology curricula. While awaiting survey results, data was collected to evaluate undergraduate pre-health students and faculties' increase in knowledge of MI sex disparities following a collaborative lecture with UCI Women's Heart Health Program. The session covered risk factors and sex-specific differences, such as pregnancy and menopause, which influence diagnosis and treatment options. Of the audience, 86.2% expressed that the talk considerably and significantly increased their understanding of sex disparities in MI, while the remainder indicated a moderate increase. The event proved valuable in raising awareness on implications of bias in healthcare and the urgency for a comprehensive outlook on heart disease identification since it is the leading cause of death for both sexes. Through post-Qualtrics, post-event self-reflection, and healthcare graduate programs' improved bias training and cardiology curricula, we project that students' awareness of their biases and ability to recognize sex-specific MI symptoms will be elevated. This study's downstream effects will hopefully result in female patients receiving more standardized and effective care, mitigating sex disparities.

Honors

45. Copyright Law and Creativity: Navigating the Legal Recognition and Reward of Creative Expression

Presenter(s): Chaz Gillette

Advisor(s): Dr. Ian Barnard

This project investigates the intersection of copyright law and creativity, focusing on whether the court system rewards creativity. Through analyzing pivotal cases, including *Lenz v. Universal Music Corp.*, *Silverstein v. Penguin Putnam*, and *Newton v. Diamond*, we explore how copyright disputes are adjudicated in the context of creative expression. These cases collectively offer insight into the legal frameworks governing copyright and the extent to which the courts recognize and protect creative endeavors. Our research methodology involves a comparative analysis of case outcomes, legal arguments, and the broader implications for creators and copyright holders. By examining the nuances of each case—*Lenz v. Universal Music Corp.*'s exploration of fair use in the context of online video sharing, *Silverstein v. Penguin Putnam*'s copyrightability of literary compilation, and *Newton v. Diamond*'s sampling controversy—we assess how copyright law intersects with creativity across different media. Expected results include a nuanced understanding of how copyright law both facilitates and restricts creative expression, offering insights into the balance the legal system seeks between protecting creators' rights and promoting innovation and cultural exchange. This project contributes to the area of inquiry by highlighting the complexities of copyright law concerning creativity, challenging prevailing assumptions about the legal recognition and reward of creative work. Through this analysis, we aim to provide a comprehensive overview of copyright law's role in shaping creative industries and influencing artistic expression.

46. Copyright Claims on Samples: How the Current Copyright Landscape Fundamentally Misunderstands Hip-Hop Music, and Unduly Targets Black Artists**Presenter(s):** Aleksander Lam**Advisor(s):** Dr. Ian Barnard

Sampling is a musical technique wherein a producer will take a portion (a sample) of another's work and repurpose it in their own work. In producer culture, sampling is often a sign of respect, and a way to musically "converse" with another artist's work. However, according to copyright law, a producer cannot use a sample without permission from the original artist. Consequently, that original artist should typically receive a portion of royalties that the song will make. In a theoretical world, this makes sense. However, current musical copyright law was not written with creative freedom in mind, and has resulted in numerous artists across genres being hit with copyright claims and accusations of theft. Hip-hop, as a genre that was built upon sampling, and is primarily pioneered and produced by Black artists, has been hit the hardest. Although there is always merit to the idea of "credit where credit is due," copyright lawyers and those outside of the hip-hop sphere often ignore the cultural context that hip-hop was formed in — and in doing so, a vast number of Black artists are targeted or sued for copyright infringement via samples used in tracks. In investigating major court cases of copyright infringement by hip-hop artists sampling others' work, I intend to demonstrate how the courts unwittingly target Black artists.

47. Authentically and Artificially Intelligent Authors**Presenter(s):** Julianne Peters**Advisor(s):** Dr. Ian Barnard

In the last year, AI advancements like Chat GPT have called copyright law and protections into question. Many companies are currently trying to sue open AI sources, fearing for the future of their industries. The filers of these suits plan to use copyright law to protect their property from being exploited or devalued and to protect their livelihoods. Yet, when AI makes a piece of intellectual property, copyright becomes complicated. Copyright exists to protect authors, but if a work is created by artificial intelligence, who can dictate how the intellectual property is circulated, replicated, and even interpreted? Should an AI "author" be treated with the same deific respect we give traditional authors? Similar to how the popularization of the internet necessitated laws such as the Digital Millennium Copyright Act (DMCA), advancements like AI raise this controversial question: How do we determine the value of a work, and what actions must we take to protect a work of that value? This project explores authorship through literary and artistic lenses, comparing Walter Benjamin's ideas of aura and authenticity with Michel Foucault's theories about the author-function to explore and determine the value of modern works across platforms. It will compare different forms of authors (academic, social, transformative, and artificial) to explore an author's power in a world of digital technology and what legal protections may reasonably be provided.

Integrated Educational Studies**48. A Critical and Analytical Autoethnography of a Filipina American College Student****Presenter(s):** Myra Dayrit**Advisor(s):** Dr. Stephany Cuevas

This study aims to continue building toward cultural responsiveness through analytic autoethnography, particularly for communities of color, within higher education spaces to increase their sense of belonging (Thompson, 2015). One racial minority that is often misunderstood in higher education research is Asian Americans. Maramba and Museus (2010) attributed their continued marginalization to the rapid growth of the Asian American population and their association with the model minority myth. When disaggregating the Asian American population, Filipino/a/x Americans are seen as the “forgotten Asian Americans” (Cordova, 1983). Filipino/a/x Americans are often underrepresented and misrepresented within education. They are often “invisible” within Asian American communities as a result of Filipino/a/x Americans’ liminality within the U.S. (Maramba et al., 2022). Leaving this population to be extremely under researched, despite being among the largest immigrant groups in the U.S. (David et al., 2017). Therefore, this study explores the lack of sense of belonging for Filipino/a/x Americans in higher education through a critical and analytic autoethnography.

49. Filipino/a/x Americans Navigating Predominantly White Campus Climates**Presenter(s):** Myra Dayrit**Advisor(s):** Dr. Stephany Cuevas

To further our understanding of how Filipino/a/x American students navigate predominantly campus climates, this study examines the stories and experiences of 9 Filipino/a/x Americans perspectives at a predominantly white campus climate. The study finds that the participants lacked a sense of belonging due to a lack of diversity and culturally specific resources. Their university’s failure to meet the needs of the Filipino/a/x Americans forced the students to assimilate, join a community by membership, or isolate to cope with the realities of a predominantly white campus culture. These findings are similar to the research on students of color’s experiences on predominantly white campuses. This study shows that in the culture of predominantly white campus culture, these Filipino/a/x Americans (n = 9) feel a sense of “otherness” visually, within their intersecting identities, and/or within the Filipino community on campus. The findings of this study are consistent with the literature on minorities navigating predominantly white institutions. This study is framed by the seven tenets of Asian American Critical Race Theory to contextualize the impact of the White Supremacist narrative of Asian Americans in American history.

Philosophy**50. A Health Humanities Approach to Interpreting the Results of C2BBe1 Cells Treated with Extracellular Vesicles from Bovine Milk****Presenter(s):** Sarelle Franco, Jordan Skolnick**Advisor(s):** Dr. Alexander Bay, Dr. John Miklavcic

Inflammatory Bowel Disease (IBD) is a gastrointestinal (GI) tract disease which is characterized by inflammation of the tissues. IBD diseases generally are diagnosed in the form of ulcerative colitis (UC) and Crohn's disease (CD). Current frameworks of treatments are moderately effective causing an overall decrease in the quality of life for the patient. Using an in-vitro model with C2BBe1 cells, it was shown that EVs are critically important for enterocyte function, EV depletion reduced cell viability and impaired cell barrier function, and EVs from bovine milk had a protective effect even when exposed to inflammatory stimulus (LPS). This framework provides promising evidence for its benefits as a potential IBD treatment model which could improve what is currently available creating better quality of life for patients. The exploration in understanding this biochemical research within the lens of the humanities reveals a critical disconnect which could implicate the lives of patients living with IBD. Thus, an autoethnographic approach was applied in order to understand how the lived experiences of someone struggling with IBD symptoms could be impacted by this biochemical research. It was found that there is promising evidence which suggests that it is important to connect the patient's lived experiences to biochemical research in order to understand the larger cultural, political and social themes.

Physical Therapy**51. Spatiotemporal Gait Parameter Consistency Across Two Days of Treadmill Walking in Stroke Survivors****Presenter(s):** Alejandro Aguirre Ramírez**Advisor(s):** Dr. Natalia Sanchez Aldana, Dr. Andrian Kuch

Retraining impaired gait is essential in post-stroke recovery. This project aims to determine between day variability of spatiotemporal gait measures in treadmill walking post-stroke to differentiate between changes due to the intervention and measurement errors due to between day test-retest variability. Six individuals post-stroke performed a two-minute walk test at a self-selected speed (SSS) for two consecutive days. SSS was assessed through the six-minute walk test. Reflective markers were placed on anatomical landmarks (van den Bogert et al. 2013). The heel markers were used for step detection. We calculated spatiotemporal parameters: stride length, stride time, step length, stance time, and swing time for both paretic and nonparetic legs. We calculated the test-re-test intra-class correlation coefficient (ICC) using a 2,1 model (Shrout, Fleiss 1979) the minimal detectable change (MDC). We list the correlation coefficients, ICC, and MDC values for each spatiotemporal variable. Stride length: $r=0.995$, $p<0.001$, ICC 0.995, and the MDC 5.9 cm. Stride time: was $r=0.994$, $p<0.001$, ICC 0.970, and MDC 0.17 seconds. Paretic step

length $r=0.999$, $p<0.001$, ICC 0.994, and MDC 2.9cm. Nonparetic step $r=0.986$, $p<0.001$, ICC 0.982, and MDC 6.6 cm. Paretic stance time $r=0.983$, $p<0.001$, ICC 0.933, and MDC 0.20 seconds. Nonparetic stance time $r=0.995$, $p<0.001$, ICC 0.979, and MDC 0.14 seconds. Paretic swing time $r=0.999$, $p<0.001$, ICC 0.990, and MDC 0.03 seconds. Nonparetic swing $r=0.816$, $p<0.05$, ICC 0.765, and MDC 0.04 seconds. Overall, paretic step lengths were more consistent between days than nonparetic. There was no observed difference in consistency between spatial and temporal parameters. Nonparetic swing time had the highest variation. The findings are of use in the intervention studies being done in our lab with post-stroke participants to detect true changes in walking due to our intervention studies. It can also be applied to other labs by working with stroke participants using the GRAIL system.

52. Perception of Task Duration and Differences in Sex Affects Energetic Cost During Locomotor Adaptation

Presenter(s): Adrian Aragon

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

In the lab, a common way to study motor adaptation is using a split-belt treadmill. While walking on a split-belt treadmill, individuals adapt and store new motor patterns (Reisman 2005), which occurs in tandem with a reduced energetic cost (Finley 2013, Sanchez 2021). We studied if energy expenditure is affected when the duration of split-belt adaptation is unknown, and determined if sex plays a role in the difference, as typically, men have larger lung capacity compared to women (Hunter 2023). We hypothesized that participants who are uncertain of task duration will have lower energy expenditure than those who know task duration, and that women would have higher energy expenditure compared to men. Participants were randomly divided into: a Known group (K, $n=14$) who knew they would walk for 10 minutes on a split-belt treadmill; an Uncertain group (U, $n=12$), told they would walk around 30 minutes. All participants walked for 10 minutes on a split-belt treadmill. We measured metabolic cost, rate of perceived exertion (RPE), and heart rate (HR) were collected. Analyses were conducted using a $2 \times 2 \times 6$ factorial ANOVA. We observed significant differences in HR across time points ($p<0.001$) between men vs women and between the K and U groups ($p<0.05$). Women in the U group had significantly higher HR during split-belt adaptation than men in this same group ($p=0.013$). In contrast, HR for women and men in the K group did not differ. Metabolic cost was different between timepoints ($p<0.001$) and between groups ($p=0.023$) but not between men and women. We did not observe a significant difference in RPE between groups or between men and women. The results suggest that duration information and sex should be considered in exercise prescription, particularly for women.

53. Day and Night Variations in HRV Among ER Workers**Presenter(s):** Seif El Askary**Advisor(s):** Dr. Rahul Soangra, Michael Shiraishi

A comprehensive study was conducted on emergency response workers, focusing on the utilization of Garmin watches to collect heart rate R-R interval data. The objective of the study was to investigate the variations in heart rate variability (HRV) between day and night in emergency response workers, with a particular emphasis on evaluating multiple HRV parameters. The study involved a group of 20 emergency response workers who wore Garmin watches to continuously monitor their heart rate and collect R-R interval data. Various HRV parameters, including both temporal and frequency-based parameters, were analyzed to assess the differences in HRV during daytime and nighttime periods. Additionally, nonlinear parameters were examined to gain insights into the complexity and adaptability of the autonomic nervous system in emergency response workers. By leveraging the capabilities of Garmin watches, this study aimed to provide a comprehensive understanding of the dynamic changes in HRV throughout the day and night in emergency response workers. The collected data will contribute to the existing knowledge base and may have implications for the development of personalized interventions and monitoring strategies to optimize cardiovascular health and well-being in emergency response workers.

54. Augmenting Hand and Arm Function for Persons with Hemiparesis**Presenter(s):** Brooke Stein**Advisor(s):** Dr. Susan Duff, Dr. Alison McKenzie, Dr. Rahul Soangra

Background. Hand and arm dysfunction due to neural disorders significantly influences quality of life. Activity-based training has been found to improve function. These improvements could be augmented with transcutaneous spinal cord stimulation (tSCS) due to its modulatory effect on spinal and supraspinal networks.

Objective. The primary aim is to determine if a 4-week training program will improve hand and arm function. The secondary aim is to determine if adding tSCS to a second 4-week training session will further improve function.

Design. This is a pre-posttest, controlled trial for persons 10-75 years of age, >6 months post-stroke, or with unilateral cerebral palsy.

Methods. Participants will engage in two 4-week training periods, 3x/week for 2 hours/day. The 1st period will include unimanual and bimanual training alone. The 2nd period will be augmented with low-frequency tSCS to the C5-T1 spinal region. Stimulation intensity will be based on individual muscle activation during 3 tasks: 1) grip dynamometry, 2) grip-lift, and 3) target pointing. Outcome measures are taken before, midway, and after training are Canadian Occupational Performance Measure (COPM), dexterity, daylong arm use, grip/pinch strength, sensibility, questionnaires, bilateral hand/arm surface electromyography, and Upper Extremity Fugl-Meyer (UEFM).

Results: Six participants have completed the 1st 4-week training period without tSCS. Individual data reveals COPM, Grip strength, dexterity, and UEFM improvements. Findings for other measures after the 1st period are mixed or in process.

Conclusion: Preliminary findings from this ongoing study reveal that participants improved most measures. The next phase of the study will determine if adding tSCS to training further augments hand and arm function.

Political Science

55. An Educated Guess: The Impact of Education on Conspiracy Theories and Voting

Presenter(s): Eleanor Bickelhaupt

Advisor(s): Dr. Ann Gordon

How strongly does education impact one's perception and opinion of conspiracy theories and voting? Throughout the years, conspiracy theories have been a rising trend in recent years that many people find entertaining, but many believe to be actual facts. The impact of one's education level can substantially change a person's beliefs in conspiracy theories and overall trust in the government. This trend has been shown by analyzing media consumption, education status, and the American National Election survey. This research will compare the trends between education level and conspiracy theory beliefs and how both affect a person's voting behavior. This research will use statistical data found in the Chapman Survey of American Fears to explore further why and how a person's level of education can impact their opinions and beliefs in relation to conspiracy theories and the government, which, in turn, affects a person's voting behavior. Media, news consumption, education, and personal research can all heavily affect an individual's opinions regarding government and conspiracy. Emotional, cognitive, and social outcomes seem to play a prominent role in this paper's hypothesis on why the lower an individual's education is and the more significant media consumption they have, the less likely they are to trust the government and the more likely they are to believe in conspiracy theories.

56. Assessing the Contemporary Causes of Americans' Fear of Illegal Immigration

Presenter(s): Amilie Cai

Advisor(s): Dr. Ann Gordon

The causes of Americans' fear of illegal immigration have been one of the most controversial topics in our democratic society. In this paper, I examine the correlation between political identification, census region, internet usage, and U.S. adults' fear of illegal immigration. Relying on the 2023 Chapman Survey of American Fears, a representative national sample of U.S. adults, I find that there is a strong correlation between Americans' political identification and their fear of illegal immigration, with people who are extremely liberal being the most fearful of illegal immigration. In addition, the degree to which the States have incorporated immigration has become one of the contributing factors to Americans' fear of immigration. Furthermore, through the survey, I discovered that the West, allowing the highest percentage of illegal and legal

immigrants out of all the state regions, also had the greatest fear of illegal immigration. Additionally, I find that Americans' exposure to the news and internet sources is strongly linked to their fear of illegal immigrants, specifically with individuals who are less likely to read online news being more fearful of illegal immigration. Although it may be impossible to end all Americans' fears of illegal immigration, increasing Americans' media attention towards illegal immigrants will help quiet their fear and promote diversity in our democratic society by reshaping Americans' perception of illegal immigrants and reducing politically affiliated or territorial barriers between them.

57. Voices of Discontent: Exploring the Impact of Political Activism on Democratic Perceptions

Presenter(s): Sierra Carles, Scarlett Vandermeer

Advisor(s): Dr. Lewis Luartz

What is the impact of political activism on democratic satisfaction during the 2020 election cycle? The election year caused a surge of protest initiatives leading many to raise doubts regarding the legitimacy of U.S. democratic institutions. Previous literature discusses other methods of political participation including voter turnouts, yet there is limited research on how protest rates can undermine democracy. We argue that those who attend methods of protest including marches, demonstrations, and rallies will be more unsatisfied with democratic institutions in the United States than those who do not. Obtaining data from the 2020 American National Election Studies, we used a logistic regression model to test this hypothesis. The results of this model suggest a strong positive relationship between protest rates and the perceived sense of democratic failure. Moreover, in 2020 citizens who attend forms of protest were more likely to have attitudes of dissatisfaction toward democracy in the United States. The findings showcase that increasing levels of activism can signal potential flaws in regime performance and therefore impact political and social stability.

58. The Influence of Political Party Affiliation on Public Opinion of Abortion

Presenter(s): Yasmine Darwish

Advisor(s): Dr. Lewis Luartz

With increasing debate and analysis on abortion rights in the United States, this sparks the question: Does political party affiliation influence public opinion on abortion laws in the United States? Existing literature that analyzes public opinion on abortion tends to focus more on religious factors as a determining element. This literature fails to address how one's political party affiliation can overlap with other additional factors that lead to forming an opinion on abortion, such as religion, social class, and race, and even be the causal factor for one's opposition or support for abortion. I argue that on a political spectrum of Democratic (left) and Republican (right), those who fall on the left side of the spectrum will be supportive of pro-choice abortion laws, those who fall on the right side of the spectrum will reject pro-choice abortion laws, and those who fall in the middle will vary. Using the `gss_abortion.csv` ("Abortion Opinions: Trends and Factors" from the General Social Survey), I did a linear regression to uncover the relationship

between the independent (“partyid”) and dependent variables (abany). My findings suggest that as one's opinion falls further left (Democratic), they are more likely to support pro-choice abortion laws, and as one's political party affiliation falls further right (Republican), they are more likely to reject pro-choice abortion laws. This suggests that there is a positive correlation between one's political party affiliation and their opinion on abortion.

59. Polarization on Voting Behavior in California**Presenter(s):** Zaphera Fidelis, Kellen Downey**Advisor(s):** Dr. Lewis Luartz

What is the impact of polarization on voting behavior in California? Existing literature has failed to understand and properly analyze the gap between polarization and its effect on voting behavior in the state of California. We want to fill this gap to further the relationship between polarization and voting behavior in California. We argue that polarization increases voter turnout in California due to the strength of party affiliations, which push voters to register and turn out. We test our argument using the ANES Time Series Cumulative Dataset (1948-2020). We recoded our dependent variable to run a logistic regression model on voter turnout to predict whether or not an individual has voted or not in California. To measure party affiliation, we incorporated a liberal/conservative scale as our primary explanatory variable. Our findings suggest that the level of partisanship has a direct positive relationship with individuals' voting and registration levels.

60. Unveiling the interconnection: Social Media Engagement and Voter Turnout in the 2020 Presidential Elections**Presenter(s):** Melanie Flores**Advisor(s):** Dr. Lewis Laurtz

The influence of social media on voter turnout in the 2020 presidential elections remains a subject of considerable debate and scrutiny. This study seeks to elucidate this relationship by analyzing empirical data from various sources. Through a comprehensive examination of correlation coefficients, the study investigates how social media engagement correlates with voter turnout during the 2020 election cycle.

