Student Scholar Symposium Abstracts and Posters   Center for Undergraduate Excellence

Fall 12-5-2018

Fall 2018 Student Scholar Symposium Abstract Volume

Chapman University Center for Undergraduate Excellence

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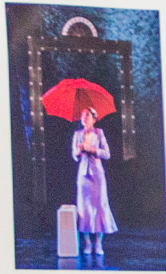
Chapman University Student Scholar Symposium

Fall Session Abstract Volume
Wednesday, December 5, 2018

CHAPMAN UNIVERSITY | **Center For Undergraduate Excellence**

Message from the Director

Greetings and welcome to the Fall 2018 Chapman University Student Scholar Symposium! The Center for Undergraduate Excellence 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.

Chapman University Student Scholar Symposium celebrates and showcases the research and creative projects conducted by Chapman students across the entire campus. Today's posters and student presenters reflect the diversity of academic and creative disciplines thriving within the Chapman community.

Please visit the student's posters to experience the compelling research and creative activity our students are engaged in here at Chapman. Chapman University Student Scholar Symposium is education in action, a true example that Chapman students are pursuing anything imaginable!

Thanks to all the student presenters and their faculty mentors.

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

Keynote Speaker – S.A. Frederick J. Simon

Special Agent Frederick J. Simon has been with the Federal Bureau of Investigations for 20 years and has worked on multitudes of cases involving Domestic and International Terrorism and Espionage throughout his tenure. Simon graduated from The City University of New York, Brooklyn, with a major in pre-law in 1990. Simon started his career as a teacher with aspirations of a career in the FBI. He taught in New York for eight years before being accepted into the FBI as an Investigative Specialist in 1998.

S.A. Simon grew through the ranks of the FBI relatively quickly. He went from Investigative Specialist in 1998 to Special Agent in 2001. Since being promoted to Special Agent, he has been a part of such notable teams as the Evidence Response Team, where he served as Evidence Technician, and the Special Operations Group. The Evidence Response Team would be sent to crimes as needed, where they would go to the scene and collect evidence both for local law enforcement and for federal cases. Also, a member of the Field Intelligence Group, S.A. Simon would recruit informants on current and possible future cases, to both track down the criminal or stop the crime from being committed at all. The most elite of these groups is the Special Operations Group. Members would be sent across the country and around the world to perform surveillance on high priority cases, including the Boston Bombing.

Highlights of S.A. Simon's career include investigating the Boston Bombing, educating nations from the former Soviet Bloc in evidence collection and operations techniques, Interrogator at Guantanamo Bay Naval Base, and stopping a planned bombing of the New York City subway system (the Zazi Case) before it happened.

For the past three years, S.A. Simon has served as private sector coordinator in the FBI's Los Angeles office. He works with private, non-governmental organizations to identify their weaknesses to possible attacks, and ensure they get whatever they need to help protect themselves against attack. This could include anything from security training to technology to general awareness training. S.A. Simon operates within the Office of Public and Congressional Affairs to conduct this outreach and facilitate training to ensure every member of the community stays safe and protected.

Acknowledgements

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- Dr. Glenn Pfeiffer, Provost

- Crean College of Health & Behavioral Sciences

- Donna Ford Attallah College of Educational Studies

- Schmid College of Science and Technology

- Wilkinson College of Arts, Humanities, and Social Sciences

Schedule of Events

9:30 – 11:30 am	**Student Poster Session I**	**Sandhu Conference Center**
12:00 – 1:30 pm	**Lunch Keynote Speaker** *Special Agent Frederick J. Simon* *RSVP required*	**Bush Conference Center** *Beckman Hall, 404*
2:00 – 4:00 pm	**Student Poster Session II**	**Sandhu Conference Center**

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Student Poster Session ll: Abstracts

Graduate Students

Biological Sciences

1. **Neurofeedback Training for Mood Improvement**
   Presenter(s): John Gavenas, Andy Liang, Jye Bold
   Advisor(s): Dr. Uri Maoz, Dr. Amir Raz

While medication and therapies are often effective treatments for depression, certain forms of depression are treatment resistant (e.g. Keller, 2005). Treatment alternatives are therefore desirable and are currently under exploration. Neurofeedback lets participants self-regulate their brain activity to a desired state via real-time measurements, analysis, and appropriate feedback. Some studies find electroencephalography (EEG) neurofeedback to be a viable treatment for depressive symptoms (Choi et al., 2009; Zotev et al., 2011) However, it is unclear how well features in EEG data generalize across individuals (e.g. Li et al., 2018). This brings into question the external validity of studies which rely on such features for targets of neurofeedback. We propose to investigate the efficacy of individually-tailored EEG neurofeedback which will treat each participant's brain activity separately. During a first session, participants will be induced to happy, sad, and neutral moods while their EEG is taken. A machine-learning algorithm will then be trained to classify each individual's EEG data in real-time. During a second session, participants will self-regulate towards a happy mood via feedback based on their EEG from the first session. Resultant changes in mood will be compared to participants in a sham control group. We expect a greater improvement in mood in the feedback group compared to control. The use of individually-tailored EEG targets and machine learning is novel, will increase the validity of our study, and will possibly improve treatment efficacy. This study may set the groundwork for a new treatment paradigm which is noninvasive, has no side effects, and is efficacious.

Data Analytics

2. **Relationship of In-situ Live Fuel Moisture Measurement and MODIS Data in Los Angeles County, California**
   Presenter(s): Kristen Whitney
   Advisor(s): Dr. Menas Kafatos, Dr. Seung Hee Kim

Southern California possesses a Mediterranean climate with semi-arid to arid characteristics and contains shrublands that are naturally at high risk to wildfire. Live Fuel Moisture (LFM) measures the percentage of moisture content within live shrubs and assesses the availability of fuel at risk to wildfire. Vegetation Indices (VIs) derived from remotely sensed satellite data have been applied to estimate LFM based on spectral response to changes in vegetation conditions. The in-situ LFM field data collected from chamise chaparral covers 3-5 acres with a temporal resolution of 2-weeks. In this study, LFM field data and remotely sensed satellite data were analyzed within Los Angeles County, California from 2001 to 2017. Five VIs were calculated using bands within the visible and infrared spectrums from MODIS collections with a 500-meter spatial resolution and an 8-day temporal resolution. These VIs, Enhanced Vegetation Index (EVI), Normalized Difference Infrared Index (NDII), Normalized Difference Vegetation Index (NDVI), Normalized Difference Water Index (NDWI) and Visible Atmospherically Resistant Index (VARI), monitor the phenology of ecosystems. Linear regression was applied to calculate the coefficient of determination

to assess the strength of correlation between linearly interpolated LFM data and time smoothed VI data. Results show that the strength of the performance of each VI varied site to site as well as year to year, and a single VI did not consistently dominate. In addition, inter-annual variability in weather conditions impacted the dynamics of LFM and remotely sensed VIs, as well as the strength of correlation, indicating that VIs may become less sensitive to LFM dynamics under extremely dry conditions. The goal of utilizing easily accessible remote sensing data to produce LFM estimation will benefit land management and planning by reducing time and money spent on ground data collection to monitor wildfire risk.

Health and Strategic Communication

3. **Instructors' Perceived Roles in Students' Mental Health Management: A Qualitative Investigation**
   Presenter(s): Allie White
   Advisor(s): Dr. Sara LaBelle

This study investigates the role of college instructors in managing their students' mental health. Instructors (N = 17) were interviewed, providing information about their perceived roles in their students' mental health management, the techniques they use to address students' mental health in and outside of the classroom, the concerns they have in addressing the mental health of their students, and the circumstances in which they deem necessary to intervene. Notably, instructors identified four roles they feel comfortable assuming, including that of an empathic listener, a first alert for university administration, a referral source, and having no role. These roles fell on a continuum of interpersonal dialogue engagement and comfort in discussing mental health topics. These findings are discussed both in terms of their contribution to instructional communication research, as well practical implications for university administration.

4. **Differences within Eudaimonic Media: Exploring How Meaningful and Inspirational Content Elicit Emotions**
   Presenter(s): Ashley Ima
   Advisor(s): Dr. Sophie Janicke-Bowles

Previous research on mainstream media has discriminated hedonic (i.e., funny, lighthearted) from eudaimonic (i.e., meaningful, elevating) media. Recently, researchers theoretically discriminated eudaimonic media (Oliver et al., 2018) into inspirational and meaningful media, but empirical research on this differentiation has only started. This exploratory study attempted to differentiate the emotions elicited by meaningful or inspiring movie clips. Moreover, the study explored the role of movie endings versus trailer clips as a way to test stimulus material effectiveness for future studies. An online quasi experiment was conducted in which participants (N = 109; 82.6% female, 19.12 years, 72.5% white ethnic majority) viewed 4 of 16 short clips (either 4 of 8 endings or 4 of 8 trailers) from popular meaningful (n=8) or inspirational movies (n=8). Movies were deemed meaningful or inspiring based on a prior audience survey (Janicke, Raney, Oliver, & Dale, 2017). Results indicate some support for the main hypothesis: previously defined meaningful content elicited more meaningful emotions (i.e., feeling touched, moved) than inspiring emotions (ie., feeling elevated, inspired), but previously defined inspiring movies did not elicit more inspiring emotions than meaningful emotions. Meaningful movie clips elicited more negative affect than inspiring movie clips, whereas inspiring movies elicited more positive affect than meaningful clips. Both trailers and endings were perceived to be equally meaningful and sad, but trailers were perceived to be more inspirational and positive in nature. The findings are significant because they suggest that different types of emotional responses in eudaimonic media exist: meaningful emotions may be a

response to both inspirational and meaningful media content, and inspiring content may be described as more positive, supporting previous research (Clayton et al., 2018). Overall, exploring differences in the effects of eudaimonic media content is valuable due to its role in attracting specific audiences and eliciting emotional responses.

Pharmacy

5. Interim Results of 24-hour Ambulatory Blood Pressure Monitoring Among Patients Seen in a Family Medicine Clinic
Presenter(s): Heidy Ruiz, Aryan Rabbani
Advisor(s): Dr. Michael Kelly

Introduction: Hypertension is a major risk factor for cardiovascular disease, with sub-optimal control rates. Recent guidelines advocate for 24-hour ambulatory blood pressure monitoring (ABPM) to confirm white-coat hypertension in patients with elevated office blood pressure (EOBP). Utilization of ABPM may lead to optimized medication management. Objective: To determine changes in antihypertensive therapy based on ABPM in patients with EOBP, and compare in-office to mean daytime BP. Study design: Retrospective cohort study approved by MemorialCare Institutional Review Board. Methods: From 08/01/2017 to 06/12/2018, patients with EOBP were referred by a primary care provider (PCP) for 24-hour ABPM, administered by a clinical pharmacist. ABPM results, including mean 24-hour, daytime, and nighttime BP were provided to PCPs to consider initiating/changing antihypertensive therapy. Medical records were reviewed to determine if medication changes were made. Primary endpoints included proportion of patients initiating therapy, as well as the frequency of medication changes in patients with a previous diagnosis. Secondary endpoints included comparison of in-office with mean daytime BP. Results: Twenty-two patients completed 24-hour ABPM (6 patients without hypertension and 16 with diagnosed hypertension). Among patients without hypertension, mean daytime systolic BP was lower than in-office BP (135.8 vs. 146.7 mmHg; p=0.083), and no patients initiated medication following ABPM. In patients with diagnosed hypertension, mean daytime systolic BP was also lower than in-office BP (138.2 vs. 148.8 mmHg; p=0.10). In these patients, 8 medication changes were made in 7 patients. Addition of a new medication (37.5%) and increased dose (25%) were the most common changes. Conclusions: In patients with EOBP, no undiagnosed patients were initiated on antihypertensive treatment. In patients with diagnosed hypertension, changes to current medications occurred in 44% of patients following 24-hour ABPM. Despite lower out-of-office BP, mean daytime BP still exceeded current BP goals.

Physical Therapy

6. Wearable Sensor-Based Gait Classification in Idiopathic Toe Walking Adolescents
Presenter(s): Sharon Kim
Advisor(s): Dr. Rahul Soangra, Dr. Marybeth Grant-Beuttler

Idiopathic toe walking on the balls of the feet is commonly found in children. Many toddlers who are just beginning to walk show signs of toe walking, but when toe walking persists after two years of age, the child's risk of falling increases as well as the risk of other developmental delays. In order to address the problem of toe walking, one needs to identify heel-toe gait versus toe-toe gait in natural environments of idiopathic toe walkers. In this study, 5 adolescents (13± 5 years) patients with idiopathic toe walking characteristics wore inertial sensors at L5 – S1 joint. Currently, it is a challenge to quantify the efficiency of intervention, but with the advancement of machine learning classification methods and powerful computing, longitudinal data from wearable sensors can be used to accurately classify gait abnormalities.

In this study, we have utilized Machine learning methods to classify toe-toe walking vs. heel-toe walking with the accelerometer and gyroscope data. Initially, a k-means cluster was performed to determine which features showed significant distinctions between toe walking and regular walking. We found that standard deviation, RMS, and kurtosis displayed distinct clusters for toe-toe walking and heel-toe walking. The k-means cluster provided an 82% accuracy score with a specificity of 83% and sensitivity of 86%. Recurrent Convolution neural network such as Long Short Term Memory (LSTM) will be used to identify toe-walking frequency from 3-day sensor data.This algorithm will also be applied on the 3-day sensor data after intervention to determine whether the frequency of toe-walking decreased. Wearable sensors integrated with machine and deep learning algorithms have the capability to transform current on-going therapy methods and monitor patients longitudinally for their improvement in gait. These novel techniques can also help us estimate the efficacy of treatment in patients.

Political Science

7. **Tapping the Untapped Potential of Social Media Politics**
   Presenter(s): Zach Ogie
   Advisor(s): Dr. Ann Gordon

The purpose of this paper is to examine political participation in regard to social media use, specifically voter behavior as it relates to the online content users see and post on media platforms. Given variables such as gender and time spent online, this paper hypothesizes that social media directly influences voting behavior on a multifaceted level. A review of the literature reveals important findings, most notably a study of Facebook that peer pressure on social media positively correlates with a significant increase in voter turnout in United States elections. A different study demonstrates that the type of message seen on social media is an important variable in determining the effects of social media on voting behavior. The results of these studies provide evidence that Facebook can affect whether users go to the polls, but limited research has been conducted on specific demographical groups and the responsiveness of different types of online users. Using the Chapman University Survey on American Fears as well as various other datasets, this paper aims to provide insight on social media's influence on voting behavior broken down by demographics and other variables. A notable finding in the present study reveals higher levels of receptivity towards political content among the male population despite data that the female population indicates a higher likelihood to vote and more frequent social media use. The implications of this finding suggest that the message and nature of political content on social media is important in determining its impact. Social media is the new frontier for future political campaigns; once further understood, digital canvassing may be utilized to change how voting behavior and campaign strategies are approached.

Psychology

8. **Does People's General Opinion of Autonomous Vehicles Influence How They Perceive the Quality of Driving?**
   Presenter(s): Jungsu Pak
   Advisor(s): Dr. Uri Maoz

Vehicles are increasingly becoming more autonomous. And it is expected that fully-autonomous vehicles (AV) will become a regular sight in the near to medium term. But, for the foreseeable future, humans will drive alongside AVs. So, it is important to understand the perceptions and opinions of humans on AVs. We asked participants to view video clips, made using 3D reconstruction of a vehicle driving, sometimes autonomously and other times under human control. We investigated subjects' views on autonomous versus human driving.

Undergraduate Students

Art

9. **An Observation on How Art History is Taught, and How Having Art History in Education Can be Beneficial to the "Now".**
   Presenter(s): Lyla Flashman
   Advisor(s): Donald Guy, Dr. Jocelyn Buckner

One of the ways in which art is identified is as history. This is dangerous in the sense that the moment "history" is tacked to something, it immediately is deemed unrelatable to the now. I have found that when using art as the platform to discuss current political, social, and even economical issues, that these difficult topics become easier to discuss. In a way, I have personally found my voice through the discussion of art and its history. I would like to examine how to change the way in which art is discussed, so to not just focus on its history in the art world, but what the work of art is saying. The moment the artist's tool hits their medium, they are making a political statement and it is our job as the viewer is to read it. Art is making the personal public, and examining the weight behind this. Today there seems to be set opinions on art, however, we as artists must challenge them about what is perceived as art, what is considered art, and in specific the art that is hard to comprehend. When a piece is created, commonly those of higher power decide how it will be perceived. Who is writing the history of art, who is deciding what is well known, and how can we broaden the spectrum of art. Once this is looked at, a deeper understanding of how we are made to perceive art is understood.

Biochemistry and Molecular Biology

10. **A Ramos-COLO Hybrid Antibody Cell Fusion Targeting Pancreatic Cancer**
    Presenter(s): Avrita Brar
    Advisor(s): Dr. Marco Bisoffi

We propose creating a cell-to-cell fusion-derived hybrid antibody as a potentially significant breakthrough for patients due to its one-month time span and much lower cost. We explored cell fusion between Burkitt lymphoma-derived Ramos cells and pancreatic COLO cells. Cell mutagenesis is crucial for the cells to survive and the fusion process to occur. We hypothesized that when the cells fused, the antibody-producing Ramos cells would exchange DNA information with COLO cells creating an antibody hybrid which could target and kill the cells of interest, COLO cells. We expected that in the Ramos-COLO fusion, the cells are integrating each other's DNA through protein restructuring, leading to a unique hybrid antibody that can be used to direct the delivery of cancer drugs to cells. Ramos cells were treated with DEPC and the COLO cells were treated with Iodoacetamide in order to mutagenize the cells. Then, both mixtures were combined into a single tube to initiate the fusion process. A disruption of packing of the cell membranes is needed for fusion to occur. After centrifugation, the cell pellet was washed and re-suspended in culture media. These cells, alongside COLO cell controls, were plated in 96-well plates. After 10 days, cell culture supernatant containing hybrid antibodies from each well was added to wells containing unfused Ramos or COLO cells alone, to perform a WST assay which is a colorimetric method to detect cell proliferation. The WST assay plate results indicate statistically significant death or reduction ($p < 0.00001$) in proliferation rates of COLO cells cultured with the fused Ramos-COLO cell supernatant. This suggests that we have created a hybrid antibody that can target a pancreatic cancer cell line. Our

next step is to confirm whether a hybrid antibody caused the COLO cells to stop proliferating and die to rule out another cause for this phenomenon. With these promising results, further research could lead to the possible development of a unique hybrid antibody or biological substrate which could be used to target pancreatic cancer.

11. **Mechanism of Action for Downregulation of Androgen Receptor in Prostate Cancer Cells By Curcumin Analog ca27**
    Presenter(s): Emma Beale, Abbi Eli
    Advisor(s): Dr. Marco Bisoffi

Our proposed project is a study on two of the possible mechanisms of action for how the diarylpentanoid curcumin analog ca27 (ca27) is able to cause downregulation of the androgen receptor (AR). The AR functions in prostate cells as a signaling enzyme that is activated to a transcription factor to induce genes promoting cell growth. This ultimately leads to uncontrolled prostate cancer cell growth. Previous research in our lab has shown that ca27 induces the downregulation of the AR. Our goal is to determine possible mechanisms of action of ca27 with respect to AR downregulation. We specifically address AR degradation and nuclear translocation, or a combination of both. Accordingly, we hypothesize that ca27 can either interfere with AR protein stability by enhancing its degradation, or that it inhibits its dimerization that is necessary for its nuclear translocation for its function as transcription factor. Using specific inhibitors for these cellular mechanisms, we present preliminary data, based on the method of sodium dodecyl sulfate gel electrophoresis (SDS-PAGE) followed by immunological detection by Western blotting. The major scope of our research is to develop therapeutic approaches against AR function in prostate cancer cells.

Biological Sciences

12. **Gain-Of-Function P53 Mutations in Field Cancerization of Histologically Normal Prostate Tissues**
    Presenter(s): Emily Cauble
    Advisor(s): Dr. Marco Bisoffi

This research project involves determining the frequency and level of expression of mutant gain-of-function p53 in tumor adjacent histologically normal human prostate prostatectomies and biopsies. We will determine if p53 R175H and p53 R273H are frequent mutations in histologically normal and field cancerous prostate tissues. We will also explore whether there is a correlation between the occurrence of the mutations with clinicopathological parameters (i.e. stage and grade) and the occurrence of the mutations between biopsies and prostatectomies. This project will be completed using independent tissue cohorts and conducting various p53 assays. There is a lack of knowledge and understanding behind the frequency of the p53 gain-of-function mutations that occur in histologically normal and field cancerous prostate tissues. Preliminary data previously conducted showed the occurrence of p53 R175H and p53 R273H in 9 out of 11 (82%) and in 8 out of 11 (73%) of histologically normal tissues resected 1cm from the visible margin of prostatic adenocarcinomas. In addition, 70% of tumor tissues were positive for p53 R175H and 90% of the tumor tissues were positive for p53 R273H. The analyses of these p53 gain-of-function mutations will pertain to both the diagnosis and prognosis of early stage prostate cancer. The most important outcome that could arise based off of this research is the correlation between the frequency and the level of expression of p53 gain-of-function mutations and clinicopathologic parameters. the potential applicability to prognosis can be further explored by analyzing the discrimination between stage II and III and the use of the Gleason grade less than 7 and greater than or equal to 7.

13. How Do Atlantic Hagfish Burrow?

Presenter(s): Keolani Kahale-Lua

Advisor(s): Dr. Douglas Fudge, Dr. Charlene McCord

Hagfishes are elongate craniates that live on the ocean floor and burrow into marine mammal carcasses. Though effectively blind, hagfish are able to manipulate their bodies to efficiently navigate through narrow crevices. However, there remains no clear answer as to how they move, or what encompasses their full range of locomotor behaviors. The purpose of this study was to determine possible mechanisms by which Atlantic hagfish (Myxine glutinosa) accomplish a vast range of locomotor functions. To investigate this, we analyzed videos of Atlantic hagfish moving through varying channel widths in a custom-built plexiglass maze. We identified the changes in locomotor patterns as individuals moved through channels and documented the frequency of certain behaviors associated with each channel width. We found that hagfishes are able to navigate through every channel width of the maze with ease. In larger channel widths, the predominant behavior was undulatory swimming. We observed the hagfish generating a wave-like movement throughout their bodies by head movement in the form of a "wag" as well as tail force propulsion in both forward and reverse directions. As the channels decreased in size, new behaviors were displayed including bracing of the sides of the channel walls. In the narrowest channel widths, a non-undulatory behavior, similar to the rectilinear locomotion observed in snakes, was used. Other observed behaviors include reverse rectilinear-like motion, as well as doubling back on themselves, even in channel widths that were narrower than the hagfishes' diameter. Our results are consistent with the idea that Atlantic hagfish locomotion is extremely diverse and that their locomotor behavior appears to be dependent on their environment. Our results provide insight into behavioral patterns that may be specific for burrowing, and future research will address how these behaviors vary in different substrates that are analogous to the sediments present in their natural habitat.