Preliminary findings suggest a statistically significant positive correlation between social media activity and voter turnout. Precisely, higher levels of engagement on popular social media platforms, such as Facebook, Twitter, and Instagram, corresponded with increased voter participation. These results underscore the potential of social media as a tool for mobilizing and engaging voters, particularly among younger demographics who are more active on these platforms.

Moreover, the study identifies several factors mediating this relationship, including publicizing political information, online activism, and peer influence within social networks. Additionally, the role of political campaigns' targeted advertising and micro-targeting strategies is examined in shaping voter behavior.

This research contributes to understanding the evolving dynamics between social media and political participation. Shedding light on social media's impact on voter turnout in the context of

he 2020 presidential elections provides valuable insights for policymakers, electoral campaigns, and scholars interested in the intersection of technology, communication, and democracy.

61. Latinx Immigrants on Immigration and Assimilation

Presenter(s): Shea Foresti

Advisor(s): Dr. David Shafie

The term “melting pot” has been used to describe how the fusion of immigrants into American society creates an ever transforming homogeneous nation. Since its establishment, immigrants have come to America from all across the world, changing this “melting pot” over time. This research paper examines Latinx immigrant attitudes using the 2016 Latino Immigrant National Election Study (LINES). The 2016 LINES surveys Latinx immigrants, citizens and noncitizens, in a year long survey conducted before and after the 2016 presidential election. The dynamic nature of United States immigration policy has shaped the country’s demographics and subsequently political discourse. Latinx engagement and participation in the complex political landscape of the United States has become an increasingly important element in understanding public opinion and voting behaviors. The American political sphere recently experienced a landmark shift towards nativism and anti-immigrant rhetoric during the 2016 presidential campaign. This shift origin can be largely attributed to Donald Trump’s announcement for candidacy in the summer of 2015. The impact of his campaign sparked new political dialogues, leaving a lasting imprint on the landscape of U.S. politics. Analysis tends to focus mostly on U.S. citizens’ attitudes towards Latinx immigration during this period. This paper’s focus is on Latinx immigrant attitudes using survey data collected from the 2016 LINES. The aim of this paper is to expand on existing knowledge of Latinx political engagement with focus on assimilation and patriotic sentiments. The main research question seeks to understand how the length of time of residency and citizenship status of respondents, who have concern for their future in the U.S., affects their tolerance of immigration. The expected result is that a longer residency and citizenship will lead to stricter immigration policy preferences.

62. Examining the Fears of White Majority Population Decline Concerning Illegal Immigration

Presenter(s): Jennifer Lopez

Advisor(s): Dr. Ann Gordon

The white American majority is shifting between the U.S. Census Bureau from 2010 to 2020. There has been research that shows that the white population feels threatened by the idea of being the minority, which can trigger fear. The purpose of the study is to compare Americans’ fear of whites no longer being the majority in the United States due to illegal immigrants.

I will be relying on the Chapman Survey of American Fears, a representative national sample of U.S adults, and the results. I will examine the extent to which the media preferences, policies, and political affiliations. Among the interesting findings is the combination of very afraid and afraid, for both fears are high percentages, illustrating a correlation between the white majority’s fears—very afraid and afraid (56.1% and 31.9%) survey data percentages. Therefore, I will be comparing

all other factors that shape Americans' fear of illegal immigrants that stem from wanting to harm and discriminate against immigrants and other racial minorities. It is crucial to understand better that there has been a hierarchy of the white population who believe that they are a superior race. Now, with the decline of the white population in the U.S., it is taking a different perspective on the fear of illegal immigrants. It creates certain stereotypes and assumptions about illegal immigrants who decide to come to the United States.

63. The Demographics and Characteristics of Climate Change Fear in the United States

Presenter(s): Jolina Hamdan

Advisor(s): Dr. Ann Gordon

As extreme temperatures, weather conditions, and natural disasters persist to intensify due to global warming's alarming influence on climate change, the overarching fear of climate change and its consequences looms over many individuals' lives. However, public discourse around global warming varies, and some individuals fear more about climate change and its consequences than others. In this paper, I aim to investigate the factors- characteristics, attitudes, demographics- that drive individuals' fear or lack thereof regarding climate change/global warming in America. Relying on the Chapman Survey of American Fears, a representative national sample of U.S. adults, I examined the independent variables of income, geographic region, political affiliation, 2020 election vote, level of education, social media usage, support of the COVID-19 vaccine, and the relationship each category had on the fear scale of climate change/global warming. Among my interesting findings, Americans with heightened fears of climate change are associated with high income, democratic affiliation, residing in the Western US region, completion of education beyond high school, voting for Biden in the 2020 election, endorsing the benefits of the vaccine over its risks, and frequently obtaining news from social media. Conversely, respondents who deny climate change and do not fear it tend to exhibit distinguished characteristics that I am further researching. This distinctive research reveals a more nuanced interplay of the demographic and socio-political factors, beliefs, habits, and attitudes shaping American perceptions toward climate change. By introducing a new, deeper understanding between American climate change fearers and non-fearers, this research equips policymakers, environmental organizations, advocacy groups, (etc) with actionable knowledge to refine their messaging and policy strategies to effectively communicate and engage with specific demographics, thereby mitigating the dire consequences of climate change.

64. The Vietnam War: Was it a National Security Issue?

Presenter(s): Victoria Kilgour

Advisor(s): Dr. Lewis Luartz

The United States' choice to enter Vietnam was fueled by a need to demonstrate to the world that they were the global hegemon they had presented themselves to be in the wake of World War II. In an attempt to halt the spread of communism through the utilization of containment, then détente, the US deployed forces to Vietnam in fear of the "domino effect" taking place, thereby spreading communism and creating a direct threat to democracies everywhere,

threatening the security of the US is not stopped. President Eisenhower was the first president to highlight the issue, and after, President Johnson sent troops to Southeast Asia in an effort to stop the spread of communism during the height of Cold War tensions, consequently starting the years-long Vietnam War. However, despite early confidence and desire to solidify America's power on the global scale following the foreign policy failure with the Bay of Pigs, US intervention in Vietnam was ultimately unsuccessful, jeopardizing the lives of hundreds of thousands while simultaneously implementing irrevocable effects on both American and Vietnamese troops alike. The Vietnam War propelled the idea of the 'Imperial Presidency' in America, hence why the war progressed so long. Despite the US pulling out of Vietnam five decades ago, many scholars have debated if America gained anything from it. Perhaps America did, perhaps it did not. Nevertheless, the bottom line is this: The Vietnam War wasted lives and resources in the name of protecting national security, but the 'US national security' that officials were so worried about was never threatened in the first place.

65. Investigating American Fears Toward China: An Analysis of Public Opinion on Economic, Technological, and Geopolitical Concerns

Presenter(s): Brett Klossing-Aurin

Advisor(s): Dr. Ann Gordon

The Chinese growth as a world economic leader and a strong military actor triggers apprehensions among the American population concerning the loss of their dominant position. The main ground of this research is to investigate public opinion on China's dominance, the size of the economy which has got bigger than America's market, the stealing of American technology by the Chinese, the espionage as the key in the competition for power on a global level, and the potential for military conflict. My study will be conducted on data gathered from the nationally representative sample, the 2023 Chapman Survey of American Fears, which will analyze to what extent people in the United States are afraid of the presented items and whether some demographics and ideologies play a bigger role or not. Such information shall enrich the existing knowledge of the American public about serious US-China geopolitical matters and could be taken into account during the discussions on relevant policies and foreign policy strategic decision-making.

66. Fear of Victimization: Exploring Vulnerability, Media Influence, Demographics, and Perceptions of Murder by a Known Individual

Presenter(s): Stephanie Martinez

Advisor(s): Dr. Ann Gordon

A prevalent feature of modern civilization is the fear of being a victim, which affects people's attitudes, actions, and social institutions. By using the Chapman Survey of American Fears, this study explores the complex anxiety associated with a particular crime: murder committed by a victim's acquaintance- in other words, by someone you may know. This research, which uses vulnerability theory as a framework, looks into what influences people's fear of these crimes and focuses on demographic characteristics. The study uses a mixed-method approach, including

surveys and qualitative interviews, to examine the intricacies of fear and vulnerability. Data are drawn from demographic indicators and Federal Bureau of Investigation (FBI) statistics. According to research, perceptions of vulnerability are significantly shaped by demographic factors, including age, gender, and socioeconomic level, even while personal experiences and social networks also have an impact on the dread of murder by a known individual. Furthermore, how these murders are portrayed and covered in the media becomes a significant element in influencing public opinion and raising anxiety levels. Policymakers, law enforcement organizations, and community leaders must comprehend these dynamics in order to develop effective crime prevention methods and cultivate a sense of security among the populace. This research adds to the larger conversation about victimization fear by illuminating the complex relationship between vulnerability and fear in modern culture.

67. Voter Behavior and Terrorism-Related Arrests: Understanding the Electoral Success of Far-Right Parties in European Parliament Elections

Presenter(s): Sage McCarty

Advisor(s): Dr. Andrea Molle

Domestic politics within European countries is marked by threats of terrorism; meanwhile, electoral successes among far-right political parties are increasing within the European Parliament. My previous research into correlations between variables related to terrorism and far-right electoral success revealed that a given European Union member country's total numbers of terrorism-related arrests and terrorist attacks in a given year are not correlated with far-right support in the country's elections for the European Parliament during the following year. Considering the effects that terrorism has on European countries, more insight is required into whether more specific variables related to terrorism, as differentiated based on motives, are correlated with the electoral success of far-right parties. Therefore, this new project seeks to reveal whether overall support for the far-right in the European Parliament elections of given year is correlated with variables pertaining to religiously inspired/jihadist terrorism and/or right-wing extremist terrorism during the election year and/or the previous year. These variables include the numbers of arrests related to religiously inspired/jihadist terrorism and the numbers of arrests related to right-wing terrorism in given years. As related to these variables, this project uses correlations to test the alternative hypotheses that support for far-right parties is comparatively low in the context of a high number of arrests related to right-wing extremist terrorism and support for far-right parties is comparatively high in the context of a high number of arrests related to religiously inspired/jihadist terrorism. This project seeks to lead to uncover whether voter support for far-right parties is correlated with terrorist threats in Europe, as quantified by numbers of terrorism-related arrests in a given year, allowing for a greater understanding of voter behavior in Europe.

68. Analyzing the Impact of Social Media on Political Polarization in the United States Over the Last Decade**Presenter(s):** Kate Meisenbach**Advisor(s):** Dr. David Shafie

Social media platforms' political messaging and consumption have increased over the last two decades, and so has their influence on the political polarization in the United States. In this paper, I will review several studies that have laid the groundwork for understanding the relationship between social media and political polarization. For instance, research published in the "Journal of Communication" posits that social media facilitates selective exposure to politically homogeneous information, which can amplify partisan attitudes (Bakshy, Messing, & Adamic, 2015). Similarly, in the study "American Political Science Review", it asserts that social media's role in political polarization is complex, acting both as a medium for echo chambers and as a space for diverse political discourse (Barberá, 2015). We will also look at studies conducted by the Inter-university Consortium for Political and Social Research (ICPSR) analyzing two variables, social media usage among different demographic groups, and political affiliation and ideological self-identification over time. I anticipate empirical evidence to find a strong positive correlation between the level of social media consumption and the degree of political polarization, and due to increased ideological entrenchment and a higher likelihood of voters to self-identify with extreme political positions. By identifying how social media impacts political polarization, this research offers insights on potential opportunities of mitigating the negative impacts on political polarization and instead foster a more inclusive political discourse.

69. Explaining the Fear of Immigrants in the United States**Presenter(s):** Leila Pozzi**Advisor(s):** Dr. Ann Gordon

The fear of immigrants has been a prominent factor affecting the political approaches of individuals across the United States. It moves public opinion in various ways across time, especially during elections. In this research project, I will explore how this specific fear navigates through public opinion as well as what exactly the root is to the fear of immigrants. To do so, the Chapman Survey of American fears, a representative national survey of adults in the United States that started in 2018, will be relied upon during this process in examining why these approaches came to be. In the findings, I expect to find areas of topics such as the economy, party affiliations, the criminal justice system, and failure of full assimilation into the US. In accordance with this, there may also be significant ties between xenophobia and partisanship with the fear of immigrants. By using the Chapman Survey of American fears from July of 2018, I will be able to analyze how public opinion plays a role in a fear that ultimately guides the way immigrants, and their families live their lives. If the American Dream is to give individuals a chance to obtain prosperity in the United States, the fear of immigrants drives that dream in the opposite direction, farther away, potentially making it harder for one to reach.

70. The Issue of Abortion Rights and its Effect on the Gender Divide in American Politics**Presenter(s):** Saam Seddigh**Advisor(s):** Dr. Ann Gordon

The 2022 Dobbs v. Jackson decision by the Supreme Court of the United States overturned nearly half a century of protected abortions under legal precedent and significantly changed the American political landscape. Trends from past election results point to a leftward shift, specifically among college-educated white women in a year when most of the country shifted right. Additionally, the American National Election Studies, with their representative national sample of U.S. adults, found a high level of salience regarding the issue of abortion during that particular election cycle. My research will seek to construct a connection between these individual findings to examine the impact the SCOTUS decision had and will continue to have on political narratives and the shifting ideologies of men and women in American politics. The research will be conducted as an anonymous online survey measuring American attitudes toward abortion rights with crosstabs to weigh for age, gender, religion, race, education level, political ideology, geographic region, and partisanship. I expect the results of my research to find that the issue of abortion was a particularly powerful motivator for women to vote, particularly in a shift toward the Democrats in a year when the country as a whole shifted toward the Republicans. This finding will show an increase in the gap between the overall ideologies of men and women, indicating further political polarization between the genders, potentially caused by a single issue. The Dobbs decision intensified political polarization, particularly along gender lines, by highlighting the sharp divide in attitudes toward abortion. The decision and subsequent elections highlight how single-issue matters like reproductive rights can drive voter behavior and deepen divisions between Democrats and Republicans, and men and women.

71. In the Shadows of Trumpism: Investigating the Relationship Between Support for Donald Trump and Tolerance for Political Violence**Presenter(s):** Donovan Young**Advisor(s):** Dr. Ann Gordon

The scene of a confederate flag waving in the defaced halls of the United States Capitol was a sight even Lincoln could not imagine; yet on January 6th, 2021, that is exactly what happened. A former president lied to his supporters, and convinced them they had to storm the heart of US democracy to save their country - and since then it seems as if violent actions and rhetoric have become increasingly baked into American politics, particularly in the former president's latest attempt to return to the White House. In this article, I examine the connection between support for Donald Trump and the Republican party, and support for political violence. Among other interesting findings, using an original data set containing many recent survey questions regarding attitudes toward political violence, I found that there is a moderate correlation between how conservative someone may identify themselves as, and their willingness to support violence to restore Donald Trump to power. Additionally, I encountered an even more striking statistic: around half of Trump supporters (which is a very significant portion of our population) believe political violence is necessary to get America on the right track. This offers a potential causation

that would explain the correlation of the rise in Republicans believing in political violence. Looking further, multiple news organizations have examined Trump's statements and found that, indeed, he expresses viewpoints condoning political violence much more than he did in 2016 - or even during his four years as president. Understanding the connection between Donald Trump, as well as the rise in appetite for political violence among Republicans, is incredibly important because of the immense consequences for our posterity that could result in a candidate who encourages violence as Donald Trump does winning the White House once again.

Psychology

72. The Role of Empathy in the Perpetuation of Physically Violent Behaviors in Women

Empathy and Domestic Violence by Women

Presenter(s): Racquel Fhima

Advisor(s): Dr. Desiree Crevecoeur-Macphail

The role of empathy in the perpetuation of domestic and intimate partner violence (IPV) has not been studied extensively. Empathy as a studied variable has only gained recognition in the past decade on a biological basis rather than a psychological basis. Furthermore, most of the research and theory surrounding empathy focuses on how feeling emotions for others relates to the firsthand experience of that emotion. Concerning domestic and IPV, there are multiple studies conducted on the victimization of women, however, there is a very slim selection of articles that have researched the victimization of men by women specifically looking at the role of empathy. Hoffman's Theory of Moral Development (1983) will serve as the main theory to base all research, but this research will also use the perception-action model as a way to study the inner workings of empathy on a neurological level. This study refines our current understanding of empathy by looking at it in relation to the perpetration of physically violent behaviors in women. If the findings are true, the hypotheses would suppose that when exposed to maternal domestic violence during childhood, males would be more susceptible to domestic violence at the hands of a female partner. As a result of men being more susceptible to intimate partner violence at the hands of a female partner, radical changes need to be made in dealing with intimate partner violence. From how male victims of intimate partner violence are treated to how the perpetrators of domestic violence are charged, changes need to be met in terms of who is being held accountable for these actions.

73. The Long-Term Effects of Family Instability During Childhood

Presenter(s): Emily Guillen

Advisor(s): Dr. Desiree Crevecoeur-MacPhail

The environment in which children are raised greatly influences the person they will grow up to be. Children who experience dysfunctional family relationships, such as constant changes and disruptions to the family structure, are likely to experience long term effects. The purpose of this study is to understand the link between family instability within relationships and the long-term

psychological effects in early adulthood. Through the use of family systems theory, the research examines the family as a whole in which interactions within the family affect each member. This study investigated childhood experiences of unstable family relationships, and their likelihood to experience long-term effects such as depressive symptoms, emotional regulation, and relational issues. It is hypothesized that experiences of family instability during childhood correlate with symptoms of depression in adulthood. The second hypothesis suggests the experiences of family instability before the age of 5 to have an increased risk of symptoms of depression during adulthood. Additionally, the third hypothesis proposes the experience of family instability during childhood to correlate with lower scores on emotional regulation in adulthood. Lastly, it is hypothesized that experiences of family instability during childhood to be associated with relational issues that continue in adulthood. The implications for the findings highlight the importance of early intervention strategies to support individuals in unstable family environments in order to prevent the long-term psychological effects seen in adulthood.

74. A Little Goes a Long Way: Gratitude and Relationship Satisfaction**Presenter(s):** Halle Morse**Advisor(s):** Dr. David Frederick

Romantic relationships play a critical role in people's daily lives and overall happiness. Expressions of gratitude for one's partner and attachment styles two factors known to be relevant to overall relationship satisfaction. The current study examines how avoidant and anxious attachment styles interact with each other and with expressions of gratitude among partners to predict relationship satisfaction and relationship conflict. Are expressions of gratitude from one's partner enough to quell the anxiety some people feel about their bonds with their partner? Among over 1300 adult women in relationships recruited via MTurk, attachment style and gratitude were associated with relationship quality, as would be expected. There were, however, significant interactions among these variables that suggested the importance of partner gratitude for ameliorating some of the negative outcomes associated with anxious attachment style. The study highlights the importance of investigating whether interventions to encourage expressions of partner gratitude could influence attachment style and relationship quality.

75. Music to My Ears: Exploring the Relationship Between Music and Self-Esteem**Presenter(s):** Missy Glover**Advisor(s):** Dr. Desiree Crevecoeur-MacPhail

Music has been an essential part of human life for centuries. Music is art, music is entertainment, music is an integral part of cultures across the globe. Understanding why music is so essential for humans is becoming a growing fad to psychologists, with previous literature highlighting a relationship between music and mood. Through the lens of biomusicology, the current study investigated how three different moods of music (depressing, upbeat, and instrumental) increased or decreased short term reported self-esteem in college students and what role preferred genre of music played in this change in self-esteem. Concurrent with the proposed hypotheses, regardless of preferred genre of music, participants are expected to see an increase

in self-esteem when listening to upbeat music. Furthermore, participants who have a preference for depressing music are expected to have the most extreme increase in self-esteem after listening to upbeat music compared to those with other music preferences. Overall, it is expected that participants who report distinctly higher levels of listening to music daily will start with higher levels of self-esteem than participants who reported low levels of the same activity. These results suggest that music can be a large mediator in affecting the moods of college students, highlighting the power music has to uplift the moods of young adults. Understanding the role music has in affecting the mood of college students is essential to enhancing the mental health of young adults pursuing the intense world of higher education. Implementing music into the everyday experience of college campuses is essential for bettering the mental health of college students across the globe.

76. Exploration Between Parenting Styles and Obsessive-Compulsive Disorder

Presenter(s): Crystal Kim

Advisor(s): Dr. Desiree Crevecoeur-MacPhail

The interplay between parenting styles and the development of psychological disorders has been well-studied and contributed to, particularly with depression and anxiety disorders. However, research exploring the correlation between parenting styles and obsessive-compulsive disorder (OCD), specifically, has comparatively not been as ubiquitous nor comprehensively examined. Though sparse, existing research and literature indicates a significant relationship between authoritarian parenting (low responsiveness, high demandingness) and OCD symptomatology. Using this finding as a baseline, this study sought to provide an expansive review in assessment of all Baumrind parenting styles, including authoritative, permissive, and authoritarian across categories of OCD symptoms such as contamination, harm/injury, unacceptable thoughts, and symmetry. Participants, via Qualtrics, were instructed to complete a maternal and/or paternal parental authority questionnaire (PAQ) to measure perceived parenting style of their parent(s), as well as a dimensional obsessive-compulsive scale (DOCS) to measure indication and typology of obsessive-compulsive symptoms. Additionally, the intentional assessment of maternal versus paternal parenting were examined to determine whether the difference of maternal and paternal influences or exacerbates the impact of parenting styles on the lack of, intensity, or type of OCD symptoms displayed by the participant. The objective of the study is to effectively contribute to ongoing research surrounding a disorder that is often stigmatized and less recognized in comparison to its related disorders such as general anxiety and depression. In a clinical setting, this research will prove to be valuable in empowering both the clinician and patient in comprehending the complex impact of parenting and upbringing on OCD manifestation, leading to a more personalized and effective intervention for OCD treatment.

77. Navigating Intimacy in the Digital Age: Exploring the Intersections of Gender Identity, Sexuality, and Dating App Usage

Presenter(s): August Potier

Advisor(s): Dr. Desiree Crevecour-Macphail

Growing up in close proximity to the rise of the Internet and social media, Generation Z, or individuals born between the years 1997 and 2012, have undeniably been affected by these factors, especially with regards to intimacy and dating life. Dating apps have undoubtedly had a profound effect on dating behavior and culture in Generation Z, with their design philosophies centered around themes such as “quantity over quality,” “out with the old and in with the new,” and superficiality. While research is abundant for older age groups, reported dating behavior and intimacy in Generation Z is still emerging, and undoubtedly requires more data, especially with regards to the many dating app platforms. The intent of this study was to examine trends between gender and sexuality with regards to how Generation Z individuals use and experience dating apps. Data is still being collected at this time, but assuming all hypotheses are statistically significant, a variety of tendencies can be expected for certain demographics. Men will be more likely to utilize dating apps for sexual purposes, whereas women will be more likely to utilize them to find serious, committed relationships. Additionally, men will be more likely to misrepresent characteristics pertaining to their socio-economic status and positive qualities, whereas women will be more likely to misrepresent their physical appearance. Finally, women will be more likely to be victimized through aggression and coercion on dating apps, men will be more likely to be victimized through monitoring and controlling, and LGBTQ+ identifying individuals will be more likely to experience all aforementioned forms of dating app victimization (monitoring, controlling, aggression, and coercion) than heterosexual individuals. If these trends emerge, they should highlight the importance of educating Generation Z on dating safety, especially within the context of using dating apps, where safety protocols and details have previously been sparse. These results should also indicate to dating app programs the importance of developing more adva

78. Examining the Impact of Teacher Victimization on Mental Well-Being: A Retrospective Study on College Students

Presenter(s): Quindon Robinson

Advisor(s): Dr. David Frederick

Teachers can have a powerful impact on their student’s academic outcomes and mental health. Many of these impacts are positive but can also be substantially negative when teachers engage in bullying or harmful behaviors or when students perceive their behaviors as bullying. These behaviors by teachers can have lasting effects on a child or adolescent's psychological, emotional, academic, and social well-being. Past research has found that some demographic groups are more susceptible to teacher victimization than others, such as students from lower socioeconomic statuses or students who are males. We conducted a retrospective study on college students (N = 227) that examined their perceived experiences of teacher victimization in the K-12 school setting and the possible associations with mental distress and emotional self-efficacy later in their adult lives. We predicted that there would be an association between students experiencing more

instances of victimization, higher levels of mental distress, and lower levels of emotional self-efficacy. Furthermore, we predict that rates of victimization will be higher among males, students from lower socioeconomic backgrounds, and students who went to urban schools. Correlational analyses found that students who reported more instances of teacher victimization reported higher mental distress and lower emotional self-efficacy. Additionally, male students and students from urban schools also reported greater levels of perceived teacher victimization than female students and suburban and rural. Results suggest that more interventions are needed to strengthen teacher-student relationships, especially among teachers and male students, and interventions that nourish students' emotional self-efficacy.

79. Sufferance for Snuff Puffs: The Acceptability and Behavior of Smoking Marijuana and Tobacco Inside the House

Presenter(s): Eusabeia Silfanus

Advisor(s): Dr. Oliver Lopez, Dr. Vincent Berardi

Secondhand smoke (SHS) released from indoor smoking contributes to household air pollution, releasing large quantities of fine particulate matter which can pose negative health outcomes, especially for developing children who spend most of their time at home. The increased legalization of marijuana increases its recreational and medicinal use along with its acceptability. With tobacco use remaining prevalent, the use of marijuana and/or tobacco remains common and may occur inside the home. Project Fresh Air conducted in San Diego County studies the air quality in households ($n = 298$) with at least one adult smoking tobacco and/or marijuana living with at least one child aged 14 and under ($M = 4.06$, $SD = 3.58$). As part of the project, an interview was conducted to understand the participants' perception and habits of smoking, along with other activities that release fine particulate matter. The interview was conducted twice; first as a baseline measure, and the second after cessation efforts. This study aims to understand the acceptability of smoking marijuana and tobacco indoors, coded for by whether or not people are allowed to do so inside the participants' home. This analysis will be done using a chi-square test, along with odds ratio to compare the perception of indoor smoking with the reality of the frequency of smoking inside the home, as well as other possible covariates. The results of this study can reveal the perception of harm of smoking marijuana or tobacco inside the home, and be further used to decrease household air pollution and the negative health outcomes associated with it.

80. How Demographics Influence Self-Image

Presenter(s): Stephanie Yu

Advisor(s): Dr. Aaron Schurger

When creating psychological research surveys, demographics are typically recorded at the end of the primary survey. Psychologists suggest placing demographic questions at the end to omit any biases from the participants (Hughes et al., 2016). Does the placement of these types of questions influence people without them knowing? How does this apply across different ethnic groups? Can demographic question placement prime individuals in their self-rating of attractiveness and the

overall impact of demographic placement on survey results? After an initial round, we wanted to see if ethnic groups would be primed differently when viewing people of the same race. We also investigated whether parents' views on beauty standards impacted them more than the American beauty standards participants grew up with. To test this question, this project will conduct five surveys, each gearing towards a specific racial group: White, Black, East/Southeast Asian, South Asian, and Hispanic. Each survey will have two versions of the study to compare self-ratings of overall attractiveness. In version one, individuals will first answer demographic questions, rate the celebrities' attractiveness of their stated racial group, and then rate their own attractiveness. In version two, participants will first rate the celebrities' attractiveness, rate their attractiveness, and then answer demographic questions. In preliminary data, participants primed with their demographics at the beginning rated their attractiveness lower than participants who answered them at the end. In the second round of data, we will test if ethnic groups are more impacted by seeing celebrities of their same racial group. Overall, this research will further our understanding of demographic question placement and which marginalized groups are impacted the most. This is important since many testing formats currently place demographic questions at the beginning. Thus, this research will influence not only how psychologists conduct research, but also how proctors execute standardized testing in classroom settings.

Religious Studies

81. Fantastical Fate: Contemporary works Depicting Enlil

Presenter(s): Marissa Becher, Daylen Motamed

Advisor(s): Dr. Julye Bidmead

It is known that the creation of Gods is prevalent, and almost essential to worldbuilding in fantasy novels. Some examples are the dwarves' Durin in Tolkien's *The Lord of the Rings* and Djel of the Fjerdans in Leigh Bardugo's *Grishaverse* novels. However, there is one popular god present in many modern fantasy series; the God of fate. In Ancient Mesopotamia, a God of fate was named Enlil. Enlil is known as the king of all Gods, as well as the God of wind and air. He decrees the fates and his word cannot be changed, as Enlil guards the tablets of destinies. Specifically focusing on Enlil's role as the God of fate, we seek to analyze the changing of morals and evolution of our society through the differences to Enlil in similar beings of destiny in the popular Sarah J Maas fantasy series, *A Court of Thorns and Roses* and *Crescent City*. These beings are the Mother and her Cauldron and the Goddess Urd, respectively. With this information and evidence of Enlil's role in Mesopotamian lore and society, we will compare him to these deities of fate. These evolved portrayals of fate convey women and objects as personifications of the force rather than all-powerful deities whose command cannot be altered. Through this comparison to the ancient God Enlil, we find that our society has moved away from the traditional gender roles of all-powerful men who rule over all versus motherly and weak women.

82. The Goddess and Her Hero: Ishtar, Athena, and their favorite mortal men**Presenter(s):** Emma Brandel**Advisor(s):** Dr. Julye Bidmead

The epic traditions of the ancient world can give great insight into the cultures that created them. The Mesopotamian Epic of Gilgamesh and the Odyssey of Homer, the crown jewel of ancient Greek literature, are both two of the most significant texts to Ancient history and literature. In both of these stories, the male heroes are helped along their journeys by two very different goddesses who favor them: Gilgamesh is guided by Ishtar, goddess of war and love, and Odysseus by Athena, the maiden goddess of wisdom and war. While both of these goddesses are depicted in these stories and across myth in very different ways, the fact that they share the role of hero's guide hints at an underlying connection between them, and thus a connection between the two literary traditions of these neighboring cultures. How do these two relationships impact the narrative of their epics? How do they reflect the ancient culture they come from, specifically the roles of women? What is the connection between Ancient Greek and Mesopotamian epic tradition? By examining the texts themselves, other ancient sources, and the historical and religious backgrounds of these two cultures, we can determine the significance of the goddesses to these heroes' stories, and how the Mesopotamian and Greek literary traditions are intertwined.

83. Mesopotamian mythology, Ereshkigal**Presenter(s):** Kelly Hy**Advisor(s):** Dr. Julye Bidmead

In different cultures and religions there are many ways in which they perceive the afterlife. Some cultures, such as the Greeks and Romans referred to it as the underworld or Hades, which were ruled by the male god Hades or Pluto. Other well-known civilizations, such as Chinese, Mayans and Aztec also have male gods ruling the underworld. But in Mesopotamian mythology, the goddess Ereshkigal rules the underworld under her role and leadership. Ereshkigal is looked up to because she holds such a rare role as a ruler of the underworld – a role predominately reserved for masculine gods. In analyzing some contextual clues about Ereshkigal, it's important to see that while she does hold such an important and meaningful status, why is it that she is chosen to be responsible for things such as disease, death, famine, and misery? This not only allows us to explore not only Ereshkigal's role as an underworld goddess, but allows us to know more about gender roles in Mesopotamian society, along with understanding more about gender roles and stereotypes when this goddess is being discussed or represented in literature.

84. Echoes of Pazuzu: The Influence of a Mesopotamian Demon in World Music**Presenter(s):** Jonathan Jauregui**Advisor(s):** Dr. Julye Bidmead

This project delves into the intersection of Mesopotamian mythology and world music through the lens of Pazuzu, a prominent demon from ancient Mesopotamia. Pazuzu's eerie presence and malevolent attributes in Mesopotamian lore have sparked curiosity and fascination, transcending

ancient civilizations to influence contemporary cultural expressions, including music. My research explores how Pazuzu's imagery, symbolism, and mythology have influenced various world music genres, ranging from traditional folk melodies to metal and modern electronic compositions. I will explore how Pazuzu's character is portrayed and interpreted within diverse musical traditions worldwide by analyzing musical compositions, lyrical themes, and cultural contexts. Through a comparative approach, the project examines how Pazuzu's archetype resonates differently across cultures, reflecting varying perceptions of evil, chaos, and spiritual forces.

Moreover, the study investigates the role of Pazuzu in shaping musical narratives and evoking emotional responses within listeners, whether through melodies reminiscent of ancient rituals or pulsating beats. Drawing upon methodologies, including ethnomusicology, cultural studies, and mythology, this research offers insights into the enduring significance of Pazuzu within the global musical landscape. It highlights how ancient mythological figures inspire creativity and imagination among contemporary artists—fostering a dialogue between past and present, tradition and innovation. Ultimately, this study contributes to a deeper understanding of the cultural resonance of Pazuzu and its impact on world music.

85. Tiamat: Abject Gender in Mesopotamia

Presenter(s): Jade McDonald

Advisor(s): Dr. Julye Bidmead

With this project, I will analyze the character of Tiamat, a primeval mother goddess from ancient Mesopotamian myth. My primary text of analysis will be the Enuma Elish, the seven-tablet cuneiform Babylonian myth which details Tiamat's rise to and fall from power as well as her role as a mother of monsters. As Tiamat prepares to battle with the younger male god, Marduk, she creates an army of demon monsters and is no longer portrayed as a nurturing mother goddess but a demonic monster. When she loses the battle, Marduk dissects and dismembers her body to create the earth. From a queer feminist lens, I want to look at the ways she represents abject motherhood and how her monstrosity develops throughout the Enuma Elish as a factor both of her power and her gender variance. I will research scholarly texts relating to the fields of queer studies and classical/ mythological studies with a particular focus on the concepts of abjection, monstrosity, and gender transgression. I will look at the lessons that stem from Tiamat's treatment in Mesopotamian myths and analyze how mythology and stories as a whole have been and can be used to spread ideologies and reinforce structures of societal power. The project will result in a comprehensive analysis of the character of Tiamat through critical analyses of Mesopotamian myth and culture, engaging the relevant scholarly research about the topic and coming into dialogue with it.

86. Ereshkigal and Feminism

Presenter(s): Khanh Nguyen, Isabella Richmond

Advisor(s): Dr. Julye Bidmead

Ereshkigal, the Mesopotamian goddess of the Netherworld, represents the dark feminine that the gods have snuffed and robbed. The famous story of Inanna's descent into the underworld had

a hyper-focus and bias towards Ishtar, Ereshkigal's sister, the goddess of love and war. The descriptions of the pitiful Goddess Ishtar being stripped of her regalia and adornments passing each gate and how God Ea had cunningly come to her rescue are to distract the truth of Ereshkigal, in her loneliness and bitterness of her fate. While her sister, adorned with lapis beads across her neck and body draped in royal robes, Ereshkigal, is naked, only covered in the ashes of her land.

Ishtar was given the power of fertility and sexuality; she is useful in a world that requires children to continue the family line and sexuality to be for the delight of men. Ereshkigal's power comes when life has ended; when all valuables, money, and possessions are no longer, and the only period of their existence is unknown and uncontrollable. The dark feminine archetype (Ereshkigal) differs from the femme fatale

(Ishtar); it is neither beguiling nor seductive but embodies rage and vindictiveness towards the judgment and confinement women have endured. The only reason for Ishtar's resurrection was Ereshkigal's honor towards her promise to the androgynous creatures. The actual victim of the story of Inanna's Descent into the Underworld and the person who needed saving had been Ereshkigal all along.

87. Breaking Boundaries: The Significance of Women in Mesopotamian Society

Presenter(s): Eleanor Noble

Advisor(s): Dr. Julye Bidmead

My study focuses on analyzing women's contributions to ancient Mesopotamian society, aiming to understand their roles and significance within that context. Women played crucial roles in the fields of politics, economics, and family life. Yet, they are often overlooked. By examining ancient writings, artwork, and literature, my findings will uncover how women were viewed in this society and better comprehend their daily lives and the required duties. I aim to use textual sources, comparative analysis, and research to draw a comparison between the experiences of women in ancient Mesopotamia and that of women in modern society. Through this comparative approach, I hope to reveal trends in women's positions and duties throughout different eras in Mesopotamian history, providing insights into gender dynamics. Specifically, the study will focus on the portrayal of powerful yet often vilified figures such as the demon Lamashtu and goddess Tiamat, exploring their roles and the societal expectations placed upon them. By analyzing myths, artifacts, literature, and everyday objects, I will examine how these women were perceived and the responsibilities of mythology to determine how these women were interpreted and the duties expected of them alongside everyday women in Mesopotamian society. I will analyze myths such as Lamashtu and her impact on women in Mesopotamia, as well as Tiamat and her journey in motherhood, along with examining mythical subjects such as witchcraft and how they integrate with sexism. My goal is to reveal the hidden and untold stories of women in Mesopotamian society.

88. Pazuzu: Protector to Possessor**Presenter(s):** Lucy Pittman, Brandon Gill**Advisor(s):** Dr. Julye Bidmead

The portrayal of Pazuzu as an evil being in popular media contrasts sharply with his historical role as a protector in Ancient Mesopotamian culture. This transformation reflects broader shifts in societal values, religious interpretations, and cultural perceptions over time. The thesis here is that Pazuzu's transition from a benevolent guardian to a malevolent demon illustrates the malleability of mythological figures and the influence of narrative adaptation on collective understanding.

In Ancient Mesopotamia, Pazuzu was revered as a protective deity, invoked to ward off evil spirits and safeguard against malevolent forces, particularly during childbirth and against the demoness Lamashtu. However, as societies evolved and religious beliefs transformed, Pazuzu's image underwent a gradual metamorphosis. With the rise of monotheistic religions and the demonization of pagan deities, Pazuzu became assimilated into the demonic pantheon of later cultures.

The demonization of Pazuzu in popular media can be attributed to several factors, including the sensationalization of ancient myths for entertainment purposes, the perpetuation of Western Christian demonology, and the association of Pazuzu with themes of fear and darkness prevalent in horror genres. Through cinematic depictions like "The Exorcist," Pazuzu's once-protective attributes have been overshadowed by his portrayal as a malevolent force, reinforcing the demonization narrative.

Ultimately, Pazuzu's transformation underscores the dynamic nature of folklore and the power of storytelling in shaping perceptions of supernatural beings. From a guardian deity to a sinister demon, Pazuzu's journey reflects the enduring tension between tradition and adaptation in the portrayal of mythical figures across different cultural contexts.

89. Tiamat: Untangling Gender in Mesopotamian Myth**Presenter(s):** Indy Rahill**Advisor(s):** Dr. Julye Bidmead

In the Enûma Elish, the ancient Mesopotamian tale of creation, the portrayal of the Goddess Tiamat, as well as her counterpart Marduk, offers valuable insights into gender in ancient Mesopotamia. Tiamat, revered as the mother of the Gods and symbolized as a primordial body of salt water, is one of the few women in the story of creation, making her extremely influential in discerning the roles of women. From her role of wife and mother to her aggressive shift in portrayal when she leaves her role of a docile peacemaker, Tiamat sets the stage for women of this time. Marduk, who eventually slays Tiamat in a grotesque manner, is important in this study as he depicts the masculine expectations. This study focuses on Tiamat, with some mention of Marduk, within the Enûma Elish, drawing from scholarly articles that examine gender dynamics in Mesopotamia. The deconstruction of Tiamat's role in this ancient text will help establish a nuanced understanding of her importance within the societal framework and gender expectations of women during this time. Through her roles as a wife, mother, and eventually

monster, this presentation seeks to illuminate the societal constraints that governed the lives of women in this ancient civilization. This research will give historians yet another avenue to understanding Mesopotamia, adding to the works that examine the intersection between gender, mythology, and social structures in the ancient world.

90. Women's Bodies: Demonization and Sexualization in Mesopotamia**Presenter(s):** Callie Yates**Advisor(s):** Dr. Julye Bidmead

Physical appearance is a defining aspect of any being. In myth, physical description also gives insight to the nature and character of said being. Tiamat and Lamashtu, within Mesopotamian mythology, are described as women whose forms change as they defy the expectations of their prescribed gender. The chopping of women's breasts to create mountains, or the filling of them to poison newborns, perverts a life-giving body part that is unique to the female sex. A similar change in description of women's characters and bodies is seen in popular media today, as women defy the roles designated to their gender their womanhood comes into question. A prominent example of this is Hillary Clinton during the 2016 presidential campaigns. Hillary became labeled by her competitor, Donald Trump, as a power hungry, "nasty woman," with unimpressive/unpresidential looks. My research reveals deep and early origins, in Mesopotamian myth, of the sexualization of women's bodies and how they are demonized as these goddess defy societal gender expectation. Further, it will show how this historical perversion of women's bodies is perpetuated in modern culture.

Sociology**91. Discourse Analysis of Ehlers-Danlos Syndrome Diagnosis****Presenter(s):** Hannah Lardner**Advisor(s):** Dr. Jan Osborn

This presentation situates itself in the world of disability studies by analyzing discourse surrounding the topic of Ehlers-Danlos Syndrome diagnosis. Ehlers-Danlos Syndromes are a group of genetic connective tissue disorders that cause symptoms such as joint instability and dislocations as well as a myriad of other complications such as cardio-vascular and gastrointestinal problems. These syndromes are highly undiagnosed, misunderstood, and considered rare, though it is highly believed by patients to be less rare than often thought. This lack of awareness can also be attributed to the fact that they mostly affect women, and because of the lack of communication within the medical field around the topic. In turn, this creates great swaths of misdiagnosis and lack of proper care within Ehlers-Danlos patients. Oftentimes, it takes decades for patients to reach proper diagnosis, as they fight being dismissed and written off by medical professionals. Within this project I am analyzing the online discourse of those affected by this syndrome as well as their specific stories when it comes to searching for diagnosis. I am then comparing it to the medical discourse surrounding Ehlers-Danlos Syndromes to find the

disparities between the two areas of discussion. Through this analysis I will then reveal the underlying ideologies that contribute to these disparities in diagnosis, and how it is linked to a much larger systemic problem within the medical industry.