14. The Locomotion of Pacific Hagfish

Presenter(s): Lauren Friend

Advisor(s): Dr. Douglas Fudge, Dr. Charlene McCord

Hagfishes are jawless marine craniates that display unique and diverse locomotor behaviors by burrowing into the ocean floor, swimming, and moving through tight spaces. They play a crucial role in benthic ecosystems and utilize their locomotor abilities to prey on benthic invertebrates, avoid predators, and feed on large carcasses. However, little is known about how they maneuver through tight channels. We investigated hagfish locomotion by quantifying and comparing the locomotor behaviors associated with moving through channels of varying width. An HD digital video camera was used to record the movements of Pacific hagfish (Eptatretus stoutii) from a dorsal view through a custom-built Plexiglass chamber that mimicked various tunnel widths hagfish may encounter in their natural habitat. At channel widths considerably larger than the hagfish's diameter, lateral undulation (swimming) was observed. During lateral undulation, muscular waves traveled along alternate sides of the animal's body and generated swimming forces that propelled it forward. At smaller channel widths, a wide range of locomotor behaviors were observed; some hagfish adopted a wavelike morphology and used the chamber walls to brace itself and push forward while others rapidly fluttered their tail using a movement similar to swimming, but with a higher tailbeat frequency. These results are consistent with research previously conducted on legless amphibians (i.e. caecilians), and accentuates the complexity of hagfish locomotion while moving through complex environments. This research provides insight into the behavior and ecology of hagfish, as well as the evolution and biomechanics of locomotion in elongate animals.

Communication Studies

15. Instagram Content Analysis
      Presenter(s): Lauren Paul, Jaryn Fajardo, Benita Izu-Alcobia
      Advisor(s): Dr. Austin Lee

The current study aimed to examine the reasons for Instagram usage, specifically related to gender through content analysis. The current prevalence and adoption of social media platforms within our society raises the question of whether or not there is a motivational difference between males and females. Previous research findings suggest that women are generally more active on social networking sites and primarily utilize them to maintain close relationships; whereas, men use social networking sites to stay up date on general information, such as sports, politics, and news. However, these findings are predominantly based off of Facebook and Twitter research. Therefore, more studies surrounding Instagram usage and motivation must be conducted to allow for greater understanding of all social media platforms. In order to achieve such insight into Instagram usage, the data for the study will be collected through a content analysis of Instagram posts from public users. There will be two coders categorizing the samples. Following data collection, correlations will be made between Instagram usage and gender. These results will provide a more in depth insight into social media platforms, which is likely to encourage further research and exploration of the topic.

16. The Five Core Capacity Units of Cyber Infrastructure
      Presenter(s): Sasha Baharestani, Kimberly Lachaine, Don Birmingham
      Advisor(s): Dr. Kerk Kee

An assessment tool needs to be developed in order to properly evaluate capacity building within cyberinfrastructure organizations. However, in order to create an accurate and proper evaluation, the main forms of capacity central to cyber infrastructures need to be specified first. Furthermore, through a series of interviews of 20 individuals, who are considered to be experts in their field of study, provided us with extensive knowledge of cyber infrastructures. Through their years of working in the field, we were able to find evidence of our research question: "What standards, practices and procedures are necessary to put in place, in order for cyberinfrastructures to be efficient, effective and successful?" Through an analysis of the interviews, we were able to find that the five key standards, practices and procedures that are necessary for the capacity building and growth of cyberinfrastructure are: Networking, Communication, Open Sourcing, Funding, and Technology. The proper networking capabilities must run smooth and be able to flow which would need the most updated technology. Another main component of cyberinfrastructure is Communication. This is a key factor because CI is most successful when people are involved and connected with each other. Along with communication, spreading awareness and personal resources helps to get more people involved and to expand the network of cyberinfrastructure. Open sourcing is necessary because it needs people to provide information so that others can critique, improve on, and provide information of their own. There has to be sufficient funding because cyberinfrastructure relies on access to material resources and staff. Finally, having access to technology and sufficient hardware plays another important role in CI because CI was made to bring together information via technology.

Computational Science

17. <u>Managing Multiple APIs using JSON for Data Exchanging</u>

    Presenter(s): Samantha Gonzalez

    Advisor(s): Dr. Michael Fahy

JSON, or JavaScript Object Notation is a lightweight data exchange format for structuring data in a readable manner used by application developers for transmitting the data of the server to that of the web application over a network connection.With multiple APIs, the HTTP protocol is used through requests to connect the servers to the client on the transport-layer which is communicated through JSON. Using an HTTP request for GET, the application is able to retrieve the data from the one API for searching through the content and an HTTP request for POST to write this data to the other API creating a server-side object. Through this application, I will be communicating with two end systems, one being that from the Spotify API and the other from Setlist.fm API. The client will be able to communicate through the access of the Setlist.fm to search through its data and retrieve a given setlist of an artist based on a variable such as the artist name, city performance, venue, or date of performance. Using this information, the communication is linked to Spotify's API authenticating the client access to the user's Spotify account and create playlists straight onto the account based on the setlist information. In this application, JSON will be used to transmit the data from the Setlist.fm API and send it to the application to communicate to the Spotify API when building the playlists based on this data and create the server-side object.

18. <u>Disparities in Overall Survival Following Second Primary Malignancies Among Survivors of Childhood Cancer</u>

    Presenter(s): Vidal Arroyo

    Advisor(s): Dr. Philip J. Lupo, Dr. Jennifer Agrusa, Dr. Maria Gramatges, Dr. Austin L. Brown

Improved treatments have resulted in 5-year survival rates exceeding 80% for childhood cancer. Unfortunately, aggressive therapy places survivors at increased risk of developing second primary malignancies (SPMs). SPMs are the second leading cause of late mortality among survivors, yet information is limited on outcomes for SPMs compared to similar first primary malignancies (FPMs) diagnosed among individuals without a history of childhood cancer. We used the National Cancer Institute Surveillance, Epidemiology, and End Results (SEER) program to compare overall survival (OS) for individuals diagnosed with a SPM following a childhood cancer to individuals with comparable first primary cancers. Data was extracted using SEER*Stat version 8.3.5 software. Hazard ratios (HR) and 95% Confidence Intervals (CI) were calculated using multivariable Cox regression to compare OS between individuals with and without childhood cancer history. OS was evaluated in 1,053 SPMs diagnosed in survivors of childhood cancer and 1,248,767 comparable FPMs. OS was significantly poorer in childhood cancer survivors than individuals without a history of childhood cancer (HR=2.49, 95% CI: 2.26-2.75). After accounting for sex, race, age at diagnosis, decade of diagnosis, and histology, a history of childhood cancer remained a poor prognostic factor for all cancers evaluated, including breast (HR= 2.69, 95% CI: 2.09-3.47), thyroid (HR=6.15, 95% CI: 3.47-10.90), melanoma (HR=2.61, 95% CI: 1.40-4.86), and soft tissue sarcoma (HR=1.95, 95% CI: 1.18-3.23). Relative to individuals without a prior cancer diagnosis, survivors of childhood cancer diagnosed with a SPM experience worse outcomes. Additional research is needed to identify factors that contribute to this survival disparity.

Computer Science

19. How Can a Telepresence Environment be Used to Increase a Person's Communication and Problem-Solving Skills?
Presenter(s): Aubrey Fernando, Kolby Ramirez, Abigail Tan, Josh Anderson, Chase Mitchell
Advisor(s): Dr. Michael Fahy

Previous research supports that one's ability to effectively communicate with others is an essential skill to better solve problems and reach goals (Yost et, al. 2000). As we become increasingly reliant on technology to communicate with one another, how can we increase a person's communication and problem-solving skills in a telepresence environment? Telepresence technology allows people to feel as if they present in another location in a virtual space (Failoa et, al. 2013). Our research project will consist of a two-player game made in Unity. The game will be a 2d top-down cooperative puzzle game in which the players must communicate and work together to complete a maze. The players will work through the game together, triggering doors and paths in the maze for each other. Players will progress through the game at the same time, in separate rooms on separate computers, creating a telepresence situation. A TCP chat server will be used to allow players to communicate and discuss their thoughts and next steps with each other. In researching this topic, we want to understand how a telepresence environment impacts communication and cooperation between players. Upon completion of this project, our findings should provide insight into the effectiveness of a telepresence environment to reach goals and solve problems. Our findings will provide us with a greater understanding of how users currently interact with virtual spaces and how we can improve upon a future user's interaction in a virtual space. By making this game, we hope that we can also develop a fun way to increase a person's ability to communicate and work with others to solve problems.

20. SpotifyMatch
Presenter(s): Isabella Pepke, Daniel Briseno, Nic Fergie
Advisor(s): Dr. Michael Fahy

The purpose of this project is to create an application which will connect to two Spotify profiles, download their song libraries, and compare the two libraries. The program will then output a metric on how similar the two profiles are. In order to achieve this, we will obtain authorization from Spotify using public and private keys and will then access the song libraries through a series of http GETrequests. All communications will take place over a TCP connection. Once we have the complete libraries of both profiles, we will begin comparing the two and looking for similarities. The comparison phase of development will deal less with networking problems and more with algorithmic and mathematical issues. We will have to, first –determine the most efficient method of comparing two potentially large libraries while still registering similarities in Artist and Genre, second –determine exactly what impact certain similarities will have (if two profiles have a few similar songs but very differing common Genres and Artists, will they have a higher similarity score than two profiles with no songs in common, but similar Genres and Artists?), and third –determine what metric would most accurately depict similarities(should it be a generic "score", with a higher scores for similar profiles, or should it be a percentage with 100% signifying identical profiles and 0% no genres artists or songs in common?). This project will be completed in python using the Spotify library.

21. **Moodify: Automated Playlist Creation for Spotify**

     Presenter(s): Miguel Luis Gotao, Scott Weller

     Advisor(s): Dr. Michael Fahy

Moodify is an Android application designed for automating the creation of music playlists based off user search filters. The project is built using Java and will connect to the Spotify music platform via the developer Web API to collect music tracks and create playlists. The primary challenge of the project is the utilization of the Spotify API to perform intelligent searches that fit the user's intent, as well as creating an easy-to-use mobile application that works on Android environments. The main feature of the project is to search for a selection of music tracks based off a specific search term that the user enters. The search can then be further refined by filtering for specific audio features within tracks, such as the presence of vocals, the liveliness of the track, how loud the music is, and more. These searches will be easily configurable, with each audio feature represented as simple radio buttons that can be checked off. Once satisfied, the user can begin the search, and the results should automatically be displayed for listening.

22. **TwitFace**

     Presenter(s): Paul Vasquez, Gabriela Ghermezi

     Advisor(s): Dr. Michael Fahy

The TwitFace program provides a convenient and efficient tool for Twitter and Facebook users. The central purpose of this project is to create a program that is able to communicate with both the Twitter and Facebook API's, thus allowing the user to post an identical status simultaneously. The program will require the user's login information for both accounts and will prompt the user to enter a status to share. The user will also have the option to share a pre-generated post from a generic list of options. This project will demonstrate network communication, client/server communication, data packet transfers, and communication between multiple API's.

English

23. **College Admissions and its Contribution to Zaniness**

     Presenter(s): Dakota Palmer

     Advisor(s): Dr. Brian Glaser

If we look at the educational system in America through a rhetorical political scope, we find that the culture shaped our views on what is expected from students, especially those within secondary school. The extreme demands from higher educational institutions have established major psychological effects upon students across the nation. In this paper I cover how college admissions, specifically the Common App, create what Sianne Ngai calls zaniness, or simply the intersection between occupational performance and play. This is where the birth of educational competition takes place and the line between work and play becomes blurred. In order to obtain the typical middle-class lifestyle, the only path is through a college degree; thus, secondary school students are forced to engage in the chaotic balancing of high GPA's, test scores, extracurricular activities, and community service in order to set themselves apart from the sea of other competitive students. Our capitalistic society causes even more obstacles for students and many argue that institutions only allow admission to those who fit the institution's needs. Students that come from a certain ethnic background, religious orientation, or come from high income families are put at a disadvantage. This competitive nature may or may not be the best way to determine an individual's intellectual ability since each student has different interests. In some areas this engagement of zaniness is essential whereas others it is not.

24. <u>Effacing Erasure: A Strategy for Synthesizing High School Literature and Racial Literacy</u>

Presenter(s): Jodi Payne

Advisor(s): Dr. Lynda Hall, Dr. Noah Golden, Dr. Rei Magosaki

Toni Morrison's "Playing in the Dark" postulates an epidemic of "erasure" of black bodies in American Literature, wherein the systematic absence or shadowing of "blackness" in literature deconstructively centralizes "whiteness". One can see evidence of black erasure in high school English curriculum through the "classic" literature that is regularly implemented. Erasure's presence in these texts reinforces harmful and inaccurate ideology about black bodies, which students may then internalize. However, such realities become difficult to combat when ridgid school district expectations mandate the standards for English curriculum. This paper seeks to provide one example of reconciling the invisibility of black bodies in high school literature with curriculum requirements. By utilizing a framework of Critical Race Theory and responsive pedagogy, teachers can engender classroom discourse about how "erasure" is enacted in a regularly taught novel, "The Great Gatsby" by F. Scott Fitzgerald. This text can be supplemented with Claudia Rankine's "Citizen: An American Lyric", a powerfully poetic rendering of erasure's existence in the 21st century. By synthesizing both works, educators may adhere to school standards for English curriculum. However, such an exercise in critical analysis can also enable students to intentionally recognize erasure within texts and question the resulting implications that go beyond the classroom. Therefore, educators may establish a space for furthering students' racial literacy and social agency.

25. <u>Deconstructing the Privileged Asian American Immigrant Narrative</u>

Presenter(s): Kristi Kayoda

Advisor(s): Dr. Rei Magosaki, Dr. Lynda Hall

Immigration has been a quintessentially American narrative. America has historically been a place where many immigrants seek greater opportunity of lived experiences through the American dream. The intertextuality between Jhumpa Lahiri's Unaccustomed Earth and Nathaniel Hawthorne's The Scarlet Letter is seen through the transplantation metaphor for immigration. Nearly all the scholarly works that examine Unaccustomed Earth underscore this frame. While intertextuality and the transplantation metaphor are an important frame to read Unaccustomed Earth, a reader can become oblivious to the privileged immigration experience Lahiri is constructing. Instead of seeing the unique and beautiful aspects of Bengali and Bengali American culture, a reader focuses on a narrative where Asian American immigrants are privileged and successful, which feeds into the model minority myth. Within this model minority, Asian Americans are perceived as intelligent, hard working, and bread winners of the minority demographics. The idea of a model minority is problematic because it exists to create difference between minorities, silence the less privileged, and to create a sense of power dynamic, even when all minorities are still subjected to the majority. By focusing on intertextuality and transplantation alone, a reader is more prone to ignore or sideline each carefully crafted immigrant narrative Lahiri shares. Drawing on various critics of Unaccustomed Earth, theorists Lisa Lowe, Sau-ling Cynthia Wong, and Anita Mannur, the idea of a diverse immigrant experience is underscored and the terms "American" and "Asian American" are redefined. More importantly, these theorists help unpack, challenge, and dispel the model minority myth and demonstrate there is no cookie cutter narrative for the immigrant experience. They shed light around what America is without the immigrant experience, what America is without the Asian American immigrant experience, and what America is without the transnational immigrant experience.

Environmental Science and Policy

26. **Analyzing E-Cigarette Trends in California**
    Presenter(s): Brooke Bradford, Kelsey Albarian
    Advisor(s): Dr. Georgiana Bostean

While smoking rates have decreased in recent years, e-cigarette use (i.e., vaping) has increased rapidly. There are many ongoing, policy-relevant debates surrounding vaping, such as disparities in exposure to retailers and targeting of youth. Our goal was to convey the current issues, as well as our research findings, about vaping to a broad public audience. To do this, we created two "StoryMaps" about vaping that focus on: (1) the effect of school proximity to vape stores on youth vaping, and (2) smoking and vaping disparities and our finding that vape stores in Orange County are more likely to be located in areas with higher proportion Hispanic population. Additionally, we described regulations and policies that might help keep e-cigarettes away from susceptible youth.

27. **Effects of Temperature on Natural Organic Matter Reduction in a Northern Minnesota Peatland**
    Presenter(s): Emily Schahrer, Lauren Miller
    Advisor(s): Dr. Jason Keller, Dr. Cassandra Zalman, Jesse Rush

Peatlands contain over a third of the world's soil carbon and have represented a sink for atmospheric carbon dioxide over time. Additionally, peatlands release the potent greenhouse gas methane to the atmosphere. With climate change an imminent threat, understanding the role of wetlands in greenhouse gas production is important. Natural organic matter (NOM), which consists of partially decomposed organic matter, can act as an electron acceptor for microbial decomposition, and represents a key control of greenhouse gas production in wetland ecosystems. In the current project, we explore how climate change – specifically warmer temperatures – influences the competition between NOM reduction and methane production. This research is part of the Spruce and Peatland Responses Under Changing Environments (SPRUCE) project, which focuses on how a northern peatland reacts to climate change. At SPRUCE, a peatland has been experimentally warmed from +0 C to +9 C above ambient temperatures for the past 4 years. For our study, soils were collected from multiple depths (5 above, and 5, 30-50,50-75,100-125 cm below the water table) and incubated anaerobically at in situ temperatures. The reduction of NOM and greenhouse gas production (carbon dioxide and methane) were measured from the samples over a 1-week laboratory incubation. The data suggest that warming temperatures increase the rates of NOM reduction. However, seasons and depths also seem to play a role in the ultimate output of methane and carbon dioxide. Ongoing work is exploring the link between NOM reduction and greenhouse gas production in this experiment. Taken together, our preliminary findings suggest that NOM reduction could be a key regulator of the response of peatlands to global change.

FFC

28. **The Power of Myth: Connections Between Egyptian Goddess Neith and Greek Goddess Athena**
    Presenter(s): Alexa Faber
    Advisor(s): Dr. Eileen Jankowski

Myth holds an incredible power over culture and its people. Whether it explains the origins of the world, offers an explanation of the cosmos, or serves hope in the form of a heroic story, myth never fails to appear throughout time, and as history ever so clearly repeats, so does foundational legend. This research project focuses not just on the power of myth, but also the common themes seen in between two specific myths: one of Neith and the other of Athena. Neith—an Egyptian goddess worshiped for her intelligence and fierceness—and Athena—a Greek goddess revered for her wisdom and boldness—are only a pair of connected dots in between the myth from Egyptian culture and myth from Greek culture, yet have an undeniable similarity between them. Neith, who has ancient origins in Lower Egypt, holds authority over who is the divine ruler and is often turned to for guidance, as seen in the myth of the murder of divine king Osiris and the search for a successor to the crown. Athena guides heroes on impossible quests in many different forms, and is among the twelve of the great Olympians, also meaning the great deities, in Greek mythology, as seen in the famous epic poem The Odyssey. They are commonly described as wise and both have an association with war. I explore and compare the depiction, gifts, standing, and stories of these two goddesses in this project to search for answers to why the significance of gods and goddesses reoccurs over time and between diverse cultures.

29. **Odysseus and Finn: A Comparison of Greek and Irish Mythological Heroes**
    Presenter(s): Brian Anderson
    Advisor(s): Dr. Eileen Jankowski

The Fianna were a legendary group of warriors occupying the midlands of southern Ireland. They served as protectors to the King and defended the land. The leader of the clan was Finn mac Cumhal, known and honored for his strength, wisdom, valour, and generosity. Another key mythological figure, and warrior of the Fianna was the son of Cumhal, Osian. Recognized as one of the greatest poets of Ireland, Osian gives name to the cycle in which the myths of the Fianna take place, the Ossianic Cycle. What sets the Ossianic Cycle of Irish mythology apart from the rest can be found in the intersection between the fairy world and humans. The interactions between spirits, animals, and fairies play a large role in the adventures and stories told in the Ossianic Cycle. When compared to Greek mythology, the Irish did not have gods or goddesses representative of certain aspects on earth, but rather certain elements in Irish mythology such as a weapon or an animal could possess certain powers. Although Greek and Irish mythology differ in a multitude of ways, a direct relationship can be drawn between two of their most prominent figures, Odysseus and Finn mac Cumhal, through their roles in the mythological society as well as certain defining characteristics. Both warlike and adventuristic, the tales of these legends often mirror each other in certain aspects. Due to their similar family lineage, a strong comparison can be drawn between Odysseus and his son Telemachus, and Finn and his son Osian. By looking at the lives of these two mythological heroes, insight can be drawn into what it meant to be a warrior in Greek and Irish mythology, and how the myths of Ireland differed from those of Greece.

30. The Wailing Spirits: How Banshees Reflect an Ever-Changing View of Women in Society

Presenter(s): Brianna Leonard
Advisor(s): Dr. Eileen Jankowski

A banshee, according to the Merriam-Webster dictionary, is "a female spirit in Gaelic folklore whose appearance or wailing warns a family that one of them will soon die." This definition, while correct, barely scratches the surface of banshees in Celtic mythology. These lamenting spirits were once known as "keeners," or women who sang sad songs at funerals in medieval tradition. Keeners were paid remarkably well, and some were so talented that powerful families claimed they were "bean sidhe," or fairy women. Over time, banshees have been interpreted in many ways, and the women who were once paid to sing at funerals became omens of imminent death, simply because some keeners accepted alcohol as payment for their services and were therefore seen as "sinners." Nowadays, banshees are depicted as either horrifying monsters who rip people to shreds or living teenagers with the power to predict death by shrieking, and their original role in mythology is often glossed over. The ever-changing portrayals of banshees, however, do an incredible job of reflecting that specific society's view of women as a whole, due to their varying depictions in many different cultures and time periods. Through several articles and accounts of banshee sightings from earlier centuries, I hope to examine how these myths reflect on the women of those eras and how their societies held them, whether it be in high standing or the exact opposite.

31. Aztec God Of War Difficult Rise and the Civilization Built Around Him

Presenter(s): Carolina Valencia
Advisor(s): Dr. Eileen Jankowski

Huitzilopochtli, the Aztec god of war and deity associated with the Sun was the major god of the Aztec people. The Aztec people moved their civilization, from northern Mexico to what is now Mexico City through some guidance from Huitzilopochtli. The place where they set up became known as Tenochtitlan. At the heart of the city, stands Templo Mayor, built to honor Huitzilopochtli. The Templo Mayor was the center of the ritual blood sacrifices to the god of war. Often, the people sacrificed to the God were war captives as to satisfy the war god. Because of the influence of Huitzilopochtli, a large part of the culture is based around the important war deity. Although the Aztec civilization was far away from Ancient Greece, their Gods had similarities. Heracles, a hero and god in Ancient Greece has some of the same qualities as Huitzilopochtli, a topic that will be explored. Heracles was born of a mortal women and Zeus, which angered Hera, as Heracles was a constant reminder of Zeus' infidelity. When Hercules was born, Hera sent 2 snakes to kill him. Her plan failed, and trouble began for Heracles since a young age. Huitzilopochtli's mother, Coatlicue was miraculously impregnated by a ball of feathers, in some accounts. Her children, "the four hundred gods of the South," did not seem to be happy with her pregnancy. So they developed a plan to kill her and her unborn child, this is when Huitzilopochtli emerged from her womb and killed all of them. Similarly to Heracles Huitzilopochtli experienced difficulties that lead to their ruthlessness.

32. Ideas of Transformation and Rebirth in the Myth of the Welsh Goddess Ceridwen

Presenter(s): Emily Nagle
Advisor(s): Dr. Eileen Jankowski

Ceridwen is the Welsh goddess of transformation, inspiration and rebirth. She is most notable for being the mother of Taliesin, originally her house servant named Gwion, who became the greatest of all Welsh poets. In this myth of Ceridwen, Gwion accidentally drank a potion she was brewing to make her son, Morfran, a more attractive and knowledgeable man. Gwion absorbed all the powerful properties of the

potion, and ran away once he realized his mistake. With Ceridwen in vengeful pursuit behind him, Gwion transformed into several different animals to escape from the goddess, who also shapeshifted to keep up with him. My thesis will explore the concepts of transformation, also known as shapeshifting, and rebirth seen in this particular myth of Ceridwen, and how both of these mythological ideas were appreciated in Celtic culture. Transformation from a human to animal state is seen in many Celtic myths, and each animal represented unique qualities that could enhance the abilities of the mythological figures that became them. Ceridwen's cauldron is another important aspect of this myth, which represents her qualities of knowledge and inspiration. My research will identify connections between the Welsh goddess Ceridwen and epics of Greek mythology in which the figure shares her same personal traits. For example, throughout Homer's epic, The Odyssey, the Greek goddess Athena shapeshifts in order to help Telemachus find his father, Odysseus, and restore peace in their home in Ithaca. The origins of the mythological concepts of transformation and rebirth are perhaps rooted in the desire of ancient humans to justify unexplainable earthly happenings, which inspired them to create mythical figures who possessed such supernatural abilities.

33. From Celtic Trees to LOTR Fans: The Evolution of "Tree-Hugging"
Presenter(s): Hannah Scott
Advisor(s): Dr. Eileen Jankowski

Throughout Celtic mythology, trees have been worshiped as sacred beings. Trees were thought of as a source of great wisdom, magical power, and a connector between the human world and the Otherworld (Celtic afterlife). Nemetons, sacred groves, were places where the Celtic people would hold ritualistic ceremonies and meditations to honor and appease the trees. The trees that the Celts worshiped more specifically were oak, hazel, apple, yew, ash, and holly trees, with the yellow cedar as the "mother of all trees". Anthropologically, trees are honored because humans are thought to be evolved from trees. Due to the size of trees and the complexities and connections with their roots makes it hard to not believe that these beings are intelligent. Through examining the worship of tree by the Celts, I have found that people today still hold trees sacred even though their ways and means of honoring trees is different. Author J. R. R. Tolkien revealed the sacredness of trees by personifying them with the Ents, which are tree-beings in his series The Lord of the Rings. The Ents are the protectors of the forest, and when they were attacked, they fought back and claimed back their sacred forest. Similarly, the environmental organization The Sierra Club promotes the preservation of trees and they use the image of the Giant Sequoia to represent their devotion to nature. My research ultimately seeks to demonstrate how honoring trees is lasting the tests of time, even though the ways of holding trees sacred have changed to fit the time period.

34. Here be Dragons, But Why be Dragons?
Presenter(s): Kai Terrell
Advisor(s): Dr. Eileen Jankowski

Dragons exist around the world and in almost every single mythology. The question is, then, with the wildly varying cultures and geographies, how do easily recognisable dragons come to be, and how are they known so widely? Three main theories exist, yet each fails to explain a crucial aspect of how the myths came to be. The most well-known theory- based around the findings of dinosaur skeletons and their explanation as mythological beasts- does not explain how ancient peoples could have reconstructed a living creature around what scattered, broken bones they might have found. The second theory proposes that dragons were first a mythological interpretation of snakes in Egypt, and the story spread around the world. But this theory begs the question of how the story became so widespread and so heavily prevalent, especially in the Americas, which were largely geographically isolated from the rest of the

world. The final theory is becoming more widely accepted. It sees dragons as a representation of humans' psychology and forbidden/unacceptable desires. But this only works for those dragons that are evil or cruel in mythology, ignoring many benevolent South Asian and East Asian dragons. Now, an emerging idea of the creation of dragons is as the interpretation of weather symbols, but it still does not account for how dragons became so prevalent and similar across the world and in so many different cultures. The heavy influence of religion also contributes to an either positive or negative view of dragons, though again there are disagreements as to why certain religions feared and some revered dragons. With the understanding (or lack thereof) of the global existence of dragons one can begin analysing the similarities in their characteristics between them.

35. Zombie Culture in Modern and Past Mythologies
Presenter(s): Lehua Johnson
Advisor(s): Dr. Eileen Jankowski, Dr. Julye Bidmead

In modern media the notion of a zombie brings to mind the images of rotting flesh, a desire for flesh, and surviving in a desolate post-apocalyptic world. While zombies have certainly evolved into a niche genre separate from horror and science fiction, it is imperative that the origins of this modern-day phenomenon are explored and analyzed in an academic context. From the empty threats of the goddess Ishtar in ancient Mesopotamia to urban legends of former Haitian slaves, the foundation of zombie culture provides strong insight to humanity's fear of losing itself to mere corporeal forms. Zombie culture is the ultimate symbol of mindless oppression and the preservation of human ethics in face of adversity. While the modern idea of a zombie entails the horrors inspired by George Romero's infamous film Night of the Living Dead, there are cultural aspects and impacts that come from the walking dead that this presentation hopes to portray academically. The origins of Romero's zombie come from former Haitian slave culture. With the horrors of slavery, it was believed that the worst possible fate for a man was to become a thoughtless body, unable to think freely and doomed to forever work under the torturous sun. This basis, a mindless form, is present in numerous mythologies. From here it is intended that these aspects of zombie culture among others such as cannibalism and the dead rising from beyond to terrorize the living shall be explored. With the foundation in place as history is examined, modern trends in zombie media will be examined and presented in an orderly fashion. It will be asked, how has humanity projected its own fears and frustrations onto zombie media? How has the idea of a zombie evolved from simple notions of human mindlessness and cannibalism?

36. Ragnarok- Even the Gods Will Die
Presenter(s): Maximilian Thomas
Advisor(s): Dr. Eileen Jankowski

Different religions have different ways of representing a higher being. The stories of the religion can shed light on the culture. I am exploring how Norse Mythology differs from other mythologies and religions. I have consulted many articles and essays regarding this topic. According to Norse Mythology, Ragnarok is a sequence of future events that mark the end of the world. The giants and the gods will brawl in a final battle that will flood the earth and engulf it in water. The myth defines Norse Mythology as unique from other religions, more specifically Ancient Greek Mythology and Christianity. Unlike these other religions, in Norse mythology, the people who are given an afterlife do not live forever, and even the gods are fated to parish. I found many similarities and differences when comparing the mythology of the ancient Norse to those of the ancient Greeks and Christians. The differences are related to differences in cultural beliefs and values.

37. La Llorona: How Spanish Folktale Portray Roles of Women and Is Used as a Tool for Generations

Presenter(s): Noah Rodriguez
Advisor(s): Dr. Eileen Jankowski

Folklore across many cultures is passed down and remembered today, utilized as a powerful tool for life long lessons and details of culture. In Mexico, one popular figure discussed and passed on is La Llorona. In the legend, it is said that a woman, angered by the vices and infidelity of her husband, released pent anger onto her children, killing them. Soon after, she meets an untimely demise herself, falling on a rock as she tries to reverse her actions, thus cementing herself as a spirit searching for her children for eternity. The interpretation of this figure, passed down by generation and generation, is generally used as a scare tactic on young children. The figure has become a tool to shape young minds into reacting to certain situations in a certain way; whether it be avoiding scandal, infidelity, or following the rules given to one. The character passed upon generations teaches those who interpret the story the ways one should and should not act. Yet, while it is presented as a a typical everyday mother committing these actions, the ideas can be misconstrued to represent an unhealthy view of how Latin women can act in these possible scenarios. Furthermore, the legend goes on to be utilized as a tool to shape minds and set up or erase certain mindsets and actions. The story of La Llorona ha been told for generations, yet at this time, it important to note the implications such a story can have on young minds.

38. The Eye of Horus: How this Ancient Symbol is Relevant in Modern-Day Culture

Presenter(s): Sabrina Stott
Advisor(s): Dr. Eileen Jankowski

Horus is an Egyptian god who since he was a child began seeking revenge for his father Osiris's death. His father Osiris was murdered by his wife Isis's brother Set who was jealous because he believed he was the rightful heir to the throne. Horus and Set were often in constant battle for the throne of Egypt. During one of these battles, Horus lost one of his eyes but it was restored and he was chosen to be the ruler of the living world. Horus was the one who eventually united Lower Egypt and Upper Egypt, restoring the country to its true form. Egyptians believed that the Pharaoh was the living embodiment of Horus. Horus is viewed as the ruler and protector of Egypt and to this day, Egyptians view him as their protector. In times of need, Horus is called upon for protection. The symbol associated with Horus is the eye of Horus and it represents the protection of the gods. This symbol can be found in many places throughout modern culture since it's a symbol of protection against negativity. People in ancient Egypt would wear amulets with the eye of Horus on them and nowadays, people involved with physics are often recommended to wear a bracelet or necklace with this symbol to ward off negative energy. Many fashion pieces also contain images depicting the eye of Horus. Although this symbol originated in ancient Egyptian culture, it has woven itself into the daily modern lives of many people who are not affiliated with Egypt in any way.

39. The Nature of Krampus

Presenter(s): Sydnie Leigh
Advisor(s): Dr. Eileen Jankowski

After studying the facets of Greek mythology and religion, I wondered how mythological figures from other cultures were influenced by that region's beliefs. The Germanic tale of Krampus has recently gained more attention in the public eye, and I wanted to learn more. Krampus is a half-goat, half-demon counterpart to Saint Nicholas. During the Christmas season, he follows St. Nick into the houses of various children and takes delight in tormenting the ones who have misbehaved. Krampus is frequently cited as a

pre-Christian figure, who originated as a pagan nature spirit. However, he was later demonized by the Catholic Church to incite better behaviour. Several other sources contradict this theory and state that the chains and shackles around his ankles represent his escape from Hell. Goats are also a common symbol of the devil in Christianity, which explains Krampus's lineage. This points towards the conclusion that he has always been a devil. I made my findings by researching the original tale of Krampus, reading scholarly articles about his origin and purpose, researching German religion throughout the years, and looking through various Greek myths for related figures. After completing my research, I found that Krampus does have strong religious undertones, although he himself is not a religious figure. I then concluded that Krampus is comparable to other Greek figures in this way. While religion was so ingrained in Greek culture, there were still myths, like that of the Minotaur, which were influenced by, but unrelated to religion.

40. The Influence of the Slavic Goddess Devana
Presenter(s): Vanessa Orrin
Advisor(s): Dr. Eileen Jankowski

Mythology was an important aspect of life for people in latter ages but also for people of modern times. Religion just like that of the earlier times still dominates most of the world today. The gods and goddesses of early regions were often created to explain a phenomenon that was too abstract to understand, such as creation of the world and life after death. Many of the mythological symbols from early religions were often very similar to their counterparts of another region's mythology. For example, the Slavic goddess, Devana, is very much similar to her Greek counterpart, Artemis. Each are the goddesses of hunting, fertility, and the forest. Through an examination of the sources surrounding the Slavic goddess Devana, I aim to discover and discuss her relationship to the ancient mythology of the Greeks and other mythologies that have a similar figure. I also will research her relationship with the Slavic region and the myths and ideas surrounding her character, such as the influence of the Slavic mythology on the development of the Serbian language.

41. Thor in Norse Myth and as a Superhero
Presenter(s): Will Miller
Advisor(s): Dr. Eileen Jankowski

Thor is a common figure, either from Norse myths or his modern role as a superhero. His transition is logical, especially when you examine the role that he played in Norse mythology as a giant killer. Both myths and superhero stories strive to convey lessons of morality, and while these two versions of Thor exist in very different time periods, they both serve to put high emphases on values like courage. Thor's role as a giant killer compares well to Zeus, the leader of the Greek gods, as Zeus kills Typhon the most deadly creature in Greek mythology, and Thor kills the Midgard serpent, the most powerful giant. However, Thor's weaknesses differ from Zeus, as Zeus's weaknesses are moral whereas Thor possesses weaknesses that are much more obvious and easily exploitable, which are a weakness to magic and a shallow knowledge of linguistics that gets him into trouble. These weaknesses make Thor a more relatable figure as humans are not all powerful like Zeus, and so while they might face similar moral issues, they will never be able to relate as closely. Thor's most common assistant is a human and artifacts known as Thor's hammers, miniature hammers worn around the neck, demonstrates the close connection between humans and Thor. Thor is an excellent superhero because he can perform great feats to inspire people, yet simultaneously shows that these feats can be accomplished even if you are not all powerful. By researching Thor's traits in ancient Norse Myth and comparing them with what we see in modern pop culture, we can see some of what makes us tick as humans, and research is commonly isolated to one of these versions of Thor, but they are rarely compared. All-in-all, Thor is an exceedingly interesting mythological figure who also makes a great superhero.

42. Life Beyond Death: The Modeling of the Ancient Egyptian Afterlife

Presenter(s): Sofia Fernandez

Advisor(s): Dr. Eileen Jankowski

The ancient Egyptian belief of the afterlife was perceived not as the beginning of a new life, nor the cessation of existence, but a temporary interruption, a pause, leading to the continuation of life in a new realm. The act of death facilitated the passage of the individual's journey from the land of the living into the underworld. Through the process of embalming and mummification practices, the individual was granted passage on the descent into the underworld and was then judged by a divine counsel to see if their heart was worthy of entrance into this ethereal realm. The depiction of the afterlife centers on the appreciation of the fertility of the Egyptian terrain, which directly translates into the depiction of the underworld, the "Duat", as an idealized society modeling the socioeconomic infrastructure of the upper-world. As an agrarian society, the Egyptian civilization relied heavily on the Nile River's seasonal flooding and depended on the fecund soil of the region to sustain their agricultural practices, and hence, sustain the empire they had built upon such practices. The Egyptians' developed a strong sense of appreciation and pride in the solidity of the agrarian infrastructure and mirrored this in their view of the underworld as a replicated image of their society, with the exclusion of the negative features of the human experience such as illness and famine. Furthermore, the replication and enhancement of mortal life in the afterlife indicates that the Egyptian society as a whole truly valued life as it was and reasserts the cultural reverence and pride in the domain they had built and maintained.

43. Breakthroughs in Computer Animation

Presenter(s): Betsabe Heredia

Advisor(s): Dr. Wendy Salmond

Animation is an ancient art form that gained momentum within the last two centuries. Animation has evolved from simplistic movements to realistic moving images. Now, we have different animation styles such as 2D, hand-drawn, claymation, and more. However, in more recent years animation has been accomplished primarily through computers. John Lasseter, a famous Pixar animator and pioneer of computer animation once said, "The art challenges the technology, and the technology inspires the art." Computer animation has allowed us to do things that could have been considered unthinkable, and as technology grows so does the possibilities for art. Computer animation is the intersection of where art and technology meet. There have been many breakthroughs in computer animation, such as the first example of a 3D short film, the first movie to be created entirely by computer, and the first time using motion capture. Animators have worked to create work that looks more realistic than 2D animation, however, what happens when the limit is tested? In my research, I want to look and focus on the different breakthrough moments in computer animation and why they were so significant. I also want to focus on not only what the artist thought of these advances, but also on how the public received it.

44. Crime Photography

Presenter(s): Brigitte Doan

Advisor(s): Dr. Wendy Salmond

The most important action to take once a murder has occurred is to photograph it, before all other courses of actions. Crime photography is the most essential tool that is used to collect and catalog all types of evidence. If photographs are not taken as soon as a body is discovered, then crucial evidence can be lost or tampered with. A photograph can tell the true whole story about the event that took place. Today, photography is completely different from how it began and the turning point started with Arthur Fellig, otherwise known as Weegee. Weegee turned crime photography into a medium of art that it now is today.

45. Historical Santa Ana, California: A Study of Architectural Photography

Presenter(s): Carah Reddin

Advisor(s): Dr. Wendy Salmond

Architecture encompasses the everyday life of any human no matter their circumstances. It describes a broad idea that refers to the carefully designed structure of something, but, despite its wide range of examples, there is a phenomenon that allows people to see the beauty and complexity in each and every one of these structures: photography. People have combined the beautifully complex structures with the captivating creation of photography in order to inspire society's appreciation and meet the cultural significance that architure holds. As time has changed, architectural photography has changed with it, becoming bolder, more creative, and eventually becoming a popular form of art. Buildings originated as particularly valued subjects in photographs, as the first permanent photograph was one of a piece of architecture. Photos have gone through a subtle yet captivating evolution through the eras, movements, and architectural styles of the times. Capturing small but significant components, architectural photography shows a broad audience the brilliance inside an architect's mind. The present project will assess photography of architecture from Santa Ana, California, as an experiment in understanding how different ways of photographing buildings affect our perception with a focus on photographing specific buildings in a way that sympathizes with the historical period in which they were built of 19th to 20th century.

46. Marble Sculpture in Modern Art

Presenter(s): Cassidy Kaufmann

Advisor(s): Dr. Wendy Salmond

Alasdair Thomson is a marble sculptor who carves intricate dresses and other articles of clothing out of white marble. His most famous collection, entitled The Identity Collection, is a collection of Carrara marble dresses and shirts modelled after the ones donated to him from 12 of his female friends. Karen LaMonte is a revolutionary artist who creates beautiful three dimensional dresses out of glass, ceramic, bronze, and cast iron. Both of these artists are innovative and exceptional in their craft. They combine fashion and art to make something new and amazing. Though fashion has often been criticised by the art world as not being "real" art, these artists demonstrate that the two- fashion and art- can be linked to create something beautiful. Thomson has taken something as simple as a white dress and turned it into a magnificent art piece that employs skills only an artistic genius has. LaMonte shows off womens unique and beautiful bodies with her glass dresses by creating an imaginary bodice underneath the dress. The artworks are all set in different positions; some sitting, some standing, yet, all looking powerful and astonishingly intricate. The fashion world has always been fluid and ever-changing, as has the world of fine art. These two artists have opened a portal to a new world, where the performance art of fashion and the fine art of sculpting can be combined to make magic.

47. The Metamorphosis of Body Modification

Presenter(s): Harley Wittmer, Miyuki Matthews

Advisor(s): Dr. Wendy Salmond

For our project, we will be studying the many reasons behind using the body as a canvas and why doing so has gained popularity and acceptance to become one of the most common and universal forms of art, expression of self, and portrayal of values in contemporary American/Western society, especially in youth culture. The ultimate commitment of deciding on permanent body art, such as tattoos, for the rest of

one's life has evolved into a different platform of free speech, public expression, as well as protest, which has been adopted and amplified by recent generations. Specifically, we will research the practice of skin modification today as a form of free speech and expression of political views. In addition to the political aspect, we will uncover what motivates people to get tattoos in Western society during the 21st century. Further, we will compare their reasonings for doing it with what they know about the original traditional purposes and cultures that have practiced this same kind of tradition of body art throughout time.

48. The Artist Biopic: Comparing Frida and Little Ashes
Presenter(s): Hunter Freedman
Advisor(s): Dr. Wendy Salmond

In my project, I will compare the biopics Frida (2002) and Little Ashes (2008,) to see how two different filmmakers show the lives of two very different modern artists. Frida is a Julie Taymor film about the life of Frida Kahlo while Little Ashes is a Paul Morrison film detailing Salvador Dalí's life. Though both Frida and Little Ashes focus on the genders and sexualities of each artist they focus on, due to the filmmakers' different points of view and their styles, each film represents these aspects of life in different ways. My analysis will focus on how each film represents each artist's life through their creative process, their sexuality and their place in the world as modern artists. In comparing each film, I will show that biopics can be a good way to start learning about an artist, but they should not be the only source used when studying an artist's life.

49. Effects of Alcohol and Drugs on Art
Presenter(s): Kyle Ng
Advisor(s): Dr. Wendy Salmond

There is a misconception in modern western society that drugs and alcohol break some moral code. In particular, knowing that an artist drinks or takes drugs often ruins their credibility. This project investigates the effects of drugs and alcohol on artists and whether they can help the creative process by activating more creative and emotional sides of the brain that non-drug users cannot experience. Scientific experiments conducted since the 1960s have suggested that psychedelics in particular cause a drastic change in artists' content, technique and approach to creating art, without impairing their unique and creative styles. Exploring these findings gives a better understanding and appreciation of many modern artists that struggle with alcoholism or substance abuses.

50. Liberation of the Mind: How Surrealism and 1920s French Communism Were Aligned
Presenter(s): Laurent Kleinheinz
Advisor(s): Dr. Wendy Salmond

From my research, I will present my findings of the French Communist Andre Breton's use of Surrealism to support his Communist beliefs. By analyzing the language Breton used in his first and second Surrealist Manifestos (1924 and 1929) as well as other writings, I show how he believed Surrealism could further the Communist political movement in France. My research shows that Breton used specific language very similar to that of Communists. His concept of liberating the mind and imagination through Surrealism correlates directly to the idea of liberation of the workers espoused by Communist supporters. I explore questions such as 'How did Surrealism illustrate Communist beliefs on societal revolution?' as well as 'How was the Surrealist movement used to support the Communist movement in France?' I also examine differences between Breton's two Manifestos and through his language, analyze his change in attitude towards social revolution as well as art's place in it. My research into Breton's writing will show that Surrealism and Communism in France were movements working in tandem.

51. Destruction of Art
Presenter(s): Megan Jefferson
Advisor(s): Dr. Wendy Salmond

This project explores why what some people consider to be a beautiful art piece can cause anger and hate in others, driving then to lash out at the art piece. Leonardo da Vinci's Mona Lisa (1503) and Marcel Duchamp's Fountain (1917) have each been vandalized or attacked on several occasions. These works represent two entirely different ideas of how art is received and what it means in our society. In a way it is almost understandable or acceptable that the shocking and for some, revolting, Fountain would be vandalized because it is intended to be shocking and unlike all of the other art that we have seen; but why would anyone want to vandalize or destroy the most well known and respected piece of art in the world, the Mona Lisa. I will compare the attacks on these two pieces to see if there are any similarities in the attackers' motives. Finally, I will consider whether those commonalities are typical to art vandalism that has happened and is still happening today.

52. Degas' Dancers
Presenter(s): Ruby Hodges
Advisor(s): Dr. Wendy Salmond

This thesis investigates the work of artist Edgar Degas and what we know about his use of dancers as subjects for many of the sculptures he made in his time. The focus of the thesis is the collection of sculptures at the Norton Simon museum in Pasadena, California. By comparing these figures of different women in motion we can ask why he used ballerinas as subjects for sculpture, and what we can learn from them. Specific images of these dancers relate to a lot of the findings and can help us to understand why they look the way they do. Emphasis will also be on the artist himself and the leading up to using the ballerinas, but also the sexual exploitation of ballerinas at the time of his sculptings, and the fatherly role Degas took on through these times. Through Degas' artwork the life of the dancer is exposed.

53. The Transition to Abstract Art
Presenter(s): Rudy Prio Touzet
Advisor(s): Dr. Wendy Salmond

My project explores the transition from realism to abstract art in the early 20th century and how many artists had the same idea of changing the way art should be seen. Specifically, I focus on Wassily Kandinsky's Squares with Concentric Circles 1913 and Piet Mondrian's The Gray Tree 1911 as paintings that represent the artists' transition to abstract art. This project compares why Kandinsky and Mondrian both wanted to change people's perception of art, stepping away from realism to create a higher emotional response throughout their works, which can still be seen in modern art. Art is a way to communicate feelings that are not easily expressed through words. In particular, abstract art created a visual expression of the artist's mindset in lines and colors that others could experience.