92. Self-Efficacy and Academic Success: How Environmental and Socioemotional Factors**Moderate the Relationship****Presenter(s):** Laney Logue**Advisor(s):** Dr. Nancy Rios-Contreras

Considerable research focuses on student success and self-efficacy, particularly in the context of academic programs and learning approaches. As a result, there is strong evidence of a correlation between self-efficacy and academic success. Despite this immense body of knowledge, another important aspect of student self-efficacy often goes under-addressed: How it interacts with other emotional, social, and environmental factors that similarly influence academic success. Thus, more research is required to fill in gaps regarding how these socioemotional and environmental factors influence students and their success, not only in school but also post-graduation. This research sought to explain how the relationship between student self-efficacy and academic success is moderated by socioemotional and environmental factors—such as social and psychological support, adverse experiences and trauma, poverty, interventional programs, and more—in public high schools. Data was collected through qualitative research methods, particularly through structured interviews with teachers. This data proved to give significant insight into the complex ways in which these factors interact; with this insight, administrators, school board members, teachers, and parents can collaborate to improve the self-efficacy and academic performance of students, thus improving their emotional well-being and success.

World Languages and Cultures**93. Underlying Factors that Contribute to the Way Children Are Raised: a Comparison & Analysis Between France and America****Presenter(s):** Mads Chu**Advisor(s):** Dr. Allan MacVicar

It is not a secret that France and America have vastly different cultures, encompassing distinct ways of life, varied work environments, and notably divergent beliefs regarding child raising practices. Amid these disparities, the independence factor observed in French children is not merely by chance but is intricately woven into the fabric of societal norms. This inclination towards independence is nurtured by a cultural emphasis on autonomy and patience in child development, supported by the overarching philosophy that children should learn self-sufficiency from a young age. Concrete flaws in the design and construction of our physical surroundings, particularly in the areas of urban infrastructure and planning, may be one of the main causes of America's lack of self reliance. Since the early 1990s, European institutions have tasked social partners and member states with improving work-life balance to promote equal opportunities

and boost female employment. Collective bargaining, preferred over legal regulations, allows for customized and enforceable measures tailored to specific workplace needs. However, the success of these policies relies on trade unions' capacity to understand and champion employees' work-life balance needs. It is also important to note that some of the basic theories and ideas don't apply to every region of France or the United States but are general trends observed in the media, day to day, and through historical practices. Furthermore, this paper does not intend to disparage any particular country or assert superiority of one over another, as each culture and nation possesses its own imperfections. This work strives to highlight the critical significance of comprehending and emphasizing the importance of child development, while also recognizing how cultural differences influence these factors. By doing so, we gain a deeper understanding of the cognitive, emotional, physical, social, and educational progression that children experience from birth into early adulthood.

94. The People Want the Fall of the Regime: the Evolution of the Tunisian Government from Autocracy to Democracy and the Future

Presenter(s): Mia Coots

Advisor(s): Dr. Allan MacVicar

Tunisia gained independence from France in 1956 and joined a region of countries ruled by undemocratic regimes. The people and government have long championed democratic ideals like women's rights, but elections were never held and power was controlled by only two presidents until 2011. After nearly 60 years of authoritarian rule under Presidents Bourguiba and Ben Ali, everything changed when the self-immolation of street vendor Mohamed Bouazizi demanded progress. The Tunisian people successfully deposed Ben Ali and sparked the Arab Spring in the Middle East and North Africa. This paper will examine the circumstances of how Tunisia became known as the sole democracy in the region while other protests fizzled out and how it was maintained for nearly a decade. Furthermore, I will look at the internal coup staged by President Saïed in 2021 that led to a major reversal in democracy that is still in effect today. With a new constitution, boycotted elections, violated rights, and the targeting of political opposition, the world is hesitant to still consider Tunisia a democratic success of the Arab Spring. In the end, I argue that it is possible for Tunisians to reestablish their democracy. Similarly to 13 years ago, the Tunisian people do not approve of the happenings in their country. Protests and public opinion show that democracy is important to the Tunisian people and that the government is not acting in accordance with their wishes. The future of Tunisian democracy is unclear, but based on the actions of the government and the feelings of the people, there is room for Tunisians to express their opinions and regain their democracy.

95. Gound-Breaking Stories in Contemporary Cinema: in a Market Full of Remakes, What Form Does Cinematic Originality Take Today?**Presenter(s):** Elisa Fong-Hirschfelder**Advisor(s):** Dr. Allan MacVicar

This work aims to analyze the evolution of both international and American cinema as an art form, specifically in relation to the abstract concept of originality, to determine what possible future trends in cinema may look like and the potential for the manifestation of “new waves” in cinema. Emerging during the Industrial Revolution, cinema has evolved as an entertainment medium from brief moving pictures presented as novelties to lengthy feature films. With its evolution arose trends in visual storytelling, including experimental, narrative, and remakes, whose own categories comprise the retelling of old stories, remakes of films in other languages, and adaptations of animated films into live-action films. In recent years, non-original films have increasingly dominated the box offices, incentivizing filmmakers and production companies to turn to IP rather than gambling big budgets on never-before-seen storylines and characters. Using statistics on the economic success of different international and Hollywood film trends and combining them with analyses of the emergence of “new waves” in cinema, this work intends to hypothesize future breakthroughs in original cinematic stories and the socioeconomic capacities that may allow them to appear. This paper aims to motivate future studies on unfolding box-office trends and the role of originality in those trends.

96. It's Lights Out and Away We Go: Formula 1's Contribution to the Rise of Dominant World Powers**Presenter(s):** Cristina Inboden**Advisor(s):** Dr. Allan MacVicar

Formula 1 is a global spectacle that has captured the eyes and hearts of millions while simultaneously reflecting the power and dominance of nations. As the tastes of the world have changed over time, Formula 1 has consistently thrived which is greatly owed to its ability to instill nationalism, provide economic growth, and inspire technological innovation and development. Countries that host Grand Prix races, foster drivers, or promote advancements in constructor (race car) technology have emerged as influential powerhouses within the sport and within the world. These powerhouses are notable nations such as France who gave rise to the Alpine team, and the United States who fostered the growth of driver Logan Sargeant, the American favorite. Aside from possessing incredible inventors and engineers, these countries also rank high in terms of GDP and GDP (PPP), demonstrating authority and supremacy. This thesis aims to dive deeper into what started as a simple pastime and is now a worldwide phenomenon and how Formula 1 has contributed to the rise of countries to the top of the world food chain.

97. Les Conservateurs: A Comparison Between Anglo and French Conservatism**Presenter(s):** Alana McKinnon**Advisor(s):** Dr. Allan MacVicar

Life, liberty, and the pursuit of happiness. Liberté, égalité, fraternité. These are the creeds that defined the American and French Revolutions and emboldened American and French revolutionaries. And yet, both revolutions had quite different outcomes. America's, born out of British constitutionalism and the Glorious Revolution, was quite conservative. France's, intent on overthrowing centuries-old institutions and ideas, was quite liberal. American conservatives are still quite active in the 21st century, but can the same be said of France? Who were the French conservatives? Is it possible to be conservative when a country's modern founding is inherently liberal? This paper seeks to answer these questions by analyzing the works of British and American conservatives Michael Oakeshott, Russell Kirk, and William F. Buckley, to synthesize a definition of anglo-conservatism. This definition is then compared to the writings of French conservatives Joseph de Maistre, Alexis de Tocqueville, Charles de Gaulle, and Raymond Aron to validate if French conservatism is compatible with the former. Finally, it uses these definitions to assess contemporary social and political events in France to evaluate the significance of the French conservative voice—if it has significance at all.

98. Artistic Resistance Under Dictatorships in Spain and Argentina Through The Lens of Communication Theories**Presenter(s):** Adrian Self**Advisor(s):** Dr. Laura Loustau

Under dictatorships in Spain and Argentina, artists used their mediums to criticize actions of the Catholic church and oppressive conditions enforced by the government using allegories, metaphors, and symbolism in their works. While many artists were exiled from or left these countries during the reign of their respective dictators or tried to create works that fell within authoritarian guidelines, others intentionally created cinema and literature that criticized the Argentine and Spanish governments, values, and practices, knowing the works would be banned. This investigation uses examples of cinema and literature created and published deliberately to be prohibited or censored under the regimen of Francisco Franco from 1939-1975 in Spain or the last civil-military dictatorship from 1976-1983 in Argentina. McComb and Lewis' Framing Theory (Agenda-setting Theory), Hall's Reception Theory, and Bunn's New Censorship Theory are useful tools for understanding message creation, transmission, and reception. These theories aid in interpreting how decisions regarding the creation and censorship of art are made. The author, Adrian Self, is a Global Communication and Spanish major and Public Relations minor at Chapman University and will offer her insights into why this topic is relevant today.

99. Progress or Stagnation: The Evolving Landscape of Women's Rights at Work in France**Presenter(s):** Vivien Tritch**Advisor(s):** Dr. Allan MacVicar

Women in France have been depicted through media and societal norms as possessing a type of sexual liberty in their culture. They are typically thought to own their sexuality, seductiveness, and style and go about their days as such. However, now in the 21st century, these stereotypes are being done away with due to their harmful impact on the woman's image. In reality, women's rights in France have been through a complex and discouraging history containing deeply ingrained biases that are still in the process of being dismantled. While the topic of women's rights in France, and anywhere in the world for that matter, is not a new idea, this paper specifically looks at women's rights in the workplace in France. The inequalities and instinctive sexism that the governments of France have forced upon women's roles in society began to be addressed by women groups in the 1970s. The Droits des Femmes (Women's Rights) was established, as were other smaller feminist groups that fought for equal representation of women in the workplace. What is interesting, however, is dissecting why and how these prejudices against women at work began and what is enabling them to be maintained. Looking at the government, religion, and overall societal trends that have been in place since the 19th century, a clear correlation can be seen. This paper will also take into account modern-day advancements in France, if any, such as the #MeToo movement and how companies are implementing progressive gender regulations in the workplace.

100. The Roots We Eat: The Bite That Changed the World**Presenter(s):** Viridiana Valadez**Advisor(s):** Dr. Laura Loustau

In a world where new food combinations are created on a daily basis, it is often difficult to remember where the roots of our food actually came from. With so many options to choose from at our fingertips, it can be difficult to know what is the right choice for us. Take a moment to think about what food means to you. Is it a matter of survival? A matter of importance? A matter of honor? No matter how you perceive food, it will always be there waiting for us. With new food trends constantly popping up, such as fusing different cuisines into one or reinventing old dishes, it becomes quite evident that there is one type of cuisine that becomes more popular than the rest: Mexican cuisine. In this project, we will focus on how Mexican cuisine influenced not only the United States, but the world as a whole. Using evidence from films, books and even social media, this project will research the effects of colonization of the indigenous tribes in South/Central America and how its findings found itself across the globe.

Creative and Cultural Industries - CCI**1. Reason, Feeling, and Agency through Meme Culture in @crisis.acting****Presenter(s):** Mason Dickerson**Advisor(s):** Dr. Kelli Fuery

Since moving images entered popular consciousness at the beginning of the 20th century, theories of spectatorship sought to understand the relationship (if any) between images, looking, and (re)action. Can media change how we act – further, can media be truly political in this call-to-action? The diffusion of social media and digital media structures seem to heighten a Debordian spectacle we have no hopes of escaping, wherein we passively ingest media in a glutinous and stupefied feedback loop. However, following Jacques Rancière, this conception of spectatorship is reductive and ultimately myopic. For Rancière, media was never about pedagogy or catalyzing Promethean action – but it is about orchestrating micro movements, small and perhaps untraceable shifts in how we perceive the possible, perceive others, and perceive ourselves. In this sense art and media images have the advantage of affecting an immediate interpersonal political pragmatics. How, then, does something like social media and meme culture fit in this paradigm? The work of this paper is to investigate an Instagram account representative of a specific emergent structure of feeling – @crisis.acting – and, taking note from Rancière, as well as Gilles Deleuze and Baruch Spinoza's theories of affect, to illustrate how this account and its posts instigate a convergence between feeling, reason, and action, problematizing classic models of passive spectatorship by reconstructing regimes of the possible. Through case study of comment sections and posts, this project traces shifting regimes of political possibility. Though the structure of feeling this account situates itself in is tinged with the kind of political pessimism and irony associated with young digital-native generations, @crisis.acting effectively begs its viewers to do the active, immanent, and unpredictable work of emancipated spectatorship.

2. Using Rube Goldberg Machines**Presenter(s):** William Yonts**Advisor(s):** Dr. Kelli, Fuery

The term “Rube Goldberg machine” describes an excessively complex machine composed of various objects put into a non-repeatable chain reaction visible to an outside observer. This paper examines what it means to use the Rube Goldberg machine as a media object, arguing that it works one's capacity to play and to use objects to creative ends. To make this claim, I draw from D.W. Winnicott's (1971 [2005]) description of play as the act of navigating the potential space between internal, subjective reality and external, objective reality, and how one's capacity to use objects to creative ends is predicated on their capacity to play. I draw a parallel between Winnicott's ideas and Bruno Latour's (1991 [1993]) concept of networks: extensive webs of mediation between human and nonhuman actors that may or may not conform to conceptual understandings of the world. To examine networks requires a capacity for play and object-usage, in other words, a willingness to destroy one's internalized model of reality so that the external

world may be re-internalized. Rube Goldberg machines make small fragments of networks visible for a brief period. To engage with them means confronting the internalized expectation of what should happen next with the objective reality of what actually unfolds in all its unanticipated contingency. This paper analyzes media objects such as the short film "The Way Things Go" (Fischli and Weiss), the Honda commercial "Cog," and videos from the YouTube channel Joseph's Machines to illustrate how they approach the creative potential of the Rube Goldberg machine to varying degrees of success.

Food Science

3. Impact of Phytosanitary Irradiation on Polar Antioxidants in Fruit Peels of Granny Smith

Apples

Presenter(s): Sneha Anna Alexander

Advisor(s): Dr. Anuradha Prakash, José de Jesús Ornelas-Paz

Ionizing irradiation is an efficient method to control quarantine pests in fresh fruits. However, it also leads to the generation of free radicals in the fruit and, consequently, to alterations in the content of antioxidants. This could alter the susceptibility of fruit to develop physiological disorders in postharvest and the human health-related effects regarded to the consumption of this fruit. Nowadays, several irradiation technologies are available for the treatment of fresh fruits, with involving different dose rates to achieve the same dose. Currently, it is unknown if the dose rate/irradiation type could impact differently the antioxidant properties of fruits. In this study, 'Granny Smith' apples were treated with gamma-irradiation, e-beam, and x-rays at a target doses of 0.2 kGy, 0.77 kGy and 0.49 kGy respectively. Non-irradiated fruit was used as the control group. The fruit was analysed for ascorbic acid, dehydroascorbic acid, total phenolic compounds, and antioxidant capacity at two different time points. The first set of analysis was performed immediately after irradiation treatment and the next set was performed after 4 months of storage of the fruits at 0° C. Irradiation decreased the content of ascorbic acid, which followed the order gamma > x-rays > e-beams > control. The content of dehydroascorbic acid increased as the content of ascorbic acid decreased in fruit. All irradiation types except gamma irradiation decreased the content of phenolic compounds after irradiation application upon storage. The storage impacted the effect of irradiation. The antioxidant capacity of fruit peels also decreased over irradiation treatment. The results suggest that the dose rate plays an important role on the antioxidant system of fruit. It seems that a high dose rate and low exposure time favor the retention of polar antioxidants in apple peels. Dose rate could also impact the overall quality of 'Granny Smith' apples.

4. Utilizing Thiol dough conditioners to lower Advanced Glycation End-Products in Bagels Made with Sunflower-wheat Flour Blends.

Presenter(s): Alton Chambers IV

Advisor(s): Dr. Lillian Senger, Dr. Nana Pepra-Ameyaw

Determining how different sunflower flour and thiol levels impact Advanced Glycation End-Products (AGEs) in bagels is crucial for minimizing AGE concentration in baked bread products without compromising texture. Food-grade thiol dough conditioners, Glutathione (GSH), and L-cysteine hydrochloride (Cys) were studied as antiglycation ingredients. The AGE content was correlated with the browning index in bagels with 0-20% sunflower flour substituted for wheat and 0-0.0090% Cys & GSH. Higher Total AGEs and lysine-derived AGEs were quantified [Crossline, fluorolink, 2-(2-furoyl)-4(5)-furan-1H-imidazole (FFI), Vesperlysine B, and Lysyl-pyrrolizidine] than arginine-derived ones in all treatment groups. Higher cysteine resulted in lower total AGEs in both the bagel crumb and crust, with strong negative correlations of about -0.94 between cysteine concentration and total AGEs in bagels. In contrast, a strong positive correlation was observed between GSH concentration and total AGEs in bagels with 0 – 10 % SFF. A weak positive correlation was determined between total AGEs and the browning index in bagels with Cys and 0% SFF (0.17), while a strong positive correlation was noted between total AGEs and the browning index in bagels with Cys and 10% SFF. An increase in total AGEs was seen with bagels containing 0.0025 -0.0090 % GSH. There is a strong negative correlation between total AGEs and bagels with GSH and 10 % SFF (-1.0). Studying Cys versus GSH effectiveness in AGE inhibition in a bagel food model could be applied to other baked goods with thiol dough conditioners and higher oilseed-based protein alternatives like sunflower flour.

5. Comparison of Chlorophyll, Carotenoids, Sterols, and Alpha-tocopherol in E-beam, Gamma, and X-ray treated Granny Smith Apples

Presenter(s): Manju Meena Vetrivelayutham

Advisor(s): Dr. Anuradha Prakash, Jose de Jesus Ornelas Paz

The objective of the study was to investigate the effects of e-beam, gamma, and x-ray on compounds such as chlorophyll, carotenoids, sterols, and alpha-tocopherol in Granny smith apples and the antioxidant capacity of the samples treated with different modalities. Harvested Granny Smith apples were irradiated with e-beam radiation at 0.20-1.34 kGy with a dose rate of 0.13 kGy/s, gamma radiation at 0.1-0.3 kGy, and x-ray radiation at 0.37-0.62 kGy with a dose rate of 4.51 Gy/s, and the apple peel samples were collected and analyzed before storage. The irradiated apples were stored at 0° C for three months, and the samples were collected and assessed after storage. Chlorophyll, carotenoids, sterols, alpha-tocopherol, and the antioxidant capacity of the samples at time 0 (after treatment) and time 1 (after storage) were measured. The chlorophyll and antioxidant capacity of the samples significantly decreased after storage compared to time 0. It was observed to have no difference due to treatment at time 0, and only the control differed at time 1. Whereas carotenoids significantly increased at time 1 compared to time 0, control and gamma samples differed at time 1 due to treatment. This research suggests that chlorophyll, carotenoids, sterols, alpha-tocopherols, and antioxidant capacity are modified

after irradiation. The specific effects of increase or decrease of compounds varied with the time and treatment doses.

Political Science

6. Legitimacy Competition: China and United States Legitimization of International Criminal Court Referral Decisions

Presenter(s): Allison Flame

Advisor(s): Dr. Minju Kwon, Dr. Gordan Babst, Dr. Andre Molle

How do the United States and China legitimize their position regarding United Nations Security Council (UNSC) referrals to the International Criminal Court (ICC)? Existing literature addresses that states seek to gain and maintain legitimacy to better influence the international system without coercion. However, there is an overall lack of attention given to the ways that state representatives frame key decisions to legitimize the state's stance and if there are correlation between cases. Filling the gap in literature, this project examines how states legitimize their position on referrals to the ICC as permanent members of the UNSC and identifies a pattern in how they do this. Referring to legitimacy competition within international institutions and the relationship between states and institutions, I argue that the United States and China are competing to be the dominating international power and use their status as permanent members of the UNSC to reinforce their legitimacy. I conduct case studies on six situations that were considered by the UNSC for referral to ICC through content analysis of UNSC resolutions, UNSC voting records, UNSC meeting minutes and press briefings to identify a pattern in their legitimation. Empirical findings show that China and the United States use concerns over sovereignty and jurisdiction, while simultaneously reinforcing their concern for human rights violations to legitimize their position regarding UNSC referrals to the ICC. The in-depth case study on the Yazidi Genocide demonstrates that China is not involved in this case and that while the US has voiced the need for accountability for the Genocide, it has not drafted a referral to the ICC. This study contributes to the literature on state behavior in international organizations by theorizing that states seek legitimation through their stance on UNSC referrals to the ICC and by conducting new case studies.