54. Claymation and Sculpture: The Bottom Step of the Economic Staircase
Presenter(s): Sofia Montgomery, Danelle Vicencio
Advisor(s): Dr. Wendy Salmond

Early Man, an Aardman Animations claymation film, was released on February 16, 2018. The budget for the film was $50 million dollars and only grossed $54.1 million, while the most recent animated film (Incredibles 2) had a budget of $200 million dollars and grossed $1.238 billion dollars. While claymation is a process that requires skills passed down by the Old Master sculptors, it is constantly overlooked by

the studios that release numerous computer animated films every month. Claymation is a sophisticated art form that takes longer to produce than the computer generated images used to quickly make Hollywood economic profits. During the time when clay animation was a technique seen and employed on various TV show series and films, cel animation was highly favored due to its assembly line type production. Similarly, sculpture is a very tedious process that requires intense patience, skill, and steady hands. Despite this, sculpture hardly receives the recognition and praise that paintings earn due to the mass production of paintings created in a shorter span of time by a large number of artists. Our project argues that both clay animation and traditional sculpture have been overlooked in today's art world and don't receive the credit that they deserve for the hard work and expertise that is put into their developments.

55. Protest Art of the Vietnam War

Presenter(s): Soncirey Mitchell
Advisor(s): Dr. Wendy Salmond

The Vietnam War was a time of great strife in America, yet it inadvertently generated unprecedented artistic unity. Posters, paintings, and sculptures from thousands of individual artists were assembled in protest of the violence and death. Where suffering was found, so too came an influx of art which didn't merely grieve for the victims; but sought to prevent further injury by voicing anti-war sentiment. Although great numbers of these works were produced, they are often overlooked by history in favor of the less political pieces (like Warhol's pop art)—a fact which would seemingly invalidate them. By examining the inspiration for, and consequences of, Vietnam protest art I will argue the importance of this art as a non-violent expression of the rage and pain of the time. I will explore the significance of coupling gallery protest art with its prominent public counterpart by comparing the works of Peter Saul to cooperative pieces like the Artists' Tower of Protest. By metamorphosing art, usually made for aesthetic pleasure, into a tool for political action, these artists took away America's rose-tinted glasses. There was nowhere to hide from the impact of the war. Although it's gravity has been obscured by time, this art was a flag to rally around when America's was bloodied. It is proof of humanity's reliance on art as a universal language, ever at the forefront of societal awakening.

56. Degenerate Art from 1917 to 2018

Presenter(s): Caroline Gardner, Grace Hill
Advisor(s): Dr. Wendy Salmond

In 1930's Germany, Hitler and his Nazi regime coined the term 'Degenerate Art' to describe all modern art. Around 16,000 pieces of cubism, expressionism, and impressionism works were stolen or removed from galleries across Germany in hopes to purify their country's art collections. Of these stolen works, 650 pieces were displayed in the Degenerate Art Exhibition of 1937 in Munich. An artist by the name of Max Beckmann had 670 of his works removed from German museums, 10 of which being shown in the infamous Degenerate Exhibition. We will study the history of Beckmann's painting: Descent from the Cross, 1917 to track its progression from its original home in Germany, through exhibitions across the world, and to its current location at the Museum of Modern Art in New York City. Along with the study of his specific works, we will examine the effects of this movement on Beckmann's life. By following this piece through its 100 year lifetime, we will uncover the qualifications of 'degenerate art' and why this purge has become one of the most devastating losses in the history of modern art.

57. Banksy is Today's Robin Hood
Presenter(s): Nathan Adorney
Advisor(s): Dr. Wendy Salmond

Banksy is the modern art's Robin Hood. He is the anti-authority street artist who sparked a new generation of artists and art viewers. Shrouded in mystery and controversy, Banksy is a unique break from what we are used to seeing an artist as. His true identity remains secret, and his works of art are iconic to say the least. The common denominator of my research was the tension he brings between art, money, and authority. He has fought against the notion that graffiti is vandalism not street art, and has had to consistently battle the removal of his works. It seems evident that Banksy's primary goal is to undermine the art world's pre-existing conventions. His art was also extremely timely, as his rise to fame was during the same time graffiti as a whole was becoming popularizes, and he spearheaded the idea that graffiti is more than just a way to destroy property, it is true form of art. His efforts to continuously push boundaries never cease, as he has recently shredded a piece of his art in front of the auction it had been sold at, or as he sold his works undercover in New York for as little as $60. Banksy is the activist rebel that the art world had done without for far too long.

Film

58. Does Size Matter? How Plus-Sized Women are Portrayed in Popular Media
Presenter(s): Claire Uhl
Advisor(s): Dr. Jocelyn Buckner

The demand for interesting stories that portray the diverse experience of all has become the forefront of film and television in the past few years. Through efforts by media conglomerates to be more inclusive, audiences who once felt alienated by the monotonous topics and characters of film and TV are now able to see steps towards accurate representations of people who look like them on screen. However, for plus-sized women, the fight for representation in film and television is still a constant battle. Discrimination against women of size is not only accepted in popular media, but perpetuated by lazy humor and wildly inaccurate portrayals of what it is like to be a fat woman in United States. More often than not, plus-sized character's lives and identities are rooted solely in their size, completely robbing them of the chance at an interesting and complex life. These caricature-like performances of plus-sized women are not only hypocritical to the movement of inclusivity in film and TV, but also incredibly alienating and discouraging to an audience that feels ignored by popular culture. While there are some efforts in film and TV to showcase plus-sized women in leading roles, not every portrayal is effective, and can often cause more damage than progression. In this paper, I will explain why this representation is consistently left out of the conversation, and why it is so important that these stories are told. I will examine the ways plus-sized women have been and are being represented in media, the good and the bad, and attempt to answer the question: if the art of performance is centered around becoming someone else, then why must those who appear to be out of the norm be confined to what meets the eye?

59. The Manifestation of Humanity's Ultimate Destiny Via Film

Presenter(s): Brandon Somerville

Advisor(s): Dr. Jocelyn Buckner

Humanity is simply a neighboring species to the many other species that dwell on earth. Humanity at its core is fragile, like many other life forms on earth. This sense of the fragility of life has been forgotten as humanity ushers itself into the next era of its existence. An era wherein rather basic primitive necessities become fulfilled with ease that was never possible before. This newly found higher rate of survivability has allowed for more energy to be focused on the future advancements of humanity. Commonly, "evolution" bears biological connotations in the minds of many, but now "evolution" has assumed a new connotation. Humanity's evolutionary process is one that is now synonymous with technological advancement; technological advancement means further evolution for the human species. Film has been an instrument used by filmmakers and scientists to instill within humanity an evolutionary sense of direction for the species as a whole. In addition, new technologies for the advancement of humanity have a chance to be introduced to the public via a cinematic platform. This use of film manifests the future of human advancements while showing to the public how these future technologies can be made as well as why they should be made. By analyzing a series of films as well as scholarly works, the use of film as an incubator for technologies of tomorrow can be proved. Film has been used as a means of turning the unimaginable technologies of tomorrow into imaginable ones, and even technologies that have become a reality following their on-screen depiction. These contributions to the evolution of humanity have aided to the overall manifestation of humanity's technologically fueled ultimate destiny.

60. Invisible Narratives

Presenter(s): Jacky Dang, Sophia Morrissette

Advisor(s): Eric Young

According to the Center for American Progress, the percentage of Asian-American women in the United States is one of the fastest growing populations (Phadke 1). However, even with over 15.9 million Asian-American women in the country, this minority population continues to face unique challenges set by the ideal societal image in America. In 2017, The Talk Project published "The Intersection of Race and Gender in Rape Culture: How Rape Culture Affects Asian Women" which discusses the hypersexualized stereotypes Asian women face such as "submissive" and "exotic." Author Hannah Ji writes that the recurring issue with the propulsion of these stereotypes is that "the submissive docile images of women imply women without voices to say no. They take away the agency of control and consent that every woman has a right to," (Ji 1). Therefore, given this limited knowledge of Asian-American realities, my project explores if the media stereotypes have also affected this segment of the female population in the United States as well as how or if intersectionality plays a vital role in shaping their lives. First, in order to study specific stereotypes, various independent, and Hollywood films as well as television shows that featured Asian American women are examined. After isolating the three most prominent stereotypes—the "kick ass," the "exotic," and the "tiger mom," – I conducted interviews with Asian American women, varying in age, sub-ethnicity, and occupation, for a documentary. After collecting the data, the documentary intercuts the interviews with the subject's actions in society. Our goal is to show these women more so in action in their communal, familial and occupational roles, and how and if they are affected by the society's image of them.

Health Sciences and Kinesiology

61. **IL-15 Upregulates Glucose Transporters While Reducing Fatty Acid Transporters in Cardiomyocytes**

Presenter(s): Veronica Yim, Kelly Hennigan, Adela Kim

Advisor(s): Dr. Marcia Abbott

Obesity is a growing epidemic in the United States and a leading cause of cardiovascular disease. Lifestyle interventions are challenging to maintain; thus, targeting the molecular mediators of obesity has become the focus to prevent its associated diseases. The myokine interleukin-15 (IL-15) is secreted by skeletal muscle during exercise and has been shown to reduce obesity and related disorders, but its effects on cardiomyocytes (CM) is largely unknown. The objective of this study was to determine if IL-15 regulates glucose and/or fatty acid (FA) metabolism in CM. CM were treated with 100 ng/mL of IL-15 for 24 hrs. The protein was harvested and isolated into total, mitochondrial and plasma membrane (PM) fractions. Protein concentration was quantified utilizing a Bradford assay. Subsequently, protein analysis via Western blotting was performed. Fifteen micrograms of protein were loaded onto 4-20% polyacrylamide gels for electrophoresis. The proteins were then transferred onto a PVDF membrane. Primary antibodies against GLUT1, GLUT4 and CPT1 (1:1000) were used followed by secondary antibodies (1:2000). GLUT1 and GLUT4 were analyzed on total and PM fractions while CPT1 was quantified on mitochondrial fractions. The membranes were imaged using chemiluminescence and quantified using Image J. A t-test ($P<0.05$) was used to determine if IL-15 had significant effects on the concentration of the aforementioned proteins. IL-15 altered neither total nor PM GLUT4 levels ($P>0.05$), increased both total and PM GLUT1 levels ($P<0.05$), and decreased mitochondrial CPT1 level ($P<0.05$). The data indicate that IL-15 increases the GLUT1 glucose transporter protein concentration and decreases the CPT1 FA transporter protein concentration. Our data suggest that IL-15 mediates a shift from FA to glucose metabolism in CM. Additional studies are warranted to confirm this metabolic shift by studying glucose uptake and beta-oxidation activity. To understand if the IL-15 mediated shift in metabolism is beneficial to CM, further studies to determine the physiological mechanism are warranted.

History

62. **Images, Art, and Paraphernalia: Analyzing Tactics of the United Farm Workers and the Coalition of Immokalee Workers**

Presenter(s): Felicia Viano

Advisor(s): Dr. Alexander Bay

What do grapes and tomatoes have in common? Both of these foods have been or are major points of contention for influential farm worker movements. The United Farm Workers formed by Cesar Chavez, Dolores Huerta, and Gilbert Padilla in 1962 has become a hallmark of success in labor history. This movement used traditional yet innovative methods of social movement strategy, eventually branding themselves as a household name. The images and paraphernalia such as buttons, bumper stickers, and posters distributed during the Delano Grape Strike seemed like a simple concept at the time, but there were strategic decisions made to incorporate images and words in this specific way. The importance of how social movements use art in order to advance their cause is showcased in the Delano Grape Strike.

The United Farm Workers played a pivotal role in the historical trend that links art and social movements together through music, theatre, posters, and other objects. One movement that learned from the tactics used by the United Farm Workers in the Delano Grape Strike was the Coalition of Immokalee Workers who use art such as puppetry, painting, and theatre in order to spread information about their work. This project explores the history of the incorporation of art in the Delano Grape Strike from the now iconic "Huelga!" poster, to the work of Luis Valdez and El Teatro Campesino. Using these forms of art I examine the relationship between the UFW and the Coalition of Immokalee Workers and how these art tactics help foster community within the movement and spread the message to the public in a way that is unique and appealing.

Interdisciplinary

63. "Theory" in Practice: How to Change the World
Presenter(s): Daniel Barba
Advisor(s): Dr. Jocelyn Buckner, Donald Guy, Adam Borecki, Tom Bradac

Made from sounds and visuals found around the world, about global topics and issues, and hoping to educate the human world about our place in the natural world, I'm making art that will harness many theatrical, technical, and creatively collaborative components -- bits and pieces of the knowledge and skills I have learned and gained over the course of my undergraduate education, and will inevitably continue to use going into my postgraduate future. By applying knowledge with skills, I'm pursuing my passion for using scientific understanding and creative technology to create expressive art, tell touching stories and share revolutionary ideas for the betterment of humanity's collective future. With thematic and lyrical content consisting of current science's empirical truths, sustainable art tells touching stories of humanity's past (where we came from), our present (what we've gotten ourselves into), and our future (the possible scenarios, as told by science). My goal is to, honestly and authentically, use art and media to educate today's popular culture and provide our civilization with instructions for solving current humanitarian issues, thus educating and empowering our fellow global citizens to create sustainable change, so that we don't end up like many failed civilizations before us -- to synthesize ideas and information given to us by previous generations and to build upon it, therefore progressing past that which previous generations have achieved, and thus furthering the ability of human mind to question, explore, and understand the world in which we exist. Because all of the past is but the beginning of a beginning, and all that the human mind has accomplished is but the dream before the awakening. Humanity's biggest obstacle lies between our ears, and in the same place we find the key to our solution -- the gift of the human mind.

64. Policing, Political and Military: Developments in French Law Enforcement since World War II
Presenter(s): Evan Rico
Advisor(s): Dr. John Boitano

The science of policing is unique. The rate at which it has evolved, in theory and in application, is unparalleled by that of any other field in recent history. Institutional authorities guide the development of rules by which the functions of society occur. As they evolve, so evolve the ways in which inhabitants of society break those rules. To study crime, then, is to study human society—such is the difficulty of understanding policing. France presents a convenient opportunity to expound this understanding because the historical factors that have shaped the current state of its law enforcement are conspicuous, vibrant, and accessible to the casual observer. Since its military occupation during World War II, France has

exhibited a high degree of overlap between its government, military, police, and political interests. Some states with legacies of military aggression and occupation have attempted to avoid similar developments by decentralizing the leadership and moderating the personnel of law enforcement services. Not France. Its integration of military and law enforcement is largely the result of political developments at the individual and bureaucratic levels in the wake of German rule. The growth of this binary relationship in less distant history is due to developments more domestic in nature. This political call and response phenomenon is responsible for many of the personal and organizational complexities that distinguish French law enforcement.

Mathematics

65. Cohomology of Bicomplex-Type Structures on Manifolds
Presenter(s): James Francese
Advisor(s): Dr. Mihaela Vajiac

Complexification as an operation on real analytic manifolds leads to classical results allowing one to phrase this operation as a faithful functor into a category of Stein spaces, a collective finding of Bruhat-Whitney, Morrey, and Grauert. However, they are constructively known only up to homotopy. From a moduli space perspective, this is clear, since homotopy classes of non-degenerate 2-forms classify complex structures on manifolds. The situation is completely different for manifolds which are already complex, or carry other G-structure. In this case the complexified G-structure is automatically equivalent to compatible foliations which provide a canonical model for the resulting manifold. Our focus is on almost bicomplex structures on real manifolds where we establish existence and torsion conditions for special Hodge structures on de Rham cohomology.

Pharmacy

66. Design and Evaluation of Fatty Acid Peptide Conjugates for siRNA Delivery and Silencing in Breast Cancer Cells
Presenter(s): Ryley Hall
Advisor(s): Dr. Keykavous Parang

Linear and cyclic fatty acyl-peptide conjugates were synthesized via solid-phase peptide synthesis for siRNA delivery and mRNA silencing in breast cancer cells. All peptides contained arginine, a positively-charged amino acid, a characteristic required to interact with the negatively charged siRNA. The positively charged characteristic of the peptides was designed to make the peptide cell penetrating. The peptides were conjugated with either palmitic acid (C16) or stearic acid (C18). The fatty acid component of the peptide was designed to improve the interaction with the hydrophobic residues in the phospholipid of the cell membrane. The attraction between the peptides and siRNA allows the peptide to encapsulate the siRNA, stabilizing siRNA, and ensuring that it does not degrade. This is a crucial feature since, without the protection and stability that the peptide provides, siRNA would not be able to penetrate the cell membrane and reach the cytoplasm. All four peptides, LP-C16, LP-C18, CP-C16, and CP-C18 were successfully synthesized and purified using Reverse Phase High Performance Liquid Chromatography (RP-HPLC), and the molecular weights were confirmed using Matrix Assisted Laser Desorption/Ionization Time of Flight Mass Spectrometry (MALDI-TOF). Future plans for this study include siRNA encapsulation and incorporation into Peptide Lipid Associated Nucleic Acids (PLANA), determination of siRNA delivery, and silencing effect of the PLANA complex.

67. Activity of Cytochrome P450 2D in Rat Brain Microsomes and Mitochondria

Presenter(s): Edena Khoshaba

Advisor(s): Dr. Reza Mehvar, Dr. Barent DuBois

Cytochrome P450s are a super-family of enzymes that metabolize drugs. Their expression in brain can affect the efficacy of centrally-acting drugs, especially CYP2D which metabolizes antidepressants and pain medications. These enzymes are expressed in multiple locations within brain cells, including brain mitochondria and the endoplasmic reticulum (microsomes). However, it is not known if these enzymes have similar metabolic efficiencies in these subcellular compartments. This project focused on the differences in CYP2D activity between purified mitochondria and microsomes in the rat brain. The primary objective was to estimate the rate of drug metabolism of dextromethorphan in different subcellular fractions in order to determine the dominant metabolic pathways for drug clearance in the brain. To study this, cell fractions were isolated via differential centrifugation and were used for various qualitative and quantitative tests. The subcellular fractions were incubated with increasing concentrations of the drug to see how much metabolite was formed as drug concentration increased. It was found that microsomes have a higher affinity for the drug than mitochondria because the reaction rate was able to increase very quickly. However, micrsomes have a lower capacity for the drug when compared to mitochondria, because the enzymes become saturated at lower concentrations of the substrate. These data suggest that when studying the activity of cytochrome P450s in the brain, microsomes and mitochondria should be separated because they interact with the drug in unique, and have very different rates of metabolism.

Political Science

68. The End of the World or Just Fake News

Presenter(s): Audrey Lane

Advisor(s): Dr. Ann Gordon

In the era of a twenty-four-hour news media, which continuously amplifies issues and dramatizes controversy, it has often been said that America is more polarized than at any time since the Civil War. The underlying implications of that statement are startling. As an American not eager to live through a Civil War I wanted to evaluate the polarized atmosphere. The most recent election has illuminated the relevance of this issue. Political Science has no unified conclusion of polarization. Using the National Election Survey from 2008 to 2016 I will statistically analyze the polarization of American's attitudes about certain issues. Assessing the political landscape of the general public will hypothesis that little has changed in the division of opinion regarding key issues. Further, I will examine the implications of the heighten hostility between the two parties by inspecting the raises in independent voters and the overall decrease in voter turn out.

69. Sources of Fear in Climate Change

Presenter(s): Ryan Shiri

Advisor(s): Dr. Ann Gordon

Climate change has been normalizing extreme weather patterns; floods, storms, droughts, radically dry and radically cold seasons are just a few extremities of the new normal spurned on by climate change. This paper will focus on the public's fear of climate change, and how a more aggressive climate along with economic and political factors have affected the level of fear for climate change in the public's perception. Using data on SPSS derived from the Chapman Fear Survey, this paper will attempt to identify the main

the actors causing the public's fear of climate change. The data will be a four-year regression of seven variables that relate to climate change. The variables will be the public's fear in oil spills, air pollution, global warming, extinction of plants and animal species, drinking water pollution, and water pollution. Identifying key determinates of fear in climate change will pinpointed on political, economic, and empirical change in the climate that relates to the public's level of fear in climate change. Understanding the trends behind the public's fear of climate change will allow a variety of actors from policymakers, businesses, and non-profits to seize opportunities on the public's fear to better address the issue of climate change.

70. The Polarization of the Parties and the American People.

Presenter(s): Alexis Lamprea

Advisor(s): Dr. Ann Gordon

In this paper, the research being conducted is going to focus on the polarization of the political parties in America today. Our two party system has been increasingly polarized and there are various factors that contribute to the polarization of those within the groups and those who are voting for the groups. There are three main factors or contributions that are in play towards the increasing polarization. First, due to the many states winner take all approach, there is a system set up solely for a two-party system. Next, the spike in education throughout the country has contributed to the ideologies in choosing a political party. Third, personal attachment to political ideal, individual reactions to public policy and the evaluation of candidates personality. These three reasons in contribution to the growing political arena and large disagreement between the Republican Party and the Democratic Party, we are seeing the parties grow further apart in ideals, and possibly seeing a massive gap within the countries population and the countries ideals.

71. Political Scandal and Sexual Misconduct in American Politics

Presenter(s): Amanda Johnston

Advisor(s): Dr. Ann Gordon

Gender has always been a prominent factor in political behavior amongst American citizens. Extensive research shows that women tend to vote more liberally while men tend to vote more conservatively. In recent years, media coverage of sexual harassment and assault with movements such as "Me Too" and "Time's Up" have increased the American public's awareness of this pervasive problem. The public has stated that this behavior will no longer be accepted and has attempted to create an environment where victims no longer feel the need to stay silent. Despite this, we still have a president in office who has been accused of numerous sexual assaults. Several politicians either in office or running for office have been accused of such crimes, and while some have lost elections or resigned from office, many still remain and continually deny that such allegations ever occurred. Although the phrase "Me Too" was coined in 2006, this movement did not gain the power it holds today until it went viral on social media in October 2017. If this new awareness of sexual misconduct is now seen as so important in holding our politicians accountable, why did it take over ten years for this movement to gain traction and start affecting the way we vote? This question can be explored through an analysis of facts surrounding sexual misconduct compared to the public's assumptions and opinions surrounding the topic. Although the number of victims of sexual assault has not increased dramatically in the last 20 years, America's perception of this fact has. Sexual assault has always been an issue in American politics, but has only just now begun to truly affect them. This paper will explore how and why, and the effects that gender plays in this topic.

72. Political Participation in a Society Distrustful of Its Politicians

Presenter(s): Amy Delgado

Advisor(s): Dr. Ann Gordon

This paper investigates the source of Americans' distrust in government officials and its subsequent consequences using two hypotheses. The first, voters who pay more attention to the news develop higher levels of distrust concerning corrupt government officials because of more polarized news media and misinformation spread across the Internet. As a result, this lack of trust in leadership may disincentivize voters to participate in political activities, such as learning about the different campaigns, attending political meetings, and believing their vote matters, in a system they believe has been compromised. Secondly, distrust of government officials may negatively impact political engagement by decreasing voter participation during the election cycle. A 2017 study by the Pew Research Center shows that general public trust in the government is at historic lows. Using the American National Elections Studies dataset from 2016, this distrust can be measured by responses to two variables: "How widespread is corruption among politicians in the U.S." and "Most politicians only care about the interests of the rich and powerful." Results show that public distrust of the government is largely unaffected by the factors stated in the hypotheses. While a relationship between public distrust and political participation does exist, the strength of their relationship is modest at best. When analyzing other factors that influence public distrust, including income, opinion on how the economy is doing, and age, results were, again, statistically significant but had an even weaker correlation.

73. Trust in Government and American Gun Ownership

Presenter(s): Ben Bruce

Advisor(s): Dr. Ann Gordon

Firearm regulation policy has been debated in this country since the Second Amendment was ratified in 1791. But in order to have a meaningful discussion about the future of gun control, we must understand why Americans own guns. Thus far, research conducted to answer this question has been incomplete. Few consider how trust in government affects American gun ownership today. The Second Amendment was inspired by the libertarian principles that big government cannot be trusted, and that an armed public is the last line of defense against tyranny. Are these principles still relevant in today's gun debate? Furthermore, would it not make sense that Americans who own guns because they distrust the government are adamantly opposed to governmental regulations on firearms ownership? I hypothesize that both inquiries are true; Americans who express less trust in their government are more likely to own guns and less likely to support gun regulations. This paper will analyze data from the 2016 Time Series Study conducted by American National Election Studies (ANES). If a relationship between trust in government and gun ownership can be found, it may help bridge the gap of understanding that has roadblocked the American gun debate for centuries.

74. Macropartisanship vs Retrospective Voting in the 2016 Election

Presenter(s): Charles Friend

Advisor(s): Dr. Ann Gordon

Research on partisanship and its effect on voting behavior has established two primary schools theories; the theory of largely stable aggregate partisanship and the "running tally" theory, which argues that voters constantly update their party identification based on retrospective evaluations of the performance and issue stances of political parties. In this essay, I will examine how effective both theories are in explaining the results of the 2016 presidential election. This election represents a "restructuring" election which

defied many trends and expectations, and analysis of its results can allow better predictions of such elections in the future as well as a better understanding of their causes. I utilize data from the American National Election Surveys and construct a version of the original "running tally" model, while also testing for the effects of existing partisan biases on voting results and comparing how the results compare to existing trends. The results of the tests strongly corroborate the "running tally" theory for explaining the results of the 2016 election. I find that those who self-identify as Republican tend to have a negative view of the preceding president's overall job, his handling of the economy, and are much less likely to self-identify as conservative as voters in the previous two presidential elections. Additionally, I find that the relationship between dislike of the preceding president and voting against his party in 2016 is even stronger than between that and partisan relationship, and that belief that economic opportunity today is less than 20 years ago to be highly correlated with opposition to the preceding president's political party. This work corroborates work by other "running tally" theorists and presents evidence that retrospective voting can be an important factor even in elections where an incumbent is not up for re-election.

75. Who Believes in Aliens? Religion, Fear and Belief in Extraterrestrials
Presenter(s): Christian Rodriguez
Advisor(s): Dr. Ann Gordon

Aliens have been one of the most controversial topics since the very first time a landing or abduction allegedly occurred sparking an abundance of theories that was used to rationalize. Although the notion has been around for decades, exactly who and what causes a person to believe? Studies have revealed that why a person chooses to believe can be as simple as human curiosity or as complex as science weakening the authenticity of religion thus resulting in a replacement to put their beliefs in. Aliens to some is a mythical and even blasphemous topic that many cannot fathom to comprehend. On the other hand, for others it is the centerpiece of what they believe in and a topic they devote their life's work to. Using the Chapman University Fear Survey data, initial findings suggest that there is a correlation between one's religiosity and devotion, that can help explain their belief in aliens. Additionally, there are findings that support a correlation between fear of a love one or themselves being abducted to their beliefs in aliens. Ultimately, it becomes evident that although aliens have been traditionally recognized as a non sequitur when it comes to biological proof, social science and the survey data helps explain patterns in beliefs and why a person decides to believe in the unbelievable. This research aims to scientifically explain and support the claim that beliefs in aliens can be broken down to viable external variables and not just a random decision to believe.

76. The Impact of Gender and Partisanship over Policy Formation on Violence Against Women
Presenter(s): Claire Norman
Advisor(s): Dr. Ann Gordon

In response to the Me Too Movement and heightened concerns over sexual assault and harassment, this research project will attempt to identify the relationship between partisanship and how women within each political ideology view issues of sexual assault and harassment. Specifically, this research will attempt to demonstrate how this relationship impacts policy formation on behalf of female legislators. Arguably, women with conservative ideologies view this issue apathetically, in some cases negatively, and not worthy of policy concerns. Whereas, women with liberal ideologies believe that this issue is important and use policies to further current activism. Utilizing the General Social Survey, as well as qualitative research into past legislative efforts and the actions of female legislators on such policies, this project will

analyze how partisanship impacts an individual's perspective on sexual assault and harassment in relation to gender. Through an analysis of this proposed relationship, we may be able to discover what prevents the creation of timely and effective legislation. The role that female legislators play in the creation, and sometimes denigration, of such policies will demonstrate fragmentation among female politicians through the conflict between gender interests and political interests. The implications of such research will hopefully illustrate that a non-political issue can become easily politicized, dividing women on the basis of party, thereby alienating survivors of sexual assault and harassment in the United States.

77. The Relationship Between Americans and The Fear Breeding Media

Presenter(s): Gabrielle Wolcott
Advisor(s): Dr. Ann Gordon

This paper examines the relationship between the members of America's different parties consumption of media and their types and levels of fear of different politically relevant issues. Furthermore, whether increased consumption of media increases fear, regardless of platform, and platform specific consumption as well. In addition, it aims to explore the level of correlation between this media consumption and the types of fears Americans report having. Different variables like gender, education level, and income level will be discussed in tandem with party identification in order to thoroughly explain the significant differences. I hypothesize that those who consume more media, regardless of party, will report themselves as more fearful than those who consume less. Additionally, I hypothesize that those who consume conservative or liberal media are more likely to fear conservative or liberal issues (classification being based on party platforms), which suggests that media consumption is an act of reinforcement of beliefs. This constant reinforcement widens the gap between the two main political parties and creates a more fear filled, desperate political environment. This paper analyzes a variety of prior research, but focuses its data comparisons on the Chapman University National Survey of Fears.

78. Fringe Groups and Their Beliefs in Conspiracies

Presenter(s): Gianluca Allesina
Advisor(s): Dr. Ann Gordon

My topic centers around the series of questions asked in the Chapman University Survey of American Fears on conspiracy theories and the degree to which Americans believe in them. The claims of such theories can range from strange, but ultimately harmless, such as the belief that the United States faked the Apollo 11 Moon Landing in 1969, to accusations with much serious implications such as the belief that the government is hiding information on the Las Vegas and/or Sandy Hook mass shootings. The latter recently made news with the biggest advocate of the "false flag shootings" belief, none other than living-meme, Alex Jones, being banned on nearly every media outlet within 24 hours. Though he had not encouraged such threats, some believers of the conspiracy harassed the parents of Newtown victims, and others. I want to find out what changes in the belief in conspiracy theories has occurred in the last few years, and hopefully create a hypothesis on why a change may have occurred. I will be using the Chapman University Survey of American Fears for my base data, along with books on the psychology behind belief in conspiracy theories. Ultimately, I want to see if there is a relationship between party affiliation/fringe groups and the belief in conspiracy theories. Finding which specific conspiracies certain groups believe will also give us insight into the mindset and ideas of that particular group. Fear of unemployment and fear of running out of money may also have a secondary effect on belief in such theories. My research paper will find and analyzes the data sets to support or not support my hypothesizes.

79. White Feminism in the Trump Administration: Conservative Women

Presenter(s): Grace Jones
Advisor(s): Dr. Ann Gordon

Over the last two centuries, many have memorialized the Women's Rights Movement for its seemingly quantum leaps in the direction of gender equality. However, the simple truth is that most feminists campaigns and women's organizations only work towards the benefit of white women. This racial imbalance is due to the idea of "white feminism," which refers to the white women who fail to consider how their feminism excludes the intersectional realities experienced by women of color. Intersectionality explains the cross-cleavages women of color encounter between their race, gender, class, religion, etc. The reason why contemporary feminism tends to neglect women of color, especially black women, is because the historical Women's Movements never fought for unconditional equality. Many white women of these movements were also and continue to be aligned with conservative politics. Despite this reality, many were still shocked by the 53% of white women who voted for Donald Trump in the 2016 Presidential Election. Many questioned: why would white women vote for a man and party that actively denies their own equality? These statistics coordinate with a long history of identity politics displayed amongst American voters. To understand this phenomenon, this paper has collected data on the clashing values of both white women and women of color. Through the theories of Intersectional Feminism and Black Feminist Consciousness, this research will likely illuminate a direct correlation between white, patriarchal dominance with the core values of conservative women.

80. Abstract Economic and Financial Laws Influence on Voter Turnout

Presenter(s): Jacob Kunkel
Advisor(s): Dr. Ann Gordon

There is a wide range of theoretical reasoning as to why voter turnout is particularly low. A specific focus of a certain category in the voter turn out rate is if and how financial laws and regulations appearing in ballots make a certain change in these voting rates. Understanding these turnout rates, especially in terms of financial laws effecting the rates, requires an understanding as to how business, financial lobbying, and social constructs that either are in congruence or oppose political systems influence these rates. Low voter turnout indicates the deterioration of the United States political system. It is important that every individual votes because, even though there is an argument that individuals have trivial affects on the likelihood of the candidate or legislation passing, there is an importance of contributing to the collective good of the representation of he or she's niche regardless of who governs. The same goes for financial and economic laws. With that being said, there is more of a micro focus on the individual voter as to what influences them to vote. The main focus in this essay will be if economic/financial laws have an influence on the voter turnout rates and how it compares to American voter turnout rates as a whole. There is a separation in hypothesis's as to whether voters vote on financial and economic laws to better the entire economy as a whole or if they vote to better their private pocketbook. In conclusion, it is expected to find that more people tend to vote financial and economic laws to better the economy over their personal pocketbooks.

81. Analyzing Gun Control: Nature or Nurture?

Presenter(s): Josie Chan
Advisor(s): Dr. Ann Gordon

The year of 2017 was deemed the deadliest year for mass killings, which explains the growing tension between those who want stronger restrictions compared to those who do not. In October 2017, 59 people were killed, with over 500 people injured in the Las Vegas massacre. When a national tragedy of such magnitude strikes, it immediately stirs up talks of gun control measures. Whether it is the National Rifle Association funneling more money to fight for 2nd Amendment rights or passionate Americans fighting for stronger gun restrictions, the debate regarding government restrictions on firearms and ammunition proves to be highly controversial. According to Chapman's Survey of American Fears, about 55.4% of those who participated in the survey, regardless of the different factors, ranged from slightly afraid to very afraid of such restrictions. Contrary to public belief, gender has little influence on one's perspective on firearm restrictions. This research will delve into the discrepancies between the literature and data and explain why such a stereotype exists. The present study also delves into other factors such as education and political identification to help explain why the divide between restrictions on firearms is so polarized.

82. Support for Environmentally Friendly Policies Among U.S. Residents

Presenter(s): Max Lopez
Advisor(s): Dr. Ann Gordon

With a new report from the IPCC stating that the turning point for action on climate change is closer than previously predicted, I will use the Chapman Fear Survey to test different variables among Americans to see which groups of people are most likely to act and which need to be educated. Demographic variables such as income, race, and religion will be used as predictors of attitudes towards climate change and different natural disasters. With this information it will be possible to make more effective outreach on climate change to Americans. A notable finding is that middle class Americans fear climate change the most in comparison to others.

83. How Women Influence and Enforce Political Change

Presenter(s): Molly Weber
Advisor(s): Dr. Ann Gordon

There has been a significant improvement in female representation in politics since women were first granted the right to vote in 1920. However, there are still many factors that may negatively affect the experiences of women in politics. This paper seeks to determine what sources influence a woman's desire to participate politically, her ability to be elected to office, and the political decisions she makes once in office. This research study will attempt to establish how women have impacted politics over the last century, specifically examining the context of how their role in politics has progressed, the role that gender bias plays in politics, how the meaning of a "women's issue" has transformed over time, and how women serve as catalysts for change in today's political environment. There are many stereotypes associated with female political participation, such as that the majority of women have liberal ideologies, and it is essential to establish whether there is validity to these assumptions, and if so, what factors have led to these trends. Ultimately, this research will address whether the advancement of women in politics that we have seen over the last century has been able to close a gender gap, or whether the gender divide is more divisive than ever. This paper hypothesizes that the latter is true, regardless of the increasing opportunities that females have been afforded over time. To determine this, the paper will draw upon relevant literature and data regarding the experiences of women in politics. Finally, it will analyze the significance of the results of the 2018 midterm election, and how this information can be utilized to identify possibilities for bridging the gender divide in the future.

84. How Much is the Government Concealing about the Illuminati?

Presenter(s): Nika Cokas

Advisor(s): Dr. Ann Gordon

Conspiracy theories have been a part of American history since as early as the 1800s. Webster dictionary defines a conspiracy theory as "a theory that explains an event or set of circumstances as a result of a secret plot by usually powerful conspirators." The question arises as to why people become so infatuated by something that has no backing of scientific proof. This paper will examine what kind of personality traits and demographics cause people to be more susceptible to believing in conspiracies. One of the most controversial conspiracy theories has to do with the existence of the Illuminati, also known as the New World Order. Three independent variables: age, education levels, and partisanship were studied to examine which characteristics were more responsive to the idea that the government was concealing information about the Illuminati. Each independent variable was measured on an ordinal scale. The results proved that all three factors were statistically significant, meaning that each independent factor had an impact on one's belief in the Illuminati. The results showed that education had the greatest effect on a person's openness to the theory of the Illuminati. This paper will examine why one's age, education level, and political party impact their beliefs in the Illuminati, and conspiracy theories as a whole.

85. Household Income on Civic Engagement

Presenter(s): Nikki Purewal

Advisor(s): Dr. Ann Gordon

Researcher Oren M. Levin-Waldman claims that civic volunteerism requires "the combination of resources, engagement, and recruitment", three factors that are strongly driven by money. The political process has shown time and time again that an abundance of money is the key to a successful campaign no matter what the issue is. But for the average American, they often don't have the luxury of buying political action. This research paper will analyze how household income affects an individual's political engagement in national politics. The participation of citizens in a democratic society is crucial for the functioning of the government, yet civic participation in the United States has continued a pattern of decreasing throughout the years. This is also happening during a time when the gap between the wealthy and the poor is expanding, and the middle class is diminishing. With this we witness the increasing power of concentrated wealth in the political system. Large companies form super-PACs to donate to specific candidates, and elected officials manage to make millions when they serve the public. In order to affirm or deny this, this paper will analyze how income determines one's ability to participate in the democratic process. Using data from the American National Election Studies of 2016, it will analyze how education, ethnicity, age, and party preference affects civic engagement. Civic engagement includes the likeliness of voting in the 2016 presidential election, signing a petition, contacting an elected representative, and giving money to a social or political organization. Regardless of special cases, we expect the data to show that wealthier Americans have more resources and time to be involved in governmental affairs.

86. Media Consumption and Fear of Loved Ones Dying

Presenter(s): Riley Byrne

Advisor(s): Dr. Ann Gordon

In a technologically driven world, news consumption continues to grow and dominate Americans media intake, all influencing the opinions on global public agendas. Media can affect people's attitudes and their behaviors as illustrated with George Gerbner's Social Learning Theory, where he demonstrated the positive correlation between media and violence. Thus, there is a space in social research to analyze the correlation of the two. The research question examined in this study is as follows: How does individual's

media exposure affects their fear levels of a loved one dying? More distinctly, this paper will be applying different media sources as the independent variable and fear level as the dependent variable. I will collect fear levels from three different groups of media: print news, local news, and nightly news. This study relies on the data from The Chapman University Survey on American Fears (CSAF) in 2018, in which 1,190 individuals of 18 or older were invited to participate in an online survey about their personal attitudes and characteristics related to fear. This paper finds that local broadcast news and nightly news not only impacts but heightens the fear of loved ones dying, and those who get news from print are less afraid of loved ones dying.

87. The Youth Turnout for Elections: How We Can Make It Better?

Presenter(s): Sarah Cash
Advisor(s): Dr. Ann Gordon

The youth turnout during both presidential and midterm elections is inferior to that of the older voting groups. Although young voters encounter different aspects of what is occurring in the country (whether it be from social media or peers), few seem to understand the impact a vote like theirs could have on the outcome of those aspects changing in a way that may favor them. Instead of focusing on why young voters do not go to the polls, I would like to focus on what would make them turnout. Every election cycle there are articles run about "why is the youth vote so low?" and the answers lie in data that can be found in the American National Election Studies year survey and the Chapman Survey of American Fear. By researching what methods can be employed to raise turnout, such as pre-registration and bringing voting into the educational domain by imploring young people to consider what their civic duty is in voting, and in turn we could raise their turnout. Another layer of encouraging voter turnout would be to analyze what role fear plays in pushing people to the polls, and what specifically is the younger demographic afraid that would lead to such an outcome. By exploring both what is important to the younger voters, as well as what they are afraid of, I believe that significant gains can be made in the 18-24 age bracket. By involving students in the election process earlier, educating high school as well as college students on their role in the election process and analyzing what they are afraid of can result in valuable information to increase youth turnout in both presidential and midterm elections.

88. The Effect of Race on Partisanship and Ideology

Presenter(s): Syd Kotar
Advisor(s): Dr. Ann Gordon

With a rising divide in party ID and ideology, race has become a more prevalent variable to understanding voting behavior in the United States. The polarization of party identity can be traced back to the 1964 election in which the Democratic and Republican parties took opposing positions on civil rights. Since this election, both parties have held their position on matters of race and civil rights. Party identification and political ideology are both political and racial concepts, and it is demonstrated that Americans rely on racial categorization when identifying with a political party, but do not rely on that categorization for political ideology. While some scholars argue that strongly opposing party positions on racial issues affect party identification some scholars state that it is the positions on other issues that create the noted cleavages. This paper will explore three variables that demonstrate stark differences between party identification and ideology for African American voters. The independent variables compared were party identification and ideology self-placement. The dependent variables studied were thoughts on equality, traditional family values, and how the voter feels about newer lifestyles. The results of data analysis from the ANES 2016 studies conclude that the majority of black voters think of themselves as a democrat but

identify ideologically as moderate. Data also shows that black voters want to talk about equality, think there should be more emphasis on traditional family values, and are split on if newer lifestyles are breaking down society. When analyzed, all of these independent variables were shown to be statistically significant, contributing to the notion of cleavages between party identification and political ideology.

89. Fear of Police Brutality Among Americans

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

Fear of Police Brutality Among Americans Friend or foe? This is the question millions of Americans are asking. This study relies on data from Chapman University's American Fear Survey, which examines the data in relation to the question, "How afraid are you of police brutality in the United States?" I sought to determine if there is a correlation between people in the United States' fear of police brutality and demographic factors including race, gender, region in which respondents of the survey live, and political allegiance. Citizens of the United States all have fears. One of those fears that continue to proliferate is the issue of police brutality. This issue stems from centuries of racial prejudices of minorities, in particular, African American males. The issue has become increasingly covered by the media and, as a result, has made the issue a common topic across the nation. By conducting this research, I aimed to identify population groups in the United States who do and do not fear police violence. My goal is to contribute to the scientific community by shedding light onto the historical injustices that have occurred in the United States against racial minorities and show how those injustices continue to plague race relations in this country. Researchers have identified several theories that may contribute to this issue of police brutality, one of which is critical race theory and the social construct of race as a hierarchical structure. In my research, one of my findings is that racial minorities have a higher level of fear in regards to police brutality than ethnic majorities. This finding has important implications to race relations in the United States.

90. How Linguistic Myth Predicts Social Upheaval in Dostoevsky

Presenter(s): Connor Guetersloh
Advisor(s): Morgan Read-Davidson, Dr. Lynda Hall

Throughout history, cultural designation has been plagued by unpredictability. It is all but impossible to know when the next revolution, violent or subtle, will arise and turn systems on their heads, systems appraised as carved in stone. If it is all but impossible, then the possibility still remains: Is there a hidden link to be discovered, to track and predict the outcomes of social unrest bubbling beneath the surface of society? I suggest that there is; this hidden link can be traced back to the field of semiotics, and primarily moves in a swift, subtle manner. Said link is known by the name of "Myth," an external tool we subconsciously use to interpret meaning. By employing Roland Barthes' theories of linguistic Myth, I plan to reveal ways in which popular society betrays its inevitable intent: to revolt against dominant Myth and meaning, replace them with newly crafted signs of its own design, and wield these transformations against the old sociopolitical order. However, it is difficult to predict without a precedent. My precedent is comprised of three of Fyodor Dostoevsky's novels: "Notes From the Underground," "The Idiot," and "Demons." With help from Mikhail Bakhtin's linguistic analysis, I will chart how each novel feeds into the next in their Mythological metamorphoses, how literature marks the movement from the rise of Marxist thought to the Russian revolution through changes in dominant collective consciousness, all on the written page. If such a template is established here, then perhaps it might be applicable to the present day; then, we will no longer have to wait for retrospect to determine the dashed line along which social construction's destruction is directed.

Psychology

91. A New Measure of Ethical Decision-Making
Presenter(s): Christopher Falco
Advisor(s): Dr. Benjamin Rosenberg

The current studies are designed to develop and validate a concise new measure of ethical decision-making that yields more data than standard measures (e.g., trolley problem, Greene, Sommerville, Nystrom, Darley, & Cohen, 2001). This measure will be informed by the knowledge that there is likely a continuum of people at stake in ethical dilemmas that influences the decisions that participants make. For example, participants presented with Greene et al.'s trolley problem are prompted to choose between allowing five people to to be hit and killed by a runaway trolley or choosing to divert the trolley to hit and kill one person to spare the five. If there were 20 people at risk in Greene et al.'s trolley problem at the expense of one, participants' decisions may be different than if there were two people at risk. To validate this new measure, we will conduct four studies. We will present the results of the first study at the Student Scholar Symposium if accepted. The aim of this study is to validate the effects of varied numbers of people at stake on outcomes. We believe our measure of ethical decision-making will be less likely to induce fatigue in participants than other measures and could potentially allow for the detection of significant results that may have been masked in past studies. We anticipate results obtained using this measure will be comparable to a wide variety of prior published studies and inform future research. We expect to successfully validate this new measure and replicate prior studies investigating effects of certain conditions on ethical decision-making. The results will inform what values are used in the subsequent studies as we create and validate our measure of ethical decision-making.