Keywords: United Nations Security Council, International Criminal Court, Legitimacy, Genocide, International Institutions, Yazidi Genocide

7. From Grief to Endeavor: Mexican Mothers Organizing and Utilizing Social Media to Pursuit Catharsis

Presenter(s): Iara Gonzalez Ascencio

Advisor(s): Dr. Minju Kwon

Families in local communities, including the metropolitan areas throughout Mexico, have suffered significantly as a result of the widespread prevalence of narco-violence and machismo under criminal governance. Women in Mexico have organized and/or joined groups to locate their

missing family members and friends in response to risks posed by the pervasiveness of drug-related violence and the absence of official security services or support and as a form of resistance. A heartbreaking yet thought-provoking issue emerges: in the context of narco-violence, how do civilian women strategically steer their nonviolent social movements in reaction to the terrifying phenomena of forced disappearances? Existing studies explore the role of women in peacebuilding initiatives to resist violence and obtain social change, more specifically, on what the search groups in Mexico do. Still, they fail to explore their strategic use of social media. To fill in the gaps in research, this thesis project examines how civilian women use social media to further their grassroots activism, using the 2020s case of the Madres Buscadoras (Searching Mothers) group in the state of Jalisco, Mexico. I argue that, per the notion of civilian women's agency in armed conflicts, especially in the context of narco-violence, these women strategically use social media platforms to ensure their safety and advance their movement. Using secondary data collection methods, I will systematically search, watch, and document key themes, narratives, and strategies portrayed in the videos posted by the organization or news media and existing scholarly research. This study contributes to the literature on activism under criminal governance, which, by meticulously organizing and analyzing the collected data, aims to uncover patterns, challenges, and successes in using social media as a tool for advocacy and awareness-raising for this grassroots movement.

8. The Role of Daw Aung San Suu Kyi's Beliefs in Myanmar's Foreign Policy Behavior under the NLD Government

Presenter(s): May Phoo Thant

Advisor(s): Dr. Minju Kwon

Myanmar maintained an independent and non-aligned foreign policy since gaining independence. Despite consistent fundamental principles, each administration followed different diplomatic strategies. Under the National League for Democracy (NLD) administration led by Daw Aung San Suu Kyi, Myanmar emphasized multilateralism and cooperation in world affairs. Despite predictions that she would rely more on the West due to her pro-West stance, the NLD government maintained a non-aligned policy, balancing the relationship between major powers. What factors contribute to the continuity of Myanmar's non-alignment policy under the NLD government, and why has there not been a shift in foreign policy principles? Why does Myanmar prioritize multilateralism and cooperation in its foreign policy decisions under the NLD government? While existing literature has focused on the international and domestic factors influencing Myanmar's foreign policy, little attention has been given to leaders' political beliefs and worldviews. This research aims to fill this gap by utilizing operational code analysis, an approach to accessing leaders' beliefs and worldviews from a distance. I argue that Myanmar's prioritization of multilateralism and cooperation and the absence of a shift in the foreign policy principles under the NLD government stems from Daw Aung San Suu Kyi's cooperative beliefs, worldviews, and preferences of cooperative tactics, and her perception of limited control over historical events. Using the operational code analysis, I analyze Daw Aung San Suu Kyi's underlying beliefs through her public statements on international affairs. The findings reveal that Daw Aung

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San Suu Kyi perceives the political universe as cooperative and unpredictable, with limited control over historical events, and prefers cooperative strategies, aligning with Myanmar's emphasis on multilateralism and cooperation. This study contributes to the literature that highlights the role of leadership perspectives in foreign policy and is the first research that employs operational code analysis in Myanmar.

AF209A

Moderator: Dr. Lisa Leitz

Psychology

10:00-10:15 am

Does Feedback Matter? Exploring How Feedback Impacts Learning Environments.

Presenter(s): JJ Riddell

Advisor(s): Dr. Desiree Crevecoeur-MacPhail

Educational environments are powerful spaces, especially within colleges and universities. However, students may not feel comfortable when giving feedback to their professor, which impacts their learning and overall classroom performance. When giving professors feedback, students' gender, ethnicity, and socioeconomic status impact their comfort level. Focusing on a student's background explains why feedback isn't more common on college campuses. It will help us understand how we can encourage students from any demographic to feel like they can give feedback to educators. Theorists explain that individuals have multiple social identities (e.g., race and class) that intersect and shape their experiences. Intersectionality highlights how people from marginalized racial backgrounds and class levels may face challenges when questioning authority. This study examined how gender, ethnicity, and socioeconomic status impact students' feedback and comfort levels when giving feedback. Participants in this study completed a survey with questions about their background and comfortability in educational settings. Study results are still pending, but we expect students with diverse backgrounds to be less comfortable when giving feedback to their professors. These results will help students and educators reshape how we teach and present feedback to students—allowing students from all backgrounds to feel like their perspective is important and valued in learning environments.

English

10:15-10:30 am

The Handgun on the Table: Discourse Analysis Around Autocracy and Militarization

Presenter(s): Etta Lauchland

Advisor(s): Dr. Jan Osborn

This discourse analysis project focuses on how militarization often serves as a foundation for autocratic leaders to come into and retain power. The corpus for the project is based on a historical article that uses the analogy of slamming a handgun on a table after coming to a peaceful agreement over a minor feud with a neighbor. "authors" article written during the end of the Prussian War is highly critical of how America put its allies on edge by grossly investing in its military although the war was coming to an end. I relate this analogy to modern militarization events, such as the National Guard being present for BLM protests, the Proud Boys bringing AK47s to the California Capitol Building, and the National Guard currently patrolling the New York subway system. My analysis focuses on how those in positions of power are constituted by those

who encourage and those who discourage their presence. I incorporate global perspectives on militarization with major global players such as Russia and Iran. For Russia, specifically, I lay out its historical battle with autocracy and how its citizens have perceived it throughout the years. I analyze discourse surrounding autocratic countries' international relations. Discourse is pulled from a variety of sources, including NPR, Scottish Review, Political Science Quarterly, and Journal of Conflict Resolution.

Biological Sciences

10:30-10:45 am

The Circadian Clock's Role in Alfalfa-Rhizobia Interactions: A Molecular Insight

Presenter(s): Kevin Nguyen

Advisor(s): Dr. Hagop Atamian

Legumes mutualistically interact with the soil bacteria known as rhizobia that convert atmospheric nitrogen into usable forms like ammonia. Nothing is known about the role of the plant circadian clock, an internal biological timekeeper, in controlling this interaction. Alfalfa seedlings were entrained under 16 hours of light and 8 hours of dark cycles (16h Light/8h Dark) for two weeks. Following this entrainment, the alfalfa was moved to constant light for four days before inoculating with rhizobia at circadian time (CT) 0 (zero hours after lights on), CT4 (4 hours after lights on), CT8, CT12, and CT16 and were grown for an additional 2 weeks at 16h Light/8h Dark cycles. The efficiency of the alfalfa-rhizobia association was evaluated by counting the nodules developed on the alfalfa roots. Results showed that this interaction was most productive at early day (CT0 and CT4) and was regulated by the alfalfa's circadian clock. To gain insights into the molecular mechanisms underlying the circadian regulation of this interaction, the experiment was repeated with the time points CT0 and CT12. This time, the roots were collected 12 and 24 hours after inoculation at each time point, and the root transcriptome was sequenced using RNA-seq. Our analysis identified 1896 DEGs at 12 h and 411 DEGs at 24 h after inoculation at CT0, compared to 1413 DEGs at 12 h and 118 DEGs at 24 h after inoculation at CT12. The analysis identified specific enrichment for genes at CT0 involved in the immune system and malate metabolism that could explain the observed differences in nodulation. This is the first comprehensive analysis investigating the molecular mechanisms underlying the circadian control of the agriculturally important plant-rhizobia mutualistic interaction.

Electrical Engineering**10:45-11:00 am****Interactive Math and Shapes Games on an Affordable Learning-Focused Braille Display**

Presenter(s): Mattheos Drivsa, Daniel Tsivkovski, Luke Shankland, Michael Smith, Emma Garofolo, John Mulhern

Advisor(s): Dr. Maryam Etezzad, Rajeev Joshi

Developing an affordable and STEM learning-focused Braille display addresses a significant disparity in the market for Braille displays, where most fail to provide a cost-effective, accessible, and education-oriented solution. This research aims to bridge this gap through innovative hardware and software development, offering a comprehensive learning experience to elementary school children (K-6) who are blind or visually impaired. The hardware features a piezoelectric tactile display that can display up to six Braille characters at once or in an 8x8 pin array configuration. The educational software includes a user-friendly website packed with engaging activities specifically designed for blind or visually impaired children in early education. The overall system is designed to be plug-and-play, minimizing technical setup and user errors so that students can focus on exploration and discovery through STEM. Additionally, this research contributes to advancing Braille literacy and enhancing essential STEM skills for visually impaired children, thereby providing a holistic approach to education that integrates tactile, graphic, and audio-based games specifically designed for refreshable Braille displays (RBDs). By providing an evidence-based, cost-effective, and accessible solution, we aim to significantly improve educational outcomes for this underserved population, fostering an inclusive learning environment that empowers visually impaired students to develop critical thinking and problem-solving skills.

AF209B

Moderator: Dr. Julye Bidmead

Creative Cultural Industries - CCI**10:00-10:15 am****Reason, Feeling, and Agency through Meme Culture in @crisis.acting**

Presenter(s): Mason Dickerson

Advisor(s): Dr. Kelli Fuery

Since moving images entered popular consciousness at the beginning of the 20th century, theories of spectatorship sought to understand the relationship (if any) between images, looking, and (re)action. Can media change how we act – further, can media be truly political in this call-to-action? The diffusion of social media and digital media structures seem to heighten a Debordian spectacle we have no hopes of escaping, wherein we passively ingest media in a glutinous and stupefied feedback loop. However, following Jacques Rancière, this conception of

spectatorship is reductive and ultimately myopic. For Rancière, media was never about pedagogy or catalyzing Promethean action – but it is about orchestrating micro movements, small and perhaps untraceable shifts in how we perceive the possible, perceive others, and perceive ourselves. In this sense art and media images have the advantage of affecting an immediate interpersonal political pragmatics. How, then, does something like social media and meme culture fit in this paradigm? The work of this paper is to investigate an Instagram account representative of a specific emergent structure of feeling – @crisis.acting – and, taking note from Rancière, as well as Gilles Deleuze and Baruch Spinoza's theories of affect, to illustrate how this account and its posts instigate a convergence between feeling, reason, and action, problematizing classic models of passive spectatorship by reconstructing regimes of the possible. Through case study of comment sections and posts, this project traces shifting regimes of political possibility. Though the structure of feeling this account situates itself in is tinged with the kind of political pessimism and irony associated with young digital-native generations, @crisis.acting effectively begs its viewers to do the active, immanent, and unpredictable work of emancipated spectatorship.

10:15-10:30 am**Using Rube Goldberg Machines**

Presenter(s): William Yonts

Advisor(s): Dr. Kelli Fuery

The term “Rube Goldberg machine” describes an excessively complex machine composed of various objects put into a non-repeatable chain reaction visible to an outside observer. This paper examines what it means to use the Rube Goldberg machine as a media object, arguing that it works one's capacity to play and to use objects to creative ends. To make this claim, I draw from D.W. Winnicott's (1971 [2005]) description of play as the act of navigating the potential space between internal, subjective reality and external, objective reality, and how one's capacity to use objects to creative ends is predicated on their capacity to play. I draw a parallel between Winnicott's ideas and Bruno Latour's (1991 [1993]) concept of networks: extensive webs of mediation between human and nonhuman actors that may or may not conform to conceptual understandings of the world. To examine networks requires a capacity for play and object-usage, in other words, a willingness to destroy one's internalized model of reality so that the external world may be re-internalized. Rube Goldberg machines make small fragments of networks visible for a brief period. To engage with them means confronting the internalized expectation of what should happen next with the objective reality of what actually unfolds in all its unanticipated contingency. This paper analyzes media objects such as the short film "The Way Things Go" (Fischli and Weiss), the Honda commercial "Cog," and videos from the YouTube channel Joseph's Machines to illustrate how they approach the creative potential of the Rube Goldberg machine to varying degrees of success.

10:30-10:45 am**Perception Through Technicality****Presenter(s):** Taylor Fetterman**Advisor(s):** Dr. Kelli Fuery

While the idea, composition, and structure of the selfie are derived from its predecessor, the self-portrait, the progression and adaptation of this basis has augmented into something entirely different. Before digital media and technologies took their prevalence in society and everyday life, the self-portrait typically existed in the form of a painting, a single work of art. Its construction and configuration were determined by how the artist chose to portray, depict, and highlight their subject in that very moment in time and space. Thus, that single-medium self-portrait relayed the perception of the subject from one viewpoint. When translating this to the progressed modern selfie, the idea of perception changes. Similar to the idea of a painted self-portrait, a digital selfie begins to deteriorate the aura and essence of the person or subject behind the medium, as only so much can be translated and perceived through the visual field. However, more critically, the medium of digital photography has the ability to adapt, corrupt, and mold any and all aspects of the authenticity and reality of an image. Through the compilation of a series of four selfies, I look to examine how collectively these selfies showcase how the perception of a photo changes when the technicality of the photo changes. Each image uses a different composition, structure, and photographic element, to challenge its viewers' perception and gaze of the context of the image. Using Walter Benjamin's idea of aura from "The Work of Art in the Age of Mechanical Reproduction", alongside Grant Bollmer's approach to materiality, each image will attempt to distinguish the identity of the subject in pair with its decaying essence and aura. Selfies have the ability to highlight and present a version of oneself in any way the subject wants in a very calculated manner, thus developing the interrelationship self, image, and digital culture.

Interdisciplinary**10:45-11:00 am****Cinempathy as Political Consciousness-Raising: Toward Palestinian Liberation with Mai Masri's 3000 Nights (2015)****Presenter(s):** Sophia Rubino**Advisor(s):** Dr. Nam Lee

Robert Sinnerbrink's concept of 'cinempathy,' broadly, understands that the spectator may be given a space to share a "congruent emotional experience" to that of the character onscreen. Cinempathy, as I argue in this paper, is the vessel unto which the spectator can actively take up an ethical position, here against the extraordinarily ugly and inhumane treatment of Palestinian prisoners, to refocus the perspective they might have had in the past on the occupation of Palestine in a 21st century sociopolitical context. I am concerned with foregrounding the material, lived circumstances which paved the way to the film's conception in the first place, and I will do so primarily utilizing the work of Michel Foucault and Achille Mbembe. A Foucaudian perspective,

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namely that of his work from Discipline and Punish: The Birth of the Prison, will assist in outlining the literal dimensions of the prison that Layal is forced into, and how her corporeal body, due to her Palestinian identity, is abused, and the everlasting effect of that treatment onto her mind. The prison as depicted in 3000 Nights, I posit, is Palestine as a land itself (at least until its full liberation), the guards the Israeli government and its punishers, the Israeli Occupation Federation (IOF). Mbembe's ultimately stronger position in Necropolitics, briefly put, explores the capacity of the sovereign figure to determine who is able to live and who must die, with a postcolonial framework Foucault did not access in his work. Film is a medium that can provide the spectator with emotional linkages to the horrors of genocide they cannot grasp in firsthand, and provides pathways toward Palestinian consciousness-raising and hopeful liberation.

AF209C

Moderator: Dr. Anna Leahy

Political Science

10:00-10:15 am

Legitimacy Competition: China and United States Legitimization of International Criminal Court Referral Decisions

Presenter(s): Allison Flame

Advisor(s): Dr. Minju Kwon, Dr. Gordan Babst, Dr. Andrea Molle

How do the United States and China legitimize their position regarding United Nations Security Council (UNSC) referrals to the International Criminal Court (ICC)? Existing literature addresses that states seek to gain and maintain legitimacy to better influence the international system without coercion. However, there is an overall lack of attention given to the ways that state representatives frame key decisions to legitimize the state's stance and if there are correlation between cases. Filling the gap in literature, this project examines how states legitimize their position on referrals to the ICC as permanent members of the UNSC and identifies a pattern in how they do this. Referring to legitimacy competition within international institutions and the relationship between states and institutions, I argue that the United States and China are competing to be the dominating international power and use their status as permanent members of the UNSC to reinforce their legitimacy. I conduct case studies on six situations that were considered by the UNSC for referral to ICC through content analysis of UNSC resolutions, UNSC voting records, UNSC meeting minutes and press briefings to identify a pattern in their legitimation. Empirical findings show that China and the United States use concerns over sovereignty and jurisdiction, while simultaneously reinforcing their concern for human rights violations to legitimize their position regarding UNSC referrals to the ICC. The in-depth case study on the Yazidi Genocide demonstrates that China is not involved in this case and that while the US has voiced the need for accountability for the Genocide, it has not drafted a referral to the ICC. This study contributes to the literature on state behavior in international organizations by

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theorizing that states seek legitimation through their stance on UNSC referrals to the ICC and by conducting new case studies.

Keywords: United Nations Security Council, International Criminal Court, Legitimacy, Genocide, International Institutions, Yazidi Genocide

10:15-10:30 am

The Role of Daw Aung San Suu Kyi's Beliefs in Myanmar's Foreign Policy Behavior under the NLD Government

Presenter(s): May Phoo Thant

Advisor(s): Dr. Minju Kwon

Myanmar maintained an independent and non-aligned foreign policy since gaining independence. Despite consistent fundamental principles, each administration followed different diplomatic strategies. Under the National League for Democracy (NLD) administration led by Daw Aung San Suu Kyi, Myanmar emphasized multilateralism and cooperation in world affairs. Despite predictions that she would rely more on the West due to her pro-West stance, the NLD government maintained a non-aligned policy, balancing the relationship between major powers. What factors contribute to the continuity of Myanmar's non-alignment policy under the NLD government, and why has there not been a shift in foreign policy principles? Why does Myanmar prioritize multilateralism and cooperation in its foreign policy decisions under the NLD government? While existing literature has focused on the international and domestic factors influencing Myanmar's foreign policy, little attention has been given to leaders' political beliefs and worldviews. This research aims to fill this gap by utilizing operational code analysis, an approach to accessing leaders' beliefs and worldviews from a distance. I argue that Myanmar's prioritization of multilateralism and cooperation and the absence of a shift in the foreign policy principles under the NLD government stems from Daw Aung San Suu Kyi's cooperative beliefs, worldviews, and preferences of cooperative tactics, and her perception of limited control over historical events. Using the operational code analysis, I analyze Daw Aung San Suu Kyi's underlying beliefs through her public statements on international affairs. The findings reveal that Daw Aung San Suu Kyi perceives the political universe as cooperative and unpredictable, with limited control over historical events, and prefers cooperative strategies, aligning with Myanmar's emphasis on multilateralism and cooperation. This study contributes to the literature that highlights the role of leadership perspectives in foreign policy and is the first research that employs operational code analysis in Myanmar.

10:30-10:45 am

From Grief to Endeavor: Mexican Mothers Organizing and Utilizing Social Media to Pursuit Catharsis

Presenter(s): Iara Gonzalez Ascencio

Advisor(s): Dr. Minju Kwon

Families in local communities, including the metropolitan areas throughout Mexico, have suffered significantly as a result of the widespread prevalence of narco-violence and machismo under

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criminal governance. Women in Mexico have organized and/or joined groups to locate their missing family members and friends in response to risks posed by the pervasiveness of drug-related violence and the absence of official security services or support and as a form of resistance. A heartbreaking yet thought-provoking issue emerges: in the context of narco-violence, how do civilian women strategically steer their nonviolent social movements in reaction to the terrifying phenomena of forced disappearances? Existing studies explore the role of women in peacebuilding initiatives to resist violence and obtain social change, more specifically, on what the search groups in Mexico do. Still, they fail to explore their strategic use of social media. To fill in the gaps in research, this thesis project examines how civilian women use social media to further their grassroots activism, using the 2020s case of the Madres Buscadoras (Searching Mothers) group in the state of Jalisco, Mexico. I argue that, per the notion of civilian women's agency in armed conflicts, especially in the context of narco-violence, these women strategically use social media platforms to ensure their safety and advance their movement. Using secondary data collection methods, I will systematically search, watch, and document key themes, narratives, and strategies portrayed in the videos posted by the organization or news media and existing scholarly research. This study contributes to the literature on activism under criminal governance, which, by meticulously organizing and analyzing the collected data, aims to uncover patterns, challenges, and successes in using social media as a tool for advocacy and awareness-raising for this grassroots movement.