92. Adult Behavior in the Pediatric Postoperative Environment: Demographic Predictors and Physiological Outcomes
Presenter(s): Natasha Hikita
Advisor(s): Dr. Brooke Jenkins

Over 85% of children experience postoperative pain. If poorly treated, pediatric postoperative pain may lead to various negative consequences such as increased anxiety, increased analgesic consumption, and maladaptive behavioral changes. Therefore, this study aimed to determine whether adult behaviors impact child postoperative physiological activity and which participant demographic factors alter adult postoperative behavior in response to child distress. This study included children ages 2 to 10 years old (N=112) undergoing elective surgery at the Children's Hospital of Orange County. Participant demographics including ethnicity and race were collected prior to surgery. Nurse, parent, and child postoperative behavioral interactions were video recorded in the Post Anesthesia Care Unit (PACU). From these video recordings, adult behaviors including distraction, humor, coping advice, empathy, reassurance, and apology were coded for their frequency of use. Additionally, children's heart rate and blood pressure were measured every 15 minutes in the PACU postoperatively. Through multiple regressions analyses, adult empathy (b = 34.56, p = 0.009) was found to be associated with an increase in child heart rate after surgery while adult apology was associated with a decrease in child heart rate after surgery (b = -20.22, p = 0.044). Moreover, there was no significant relationship between adult behaviors and child blood pressure, ps > 0.05. In addition, adults were more likely to use humor with Non-Hispanic White children compared to Hispanic children (b = 0.393, p = 0.049). Fathers were marginally more likely to use empathy, reassurance, and apology with Hispanic children compared to Non-Hispanic

White children (b = 0.249, p = 0.05). These results demonstrate that certain adult behaviors may be associated with child physiology, a possible marker of child distress in the pediatric postoperative environment. Moreover, the results suggest that Hispanic and Non-Hispanic White children may receive different behavioral treatment in response to postoperative distress.

93. The Effects of Gratitude on Cognition

Presenter(s): Amber Hopkins
Advisor(s): Dr. Connie Shears

Existing literature has shown that a daily gratitude practice can increase positive affect, life satisfaction, well-being, and can decrease stress and anxiety (Emmons & McCullough 2003, Krejtz et al. 2016). However, this research investigates how a daily gratitude practice affects cognitive performance. Gratitude was separated into three levels: hassles listing, gratitude listing, and control listing. Each listing was designed to elicit a different mental state. Time was separated into two levels: one session or one week of daily sessions of assigned listing. Participants (n= 48) were separated into six groups, each differing in the combination of the levels of the manipulations: gratitude and time. Gratitude (measured using the GQ-6) and cognitive performance (determined by accuracy and response time on a task) were measured before and after session(s) of assigned listing. We hypothesized that individuals in the gratitude listing group would show the greatest positive change in cognitive performance. Results show a significant main effect of gratitude listing on the post-test cognitive task score Individuals who completed the gratitude listing performed the higher on their post-test cognitive task (mean= 82.5%) compared to the hassles listing groups (mean=81.3%) and the control listing groups (mean= 76.3%). A grateful mental state, provoked by a gratitude listing, does appear to have a positive relationship with cognitive performance.

94. Stressed Out : Impact of Group on Everyday Moral Decision-Making

Presenter(s): Ashleigh Dimpflmaier
Advisor(s): Dr. Connie Shears, Dr. Steven Schandler, Dr. Brooke Jenkins

This experiment seeks to add to the literature surrounding decision making, stress, and groups. Stress is a daily occurrence for most individuals, so understanding how stress affects the choices we make has important implications for understanding behavior. Additionally, many people do not make decisions in isolation, but with thoughts of the other people and relationships in their life that may be impacted by their decision. Social community, or being part of a group is an important component of human behavior and decision-making. Literature to date has placed a large emphasis on risky decisions and gambling tasks, however not all decisions are high risk or money based. Many decisions involve morality and emotions, and this is an area that has not been thoroughly investigated. Therefore, this experiment aims to add a new perspective to our understanding of decision making by looking at the effects stress and group have on moral decision making. Participants were randomly assigned to either 'team' or alone to complete a simple puzzle. Once the puzzle is completed, participants in the stress condition will complete the an impossible Stroop Task in the lab. Then participants all completed the Everyday Decision Making Task, a task that presents decisions that have either an altruistic or egotistical decision (Starcke, Polzer, Wolf, & Brand, 2011). The percentage of egotistical decisions was recorded as well as decision time. We hypothesized that if participants work in a group and are stressed, they will have a lower percentage of egotistical than the alone and stressed participants. Current results indicate that the proposed hypothesis is supported.

95. The Effect of Cannabis Use on Physical Activity
Presenter(s): Lydia Ong
Advisor(s): Dr. Vincent Berardi

With the growing prevalence of cannabis use and its legalization in multiple states, it is important to understand the relationship between cannabis use and health behaviors such as physical activity (PA). Conflicting findings report cannabis users are less likely to be obese than non-users, while other studies report cannabis use as associated with low levels of sport and exercise, but not the broader scope of recreational PA. Thus far, these studies have relied on self-report measures of PA. This study aimed to more precisely explore the relationship between cannabis use and PA using objective measures of PA. Data was obtained from the National Health and Nutrition Examination Survey (NHANES) covering adults ages 20-85+ (N=3,769) from 2005-2006. PA data was obtained by processing accelerometer measures and categorizing each minute into light PA, moderate to vigorous PA (MVPA), or neither. Self-reported cannabis use was categorized into current and non-current users. Descriptive analysis and multivariate regression were performed to analyze associations between cannabis use and light PA and MVPA. On average, current users engaged in significantly more light PA than non-users (370.97 min/day vs. 335.14 min/day, $p < 0.01$). Similar results were found for MVPA (33.46 min/day vs. 28.25 min/day, $p=0.02$). However, once controlling for age, gender, and education, the effect of cannabis use on PA was no longer significant. Age and higher education level were negatively associated with light PA, with older adults and college graduates+ spending less time engaging in light PA ($p < 0.001$). Age, gender, and lower education level were negatively associated with MVPA, with females and non-college graduates spending less time engaging in MVPA ($p < 0.05$). Cannabis use was positively correlated with light PA and MVPA—a counterintuitive finding. However, majority of this effect seemed to be associated with the demographic of cannabis users. More studies should be conducted to further our understanding of the relationship between cannabis use and PA and its implications for public health.

Public Relations and Advertising

96. Inclusive vs. Exclusive Advertisments
Presenter(s): Nicolette Evans, Allie Ricci-Fisher, Noa Rocco
Advisor(s): Dr. Austin Lee

This research investigates the impact of inclusive vs. exclusive advertising in terms of body satisfaction and the overall impression left of the brand after exposure to the advertisement. Participants were Chapman undergraduate female students, who were randomly assigned to either inclusive or exclusive advertisements by the researchers and instructed to report through a survey their level of self-esteem, mood and likelihood to purchase the brand's product after one exposure. The experiment was based on a 2 x 2 anova. The first overarching variable was "Body Shape"; thin, thin and overweight. The second overarching variable was "Race"; white, white and mixed race. The exclusive ads fell under subcategories "thin, white" advertisements. The Inclusive ads fell under subcategories "thin and overweight, white and mixed race" The Inclusive ad (based on race) fell under subcategories "thin, white and mixed race". The inclusive ad (based on body shape) fell under subcategories "thin and overweight, white". The hypothesis for the study was inclusive advertisements reported strong levels of self esteem, strong levels of participant's mood and strong likelihood of purchasing product while the exclusive advertisements reported weak levels of self-esteem, weak levels of mood and weak levels of likelihood to purchase the product.

Sociology

97. Negative Self-Concept and Dating Application Dependence
      Presenter(s): Sara Gorman, Emilie Allen, Santiago Bollag
      Advisor(s): Dr. Austin Lee

The current study examined how internal factors related to self-concept and insecurity influenced level of engagement and dependence on dating applications for dating in young adults. Low self-esteem has highly significant implications for virtually all areas of a person's life, including a person's experiences in regards to dating and relationships. Since dating applications have become very commonly used among young adults, we conducted a study on how a negative self-concept relates to dating application use. We hypothesize that individuals with negative self-concepts are more likely to engage in the use of dating applications and be more dependent on them for forming new relationships. In order to conduct this study we recruited Chapman students to participate in our survey through the university subject pool. We utilized the Rosenberg Scale and the Likert Scale to as measures for our findings. Increasing our understanding of this relationship will be beneficial to society because it will help prevent unhealthy dating behaviours in individuals and add to the body of data on the relatively new phenomenon that is dating applications for smartphones.

Strategic and Corporate Communication

98. Perceived Social Support, Academic Outcomes, and Self-Efficacy of Out-of-State versus In-State College Students
      Presenter(s): Mariah Bode, Kellyn Toole, Sebastian Barahal
      Advisor(s): Dr. Austin Lee

The purpose of this research is to compare the amount of social support in-state college students receive to the amount out-of-state college students receive, and how it relates to their academic outcomes and overall stress, self-efficacy, and social integration. Social support can be defined as any sort of aid or assistance given by family members, friends, and others. According to literature, it is unclear the difference in social support received by in-state versus out-of-state college students. There is research pertaining to social support received by first generation students, and we will use that as a frame of reference for our study. We will be conducting a survey to send to both in-state and out-of-state students at Chapman University. We will first be asking questions pertaining to perceived social support, academic outcomes and stress, self-efficacy, and social integration using a Likert scale. Following that we will be asking a set of demographic questions with multiple choice responses. Our hypothesis states that out-of-state college students experience less social support compared to college students who remain in state for school which leads to different academic, mental, and social outcomes. The results of this research will provide valuable information regarding social support and how it affects overall college performance.

Theatre

99. Haunting Immersion: A Biological and Technical Need
Presenter(s): Amanda Burtness
Advisor(s): Dr. Jocelyn Buckner

Just as tales and plays have been told orally to one another since the beginning of time, scary stories have also made their way into human dialogue. These means of communication are bound to the human connection and have furthered our knowledge on the world and each other. We have all, in some form or another, gathered around and told each other ghost stories, inciting excitement and terror. The monsters of our nightmares have been verbalized to us since we were young, and continue to do so till this day. However, people for hundreds of years have since expanded upon those spooky stories, and turned them into an immersive experience. Haunted houses have been around since the 19th century, where people would be amazed by illusions and "chambers of horrors." Since then, haunted houses have grown in depth, scaring their audiences in new ways every year. Some could say haunted houses are cheap tricks, however, haunts have provided a new way to tell stories and evoke emotions in their audiences. Not only do haunts allow for immersive entertainment, but also evoke the psychological response of fear and stimulus necessary in the human body. Rather than just experiencing something via word of mouth or visually, the placement of the human body in a specifically designed location has been told to further encapsulate the audience member into the story. By utilizing the audience mind and body as a tool in it of itself, this form of storytelling is heightened. The art of theatre is clearly expressed in the art of haunts. With the ever growing and changing entertainment technology, haunts have achieved nightmares people never thought they would be able to experience. One company in particular that has combined the art of storytelling, theatre, and haunts, in seamless coalition, is Knott's Berry Farm. Their haunt has not only scared people to tears, but also been able to dig deep into the human psyche and told them stories they never knew they wanted to be a part of. I will discuss the need for haunts as a form of technical entertainment and immersive storytelling.

100. Staging the Solution: Practicing Performance to Solve Recidivism
Presenter(s): Casey Johnson
Advisor(s): Dr. Jocelyn Buckner

Arts education holds the capacity to transform, build confidence, and illuminate an individual's purpose. In this thesis, I will cover the inveterate issues connected to incarceration and criminalization as well as the threats of re-entry and causes of prison regression. Consequently, I plan to explore how implementing performance arts into correction facilities' recreation curricula can decrease the rate of recidivism, meaning a person's relapse into criminal behavior or conviction. The vicious cycle of recidivism is one of the most fundamental issues facing the criminal justice system and is long overdue for a solution. Today, over 2.2 million people sit in a United States prison, and upon release, approximately half are arrested within 8 years. In fact, re-arrest rates are actually higher for ex-prisoners who were fully released from prison (52.5%) than those directly put on probation (35.1%), the most common charge being assault. Instead of seeking a form of recalibration in crime and violence, how can we cultivate self-worth and power through an arts curriculum? As the United States continues to emphasize corporal punishment, our criminal justice system is seriously lacking the fundamental value of restoration. In this thesis, I will explore causes of this viscous cycle and offer in-prison theatre education as a solution. I plan to study recidivism rates of prisons with and without theatre education curriculums involving case studies on

prison outreach programs The Actors' Gang and Prison Performing Arts. In these case studies, I will examine how giving inmates the "permission to fail" nurtures commitment, teamwork, and accountability. Being a part of an ensemble building network in a theatrical safe space allows inmates to recognize and celebrate emotions, develop problem solving skills and empathy, and ultimately creates structure in a period of chaos.

101. The Conjuring Consultant: Providing Magic for the Masses Throughout the Ages

Presenter(s): Ethan Robarts
Advisor(s): Dr. Jocelyn Buckner, Donald Guy

When it comes to the world of magic, many people would simply think that it is all just smoke and mirrors. That magicians plan their next feat of the impossible, have their team build such an illusion, and then have it performed before a live audience. Unfortunately, to those who believe this to be true, it is not. It takes a dedicated team of professionals to even begin the conceptual process of design work and fabrication of these mind-boggling displays of prestidigitation. The most important member, more important than the magician itself, is none other than the consultant. Without the consultant, magic just simply would not be in the equation. For if it were not for the consultant, the magician (as well as other members of the theatrical industry) would not be astounding and amazing audiences as they have done since the dawn of man. Within this thesis, I have proof of the essential role consultants in magic have on the future development of theatre through the mass of evidence acquired through published books, in-depth interviews, and personal experience. For without this resource, the history and advancement of theatre may not be as advanced or have reached the same level of sophistication as we all see it today. We often take for granted what is given to us, but through my research, I have found that the technological aspects of magic have been not only adopted or used by people in the theatre industry but anywhere there is a performance to be had. In conclusion, the results have shown that magic consultants directly affect the future of theatrical performance and technology based on the hard evidence that many of today's shows and venues utilize and are equipped with the same techniques used by the magicians from the past. From concerts to live stage performances, magic can be seen everywhere when we least expect it and take its properties for granted. After all, that is what magic is supposed to do, deceive us into believing that there is nothing truly there when there was a whole history, background, and design process behind it.

102. Access to Art

Presenter(s): Keilani Spahn
Advisor(s): Dr. Jocelyn Buckner

As a student who has to live with being hard of hearing since first grade, but also in love with theatre and performances, I have overcome the struggle of misunderstanding shows. Rather than giving up on theatre, my desire is to get more involved with it, so that I may change it. For this reason, I am doing research on the intersection of performance studies and disability studies since this is the academic manifestation of my interests. The fields of disability studies and performance studies often interact in the idea that having a disability is often a performance (Sandahl and Auslander 3). Being in a wheelchair in front of a stairway is a script that disables a person, as a body clearly separated from its environment. Architecture, therefore becomes a performance space whether it's in a theatre or not for people with disabilities. This intersection of disability studies, performance studies, and architecture will be the main focus of my project. To make a tangible paper, I will be looking through the ADA guidelines from 1991 and 2010 to see the basic guidelines that must be met, and what is missing. For the interviews, I will reach out to older theatres in the local Los Angeles community that have been upgraded to comply with ADA guidelines and how that

has changed their atmosphere and experience. I will reach out to Chapman's Musco Center for the Arts about how the space was designed with ADA guidelines in mind. With this thesis I hope to create awareness of accessibility (or lack thereof) in theatre spaces, arts, and entertainment. This is important to children and new generations who can finally see themselves represented both on stage, and more importantly, have access to the physical venues that they can see themselves.

103. The Lack of Female Directors and Artistic Leaders: Discrepancy in the Number of Women from Theatre Education to Career

Presenter(s): Madeline Lang-Ree
Advisor(s): Dr. Jocelyn Buckner

Recently, society has slowly started to take initiative against the large gender gap that exists in positions of leadership. Though this gender gap stretches across all work fields, the theatre industry is extremely guilty of a lack of female representation in many of its career paths. In both studies and personal experiences, it is repeatedly reported that there are considerably more girls than boys participating in theatre during educational and formative years. Despite this, the number of female directors and artistic leaders in the theatre industry is significantly lower than males. Why is there such a large amount of young women participating and thriving in educational theatre and a vastly smaller amount of women leading the professional theatre industry? What should we be doing to change it? By researching the amount of girls who participate in youth theatre compared to their male counterparts, I will contrast these findings with the significantly lower amount of female industry leaders. Through interviews of professional working women, I will gain intimate knowledge of what it's like to be a minority gender in this industry and gain insight on how they think the gender gap can be fixed. In 2014, 73% of LORT artistic directors were white men, and in 2016, only 20% of new shows on Broadway had a female director. In this study, I will explore why there is a lack of female directors and artistic leaders, what specific actions can be taken to change the disparity, and what the future must look like for women in theatre. With a combination of statistics found, interviews taken, and research done, I will be able to propose solutions to giving women equal leadership roles in theatre and subsequently estimate how long it will take to reach equality.

104. Casting Away from Traditional Casting: How Diversity in Theatrical Casting Brings New Insights to Old Characters and Stories

Presenter(s): Madison Huckaby
Advisor(s): Dr. Jocelyn Buckner

For centuries of theatre history, there were rules about casting and performances involving diverse groups, many of which were simply not allowed to be actors. Slowly, those groups began to make appearances in theatrical performances, but only where characters were written for them, and rarely without being stereotyped. In recent years, actors from diverse groups have made significant strides for representation past the page and onto the stage. Between actors' persistent talents and producers' and directors' creative open mindedness, minority actors are being cast in roles that were not originally written or intended for them. This break from 'traditional' casting, meaning the generic privileged straight white norm, can come from both blind and conscious casting. Either the best actor is cast regardless of race, gender, disability, and appearance; or the production team makes a purposeful choice to cast diversely in a specific role to change that character or the entire show. This paper will assess the differences of these approaches to casting diversely and how bringing new types of actors into familiar roles can give accidental enlightening or intentional crafting of a new outlook to a known character and how the instances are strong choices or not. By analyzing the human psyche and subtle biases, I will argue

that much of 'traditional' casting is subconscious prejudice by being intentionally left out and that casting diversely in already existing roles brings another layer of insight to those familiar characters. With references to recent productions, I will give detailed examples to support how much more interesting characters and stories can become just by being anything but a healthy, straight, white male. The beauty of theatre is that it is always changing. If something is to be done the exact same way every time, it should be a film. Theatre should always be trying new things and exploring different ways to tell the same stories. Diversity in casting is one strong, yet simple, way to showcase the ability theatre has to tell all forms of stories.

105. The Detrimental Decline of Creative Dramatists at the Elementary Level
Presenter(s): Natalie Teichman
Advisor(s): Dr. Jocelyn Buckner

Children are inherently creative and imaginative, constantly inventing games, storylines, and exploring. However, in the current climate defined by a rise in technology that may not be conducive to these instinctive attributes, theatre is an incredibly important medium where children are able to further refine these characteristics. Because of this belief that theatre is important for a child's development, children's theatre has become an entity in its own right, used to promote creativity in the lives and minds of children. Unfortunately, children's theatre is something that is not accessible for enough children. In this paper I discuss numerous sources pertaining to theatre at the elementary level, my own experience and research about this topic, and my observations of the Drama Maniacs, a local children's theatre company. Through the exploration of this accumulated research and observation, I will suggest possibilities for further integration of theatre in schools in order to improve this lack of theatrical education. I argue theatre is important for children due to its numerous benefits, which is why the reach and accessibility of theatre for children should be increased exponentially, especially in children's education at the elementary level.

106. Light Eaters: A Study on the Affect of Light Depicted Through Different Art Mediums
Presenter(s): Samuel Wyatt Dyck
Advisor(s): Dr. Jocelyn Buckner

Humankind has spent its entire history defining and creating the things that make up our physical world. Everyday, humanity continues to discover and create, furthering society's knowledge and understanding of existence. However, there are facets of nature that have never been entirely understood by mankind, because they have a unique affect on each individual. It is known how a tree manifests and grows but no one can explain the feeling of relief that comes in the shade of a long limbed oak on a cloudless day. Nature is unique in its simplicity and mystery. Artists often use aspects of nature to create a unique affect for their audience. In this paper I aim to narrow my gaze onto light, one fragment of the natural world that has been manipulated by artists across mediums to incredible effect. I have clarified the differences in art that uses light to imitate the natural and art that uses light to exemplify nature's beauty. "Affect", meaning: an expressed or observed emotional response, is difficult to conceptualize, especially when it comes to art because each individual's reaction and feeling is different. However, I believe that the graceful appliance of light in any art form, whether it is the architectural installations of James Turrell or Michelangelo's the David, consistently elicits an emotional response from the individual viewer. Historically, Artists have always been fascinated by light and the emotional quality it brings to a piece. Furthermore, in today's modern age, there is an immense amount of technology that give artists a much broader spectrum of tools to utilize in the pursuit of eliciting emotional response from their work. I will highlight some revolutionary uses of light in artistic platforms such as architecture, sculpture, and live performance.

107. **Technology: Evoking Emotion, Preparing the Next Generation, and a Look into the Professional World**

Presenter(s): Ziad Niazi

Advisor(s): Dr. Jocelyn Buckner

Entertainment technology is just as elusive as the people, dressed in black, who run the behind the scenes aspects of theatrical performances, music festivals, and corporate events. A talented magician never reveals their tricks and this can be said for the people and the technology used on some of the biggest productions around the world. Scholarly resources and articles discussing entertainment technology are scarce because of this fact but with some work, one can begin to piece together the importance of technology in a production. With innovators continuing to set the bar higher and higher every year, if a person doesn't keep on top of new technology, they will be left behind. By referencing different articles from TPi Magazine, PRG, personal experiences, and scholarly articles, I will narrow in on the impact that audio, lighting, and video technologies can have on various productions, whether they are large or small, and how they add a different dimension to a production. In addition, I will show the importance of education in the entertainment world through the use of technology and creating an all around "good" person to send out into the professional world which then helps large companies like Disney or Cirque Du Soleil work to train those individuals so they can work with various clients around the world. Many educational programs realize that technology is a crucial part of teaching the next generation and professional artists also understand the importance of technology to be incorporated into their performances. Finally, I will give a handful of examples of professional productions such as Beyonce's Formation World Tour and Ed Sheeran's Divide Tour. As technology expands, the creativity stemming from the minds of artistic directors & technical coordinators grows exponentially and challenges people to create the next big thing that no one has seen. Technology is apart of our present world and even though people can make art without all the latest and greatest technology, they must admit that having the tech helps spread their message exponentially.

World Languages and Cultures

108. **French Secularism in 2018: Does it Help or Hurt?**

Presenter(s): Flannery Johnston

Advisor(s): Dr. John Boitano

This thesis explores the relationship between "laïcité", the fundamental French principle of secularism, and its relationship with equality for citizens of varying religions and ethnic groups in France. Recent news articles regarding events in France, such as the Nice terrorist attack of 2016 and the Paris terrorist attack of 2015, as well as historical books and journal articles provide for a holistic and longstanding background. This project contributes to the study of secularism and the weight it bears in France because it examines this well-established concept through an inquisitive lens in terms of whether it helps or hurts French citizens of particular religious groups. A comparison of the differing levels of secular principles in both the United States and France serves to illustrate how certain restrictions may aid the general public while sacrificing some liberties and complicating the lives of citizens. Through the analysis of controversial incidents in France like the Baby Loup nursery case in which a woman was fired for wearing a Muslim full body suit despite working in the private sector, one can see how the principle of "laïcité" struggles to be clearly defined. Analysis of the events which unfolded after the ISIS attack on Charlie Hebdo, reveals how efforts seeking to unite the masses can end up isolating those who need the most support. Although "laïcité" is at the very foundation of the French Republic, the varying implementations of the principle based on circumstance have isolated some religious groups. In this current day and age, it is becoming increasingly more difficult to define what is secular and what is not.