AF209A

Moderator: Dr. Ana Palomar

Art

11:30-11:45 am

Analysis of Consequences Arising from Acquisitions of Forged Artworks by Elmyr de Hory (1906-1976)

Presenter(s): Caroline Grinstead

Advisor(s): Dr. Justin Walsh

Art institutions such as museums, galleries, and auction houses have for many years been characterized as reliable and trustworthy. The act of art forgery threatens this integrity and causes these institutions to rethink how they acquire artworks. My research focuses on a specific art forger, Elmyr de Hory, who became notorious for being able to reproduce works in the style of notable artists such as Picasso, Matisse, and Modigliani. By successfully selling his forgeries to multiple museums and galleries, only to be discovered later, de Hory forced institutions to reconstruct their approaches in authenticating and acquiring works of art. As part of my research, I reached out to Mark Forgy, a close friend of de Hory who has published a biography of de Hory as well as curated exhibitions about art forgery. Thanks to the undergraduate scholarly/creative grant, I was able to travel to Minneapolis where I met with Forgy, conducted multiple interviews, and toured his extensive collection of de Hory's works. My research intends to lay out the causes and consequences of acquiring fake artworks. Some questions addressed in my research include the following: Why do so many museums fail to recognize fake artworks? What does this failure say about the value we attribute to art and to artists – that is, if we can't tell the difference between real and fake works, why does art matter? How does the acquisition of fraudulent artworks impact the museums and galleries that bought them, and the scholars who study them? Overall, I address the question of whether and how the work of Elmyr de Hory changed the way art galleries and museums acquire and analyze art today.

Digital Arts

11:45-12:00 pm

AI Visualization of Gendered Language and its Biases

Presenter(s): Emma Nguyen

Advisor(s): Micol Hebron

Over the past few years, artificial intelligence has integrated itself into our lives, establishing itself as one of society's most significant technological advancements. However, its increasing relevance in our society comes with new avenues for analyzing and understanding how language can perpetuate biases, particularly gender biases. In this research, AI visualization tools, specifically Midjourney, will be employed in revealing and addressing gendered language biases. Midjourney is an image-generating AI with the ability to interpret prompts in order to create

variations of images. In this case, the prompting of the AI is referring to a short text or phrase that is used by the Midjourney AI in order to produce an image result. Words contained in the prompts will individually be used in image generation. The research will be multidisciplinary, involving and incorporating studies of feminism, algorithmic programming, and digital media. Furthermore, it will examine the artistic decision-making conducted by the AI, specifically how the AI will interpret and interact with various, often vague prompts. Due to the vagueness of these prompts, the AI must make its own decisions on how to illustrate and generate the images that best represent the user's input. Research findings show that with very minimal and generalized prompting, such as "women in sports", the AI may generate images that are depicted as biased and misogynistic. These observations raise concerns about potential biases in the AI's database and programming. Future research will explore how the AI's responses may vary depending on the user's gender identity, since users of different genders may utilize different prompting syntax and language. The aim of the research is to be able to illuminate the prominence of an increase in diversity on the programming side of AI, which can reduce the amount of biased information that is being input into the AI's database.

Music

12:00-12:15 pm

Remote Orchestral Recording Session: "Elegy for a Flower"

Presenter(s): Logyn Okuda

Advisor(s): Adam Borecki, Dave Volpe, Nolan Markey

Within the many aspects of a film exists the epicenter that is visual storytelling. Music production within film always becomes a point of discussion after the fact, as composers will use their musical expertise to aid the established vision of the filmmaker. Despite music technology having evolved to recreate the sound of an orchestra, the role of music remains the same. However, what if the roles were reversed? Through this endeavor, I sought out to find the impact of a multimedia work when music becomes the primary focus of storytelling. Explored in the past by Disney's "Fantasia" and Phillip Glass' "Koyaanisquatsi", I decided to create an experimental film of my own. After writing a symphonic piece for orchestra, I utilized the fluidity within the music to begin storytelling. Gathering fellow peers and faculty from Dodge College, we embarked on adding visual/sound elements that complemented the ebb and flow of the music. These visuals consisted of beautiful closeup and landscape drone shots, as well as sound design to enhance the immersion of the shots. On the music side, to create a demo, I made use of 'sample libraries'—pre-recorded audio replicas of instruments. However, for music to create emotion, there had to be authentic emotion behind the performance. Thus, I contracted 'Budapest Scoring', a Hungary based orchestra that specializes in recording music for film. It would be an understatement not to mention that their performance brought my composition to new heights. Working virtually with an orchestra of such magnitude required meticulous sheet music preparation, as well as professionalism to steer the ship of the session. To be a professional film composer, it is my

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responsibility to not only know the entire process of bringing music to life, but also telling a story. In the end, the collaborative/filmmaking process allowed me to answer my question. In the end, creating an innovative take on cinematic storytelling granted me further enlightenment as a musical narrator.

AF209B

Moderator: Dr. Julye Bidmead

Creative Cultural Industries - CCI

11:30-11:45 am

Exploring The Digital World: Girlhood, Digital Culture, and Selfies

Presenter(s): Katie Conway

Advisor(s): Dr. Kelli Fuery

Society may think that digital visual culture is separate from the way we act and behave in real life, however it is all interconnected. This paper explores aspects of such interconnection through a photographic analysis of girlhood, focusing on the links between girlhood, digital culture and the phenomenon of selfies. As Grant Bollmer argues, digital technologies have significantly altered the ways in which individuals perceive and perform identity and engage with their surroundings. Selfies, as a prevalent mode of self-expression and identity construction in digital spaces, serve as a lens through which to examine the complex and contemporary dynamics before us.

Drawing upon interdisciplinary perspectives, Bollmer's ideas surrounding identity, Robert Cialdini's research on the 7 Principles of Influence, and Susan Sontag's discourse on the authoritarian relationship cameras have over reality, this paper investigates how the rise of selfies intersects with notions of girlhood. Through a dive into my own self-portraits, I discuss the ways in which digital platforms serve as both empowering and constraining spaces for girls to navigate their identities, as well as social norms, and establish connections with others. Furthermore, the paper critically analyzes the role of digital culture in shaping beauty standards, self-esteem, and notions of authenticity regarding girlhood.

Selfies function as both a reflection and a refraction of modern girlhood experiences in this age. From crying selfies, to the impact of influencers, to identity crises, girlhood will continue to be shaped and changed as our use of digital visual culture continues to evolve.

English

11:45-12:00 pm

In and Out of LA

Presenter(s): Catherine Silva

Advisor(s): Dr. Mildred Lewis

This pair of poems was inspired by summers spent in Los Angeles and growing up in Southern California. They examine the cultural and physical landscape of the city. I presented it at the Sigma Tau Delta Centennial Convention in St. Louis, MO on a panel that discussed self discovery in poetry workshops.

Psychology

12:00-12:15 pm

ADHD and Negative Behavioral Patterns: The Relationship Between ADHD and Behavioral Issues

Presenter(s): Mattie Harris

Advisor(s): Dr. Desiree Crèvecoeur-MacPhail

Within the past decade, there has been a slow growth of knowledge in the average household surrounding the ideas of neurodiversity, especially regarding individuals with ADHD or Attention-Deficit/Hyperactivity Disorder. Despite this recognition, those with ADHD are still often left behind by their peers as they enter a world not built to accommodate the way they perceive what is around them. They are often left with less preparation for their entrance into adulthood and a lack of containment capabilities that may lead to behavioral issues as they grow older. The current study examined those diagnosed with ADHD and their behavioral issues in their adult life under the guidance of Agnew's General Strain Theory (2002). Agnew's theory posits that relationships that put strain on individuals may lead to these same individuals committing negative, and often criminal, behaviors. Specifically, this study examined the age of diagnosis, treatment levels, and the severity of symptoms of individuals diagnosed with ADHD and whether these aspects correlated with the levels of behavioral issues they experienced. Study results are currently pending but are assuming significant findings. It is predicted that the higher the age of diagnosis, the lower the levels of treatment, and the higher the severity of symptoms will correlate with a higher severity of behavioral issues. This research could provide evidence to explain why individuals with ADHD have behavioral issues. If utilized for interventions, this research could also be helpful in reducing the delay in treatment for those with ADHD. And this, in turn, might help to decrease poor decisions due to unregulated impulsive behaviors in adulthood.

AF209C

Moderator: Dr. Anna Leahy

Interdisciplinary

11:30-11:45 am

Maiden, Mother, Crone: Constructions of the Female Body versus Feminine Aesthetics in Cinema and the Gyn/Affection that seeks to Liberate Her

Presenter(s): Sophia Rubino

Advisor(s): Dr. Emily Carman

This paper takes up both Beauvoir's existentialism and, as I argue, her radical feminist framework in seeking pathways toward liberation for the lived, female, body – namely away from the aesthetics constructed of the ideal feminine subject/object within global and Hollywood cinema/s. Femininity, the ideal orientation toward hetero-patriarchy, by design seeks to naturalize women's second-class state as a sex through literal immobilization of their bodies and the spaces they occupy, reduced to simultaneously a state of artificiality yet somehow enhancing their 'natural' femaleness. I also examine how women can break through these thresholds; Janice Raymond's notion of gyn/affection is highly effective, forging paths toward a possible and genuine future for the female subject without misogynist constraints. Essentially emphasizing the affect of female bonding and its critical place within heterosexual-male dominant culture, I suggest representations of gyn/affection in film, and, by proxy, the experience of watching women-created films as a woman, can operate as a mechanism that can gravitate women out of their ostensibly mandated position within the world. As my case study I see fit to outline the different ways in which women are looked at throughout the stages of their life: adolescence in *Tomboy* (Sciamma, 2011), motherhood through the experiences of Collé (Fatoumata Coulibaly) in *Moolaadé* (Sembene, 2004), and the old age of Baby Jane (Bette Davis) and Blanche Hudson (Joan Crawford) in *Whatever Happened to Baby Jane?* (Aldrich, 1962). In the experience of experiencing women in film confront the issues that plague their relations in the world, the farce of femininity is exposed on its scalding, ugly rear and ultimately encourages women to seek ways of being-in-the-world prior lambasted by male-supremacy as Other.

Film

11:45-12:00 pm

Amplified Memory and Cosmic Mediation in Robert Zemeckis' Contact

Presenter(s): Emma Koss

Advisor(s): Dr. Emily Carman

Contact is an American science fiction film that follows a scientist who receives a signal from extraterrestrials and her journey to experience the first cosmic conversation. This article draws its focus on the experience of its main character and the ways in which she establishes and communicates her lived experiences to those around her. It is throughout the film that audiences

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witness this character have an experience, one that was individual, but was, by all sense and feeling, real. This article examines Jodie Foster's performance in the film as well as its soundtrack and connects it with the theoretical concept of Radical Mediation. These ideas are further amplified through the application of further philosophical principles, those of Henri Bergson's Matter and Memory and Jean Baudrillard's Simulacra and Simulation. These ideas lay the foundation for further strength in scene analysis as well as the ability to translate mediation within both aspects of the narrative and its visual presentation. Therefore personifying the film's ideas of memory and consciousness into a means of communicating experience through meditation. Through the support of scene analysis and the study of stylistic choices within the filmic realm, the cinematic presentation of these ideas within the apparatus continue to broaden the idea of the perpetual within an undeniable, individual experience.

12:00 – 12:15 pm

SPORK

Presenter(s): Chiana Chuc Nidhi Kumar

Advisor(s): Ed Lavelle

Premiering in Spring 2024, SPORK, will showcase the result of a solo produced project with the help of nearly 50 crew members and 3 main actors. This film is about an exasperated doctor by day, whimsical inventor by night who is burdened by his mother's disapproval and how he must battle self-doubt and societal expectations on his mission to create the most life-changing invention of all time. SPORK, inspired by a true story, is set in the historical backdrop of 1876 New York, where it delves into an underexplored facet of American history. This narrative is centered around the themes of authenticity, reconciliation, and unyielding innovation, presenting a compelling tale of a young doctor who wants to be an inventor and his relentless pursuit of his dreams against all odds. The story captures the essence of the enduring American dream and serves as a reminder of the significance of life's simpler pleasures. The aim is to produce an exceptional film but also to foster a cohesive, productive, and educational environment for the entire crew, ensuring a harmonious and rewarding filmmaking experience. The challenges faced in bringing Samuel's inventions to life were rooted in the film's historical context. These inventions, dating back to the 19th century, are not readily available through commercial means. Consequently, the team had to embark on a custom crafting journey, meticulously recreating these historically significant objects. To achieve this, the resourceful art department utilized the on-campus makerspace, the DCI Lab. Tools such as 3D printers and laser cutters were crucial in creating high-quality, historically accurate props that are essential to the film's narrative. Following the conclusion of the film, it will be submitted to numerous film festivals, with the potential for it to be acquired and adapted into a full-length feature film.

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Hasta La Raíz: Exploring the Colonial Roots of Violence Against Native Women Through Film

Presenter(s): Ariana de Leon, Nuria Schettino González

Advisor(s): Madeline Warren

Violence against Native American women remains a critical issue today, as they are “2.5 times more likely to experience violent crime and at least two times more likely to experience rape or sexual assault crimes than people of other races in the United States.” In fact, “106,043 Native women have disappeared or been killed” from 2006 to 2016 (Simpson). The 15-minute short film I produced entitled CECILIA explores the roots of colonial violence against women and Indigenous peoples of the mid-19th century, specifically after the U.S. claimed California from Mexico following the Treaty of Guadalupe Hidalgo in 1848. The historical drama short film, set in 1856 in the greater Los Angeles basin (Tovaangar), follows Cecilia, a Gabrieleno (Tongva) woman working at a Mexican rancho who must protect herself against an Anglo squatter when the rancho’s wife leaves to defend her own land grant. The purpose of this work is to produce a historically and culturally accurate senior thesis film that engages with the Missing and Murdered Indigenous Women (MMIW) movement to drive awareness and action on the ongoing crisis of violence against Native women, all under safe on-set practices. With help from the Undergraduate Scholarly/Creative Grant, I was able to support the funding of a Stunt Coordinator and Studio Teacher. These specialized crew positions were vital in safely portraying an empowering moment of female strength and resilience through a stunt sequence; they also allowed us to work with a minor to portray a mother’s fight to protect herself and her daughter from ongoing threats against their community and land. After a year of producing this film, the official screening occurred this past April and is currently circulating film festivals for both local markets and Oscar-qualifying events.

AF209A

Moderator: Dr. Kelli Fuery

Creative Cultural Industries - CCI

1:00 – 1:15 pm

Rhetoric of Interactivity

Presenter(s): Willoh Tyler

Advisor(s): Dr. Jan Osborn

To analyze video games through a rhetorical lens, we raise questions about the impact they have on us, society, culture, and other things. Games stimulate an interaction between a player and the game. In producing visuals, tactile and auditory feedback, and other stimuli, games prompt reactions, thereby, games generate a rhetorical image which materializes a series of reactions from the player that the game responds to, creating a cycle of interactivity. The player, to continue responding to the game, engages with it, its environment, its mode of activity, and its narrative frame. A Griesian understanding of new materialism provides us with the tools to analyze the material force of this interaction cycle, in which the things games and players produce through their interaction manifest consequences on culture, society, and other things. As rhetoricians, we can apply new materialist rhetoric to interactivity and study video game cases like Call of Duty: Black Ops (2010), in which the game's stimuli produces situations which are designed to necessitate a reaction on part of the player to engage in war violence: from the intense othering of "enemies" tied to specific "enemy peoples" to requiring the player act quickly to throw barrels of napalm at Vietnamese soldiers in order to "survive." The material force of these situations impact the players who engage or have engaged with Call of Duty: Black Ops. This rhetoric of interactivity allows us to examine games like this one and their consequences on us, society, culture, and other forms of material.

English

1:15 – 1:30 pm

The Process of Ensnarement

Presenter(s): Daryn Schwimmer

Advisor(s): Dr. Mildred Lewis

I wrote and presented a story for the Sigma Tau Delta Centennial Convention. The story is a telling of the folklore surrounding the siren. I, however, wrote the story in a modern lens where the siren is a person who befriends people like an abuser would, by worming their way into their lives through stalking and inserting themselves into their victim's lives through contrived meetings. The siren then befriends the person and pretends to love and understand them, before luring them into the ocean by using a personalized song to ensnare them. I wanted to engage with fantasy characters and concepts through a modern lens, and through more realistic modes of horror, like the presence of a manipulative abuser who takes advantage of the loneliness of

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others. In this project, I wanted to merge real-life worries with elements of fantasy and folklore to try expressing and showing these horrors through a less conventional means. I really like reading fantasy, and I feel like the genre is at its most compelling when dealing with grounded issues like grief or love, while combining them with things like magic and monsters.

1:30 – 1:45 pm

Ecosystems of Dreaming: Loving Toward Liberatory Visions through Filipina Storytelling

Presenter(s): Bernadine Cortina

Advisor(s): Dr. Justine Van Meter

In this paper, the author draws from the rich interdisciplinary connections of Black studies, Filipinx studies, disability studies, gender studies, and queer studies in her engagement with her migration story as a Filipina migrant. Drawing from Robin D.G. Kelley's idea of freedom dreams and as an example of "poetry that dreams of a new world," the author emphasizes how the practice of self-examination, auto theory, and Filipina storytelling is a healing praxis for growing freedom dreams that forward life-affirming and life-sustaining interventions and grow liberatory possibilities on the loss-filled landscapes of the Philippine's continued postcolonial struggle (Kelley 10). Centered on autoethnography with theoretical underpinnings, bearing a heart shaped by Black feminisms and Filipinx theorizing, and speaking as a fellow Filipina storyteller trying to dream, the author also offers her own emerging freedom dreams in its postcolonial, queer, disabled, and migratory formations. Amidst work with trauma, the author argues for the value of freedom, love, and radical joy in the visionary work of articulating what liberation means for her in dreaming and creating Filipina/x/o futures.

Advertising

1:45 – 2:00 pm

The Cultivation of Emotional Connection and Its Applications in Marketing

Presenter(s): Mae Bryant

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

The goal of this study was to investigate the impact of emotional connection on various consumer behavior constructs and buying behavior, with a focus on brand commitment, brand attachment, word-of-mouth marketing and their result on purchase intention. This study is grounded in cognitive theories of emotion, particularly Oatley and Johnson-Laird's Cognitive Theory of Emotion (1987), which emphasizes the cognitive modular function of emotions. The methodology employed was a randomized two-group survey design, allowing for independent analysis of emotional connection's effect on various consumer behavior constructs. Participants, recruited from undergraduate students, were randomly assigned to either an emotional advertisement condition or a non-emotional advertisement condition. Following viewing the ad, participants completed an online questionnaire. The survey materials utilized in this study included validated scales to measure brand commitment, brand attachment, word-of-mouth intention, and

purchase intention. Expected results include finding a significant positive effect of emotional connection on brand commitment, attachment, word-of-mouth intention, and purchase intention. These findings suggest that emotional connection plays a crucial role in shaping consumer perceptions and behaviors, highlighting the importance of emotional branding strategies for creating genuine relationships with consumers that deliver value and drive business success.

AF209B

Moderator: Dr. Julye Bidmead

Political Science

1:00 – 1:15 pm

Diffusion of Bukelismo Among Latin American Politicians

Presenter(s): Bryan Molina

Advisor(s): Dr. Minju Kwon

How do politicians emulate other successful politicians in different countries? Since Salvadoran President Nayib Bukele's election in 2019, his Mano Dura (iron fist) security policy and tough-on-crime rhetoric have won him immense support, admirers, and many political emulators throughout Latin America. While existing studies examine his erosion of democratic institutions and his communication strategies that resonate with the young generation, there is a lack of studies on Latin American political leaders' reactions toward Bukelismo, which refers to the cross-national popularity of Bukele. Filling the gaps, this paper examines the key patterns of individual political leaders' emulation of a successful politician from the case of Bukelismo across different Latin American countries. We analyze public statements and policies, or promised policies, of ten individual politicians from five countries—Guatemala, Honduras, Colombia, Peru, and Argentina—from February 2019 to March 2024. We find two main emulation patterns: (1) the delegitimation and attrition of democratic institutions and (2) the glorification and implementation of Mano Dura within their own countries. These findings contribute to the literature on political leaders' behavior in Latin America by theorizing their emulation patterns and providing new empirical evidence from various individual political leaders.

1:15 – 1:30 pm

The Missing Piece: Native Americans' Role in Compliance with the Indian Child Welfare Act

Presenter(s): Tyler Coker

Advisor(s): Dr. Minju Kwon

The Indian Child Welfare Act (ICWA), an act to protect the culture of Native American children entering the foster system, has seen varied implementation since its passing in 1978. Why do some regions comply with the Indian Child Welfare Act more than others? Existing literature has examined the national effectiveness of the ICWA and demonstrated indigenous influence on how long Indian children are placed with guardians under the ICWA. However, these studies have

focused on the length of Indian child placements while in foster care and not local Native Americans' significance in how a region actually interacts with the conditions of the ICWA. This paper examines factors that influence the differences in compliance with the ICWA in different regions of the United States from three cases: Orange County in California, Reno County in Nevada, and an undisclosed county in South Carolina. Using cases from three regions in America from 2013-2022, I argue that the key factor that impacts the different regions' compliance is the presence of Indians nearby each court. Indigenous presence is crucial in supervising compliance with the ICWA, as well as supplying opportunities for Indian children to be placed with Indian guardians. South Carolina, with only one recognized tribe in the entire state, ignored the requirement to check children's heritage. Orange County, with more indigenous influence than South Carolina but no nearby reservation, gave minimal effort in its failure to adhere to the ICWA, and Reno County, with a reservation within its borders, followed the stipulations. This study contributes to literature on the ICWA's effectiveness by theorizing the importance of Indians in complying with the ICWA with an emphasis on their proximity to family courts and providing a comparative analysis of the differences in compliance across America.

Sociology

1:30 – 1:45 pm

The Kids from Yesterday: An Examination of the Motivations and Social Role of Camping Culture in Music Fandom

Presenter(s): Natasha Ryan

Advisor(s): Dr. Nancy Rios-Contreras

With the return of arena concerts after the COVID-19 pandemic and the hyper-availability of social media communities to those who were not previously inclined to be fannish, there has been increased strain on the metrics of what makes a successful concert attendance, and further, how those metrics reinforce identity as both a real fan and a member of the fan group.

This research focuses specifically on the act of arduous overnight queueing for general admission shows, referred to in the populace as "Camping Culture," aiming to answer the question of what is the motivation to undergo significant effort to experience the optimal concert as defined by the superfan. Interviews were conducted with music fans who have a strong attachment to one or more artists and regularly attend concerts under General Admission tickets. Additional research was collected through survey data, and observational fieldwork where the researcher acted as a participant-observer in concert queues at local shows.

Both fan-artist and fan-fan relationships and interaction rituals are noted, and analyzed utilizing Durkheim's theories of religion (1912) as well as subsequent framework by Löbert (2012) which categorizes these rites and rituals within the perspective of concert-attendance as a religious participation. Findings suggest that while the initial motivation to join the queue is the promise of a primary interaction with the sacred object (in this case, the artist), ultimately what keeps fans coming back are the secondary interaction rituals, forming bonds with other fans.

1:45 – 2:00 pm

Factors Affecting Birth Control Choices in Young Women at College

Presenter(s): Isabella Birkhofer

Advisor(s): Dr. Nancy Rios-Contreras

Most people will face the realities of contraception at some point in their lives. For some, physical barriers to protect against reproduction and sexually transmitted diseases, such as condoms, are the solution to issues with contraception. However, there are various reasons, including but not limited to being sexually active, for women to inquire about contraceptive methods. This research will aim to examine the various reasons that women between the ages of eighteen and twenty-four explore contraceptive methods. Additionally, this research will search for the most common experiences with certain contraceptive methods, such as the oral pill, implant, IUD, sterilization, natural cycles, and the use of condoms. This collection was accomplished by analyzing qualitative data collected through six interviews. These interviews allowed insight into various experiences with different contraceptive choices. Several participants were from various origins in the United States and had experience with private and public school systems. Additionally, the participants exposed several family dynamic aspects that have had a huge impact on their access to contraceptives and the choices they make. The research validated several non-sexual reasons college-aged women search for contraceptive methods such as hormone control. The result of this research will aim to answer social questions involving how sexual education, religion, family relationships, geography, and politics play a role in contraceptive choices in college-aged women. This information will help healthcare providers, legislators, educators, and parents understand the social implications that affect contraceptive choices in young women.

AF209A

Moderator: Dr. Julye Bidmead

Communication Studies

2:30 – 2:45 pm

Resident Evil's Technological Terror: How Technology Shapes Modern Horror Video Games

Presenter(s): Ashlyn Catuna

Advisor(s): Dr. Michael Wood

Video games offer a unique level of player immersion and interactivity that differs greatly from other forms of media. With every generation of gaming consoles, there are immense leaps in graphical and audio quality, as well as in consoles' processing capabilities. These allow video game developers to push the boundaries in terms of presentation and game mechanics, which in turn allow for greater player immersion. Numerous studies have detailed the general relationship between technology, play, and immersion in video games and have examined this relationship specifically in the context of horror video games. However, there is a noticeable gap in academic literature analyzing technology as both a means of engaging the player, while also utilizing it as a unique form of terror within a game's larger story. The present study examines technology's relationship with horror video games through their presentation and story by means of cultural and textual analysis. Specifically using the latest entries to the Resident Evil series as a case study, this analysis looks at the expansion of player immersion through innovation of interactivity, such as virtual reality and photorealistic presentation made possible by major technological leaps. Additionally, it explores developers' clever use of society's growing unease of major technological advancements. These fears include the blurred lines between what can be considered "human" and what is considered "nonhuman" or "other" in science and technology. Media has long reflected societal fears and pertinent issues, and horror is no exception. From this study, it becomes clear that a large number of modern horror video games capitalize on the technological advancements that society has begun to fear in order to present immersive stories that directly reflect this growing unease back at players.

English

2:45 – 3:00 pm

MeToo: The Harm Done to Us All.

Presenter(s): Olivia Rivet

Advisor(s): Dr. Jan Osborn

In 2006, Tarana Burke, survivor and activist, founded the "MeToo" movement that went viral in 2017 as more individuals came forward to share their experiences of sexual violence. The sheer enormity of the issue was revealed in a matter of keystrokes. To date, there have been over 2.3 million "MeToo" tweets from 85 different countries. A sense of agency prompted this movement; each individual moved to action by their affect and emotion. A sense of vulnerability is at the

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center of Dr. Kefaya Diab's theory on activism. Using her theory, I examine the sense of agency in the genesis of the "MeToo" movement. In addition to Diab, I use Judith Butler's framework for understanding violence and its effects— choosing to respond or not to respond to violence is an extension of my inquiry as to the origins of the "MeToo" movement. Together, Diab and Butler provide an analytical framework for my project, "MeToo: The Harm Done to Us All. " exploring how the movement came to be and how a call to action may be initiated as injustices occur. Sexual assault was performatively addressed prior to the "MeToo" movement. Through an analysis of this movement, using the theoretical framework of Butler and Diab, I argue that we can once again occupy the mental spaces of those who demanded justice and respond to violence as it occurs. There must be a way to expedite this process, not only for the sake of justice but in order to protect those who are currently unprotected.

3:00 – 3:15 pm

Friendly Fire and Female-led Misogyny: A Critical Analysis of Tradwife Discourse

Presenter(s): Courtland Jeffries

Advisor(s): Dr. Jan Osborn

This project analyzes the discourse within the "tradwife," or traditional housewife, community online. The movement, though based in traditional values, has only gained traction within the last decade, and this presentation aims to explain the events, environments, and ideologies which have encouraged the rapid growth of the community in recent years. The analysis is achieved through the utilization of the theories and methods of James Paul Gee, Teun A. Van Dijk, and Judith Butler. By implementing key ideas of these theories within my own project, I am able to demonstrate that the tradwife community is one which is built on a foundation of American conservatism, Christianity, and, often, racism. At a surface level, it simply seeks to promote the lifestyle of a "homesteader" or housewife, but often goes further than simply calling on individual women to embrace their "natural" role of wife, with many popular creators advocating for federal reversals of women's rights. This includes, but is not limited to: the right to vote, ability to initiate a divorce, and access to abortion. These beliefs are not new, but the tradwife community stands out as a group not of conservative male politicians, but humble everyday housewives advocating for the loss of their own agency; this project offers possible explanations as to why they do so.

World Languages and Cultures

3:15 – 3:30 pm

The Korean-American Paradox

Presenter(s): Rachael Bae

Advisor(s): Dr. Jan Osborn

This project explores the significance that language has in Korean-American culture, examining how language—despite being an aspect that forms deep bonds—can also act as a divisive element, developing schisms between "Korean" and "American." Gloria Anzaldúa's concept of

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Borderlands encapsulates the way Korean and American cultures may be isolated by language. The language used by most young Korean-Americans is an amalgamation of accents and dialects from all different regions in Korea, mixed with English terminology (Konglish code-mixing). Early Korean immigrants strove to maintain their bond to their homeland, but the same fervent desire to pass on that meaningful cultural relationship to their descendants now often does more damage than intended. Korean-Americans are rapidly losing the language of their parents or grandparents, yet attempts at connections with Korea can result in failure and judgment. The Borderland itself devolves, losing meaning, and young Korean-Americans drift away (purposefully or subconsciously), stung by seeming rejection from one “side” and, thus, turning to the other for acceptance. Tension builds, with the common second or third-generation Korean-American possessing a language entirely their own, but always foreign to both sides of their identity.

AF209B

Moderator: Dr. John Hunter

Sociology

2:30 – 2:45 pm

Early Career Black Women and Well-being

Presenter(s): Bria Benton

Advisor(s): Dr. Nancy Rios-Contreras

Social mobility, defined as the movement of individuals within one group to another higher class, allows for growth for minorities and struggles of inequality to decrease with time. Research conducted in the past notes that upward mobility, the specific rate of employment advancement, and improved compensation have become much more complicated for Black women (“Pursuing Upward Mobility: African American Professional Women Reflect on Their Journey on JSTOR,” n.d.). In the workforce, Black women have faced oppression since the early 1960s, as the Civil Rights Movement enabled women of color to maintain purpose within themselves and provide for their families. As more companies flourished and added more women and racial/ethnic groups into their labor unions, discrimination and prejudice were bound to happen. This study aims to understand how Black women’s well-being is impacted by pursuing higher education at a predominately white university (PWI) and adjusting to a routine post-grad, such as searching for jobs or creating a healthy work-life balance. Through observing Chapman alumni, I aim to research these women's experiences and apply different sociological approaches to support the notion that the workforce should support minorities and improve diversity within the workplace. Such approaches would be early Black feministic theories, intersectionality, expanding upon the racial wealth gap, and gender socialization in the workplace. By showing career optimism in post-graduates, results from using qualitative data will promote future suggestions for well-being and social flourishing.

Psychology**2:45 – 3:00 pm****Disordered Eating in Transgender and Non-Binary Individuals****Presenter(s):** Vincent Marais**Advisor(s):** Dr. Desiree Crevecoeur-MacPhail

The purpose of this study was to examine the prevalence and nature of disordered eating behaviors and body image issues among transgender and non-binary individuals. It examined prevalence rates of different disordered eating behaviors to contrast them with rates among cisgender individuals. It also examined the ways in which gender-affirming healthcare and social acceptance of one's gender identity are correlated with improvement in eating habits and body image. For transgender and non-binary survey participants, the prevalence of disordered eating behaviors was compared to self-reported stage of transition. The prevalence of disordered eating behaviors among binary transgender participants at different stages of transition were also compared to the prevalence of similar behaviors among cisgender participants. Levels of self-acceptance of transgender status were recorded in transgender and non-binary participants and compared to the prevalence of disordered eating behaviors. Finally, willingness to seek treatment among transgender and non-binary participants was compared to the willingness to seek treatment among cisgender participants. The results from this study are intended to be used in the treatment of transgender and non-binary eating disorder patients in order to better suit their individual needs and ensure more effective and accessible treatment. Furthermore, the results are intended to provide insight into an underrepresented and understudied group of patients whose needs are not yet widely understood, and to pave the way for future research.

3:00 – 3:15 pm**Hooked on Hooking Up: Analyzing the Discrepancies of Opinions on Casual Sex Between Genders****Presenter(s):** Valentyna Simon**Advisor(s):** Dr. Amy Moors, Dr. David Frederick, Dr. Desirée Crèvecoeur-MacPhail

Decades of research has found the gender differences regarding casual sex to be one of the largest gender differences in sexuality research (Petersen & Hyde, 2010). According to evolutionary psychology frameworks such as Parental Investment Theory (Trivers, 1972) and Sexual Strategies Theory (Buss & Schmitt, 1993), women are generally less invested in sex than men due to the fact that women face the possibility of pregnancy, which results in them being more “choosy” than men are when selecting a short-term partner. We see these evolutionary perspectives throughout survey results, as when asked about “taboo” topics such as casual sex, men tend to over-report their interest while women tend to under-report their interest. However, when looking at this gender difference, the discrepancy is actually statistically improbable: men cannot report having more heterosexual intercourse than women. Instead, these numbers should be near equal, as men are restricted to the amount of reproductive success they have based on how many fertile

women they can find (Buss & Schmitt, 1993); men often will prioritize maxing out on their reproductive success, rather than focusing on keeping themselves and future offspring safe as women do (Schmitt et al., 2012). The current study gathered a population of students from a mid-sized liberal arts university, and through the Bogus Pipeline Technique, found that both men and women are responding to survey research in ways that are socially desirable and in line with the gender norms implemented by society. These results provide greater context towards how individuals report their sexual behaviors, such as why one gender has over-reported over others. Additionally, this study indicates that the methodology of outreach programs for STI prevention should be overhauled, as the reported numbers of sex partners may not be as accurate as previously believed.

3:15 – 3:30 pm**Substance Use and Abuse When Working in Sexually Objectifying Environments**

Presenter(s): Audrey Kim

Advisor(s): Dr. Desiree Crevecoeur-MacPhail

Sexually Objectifying Environments (SOEs) are workplaces that not only acknowledge the sexually objectifying nature of service work but encourage, promote, and further capitalize off of the objectification of women. Some of these well-known establishments include Hooters and The Tilted Kilt, where women “audition” for the role of “entertainer” despite the actual position being that of a server. With this distinction, these workplaces are able to easily bypass equal work laws, hire based on physical attributes, and employ mandates on employee appearance. This is a prime example of Objectification Theory, which cites that the elements of SOEs that celebrate the objectification of women and reinforce subservient gender roles often lead to increased stress and substance use/abuse among the women who work in SOEs. A survey was distributed among employees in SOEs to observe how substance use/abuse impacts the behavior, job performance, objectification of the employees, and mental and physical health. BIPOC employees also experience additional stressors due to their race, leading to more significant substance use/abuse. With an increasing call for supportive working environments, many sexually objectifying institutions, most prominently Playboy, have rebranded as female-empowering and sex-positive. However, even with this increased awareness to accommodate modern standards, the nature of SOEs is to keep women at the mercy of the heterosexual men they serve, who view women as sexual objects. This study aims to shed light on the true experiences of women who work in SOEs; by sharing their stories, harm reduction programs will also be able to better protect the needs of individuals within SOEs. Due to the inherently subservient position women hold in SOEs and the service industry overall, legislation that restructures the service industry to be more equitable and safe for women — even through eradicating SOEs — will decrease detrimental consequences such as substance use/abuse.

AF209C

Moderator: Micol Hebron

Shame on Us

Presenter(s): Rylie Shimabukuro

Advisor(s): Micol Hebron

“Shame on Us” is a 24-by-20-inch Photoshop digital media piece. An astronaut floats in a spaceship in the foreground, whose windows face a blazing planet with nude figures dancing in a circle, wearing tan blindfolds in the middle ground. Rocketships fly in space among trash in the background, including paper, plastic bags, VR headsets, laptops, phones, earbuds, cups, shoes, and stop signs.

The middle ground figures are from Matisse’s “The Dance.” It is a beautiful piece, embracing freedom and peace, contrasting the content shown here. All the figures are blindfolded, unaware of the burning planet, relating to the dismissive attitudes towards climate change and ignorance towards those changes. The burning planet is an extreme example of climate change. That may not be happening now, but it is possible if we continue ignoring the signs. A stop sign is an object in the trash-patterned background, a visual reminder for the audience to pause and think about their relationship with the earth. The pieces of trash relate to overconsumption and the use of harmful materials. The technology-themed items focus on that industry and how it takes our attention away from issues that should be a priority.

The various spaceships have many meanings. For one, we all have our critiques of the world, but we struggle to do something about them. The astronaut could be sad to leave or worried about the future, but he had the resources and mindset to escape instead of helping. The spaceships allude to the embarrassment we feel when holding ourselves accountable because the easy way out is not to get involved. This piece speaks on privilege and how well-off people hardly do much to promote the topic of climate change or help the cause, leaving the rest of us to struggle unknowingly under their influence.

Nothing Gets Done

Presenter(s): Meg Peters

Advisor(s): Micol Hebron

In the collage, the upper right and left-hand corners have text that states, “This is your wake up call” and “The world is burning and we are the flames.” The background includes a pattern of suns and a yellow-orange sky. The middle ground is New York City. The foreground has many components, including an ocean with three politicians standing on a platform arguing, an open fridge with a forest in the opening, and a surrounding border of flowers. This is a depiction of Global Warming. The text symbolizes examples of activist speech against the climate crisis, and the central juxtaposition to this is the arguing politicians in the foreground who are too busy fighting to realize they are currently surfing against the rising oceans that overlap the city. The sky is orange to represent the smoke-filled sky in New York City, and the pattern behind it

demonstrates how and why it changed so drastically. The border of flowers is there to stop the men from entering the fridge. This represents how people have changed the world so much that returning to a healthy, vibrant earth is impossible. Overall, the context illustrates the irreversible damage and how no one can agree on a solution. There will be no fixing or changing the outcome.

Climate Crisis -Thematic Collage

Presenter(s): Vivianna Juarez

Advisor(s): Micol Hebron

This is a horizontal collage with a red background that contains white text on the left side, featuring a snowboarder using a pen as a board. On the right side, there is an image of snow goggles reflecting a mountain engulfed in fire, with lava running down the center. This collage was created to draw attention to the climate crisis we are currently facing. I made a conscious decision regarding certain prominent characteristics of this artwork, which I will explain.

I chose snowboarding as a way to connect the artwork to myself (the artist) because I love snowboarding during the winter. Unfortunately, due to climate change, the winter season has been cut short in the local Big Bear Mountains. Most of the snow has been man-made, resulting in poor ride conditions and damage to the riders and their boards. I chose red as the main color throughout the collage to symbolize the blood on all our hands if we do not make any changes to shift the trajectory of our planet.

The goggles that every snowboarder and skier must use were a perfect way for me to illustrate what I believe these beautiful ski resorts will look like if we do not address this climate crisis. I used an abstract painting that I created last semester as my background, and by using Photoshop, I was able to move an image of snakes around to create a custom pattern.

Femininity Eclipsed

Presenter(s): Dominique Rodriguez

Advisor(s): Micol Hebron

This piece comprises photographs I have taken, drawings I have made, and found images. I hoped to convey a dreamy, hand-crafted quality using subtle colors, sketches, and scrapbooking tape from my notebooks. I look at my younger self through the velvet curtains that used to hang in my grandparent's bedroom. I am turned away in both images implying we can't see our future, however, we can look back upon the past with more understanding. I hope we can all learn to be gentle with our younger selves and forgiving of the mistakes we make as humans. A portrait of an infant carried by a moth is an expression of how ephemeral childhood is. Innocence is as fragile as the wings of a moth and can so easily be destroyed by malevolent hands. I had the privilege of seeing the statue of Juliet in Verona, Italy where people were taking pictures of themselves touching the breasts of the statue. Apparently, this is a good luck charm. I was confused by this tradition. It seems even a woman (rather a girl, as the character of Juliet was 13 years old) made of bronze cannot escape groping hands. Women have been written as evil seducers, bringing ruin to great men. I employed the image of an apple plucked by a male hand to ask the question, why was it written that Eve picked the forbidden fruit rather than Adam? Why is it that all women kind

would then suffer punishment until the end of time for a story written by a male prophet? In Ovid's *Metamorphoses*, Neptune rapes Medusa and she is transformed into a snake-haired monster as punishment for this assault. She is eventually killed and decapitated by the story's hero. Why are violence, violation, and the vilification of women so prevalent throughout history and in modern-day culture?

The Choice is Ours

Presenter(s): Isabella DeFeo

Advisor(s): Micol Hebron

This collage is oriented horizontally and includes motifs of hands holding the globe, two doorways leading into contrasting paths, and a galaxy in the background with floating plastic bags. There are paper cut-outs of trees in the lower left, with an image of a factory behind them. A woman is smiling, holding ski poles and a protest sign with her feet in skis on a dirt pathway in the lower right. Behind her is a green countryside with trees and a blue sky. Above these images, in the midground, is a graphic of the Earth, which is being held by two hands and is being lit by a match. The title suggests an optimistic viewpoint on moving forward with the climate crisis and that we still have time to fix our wrongdoings or at least change our habits to save our planet. On the left stands the horror of what fossil fuels and factories are doing to our environment with cutouts of paper trees because there could no longer be real ones living. This apocalyptic atmosphere begs the question of whether it is really what we want to look forward to if we continue to harm our planet. We are quite literally setting it on fire, as the match suggests. On the right is a portal into a beautiful and perfect world with bright vegetation and the combination of all climates, one lush and the skiing suggesting cold, that could live in harmony. These two sides confront the viewer about which door they want to walk through because even space appears to be littered with pollution in this collage, so we have to start making changes to rescue the Earth.