109. L'Assurance Maladie Simplifiée

Presenter(s): Priscella Widjaja

Advisor(s): Dr. John Boitano

The goal of this study is to simplify the health care and social security systems of France in such a way that is easily understood by foreigners. This study includes a brief overview of the three branches in the French health care system: health, retirement, and family. The study also includes an in depth analysis of the problems that France faces in their health care system, such as the steady rise in healthcare spending that is affecting France's National debt overall. The reader will be informed about what contributes to the healthcare spending in France and who finances these costs. These current problems are further discussed in terms of possible solutions presented by current government officials. This study will look at the reforms that are being put in place now and the reforms that will be established for the years to come. There is no simple solution that will target every facet of the healthcare system, nonetheless it will be interesting to see how these proposed reforms will revolutionize the French healthcare system in the near future. This information is provided with the intention for the reader to develop their own proper conjectures of French healthcare and to relate the healthcare system of France with that of their own country. Hopefully, this research will inspire insights into how the health care system can be improved upon around the world.

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Graduate Students

Physical Therapy

1. ### Wearable Sensor-Based Gait Re-Training in Idiopathic Toe Walkers
   Presenter(s): Michael Pollind
   Advisor(s): Dr. Rahul Soangra, Dr. Marybeth Grant-Beuttler

Idiopathic toe walking is associated with lack of heel strike during the initial contact phase of a gait cycle. Idiopathic toe walking affects 5-12% of healthy children in the US. Typically a child can heel-toe walk on request, but habitually walk on their toes. In this pilot study, we propose a wearable insole with tactile corrective feedback. A total of five subjects (13Â±4 years) participated in this study. A customized insole was designed with two pressure sensors, inertial measurement units and on board data storage SD card. A vibration biofeedback was provided to the participants if three consecutive toe-toe strikes were found. We found that the average proportion of heel to toe strikes was 0%,66%,64%,53% and 67 % among participants. We also found median time of return to habitual walk of toe-toe gait was 13 seconds. All analysis was conducted on a walking data ranging from 2 to 20 hours of walking. All five subjects reported that the customized insoles were helpful and reminded them for a corrective action during walking. This research with wearable sensors will help physical therapists to utilize innovative intervention methods for gait training in idiopathic toe walkers.

Psychology

2. ### Transfer Learning in Random Sequence Generation
   Presenter(s): Alice (Sook Mun) Wong
   Advisor(s): Dr. Uri Maoz

Human random-sequence generation (RSG) has been shown to be systematically biased towards underestimating the likelihood of long runs of repeated and that this bias can be reduced in a competitive environment. We investigated whether participants could transfer this learning back to a non-competitive environment. Participants carried out a 3-part experiment where they: (Part A) created random sequences of Rock (R), Paper (P), Scissors (S) to establish baseline bias, (Part B) played a competitive game of R-P-S against a computer, then (Part C) again created random sequences of R-P-S as in part A, to measure any post-learning transfer effects. This experiment had 3 between-subjects conditions. In conditions 1 and 2, the computer searched for patterns in each participant's response and win/loss/tie history to predict the participant's next move. Thus, a participant's game responses needed to be as random as possible to win. In condition 3, the computer generally followed a simple R-P-S-R-... pattern, where the corresponding winning strategy for the participant was P-S-R-P-.... Furthermore, in conditions 1 and 3, participants were only instructed to play to win against the computer, while in condition 2 they were specifically informed about the computer search algorithm and that they had to be as random as possible to win. We computed each participant's randomness score using the Wald-Wolfowitz runs test, confirming that participants indeed produced more random sequences and longer runs in part B than in parts A or C. Their patterns in part B were not statistically different than Matlab's pseudo-random number generator. While participants' randomness in part B of conditions 1 and 2 were not reliably different, only

those in condition 1 showed transfer learning from part B to C, despite not being informed about the computer's algorithm. Our results suggest that humans can learn to become relatively random in a competitive situation with feedback and maintain that randomness for other tasks, but only if the ability is learned implicitly.

<u>Undergraduate Students</u>

<u>Biochemistry and Molecular Biology</u>

3. **<u>Exploring the Physical Interaction Between Curcumin Analog Ca27 and the Androgen Receptor</u>**
   Presenter(s): Emma Whiteley
   Advisor(s): Dr. Marco Bisoffi

A key player in prostate cancer development and progression is the androgen receptor (AR). AR overexpression at both the protein and mRNA levels are seen in the majority of castration-resistant prostate cancers. The AR is activated by the binding of androgenic hormones like testosterone and dihydroxytestosterone (DHT) to its ligand-binding domain (LBD). Inhibition of AR protein function is a potential therapeutic target for prostate cancer. This research project focuses on a specific ligand: curcumin analog ca27, which has been shown in previous studies to downregulate AR protein expression and function. This research project focuses on the mechanism of action of ca27. Specifically, we are investigating the physical interaction between ca27 and the AR-LBD in vitro. A competitor fluorescence polarization assay is used to quantify the physical interaction between ca27 and four of its analogs with the AR. In this assay, effective competitors, such as the androgens DHT and R1881, bind the AR-LBD and displaces the pre-bound fluorophore fluoromone, which leads to a decrease in polarization values. Thus, fluorescence polarization measurements will allow us to experimentally explore whether ca27 physically interacts with the AR. Preliminary results show shifts in polarization upon addition of ca27 indicating some degree of fluoromone displacement. In forthcoming work, we will generate dose-response curves to quantify the effects of the test compounds (ca27 and its analogs) to determine whether a physical ca27-AR interaction is occurring. These experimental results will also be complemented by computational modeling.

4. **<u>Mechanism of Action Studies of the Diarylpentanoid that Down-Regulates the Androgen Receptor in Prostate Cancer Cells</u>**
   Presenter(s): Alejandra Solis, Samantha Dyer
   Advisor(s): Dr. Marco Bisoffi

In this project we are looking at the diarylpentanoid ca27 which is a synthetic analog of the natural product curcumin. The molecule ca27 has previously been shown to down-regulate the androgen receptor (AR), which is a prominent therapeutic target in the treatment of prostate cancer. However, the mechanism of action of ca27 is not yet understood. We are investigating whether ca27 works at the transcriptional or the translational level to down regulate the activity of the androgen receptor. By introducing different compounds that inhibit these levels of regulation, we can investigate what level of control ca27 is acting on. The procedures that were followed during this experiment, were culturing the human prostate cancer

cell models LNCaP and treat them with different combinations of the transcriptional, translational inhibitors. Transcriptional inhibitors we use are Actinomycin D (ActD), for translation inhibition we use cycloheximide (CHex). In both cases we also added a soltion to inhibit protein degradation known as MG132. After treatment, we generated protein lysates, then determined their concentration, separated the protein mixtures by gel electrophoresis, transferred the proteins to membranes, and measured the expression of the AR by Western blotting using specific antibodies and chemiluminescence. So far we have observed that the combinations of the transcription or translation inhibitors and the use of Ca27 have down regulating effects on AR receptor. We have compared this results to cells treated with only the Ca27 molecule, which still show down regulation but in less amounts.

Biological Sciences

5. ### The Effect of Fire Intensity on Soil Microbial Respiration in Southern California
   Presenter(s): Katina Boise
   Advisor(s): Dr. Cassandra Zalman, Jesse Rush

Fires occur often in southern California due to the arid conditions in the region. When a fire moves through an ecosystem it does more than burn the aboveground vegetation, it also affects soil properties and microbial activities, such as respiration, that are important for regulating ecosystem carbon and nutrient cycling. The intensity of the fire – determined by fire characteristics such as temperature, duration, and fuel loads – can play a role in the extent of ecosystem changes, both above and below ground, post-fire. The Holy Fire and Canyon Fire occurred in southern California in October 2017 and August 2018, respectively. These fires varied drastically in fire intensity. In general, a high intensity fire results in a higher proportion of ashed material whereas a lower intensity fire results in a higher proportion of charred material. The Holy Fire was classified as a high intensity burn with ash deposition ranging from 0.5 to 12 cm. In contrast, the Canyon Fire was considered a lower intensity fire with little ash deposition and a higher proportion of char (<1 cm). The objective of our study was to determine how fire intensity affects microbial respiration following these wildfires. In each site, we identified locations that varied in burn severity (no burn, low burn, and high burn) as defined by the depth of fire residue deposited. Soil respiration was monitored immediately after the Holy Fire (1 week and 2 weeks) and over the past year (1 month, 6 months, and 1 year) at the Canyon Fire. Preliminary data suggest that fire intensity and severity can have complex effects on microbial activities such as respiration, suggesting that differences in fire characteristics can affect the overall recovery of microbial function post-fire. Moreover, the relationship between fire severity and respiration differed by site, suggesting that the controls on this process may vary. In order to understand these controls, we are currently quantifying changes in microbial biomass and soil nutrient availability in both sites post-fire.

6. ### How Hagfish Skeins Unravel in Seawater
   Presenter(s): Aly Dwight
   Advisor(s): Dr. Douglas Fudge, Dr. Gaurav Jain

Hagfish are deep-water fish that are known for their ability to produce substantial amounts of slime when provoked. The slime is composed of mucin vesicles and skeins. The skeins are essentially balls of thread that unravel to allow for intact slime formation. My project focused on understanding the slime formation through skein unraveling. I hypothesize that skeins require an anchor point for fast and full unravelling to take place. I began to test this hypothesis by collecting fresh exudate and exposing it to artificial sea water

(ASW) with convective mixing and no anchor points present. In addition, I designed an apparatus that will be used to test the anchor point hypothesis using an Instron machine and dissecting microscope. Full unraveling of the skeins with no anchor points in the apparatus would disprove my hypothesis, whereas finding that anchor points facilitate skein unravelling would support it. Preliminary results show that some skeins fully unravel through simple mixing in ASW, however not all of the skeins unravel. Understanding how skeins unravel will advance the progress of future biotechnological and biomedical applications using slime.

7. **Stabilizing Effects of Trimethylamines in Skein Unraveling of the Pacific Hagfish (E.stoutii)**
   Presenter(s): Kashika Singh, Marie Starksen
   Advisor(s): Dr. Douglas Fudge, Dr. Charlene McCord, Dr. Gaurav Jain

Hagfish defend themselves by releasing large volumes of gill-clogging slime. The slime consists of two major components: mucus cells and thread bundles. These thread bundles are kept from unraveling via a seawater soluble protein adhesive. Previous analyses in Atlantic hagfish revealed that the gland has a high concentration of methylamines including TMAO, betaine, and dimethylglycine. The threads are packaged into coiled skeins, which unravel in the presence of seawater due to the dissolution of the glue holding the thread bundles together. We hypothesized that the trimethylamines TMAO and betaine have stabilizing effects that inhibit skein unraveling. We investigated skeins of the Pacific hagfish to estimate the amount of unraveling in the presence of these stabilizing components. Slime exudate was collected from hagfish and exposed to 100 mM-500 mM (100 mM intervals) concentrations of betaine, TMAO, TMAO and betaine (1:4 ratio), and dimethylglycine. Our results reveal inhibitory effects of both solutes in high concentrations (<400 mM), but TMAO is a more effective inhibitor of unraveling than betaine. These data partially support our hypothesis. Researching how these stabilizing kosmotropes affect the skein unraveling will contribute to our understanding of how hagfish slime is stabilized in the slime glands and how it deploys in seawater.

8. **Evaluation of Potential Stabilization Buffers for Hagfish Mucous Vesicles**
   Presenter(s): Lindsay Zumwalt
   Advisor(s): Dr. Douglas Fudge

Hagfish are deep-sea dwelling creatures that, when provoked, produce an abundance of slime as a defense mechanism. Large amounts of slime are produced from a very small amount of exudate which is composed of skeins and mucous vesicles. We are studying the mechanism of the swelling and condensation of mucous vesicles. There is little knowledge on how the vesicles are stored in the gland and how they swell in seawater. Recently, it was found that the stabilization buffer (SB) being used to store mucous vesicles for experiments in the long term, 0.9M sodium citrate + 0.1M PIPES, alters the swelling properties of the vesicles in ways that make it difficult to infer the behavior of fresh vesicles. The goal of this experiment was to find a stabilization buffer that does not impact the behavior of the swelling of vesicles so that they can be stored for longer periods of time. Promising stabilization buffers, including 1M $MgSO_4$, 1M $MgSO_4$ + 0.1M PIPES, 1M $(NH_4)_2SO_4$, 0.5M sodium citrate, 1M Na_2SO_4, and 1M Na_3PO_4 were tested in a 14-day experiment. Fresh vesicles from filtered exudate were immersed in the different test solutions. Images of the vesicles were taken at day 0,1,7 and 14. Using Zeiss ZEN software, the average area of ~30 vesicles were measured for each time point and graphed. Nanopure water was passed through the vesicles at each time point to test their functionality by determining if they rupture or not. Our results show that 1M $MgSO_4$ and 1M $MgSO_4$+ 0.1M PIPES causes the vesicles to clump and change shape and

1M Na3PO4 causes a slight increase in size but inhibits vesicle rupturing when exposed to water. Interestingly, 1M Na2SO4 and 1M (NH4)2SO4 stabilized the vesicles size for 14 days while also causing vesicle rupturing in water but some clumping of vesicles was observed. Vesicles in 0.5M Sodium Citrate did not clump at all and burst when exposed to water, suggesting that it has the best potential to be the new stabilizing buffer for long-term storage of hagfish mucous vesicles.

9. **Possible Candidates for the Regulation of Serglycin in Lung Epithelial Cells Using Mass Spectrometry**
   Presenter(s): Sherin Nemanpour
   Advisor(s): Dr. Kenneth Sumida

Serglycin Proteoglycan is a core protein that is essential to the intracellular storage of compounds for secretion and general homeostasis of secretory granules. Its function is well known within immune cells such as macrophages and neutrophils, however, while known to be expressed, its purpose within epithelial-type cells is not well characterized but appears to be over-expressed in various epithelial cancer cell lines including lung cancer. The goal of this project was to better characterize the function of serglycin in lung-type epithelial cells. Mouse tracheal epithelial cells (MTEC) were isolated from wild-type and serglycin knock out mice and seeded in airway-liquid interface cultures were utilized to mimic the in vivo lung epithelial cell environment. Once differentiated, the cultures from both wildtype and knockout mice were treated with a pseudomonas bacterium, inducing the inflammatory processes of these cells. Secreted proteins were collected from these cultures and analyzed by mass spectrometry as a first inquiry into the role of serglycin in epithelial cell physiology. Our long-term goal is to use additional knowledge about the biochemistry of serglycin proteoglycan within mouse lung epithelial cells to identify potential therapeutic targets for lung cancers and other pulmonary pathologies.

10. **Activation of the NLRP3 Inflammasome by Oxidized Mitochondrial DNA During Apoptosis**
    Presenter(s): Rosita Saul
    Advisor(s): Dr. Melissa Rowland-Goldsmith, Arditi Laboratory

Interleukin-1β(IL-1β) is involved in both acute and chronic inflammatory diseases and determining the activation of this pathway can help resolve inflammatory diseases. It has been determined that mitochondria play a key role in the mechanism of activating the NLRP3 inflammasome through apoptotic signaling that leads to the production of IL-1β. Macrophages stimulated by different NLRP3 secondary signal activators have been used to determine which has the strongest stimulation and thereby the greatest IL-1β secretion. NLRP3 secondary activators such as ATP induced mitochondrial dysfunction and apoptosis, resulting in the release of oxidized mitochondrial DNA (mtDNA) into the cytosol, where it bound to and activated the NLRP3 inflammasome. The anti-apoptotic protein Bcl-2 inversely regulated mitochondrial dysfunction and NLRP3 inflammasome activation. Mitochondrial DNA directly induced NLRP3 inflammasome activation because macrophages lacking mtDNA had severely attenuated IL-1B production, yet still underwent apoptosis. Both binding of oxidized mtDNA to the NLRP3 inflammasome and IL-1b secretion could be competitively inhibited by the oxidized nucleoside 8-OH-dG. Thus, data reveals that oxidized mtDNA released during programmed cell death causes activation of the NLRP3 inflammasome. These results provide a missing link between apoptosis and inflammasome activation, via binding of cytosolic oxidized mtDNA to the NLRP3 inflammasome.

11. Can Peripheral Immunity of Healthy Animals Affect Social Behavior?

Presenter(s): Morgan Kindel
Advisor(s): Dr. Patricia Lopes

Although social interaction is, in many organisms, a necessary component for survival and reproduction, it also increases exposure to pathogens, and consequentially, the risk of infection. The direct role of molecules in the immune system in protecting against infections has been established. It is less clear, however, if these immune molecules also function as mediators against infection. Could these molecules also influence the degree of social interaction (sociability) an organism seeks? The present study investigates the relationship between immune function and sociability. A population of wild house mice (Mus domesticus) was studied, and a sociability index was determined, through use of social behavioral data, collected remotely. Mice with extremely low and high sociability phenotypes were identified, and blood, brain, hair, and other tissue samples of these mice were collected. Serum levels of three cytokines (TNF⬚, IL1⬚, and IFN⬚) were analyzed. Specifically, we were interested in the degree to which sociability phenotype and/or sex of the mice could be explained by serum cytokine levels. There were main effects of both sociability and sex on TNF⬚ levels. There were no main effects observed of sociability or sex on IL1⬚ or IFN⬚ serum levels. Results indicate that cytokines, once thought to only influence sociability during times of illness, may also be associated with sociability in healthy organisms. Our findings provide insight into the various ways that immunity may be connected to social behavior.

12. Are Mycosporine-like Amino Acids Molecules of Keystone Significance?

Presenter(s): Maya Collins, Joshua Goldfaden
Advisor(s): Dr. William Wright

The classic keystone species concept (Paine 1969) states that a keystone species is a relatively rare species with a very large impact on its ecosystem. In the past decade, the concept has been broadened to include specific molecules in specific ecological contexts, so-called molecules of keystone significance (MKS). The criteria defining a given molecule as an MKS were spelled out by Ferrer and Zimmer (2012): abundance (relative to common biomolecules) is low, molecule activity is observed at multiple trophic levels, and molecules may have different functions at different trophic levels. Mycosporine-like amino acids (MAAs) are a class of molecules that are biosynthesized by macroalgae along with protists and fungi. Experiments suggest that these MAAs absorb harmful UV rays in a variety of marine species (Eckes et. al. 2008). For example, MAAs are among the chemicals sequestered by the California sea hare, Aplysia californica, from its diet of red macroalgae. From this diet A. californica is able to deploy sequestered MAAs in its skin, consistent with the sunscreen hypothesis. Interestingly, MAAs are also found in the defensive secretions of sea hares, i.e., purple ink and white viscous opaline, raising the possibility that MAAs are also MKSs. We tested the hypothesis that MAAs are bona fide MKS by determining whether MAAs isolated from the opaline secretions via HPLC would deter feeding by a sea-hare predator, the blue-banded hermit crab Pagurus samuelis. Squid pellets were laced with small amounts (10% v/v) of the MAA samples, and fed to P. samuelis. However, the feeding assays failed to demonstrate feeding deterrence by isolated MAAs, contradicting our hypothesis. To test whether 10% might be too low to deter feeding, we performed experiments using pellets laced with quinine HCl as a positive control, across a range of concentrations. We found that at least 33% quinine was required to significantly deter feeding in P. samueli, suggesting that our isolated MAAs may have been too dilute to deter feeding. Future studies will test MAAs at higher concentration.

Communication Studies

13. Diving into the Depth of Note-taking
Presenter(s): Antonina Pavlenko, Vishnu Gettu, Sabina Friden
Advisor(s): Dr. Austin Lee

The current study examines the deeper understanding of content in a classroom, dependent on the note-taking strategy students use. A student's note-taking method has a big impact on how the student studies and their achievement in courses. In this study, we predict that without reviewing notes, students who takes notes by hand will have better factual learning outcomes than those who takes on their laptop or do not take notes at all. We also desire to understand which note taking strategy will enhance deeper understanding of the content. Prior studies have focused on advantages and disadvantages of taking notes on a laptop versus taking notes longhand. However, we desire to add in the condition of taking no notes at all, possibly allowing for more conceptual understanding in actively listening. To examine this, participants in the classroom will be randomly assigned into conditions and instructed to either take notes via laptop or by hand, or not take notes at all on a selected video. This is in preparation for an in-class quiz of the material, approximately 45 minutes after the video is shown. The quiz includes factual and conceptual questions allowing the examination of deeper understanding of the content. Students will also be instructed to complete a questionnaire about their note-taking habits. The findings will suggest which note taking strategy allows for deeper understanding of content.

14. Relationship Between Stress, Meditation, and Emotional Intelligence in College Students
Presenter(s): Erika Fernandes, Sarah O'Connor, Samuel Kigyos
Advisor(s): Dr. Austin Lee

For senior seminar class in Strategic and Corporate Communication, our group has decided to study stress, meditation, and emotional intelligence. As college students, we have seen firsthand the impact of stress on students' mood and overall demeanor, especially during midterms and finals week. Many students do not know how to cope with this stress, which can lead to unhealthy coping mechanisms and can be detrimental to a students mental health. We are curious to look at a sample of Chapman University students and analyze if a single session of meditation can decrease stress levels and increase emotional intelligence. The overall purpose of this research project is to inquire if meditation has any impact on college student's mental health and emotional intelligence, and to hopefully leave a long-term impact by providing students with a healthy way to cope with overwhelming schoolwork. Our hypothesis is that an increase in meditation in college students at Chapman University will lead to reduced stress and increased emotional intelligence. The researchers will be gathering information on students stress level and emotional intelligence through a pre and post test. The actual experiment will be a guided meditation session which will take place the week of November 26-30th for one hour.

15. The Key Elements of Organizational Capacity for Cyberinfrastructure Projects

Presenter(s): AnnMarie Maciel, Emilie Allen, Emilee Mast-Monnig, Adrienne Courey, Madison Conrad

Advisor(s): Dr. Kerk Kee

It is critical to develop a comprehensive assessment tool to quantitatively measure organizational capacity in cyberinfrastructure projects, because with a baseline measurement, projects can identify growth opportunities to strengthen their ability to carry out their mission. However, to achieve that goal, the key elements of organizational capacity needs to be identified. Therefore, we pose the research question, "What are the key elements of organizational capacity for cyberinfrastucture projects?" In order to answer this research question, we analyzed 20 interviews with individuals/experts who have extensive experience in the cyberinfrastructure field to understand the dimensions and capacities of cyberinfrastructure projects. Analysis resulted in 5 common themes of funding, collaboration, relationships, resources and security as the overarching ideas that define projects' capacity. These 5 interdependent elements are critical for the success and growth of cyberinfrastructure organizations in general.

16. How Social Norms and Cultural Values Drive People to Adopt and Use Cyber Infrastructure

Presenter(s): Natalie Shanaa, Leora Kalili, James Wu, Morgan Venn, Chai Burley

Advisor(s): Dr. Kerk Kee

People are always computing, they use cyber infrastructure for research that supports advanced acquisition, storage, management, data integration, and many more. Cyber infrastructure is what makes a technologically advanced organization successful. In order to have a successful company focusing on cyber infrastructure you need to target certain aspect including; material objects, data sharing, funding and resources, policies, and data and center space. But, how do social norms and cultural values drive people to adopt and use cyber infrastructure? This project looks at how norms and values influence people's attitudes and actions towards cyber infrastructure. One can see people using such tool for capacity building purposes in order to help prosper their organization. Our hypothesis is that because people are striving for science to be more open, cyber infrastructure technology allows people to work collaboratively while still improving technology. The idea of cyber infrastructure refers to the idea where the people are doing computing and it's real computing, and there are in fact more resources available for the asking. Therefore, through our research, we will analyze how both social norms and cultural values not only influences an organization but projects one towards cyber infrastructure and why it's vital for an organizations longitudinal success.