The Existential Gaze

Presenter(s): Janine Avery

Advisor(s): Micol Hebron

The *Existential Gaze* is a digital collage composed of images from a wide variety of sources. The background is composed of both a James Webb Telescope photograph on the left of the canvas, and an AI generated image on the right. The AI image depicts other-worldly fauna in a cosmic landscape, created through Adobe Firefly. Lines within each respective image guide continuity between the spacescapes. The middleground features the focal point of the collage, a watercolor painting of a female nude. To the right of the body there is a cutout drawing of a medieval cat carrying male genitals in its mouth. A magnifying glass sits on top of the body to function as a portal, exposing a pattern of fallopian tubes inside of it.

The piece deals with themes of gender, sexuality, and identity; *The Existential Gaze* questions what it means to take part in creation, how we define ourselves through our biology, how women are perceived through a predatory lens, and our sense of self within an infinitely vast universe. The body exists in this space to convey our connection to the cosmos: the very fibers of our being

are made from the dust of other-worldly matter. The cosmic elements of the piece create a sense of infinite life and creation, while the sterile magnifying glass and fallopian diagram denote our identities exposed to constant examination and attack from others.

Hollow Face Trying Not to Diet

Presenter(s): Valeria Evereth

Advisor(s): Micol Hebron

The horrifying yellow hollow face, which I have painted myself purging out all types of food, which, if you can see, is obviously not actual pieces of ingested food mixed with stomach acid because otherwise, that would be downright disgusting and utterly triggering. That detail is clearly seen in the other face, with the mouth area much more open and apparent with what it's doing. As seen beside the faces, the scheduling notepads have the words "eat" on them, foreshadowing what the hollow yellow face is always thinking about. With that whole scene playing out in the middle of the piece, I wanted to make it look like a mountainscape, but it was just not giving what it was supposed to be giving. I had to ensure it was clear to the viewer, so I lowered the opacity to that silhouette image and had it right there. Having to reach a goal and be better is like scaling Mount Everest. Sometimes, you end up dead just by trying, which leads to the idea of death. Many deaths are caused by violence and are associated with the arm that I included that has intense bruising. That also correlates to feeling uncomfortable with oneself, and one of many reasons is gender. The eye in the corner is in a triangle shape, radiating sun rays in yellow and black, which signifies power, especially towards the yellow and black face. People's eyes expect to see a woman represent herself in a way that can be considered eye candy for them. If you don't exceed those expectations, you find a way to make it happen, even if you end up dying. The mouth is the aftermath of so much gastric acid coming from the stomach to destroy the mouth and slowly remove the teeth' barrier to protect themselves. At last, the pattern is the shape of a woman and man being warped into one in the middle as purple from mixing their own colors but are hidden because they don't or can't admit that they have to change to satisfy the people around them. That pattern line has bright colors that underline the bold words above it to make the background obvious and draw attention to what it has to say.

Polluted Skies and Interstellar Sighs

Presenter(s): Chelsea Tate

Advisor(s): Micol Hebron

This collage is of an aspect ratio of 5:6 and includes a background of a photo of Earth from outer space, and the foreground is a living room of an abandoned house in Desert Center taken by myself in 2023. In the living room, a TV screen has been replaced with a picture of men playing golf while a forest fire burns behind them. On top of the TV is a scene of an industrial plant producing smoke, and beneath the TV is an army tank and semi-truck. Part of the living room floor is covered with grass, and a cow is stepping through the doorway. A mushroom cloud is pictured exploding from the globe through the same doorway. This collage focuses on communicating our world's current issues with climate change. Each addition to my collage has

the purpose of representing a current cause or effect of global warming. The semi-truck picture in the bottom left corner represents our society's transportation emissions.

Similarly, military emissions are represented by the army tank to the right of the truck. Livestock production and agricultural practices contribute a large percentage of our total methane emissions; the addition of the cow illustrates this. Another classic imagery of the causes and effects of the climate crisis is smoke and fire, which is depicted on TV by a viral photograph, a factory scene, and a mushroom cloud. Although represented by playful imagery, this piece's purpose is to communicate genuine and severe climate issues our society faces.

Digital Dreams

Presenter(s): Jackson Stewart

Advisor(s): Micol Hebron

My collage plays and intertwines physical and digital into an amalgamation where the lines between reality and rendering is blurred. The main focus of the piece is a rather crummily AI generated depiction of a desktop screen, where a collage of power lines, flowers, and clouds is displayed. In the foreground, there are more flowers with various sunsets layered on top of the petals, with additional light painting acting as a framing device, zipping around the outline of the generated computer screen. While most of the imagery is compiled from photos I took myself, there is a meshing of the AI generation superimposed on top of some of the flowers and weaved into the background to further emphasize the mixing between what's real and what's not.

The thematic prompt I chose to adhere to is the reality and artifice idea. I was inspired by the landscape of our society in this modern world; in an age so dictated and run by technology, and now with access to digital AI programs that can generate whatever we want it to with realistic results in the snap of a finger, the lines between the natural and the artificial are blurred more and more everyday. I wanted to represent the mixing of the two by taking the visual motif of flowers and clouds, two things so closely associated with the natural world, and to digital alter and distort their appearances to make them blend more and more into the artificial scapes of the AI generated frame, but also keep them identifiable enough to where the line between fake and real is still discernible.

Global Warming is Not Cool

Presenter(s): Bella Fraher

Advisor(s): Micol Hebron

The background is a clip of outer space, the middle ground is engulfed in flames, and the foreground includes a tiger stuck in a pile of wood. The tiger additionally has a red drop shadow in order to draw attention to the fire. Trees hang upside down and have a fiery red drop shadow. In the middle of the collage, our world, Earth, is on fire. Surrounding the flaming planet are three news articles regarding forest fires, placed on the lines of a rule of thirds grid. In the high center of the piece reads a statement, "Global warming is not cool" in order to draw attention to the focus point of the piece. I sourced my collage assets from Google Search and Adobe Firefly.

This collage draws attention to global warming, specifically forest fires. As the planet heats up, wildfires become more common, burning down forests and eliminating habitats for thousands of species of animals. I included a visual of the tiger's death to illustrate its home being burned to the ground. There is an image of the Earth on fire in the center of the piece. It is impossible for the Earth to catch on fire, so it serves as a metaphor that global warming is real and increases the Earth's temperature by dangerous amounts. Wildfires are becoming too common, the news articles in the collage draw attention to this fact. It is up to our world to work on reducing the pollution we emit into the atmosphere. But until then, the Earth will continue to get hotter and hotter.

Playroom

Presenter(s): Trent Hinely

Advisor(s): Micol Hebron

In the foreground, a child is holding a sphere. Behind the child, there is brown wallpaper covered with birds. There is a picture to the left of the child. In the middle ground through the window, there is a building with clouds and a sky in the background. There is a photo with Polar Bears on the left side by an artist named Dmitry Kokh. There is a nuclear cloud in the background of the image.

The child is holding and playing with the planet Earth. He is smiling while having fun inside, with no worries about what events are happening in the world besides the current moment. Outside in the real world (beyond the window) shows the aftermath of not caring for the planet. The careless playing that humans do with the Earth as a whole. The background leaves an abandoned wasteland with a mushroom cloud. The picture in the frame to the left of the photo is a creation from Dmitry Kokh. The photo depicts polar bears living inside of a human house. This photo shows how their homes are dwindling for us to create our own. The mushroom cloud symbolizes a nuclear explosion decimating everything and anything in its path. The abandoned factory building saturation is brought down to look dull and bleak. There is a drop shadow on the clouds to show depth and a 3D perspective. The nuclear cloud in the background shows how little humans care about other lives and the planet around them.

AF209B

Moderator: Micol Hebron

Developing Waterways Thoughtfully: There Must Be Another Way

Presenter(s): Caleb Lachelt

Advisor(s): Julie Shafer

Intense conflict is unfolding in Southern California, and it runs right through our cities every day. It goes unnoticed by most, but its outcome will decide the future for humans and nature alike. This conflict is between human development and the natural majesty of our waterways. The foundation of Orange and surrounding areas is historic wetlands, which have caused massive flooding that destroys human lives and buildings. In response to this destruction, we have unleashed our own damage, paving entire sections of our rivers and erecting dams and levees wherever we can. Through this process we have successfully protected those in the vicinity, but at what cost? Rivers not only provide important habitats for wildlife, but also make for excellent recreation areas that humans can use to decompress. Our once beautiful rivers now parallel multi lane highways, are intersected by innumerable roads and bridges, and display record levels of contamination. Through this project I aim to raise awareness through documentation of the current state of the Santa Ana, San Gabriel, and LA Rivers, and discover what changes we can make to better utilize this land in pursuit of a symbiosis that benefits humans and the environment alike. Advanced photography techniques alongside sociological and environmental research will be utilized to produce a photo essay including images of the river accompanied by analysis and anecdotes regarding the research.

Study of Witches // Attitudes towards Women

Presenter(s): Arianna Patterson

Advisor(s): Dr. Amy Buono, Claudine Jaenichen, Lia Halloran

To accuse a woman of witchcraft is a technique of scapegoating used for hundreds of years in Western culture, and more specifically, in Christian based societies. Countless forms of media and misinformation further stereotypes, false narratives, and gender biases to erase any power that women once had. Outrageous excuses are used to shame, blame, and turn women against one another. I call this systematic utilization of religion and magic as reasoning for establishing gender imbalance patriarchal mysticism. The origin of patriarchal mysticism can be traced back to the 15th and 16th centuries through religious texts written by clergymen and the engravings of men like Albrecht Dürer and Goya. In this study, I subvert the narrative of the classic Western witch, exploring archetypal stereotypes, symbols and stories that have been defining features of what it means to be a witch. Combining both historical imagery and more recent representations of witches, this project also investigates the witch archetype's strong hold on the contemporary attitude and reasoning for gender inequality, echoing the outrageousness of these claims through

humorous and surrealist imagery. These concepts are established using cyanotype prints on various glass materials as an ironic gesture to scientific specimens.

A Prophecy In-Reverse / So Much, No More

Presenter(s): Harrison Gaushell

Advisor(s): Dr. Kelli Fuery

This project was designed around a certain prompt given to me to act as my midterm for CCI 205, Digital Cultures. The assignment was to photograph a series of selfies and, through this, provide an analysis of my image and sense of identity; with the goal to illustrate their complex interrelationship.

The purpose and aim of my project is to visually investigate – through only images of the self (either in self-portraits or re-photographed self-portraits) – the birth and death of a film photograph; and through this visualization – prompt to the mind the notions of both photography’s inherent (fragile) materiality, alongside its ability to reveal the instantaneous unseeable/other/invisible missed in our (though in this case, resembling my) conscious experiences. A form of a curse, an impossible beginning, a photographic paradox.

The photographic images presented in this project have all been captured with a modified Infrared imaging camera, with this intentional medium specifically being chosen to suggest an allegorical connection between Photography’s way of capturing the ‘Optical Unconscious,’ similar to how Infrared (also, ‘Full Spectrum’) imaging captures photos utilizing infrared/ultraviolet light that is invisible to the naked eye. In the spirit of the assignment, all of the following visualizations have been handcrafted by myself (to be ideally understood from afar as being concerned around a coalescence of both photographer and subject. (Essentially, an authorial photographic mirror)). All reflections were diegetic (truly captured). Each still is presented in orthochromatic black-and-white (the absence of red; the addition of ultraviolet light information) as a further stylistic nod/homage to the unseen. The film photographs presented in this project were taken on medium-format (120) film and were hand-processed to completion (and physically destroyed) in and around my darkroom. They have been designed in three sets, each representing a different trilogy of images – Lenses/Reflections, The Darkroom, and The Photograph.

There's No Place Like My Room

Presenter(s): Hannah Emerson

Advisor(s): Micol Hebron

There’s No Place Like My Room is an installation of my childhood bedroom that has spanned my entire life, and is made up of personal objects and art that I created inspired by what brought me joy in my childhood. Throughout my childhood, people often visited my room, but as time passed, my room transitioned from a lively space to an isolated one. This exhibition allows for this space to become active again through the visiting of viewers and their participation in the events held in the space, which include: listening to burned CDs with my favorite music, in addition to attending a movie screening or listening party. These are activities that I usually do alone in my room, but through people’s participation, they aid in transforming my room into a lively space

again. The work in this installation follows a history of art making, and its main goal of transforming a space and immersing the viewer within the art. An example of this is Mike Kelley's Mobile Homestead, which allows the community to visit a replica of his childhood home and engage in activities hosted within it. Within my installation, there is a replica of my bedroom window as a photographic print, as well as a recreation of my door frame that allows people to write on it, similarly to how I tracked my height on it as a child. These work with other furniture components to transport viewers visually into my bedroom. In addition to this, there are several collages amongst various posters and personal objects that serve the purpose of celebrating what brought me joy in my childhood, including the music I listened to and the toys I played with. This installation honors an important space in my life and allows people to give it new meaning.

Her Eyes Through Yours

Presenter(s): Kiley Silkman

Advisor(s): Micol Hebron

"Her Eyes Through Yours" presents a collage centered around Marilyn Monroe's iconic presence on stage. Set against a backdrop of a stage setting, the composition follows a horizontal layout with an aspect ratio of 6 by 5. The scene depicts a crowd of men, portrayed in black and white, fixated on Marilyn who stands as the solitary figure in color, emitting a radiant glow around her. The men's attention on Marilyn is exaggerated through the use of telescopes, binoculars and cameras, depicting their attempt to get the closest perspective/angle possible, emphasizing the visual violation she is subject to. The men are located in the audience and behind the stage curtains, showcasing eyes on her from every angle.

The collage evokes discomfort by the close proximity of the audience, observing through binoculars, telescopes and cameras to emphasize the theme of perpetual scrutiny and judgment. Marilyn's actions on stage are tailored to please the male gaze, highlighting the pressure on women to conform to societal expectations. The fascination with Marilyn by the men presents the objectification of women and the perpetuation of the male gaze. The men in this collage serve as a representation of the voyeurs and scopophilics in our world, enacting tendencies based on desire. Through the juxtaposition of color and black-and-white imagery, the composition symbolizes the correlation between female identity and the influence of the male gaze.

Ultimately, "Her Eyes Through Yours" serves as a representation on the complexities of gender and power dynamics, illustrating how women often find themselves under the scrutiny of society's expectations. It shows how female identity is shaped and influenced by the perceptions and desires of men, offering a compelling exploration of the tensions between visibility, agency, and conformity in the realm of gender relations.

Time's Melting**Presenter(s):** Danielle Gemayel**Advisor(s):** Micol Hebron

This piece depicts how much climate change is affecting Earth and here are some of the main issues collaged together. This collage is oriented horizontally to fit the 2 landscapes provided. Inside the portal is an oil painting I painted Downtown LA during a bright sunset, contrasting against the dark buildings in the background. There is someone walking along a rusted pipe towards an open portal of our present time. The other background depicts a forest that is beginning to be affected by the plastic waste, climate change, and carbon dioxide emissions. There is some plastic in the water and there are red bridges coming from the pipe that are reflected on the water's surface. The wolf and deer in the background look towards the portal and can only witness the destruction upon their home. The reflections show the expansion of man-made things taking over the environment and destroying its essence. Additionally, the pattern of the melting candle covering the sky is reflected onto the water to show how carbon dioxide emissions emitted into the sky are coming back to negatively affect the environment. The candle is also in front of the sun to convey the acceleration of the melting and to represent the lack of time left. The piece is named, "Time's Melting" in relation to this idea of how each component of man-made things has brought harm to so much of the environment. This harm cannot be resolved by only one person, it needs to be a collective effort or the damages will be detrimental for the future.

Buried**Presenter(s):** Sophia Hsu**Advisor(s):** Micol Hebron

This collage displays a vertical background photograph of a tree extending into a green-colored hand that's holding a girl's head. Extending from the girl's head is her skeletal body surrounded by two anglerfish with portals into two post-apocalyptic worlds. On the girl's right side is a self-portrait figure study sketch, along with pigeons flying around the sketch. On the left side is a pencil sketch of greed. Lastly, the background is a pattern made by bugs commonly found in decomposition. I chose to explore the topic of climate change with this collage. The oil painting of the girl was initially created with the intention of open interpretation. In this context, the hand extending from the tree saves the girl. Around the girl, two angler fish are eating her away; within the angler fish's mouths are portals to future predictions.

I wanted to illustrate human connection as well as disconnection to nature. As we enter a digital age where we are constantly focused on a virtual space and presence, it is essential to reconnect back to nature as it provides benefits to all of us. In the collage, the tree provides the girl with a life source, sustaining her from the decomposition of the angler fish. Inside the angler fish are pictures of what AI thought polluted water would look like. Despite my decision to utilize AI to portray the future, it does not accurately showcase its significance. The pattern around the collage consists of bugs responsible for human decomposition when we pass. I wanted a visual reminder of the cycle of life and how we all return to the earth.

In Tandem

Presenter(s): Nina Jensen

Advisor(s): Micol Hebron

The formal pieces of this collage are few and the composition is rather minimalistic. This brings more focus to each element, giving them each a purpose of their own. The collage is oriented horizontally so as to frame the glasses worn by the subject, a scan of an analog film contact sheet that falls in the middle ground. Her glasses act as a portal into an image of flowing grass, from which extends the main subject, a girl in the wind, who is in tandem between the foreground and the background. Adjustment layers and blend modes are applied to the subject to embed her into the layers underneath.

This collage is conducts a comparison of reality to simulacra through a visual narrative. Analog is the opposite of digital, and the digital world contains augmented reality and simulacra. Therefore anything analog is associated with the inverse: physical reality. Following this logic, the contact sheet represents reality, while the glasses provide a glimpse into a separate landscape image that represents the digital world and its easy access to alternate digital realities and perspectives. The glasses portal prevents the viewer from seeing the subject's eyes, mimicking the function of VR/AR headsets and the concept of distorting one's perception of reality to intertwine it with the digital world. The jewelry-patterned purple that fills the section of the main subject that falls under the glasses references digital simulations and the ability to choose and edit how others perceive the digital version of oneself. The subject only has the option to augment her self image within the digital world, and her line of vision reflects a sense of curious desire to explore this option among others in the world of simulacra.

Self Immolation of the Gifted Child

Presenter(s): Ami Carrera

Advisor(s): Micol Hebron

A vertical 24 x 20-inch at 200 DPI image containing a background of the sun and space, a middle ground of icy plains, and a foreground of a desert. The collage also contains images of burning candles, dead flowers, eyes, a hand, a candle person, a star, and a statue of two figures. The candles stand on the platform of the statue, while the dead flowers cover both the faces of the two statues with the hand pointing at the statue; the candle person stares directly at the statue.

The piece is about a gifted child and the process of burning out due to high standards and changes in their environment. Often, the gifted child thrives in k-12 school, easily earning As and appeasing their parents and teachers, becoming a star but over time they begin to burn themselves on the self and imposed, constantly rising standards and begin to have a difficult time and cannot keep up. It is very common for a gifted child to arrive at higher education and be unable to succeed because they never learned how to study in class leading them to drop out or fail desperately. The metaphor I've placed is that the gifted child is much like a candle, burning until it is exhausted and is then discarded as trash because it can no longer provide a service.

For creating the collage I chose a lot of candles to convey that metaphor, I also chose the genre of the Pieta position for the statue because I wanted to show a relationship between the parent

and the gifted (Madonna and child), to demonstrate how high standards also come from parents. I included a picture of the fallen angel and a falling star to illustrate how they fall from the graces of society once they no longer astonish people with their intelligence and skill.

Plastic Home

Presenter(s): Mya Mannoni

Advisor(s): Micol Hebron

This collage is orientated vertically in a 5 by 6 ratio. Elements of this collage include plastic water bottles in the right upper third and a red bottle cap in the upper left sky background. The foreground of the piece has two sheep and one of them is looking up at the viewer while the other has its back turned to the viewer. This narrative collage combines graphite drawings that depict a natural landscape of a house and trees. The sky is painted blue by blue recycling

This narrative collage, Plastic Home, depicts the reality of our world which is changing rapidly from natural to plastic and pollution trying to mimic nature. The graphite landscape drawings that make up the background and foreground are reminiscent of the master landscape sketches done by artists like Monet and Rembrandt who were masters of capturing the natural world in its beauty and for its very essence. This creates tension between the illustrations and the man-made pollution that is placed on top of the drawing to fill in natural spaces. The water bottles which cast a shadow on the plastic clouds, are meant to represent birds that would normally be flying in an orange sunset sky.

These harmful elements that have been so seamlessly integrated into our lives and our world are brought to light in Plastic Home.

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