17. Lesser Known Key Components of Cyberinfrastructure

Presenter(s): Taylor Collins, Kate Peters, Ashley Jensen, Luke Bradbury

Advisor(s): Dr. Kerk Kee

Cyberinfrastructure (CI) is an emerging and complex innovation for processing big data for important insights. This innovation has received continuous federal investments for more than a decade to build a national CI for science and engineering research in the US. In order to better promote the effective adoption and meaningful implementation of CI, the innovation itself needs to be fully defined. This research started with defining CI as multi-dimensional, involving a range of material objects, behavioral practices, and philosophical ideologies. However, the interview data gathered revealed that additional dimensions are at play. In order to determine these additional dimensions, the purpose of this poster is

to answer the research question, "What are key dimensions of cyberinfrastructure (CI) besides the objects, practices, and ideologies that make up the CI innovation"? Based on an analysis of 20 interviews with CI experts/professionals, additional dimensions will be reported.

18. The Key Behavioral Practices that Define Cyberinfrastructure
Presenter(s): Amber Ingram, Abbey Francis, Jack McKeon, Chase Vombaur, Alyssa Karpas
Advisor(s): Dr. Kerk Kee

Behavioral practices allow the technologies and objects within cyberinfrastructure to work at their greatest capacity. In this project, three dimensions are conceptualized to define cyberinfrastructure: material objects (networks, computing resources, etc.), behavioral practices (how the research is carried out), and ideologies (values and norms driving the research). Behavioral practices are an instrumental dimension of cyberinfrastructure projects because they enable the material objects to 'come to life'. To further examine how this enabling dimension operates, we pose the research question, "How do behavioral practices define cyberinfrastructure?" In order to answer this research question, we analyzed 20 interviews with individuals/experts who have extensive experience in the cyberinfrastructure field to understand the key behavioral practices in cyberinfrastructure projects. Our analysis shows that there are five components of behavioral practices in cyberinfrastructure: data sharing and networking, central computing, user support, actual practitioner workflow, and resources. We found that behavioral practices are more influential than ideologies alone because actions yields greater impact than thoughts alone.

Computational Science

19. Trendify
Presenter(s): Ananya Vittal, Kathleen Gendotti
Advisor(s): Dr. Michael Fahy

The purpose of our project, Trendify, is to provide an analysis of users' listening trends on Spotify, a popular social media site. Spotify is a digital music service that gives users access to millions of songs. Some features of our project include looking at what types of genres, artists, and playlists people listen to and their demographics. In order to retrieve this information, our project will utilize Spotipy, a lightweight Python library for the Spotify Web API. By using the Spotify API, we have the ability to access all of the music data provided by the Spotify platform. This project also implements an authenticated Spotify client. An authorization token indicates that the user has granted permission for an application to perform a given task. In addition, we will work on incorporating the Facebook API into this project. By doing so, we could track if there are concerts or other events available for a specific artist based on the user's location and music preferences. This project will utilize a simple command line interface, which allows users to easily execute the program.

20. TCP Server and Client: Bookstore Enquiry
Presenter(s): Fawaz Bukhowa
Advisor(s): Dr. Michael Fahy

An application called "Bookstore Enquiry", and it is implemented in Java using TCP client-server program. It contains two programs; one program is called "Server" and another one is called "Client". In this application, the 'server' maintains information about books and for each book it stores information like 'BookId', 'BookName', 'BookEdition', 'AvailableStock', 'UnitPrice', 'Discount'. This application works in such

a way that, the server runs indefinitely and waits for client requests. The Client will accept the BookId & BookName from console and send it to server. If the server finds any books that matches with sent details, then it shows "BOOK FOUND" message to the client. If there is no any such book, the server sends 'ERROR' message to client and then prints that message and quits. In the case of having "BOOK FOUND", the client again prompts the user with what kind of book information is required, like Book Edition and Stack available. When entering the choice, the client sends the choice to server and server sends the corresponding information to the client which will be printed by the client. TCP is used as the transport layer protocol, since it provides reliable delivery which is critical for the given application. TCP does not provide timing guarantee, which is not very important in the given scenario. The server is implemented as a singleton class. The main thread opens a server socket on the local inet address and port 25000, which has been arbitrarily chosen and hard coded. It then waits for clients to connect to it. The Client is also implemented as a singleton class. The main thread opens the socket and connects to the server. The main thread takes care of input and output messaged by opening input buffered reader and output buffered writer respectively. It also creates a buffered stream to read from the console. Current design does not encrypt the text strings and also there is no graphical user interface.

Computer Science

21. Chat Room
  Presenter(s): Colton Gering, Charlie Raymond
  Advisor(s): Dr. Michael Fahy

The purpose of this project is to create a multi-user chat room for users to interact with each other. The application will allow for users to create an account and have choice of linking their Spotify account. The program will use the accounts for a login system. The application will validate the username and password, then send the user to the chat room if the account is in the system. Users will be able to correspond with each other publicly in an all chat, as well as in various chat rooms, and individually. The application will allow users to check out each others profiles, and add each other as friends. The app will allow for rooms to be private, in which case they require an invitation to join. Users will be able to upload images, videos, and other media such as previews of Spotify songs to the chat room. The user accounts will also have a list of their top Spotify songs, most shared songs, most shared songs, and favorite artists. There will be a feature to add songs from the app to your linked Spotify account. We expect this application to function as a portal that enables users to connect with each other and to easily discover and share new music.

22. Twitter API
  Presenter(s): David Hernandez
  Advisor(s): Dr. Michael Fahy

Millions of people use the Twitter application everyday and create new data that is stored within their massive database. The Twitter API allows an authorized user to access their database and control the data. This begs the question, "What information can I conclude by analyzing the data extracted from the database?" This project will focus on a list of algorithms that take the data and return an educated guess. The final outcome will be dependent on which algorithm the user selected and the input they decided on. The list will consist of a sentiment analysis that can determine the outcome of a sports game, a topic that is trending, and location finder that will implement the Google maps API. There will be a server that operates independently and allow access from a client. The server will perform all the calculations needed to return information that the connected client is requesting. The client will have a user interface that

prompts the user for the action they want to take. This application will allow users to receive quick information about a topic of interest, what is trending in the world or the server will be able to determine the general location of a tweet.

23. <u>Yelp Interface and Analytics</u>

Presenter(s): Jayson Marshall, Eric Vela, Samir Kamnani, Sabrina Toubbeh
Advisor(s): Dr. Michael Fahy

Yelp is an application that is publicly-sourced so that users can create/find reviews, recommendations, and vast amounts of other information about services in their area. These services mostly include local restaurants and bars, however they may also be other types of businesses given a location and a search radius. The Yelp Fusion API (Application Programming Interface) gives developers free, public access to the great depth and breadth of data that Yelp collects. Developers can both incorporate Yelp's features into their own applications as well as run various analytics to evaluate the millions of businesses that are currently on Yelp. The purpose of this project is to use the Fusion API in conjunction with the Python programming language to create a terminal application that will display desired information about business' to users. This includes business locations, phone numbers, hours, menus, and reviews. Moreover, the application will allow the user to enter these data to find a service that matches their specifications. For example, the user may enter a phone number, and the business that matches that number will be displayed. Often times, Yelp ratings (0-5 stars) for services can be misleading for many different reasons (small sample size, bitter customers, etc.). Because of this, this application will use text mining analytics to inform the user on how people are actually talking about the service over the time they have been on Yelp. Ultimately the application will be converted from being entirely terminal based, to running on the web (html) with an improved interface.

24. <u>Chatty Patty</u>

Presenter(s): Ryan Lindner, Antoine Canaan
Advisor(s): Dr. Michael Fahy

As voice interfaces and virtual assistants have moved out of the industry research labs and into the pockets, desktops and living rooms of the general public, a demand for a new kind of user experience is emerging. A chatbot allows a user to simply ask questions in the same manner that they would address a human. They are currently being adopted at a high rate on computer chat platforms. We plan to research a network chatbot using a multi-threaded chat room using TCP network connection in Java, with the chatbot assuming the persona of Chatty Patty (everyone's favorite grandmother). Our scholarly context is developing our understanding of TCP network connections in a multithreaded chat system, while integrating our own interpretation of a chatbot. The purpose of this project is to demonstrate how new applications can be integrated with network features to create a multi-user application. We aim to implement this program fully, with limited functionality behind the chatbot's responses. Thus, the user ought to be able to join the chatroom and chat with all other users, including responses from our chatbot and its response-pool. We acknowledge that Patty will not be able to respond to every message, as we will only be able to program so many responses, but we expect to see a healthy environment of both user chat and Patty's responses.

25. Indeed We Can: Filtering The Application Processes With Indeed.com
  Presenter(s): Zach Granoff, Megan Yu, Matt Greenberg
  Advisor(s): Dr. Michael Fahy

The problem we are trying to solve aims to serve businesses that post job listings on Indeed.com. Currently, employers can search resumes within the Indeed database for specific criteria such as job titles, skills, and previous companies. Our team wants to take this a step further in easing the process for employers by allowing them to search within the applicant pool for their specific job listing and filter through resumes from there. We will create an application that prompts employers to enter specific criteria regarding each job application, and returning the list of applicants that fulfill the search term. Employers provide half the business for indeed.com, however most people see it solely as a customer platform, with users having used it for job-hunting at some point. By providing this app to employers, we hope to increase efficiency and ease of sifting through specified applicants, especially for popular job listings that generate thousands of applicants.

English

26. Yellow Fever: Asian Representation in Pornography
  Presenter(s): Shaun Chin
  Advisor(s): Dr. Ian Barnard

This research project seeks to explore the various implications porn films make on Asians Orientalism. Generally, Asians in pornography are composed of multiple negative archetypes, all based off the underlining purpose of servitude. Characters are portrayed through stereotypes including the use of colonial language to misrepresent Asian men and women in both straight and gay porn videos. Referred to as Orientalism, this ideology exploits Asian characters to privilege the White, male viewer. My research project investigates the following question: How are Asians represented in gay and straight pornographic films and pornographic scenes? I will be applying scholarly arguments to various Asian porn scenes. Scholars like Richard Fung and Linda Williams establish the foundation of my arguments, putting rhetorical theories into context. While pornographic sources will capitalize on how these theories are present or absent in contemporary channels. Through my research, I have found that Asian male performers aren't as present in pornographic scenes compared to their female counterparts. Nevertheless, due to the convenience of the internet, Asian male pornographers now have the agency to become visible. Sites like Asian Schlong and Banana Fever construct a space for Asian-male-White-female scenes. However, they still reinforce misogynistic elements to cater to the male gaze. The internet has created a gateway for Asian pornographic performers for self-representation. However, it has also allowed racist and misogynistic rhetoric to appear unchecked on various free-tube sites. Link-O-Rama relies on White-heteronormative language to market racism. Free-tube sites like Pornhub or Xvideos also allow uploaders to name videos with no restraints on degrading or prejudiced titles. Some contemporary pornography has allowed Asians to break away from traditional stereotypes. However, there are still many changes that need to be made in order to reflect diverse representations of Asian identities.

27. The Publishing Industry: An Introduction

Presenter(s): Audrey Woodsum

Advisor(s): Dr. Jamie Larkin

This project will comprise the fundamental aspects of publishing as a pivotal creative industry in the United States. It will be formatted as an informational poster and an interactive, self-published, 16-page book, through Nook Press. It will cover an overview of the industry as a whole, the four major firms, the financial impact in terms of the broader economy of the U.S., the process and different of publishing, and the future of publishing as we know it. The book will use the publication of the said book as an example to illustrate how the publication process works and how it affects other creative and cultural industries on a larger scale. The publishing industry is a massive part of what makes the United State's creative culture rich and diverse, giving a platform to different voices to share their stories. While many argue that the publishing industry is a dying industry, it is merely changing. This research project will dig deeper into the future of publishing, in relation to ebooks, audiobooks, and online platforms. It will also focus on the revival of independent bookstores as readers turn away from larger bookstore brands, such as Barnes & Noble or Borders. The goal of this project is to create a digestible way for people with little involvement or understanding of the publishing industry to comprehend what it means to have a thriving publishing community in the United States and why it is essential within creative and cultural industries.

28. Thoughts and Prayers

Presenter(s): Chloe Kardasopoulos

Advisor(s): Dr. Jan Osborn, Dr. Lynda Hall

Examining the symbolic Gun against its tangible counterpart illuminates abstract attachments of power and superiority this nation associates with the weapon. These elements loaded in the Gun transform the weapon into an object representative of American identity. Analyzing ideological commitments within the Gun guides a critical response to examine disproportionately increasing national gun violence against stagnant federal gun control. The ongoing gun debate must be analyzed in its entirety, beginning at its source - the Second Amendment. Scholars such as Gary Wills dissect the Second Amendment to extract its contextualized intent from modern writers' manipulated interpretations. It is not the Amendment but the ideological weight it carries that sustains private gun ownership in the United States. Untouched by the gun debate is a close reading of both American literature and political rhetoric to pinpoint the multifaceted attributes of the symbolic Gun as a means of extracting and diluting hegemonic principles defining America. Three American short stories deliberately include the Gun as representative of individual power. Across eight Presidential national eulogies after mass shootings, the Gun identified in literature escapes the eulogy; however the Gun's symbolic attribute - societal power - is vocalized. Articulation, a specific ideological critical approach, structures texts for the purpose of breaking them down into elements; if these elements cluster around specific themes, the texts might establish or contribute to an ideology. Both American literature and politics work in creating a shared narrative about the Gun that shape self identities and a national ideology of power simultaneously. American exceptionalism as an ideology stamps the individual through literary narrative and cements its withstanding weight through legislation.

29. The Basque Identity: The Inherent Need to Survive

Presenter(s): Christina Iriart
Advisor(s): Dr. Jan Osborn, Dr. Lynda Hall

Although Basques make up a marginal amount of the population, the Basque culture remains prominent in Southern California. Basques who immigrated and started families in California maintain their Basque identity, so much so that younger generations of Basques share a sense of ethnic pride like their ancestors did. Despite persecution by Francisco Franco and Adolf Hitler, Basques in the past continued traditions and brought their identity to America where it has flourished – but, how? Considering the historical victimization and then mass immigration, the Basque identity should have ceased to exist decades ago. However, as the years pass, Basques continue to celebrate their identity within Basque communities where they honor their heritage. The Basque culture, though small, is somehow growing. To find the answer to a thriving Basque identity, I will use academic resources that explore phenomenology, the attempt to answer questions through described, personal experiences, and Edward Shils's work on the theory of primordialism to highlight the inherent attachment and loyalty Basques feel to one another. I will also conduct interviews with Basques spanning several generations to study their opinions and personal experiences. With scholarly research and the firsthand experiences of Basques in the modern day, I will work to prove that the primordial and exclusive instinct shared between Basques is the reason that the Basque identity thrives today.

30. The Wild Palms: Abortion in Early Twentieth Century American Fiction

Presenter(s): Clarissa Vokt
Advisor(s): Dr. Joanna Levin

In my English Literature Senior Thesis, I compare three literary texts from the early Twentieth Century that feature the topic of abortion: The Wild Palms (1939) by William Faulkner, "Hills Like White Elephants" (1927) by Ernest Hemingway, and Bad Girl (1928) by Viña Delmar. The three texts I am looking at feature young, liberated women in the 1920s and 1930s who engage in premarital sex that results in an unwanted pregnancy. The women are left with a choice: either keep the child or have an abortion. I am focusing on abortion and its presence in early Twentieth Century American literature because even in a post-Roe vs. Wade society, abortion is still a controversial topic commonly debated in contemporary political rhetoric. The mention of abortion in American fiction post-World War I, a time when abortion was still criminalized, challenges the status quo of how women were expected to act in society. Analyzing these texts through a historical and feminist lens reveals how literature can both reflect and shape culture. By comparing the topic of abortion in the past to present-day discourse on abortion in America, this paper reveals how not pro-choice abortion rhetoric is meant to deny women the sovereignty to make choices about their own bodies.

31. Hawaiian Culture and Hybridity in Davenport's Shark Dialogues

Presenter(s): Savanah Janssen
Advisor(s): Dr. Justine Van Meter, Dr. Lynda Hall

Hawaiian culture offers a fascinating landscape for postcolonial theory. Due to a history of immigration--from the Polynesians who first inhabited the islands, to the European missionaries, and then the plantation workers from Japan, China, the Philippines, and Portugal--the culture of Hawaii formed as a union of diverse elements ultimately creating a hybrid, varied whole. Kiana Davenport's Shark Dialogues reveals this complex hybridity--her 1995 novel tracing Hawaiian culture and history from pre-colonial to postcolonial times through the epic fiction of one family's genealogy. Using theory from Salman Rushdie and Homi Bhabha, Shark Dialogues reveals Hawaiian culture as interpolative and hybrid, through its form,

themes, and characters. Davenport's novel thus acts a version of Bhabha's rhetorical "Third Space," or a means of expressing fluid, hybrid identity. As Bhabha says in an interview with Jonathan Rutherford entitled "The Third Space," "The process of cultural hybridity gives rise to something different, something new and unrecognizable, a new area of negotiation of meaning and representation" (Bhabha 211). Such is the method of Shark Dialogues; a text that manages to represent and follow Hawaiian culture, from its mythic, traditional past, to its new, disseminated (racially, socially, and economically) version of modernity.

32. Film Music as Adaptive Glue: A Study of the Score of Joe Wright's 2005 Pride and Prejudice

Presenter(s): Ann Mullee
Advisor(s): Dr. Lynda Hall

Like Jane Austen adaptations have become a genre of film, the score in Austen adaptations has become a genre of film music. Taking on classical elements, the score in moments both diegetic and non-diegetic help establish the Regency setting and folky tone. This score particularly, however, blends classical music aesthetics and modern music aesthetics in a way that functions as more than just an aid to the visual storytelling and dialogue, but actual as the emotional dispositions of characters, cueing key perceptions of plot. Where Austen relied on direct and indirect reporting to characterize in the novel, the score functions as emotional exposition in the film, undercutting the need for added dialogue which could seem contrived, or voiceovers, which, to a modern audience can seem clunky or disrupt suspension of disbelief. Mixing three different disciplines, film, music, and literature, this paper chronologically explores how score functions in critical moments of the film. Research included a base knowledge in film music and literary theory, but also a theoretical analysis of the sheet music, commingling three source materials: the music, the film, and the novel. Dario Marianelli's new approach to this established genre of score is arguably the direction film score for period dramas and adaptations of classical literature will need to continue exploring if they are to continue evolving with modern audiences.

33. Gender Revealed: The Heroism of Subversion in RuPaul's Drag Race

Presenter(s): Candace Murga
Advisor(s): Dr. Lynda Hall, Dr. Myron Yeager

I will be examining portrayals of gender and heroism in RuPaul's Drag Race. On this competition-style show, a group of drag queens compete in a series of challenges to win the title of "America's Next Drag Superstar," utilizing primarily Judith Butler's gender theory and Bakhtin's concept of the carnivalesque as my theoretical bases. With drag icon RuPaul as its inspiration and host, RuPaul's Drag Race provides a platform for drag queens across America to share their stories and have a voice in a society that has, historically, pushed them to the fringes. I will examine the television show through the lens of Judith Butler's concept of gender performativity and drag as a parodic subversion of normative gender, which reveals that there is, ultimately, no tangible basis of gender; it is, instead, a concept created through repeated acts of gender performativity, and drag reveals this baselessness through intentional parodic gender performance. I will then argue that the gender subversion that takes place on RuPaul's Drag Race is a heroic act, measuring this heroism by both historical and societal concepts of heroism, asserting that the show's importance lies in the platform it gives to queer performers to be heroes for queer individuals. Through this examination, I argue that RuPaul's Drag Race is a platform for queer individuals whose radical, subversive gender performance in the form of drag is itself a heroic act. Through this heroism, queer identities are validated and normalized within the mainstream, representing the expansion of LGBTQ+ acceptance in the heteronormative American culture.

34. Listening to the Current Mockingbirds of the United States: An Ethical Examination of To Kill A Mockingbird and America's Enduring Cultural Legacies of Racial Injustice

Presenter(s): Rebecca Maehara
Advisor(s): Dr. Lynda Hall

Fifty-eight years later after it was written, Harper Lee's To Kill A Mockingbird retains a cultural status as an important and celebratory account of racial equality, especially through its depiction of Atticus Finch and his choice to defend Robinson, a wrongly convicted Black man, against a white, misguided criminal justice system. However, amidst the enduring legacies of slavery, Jim Crow America, and contemporary racial injustice (e.g. mass incarceration rates, the prison industrial complex, and school-to-prison pipeline), Atticus Finch's conceptualization of the law and the code continues to be an enduring question in the project of racial injustice. As ethics shows us how to live better with others in the world, this project demythologizes To Kill A Mockingbird by examining the ethical frameworks utilized by Atticus and Maycomb County's residents vis-à-vis Robinson's trial. The novel depicts the interaction and clash of varying ethical frameworks operating in Maycomb County and, by extension, the United States, regarding race relations. Atticus's hopefulness of the legal system, along with his virtue and care ethics in defending Robison, ideologically clashes with the all-white jury's belief in retributive justice, singularly teleological ethics, and maintenance of social order and control, resulting in a guilty verdict for Robinson. When her work is examined under such frameworks, such as John Rawls's conceptualization of social contract theory and John Stuart Mill's utilitarianism, Lee suggests that while the law is imperative for social progress, so too are changing social codes, cultivating a sense of moral responsibility and call for social progress to treat others with equality and with dignity. Thus, the application of ethical frameworks onto the novel will help readers to reexamine American history and cultural memory regarding racial and class delineations and construct a national narrative more attune to listening to the current mockingbirds of the United States.

35. Preserving a Culture of Power through Gender Performance in Junot Diaz's Drown

Presenter(s): Karen Cruz
Advisor(s): Dr. Lynda Hall, Morgan Read-Davidson

In the text, Gender Trouble, Butler interrogates the preconceived notions of "sex" and "gender" suggesting that humans, as symbolic beings, are physically and mentally compelled to conform to the socially constructed roles of 'male' and 'female.' Butler argues that the roles of 'male' and 'female' are not natural, rather they are created to benefit patriarchal societies. Junot Diaz's short story collection, Drown, exposes the cultural mechanisms of power that preserve masculinity and patriarchal dominance in Dominican communities. Using Judith Butler's notion of gender performance as a lens, my thesis examines the social construction of gender in communities as expressed in Diaz's work, where women are expected to be submissive and domestic, in opposition to male expectations of masculinity that according to Riofrio, "has long been dominated by the notion of machismo, a manliness that overpowers and in fact seems to spill over an excess of masculinity." Specifically, the exploration of Drown will focus on how sexually confused Yunior, drug addicted/homeless Aurora, and facially deformed Ysrael are influenced and affected by their counterparts--masculine, heteronormative, able bodied males. Drown, in a sense, represents the lived realities of both Diaz and Butler, both perpetrators of this cycle of oppression despite their feminist credentials, ultimately confirming that society's influence, its construction of gender roles and embodiment, is so great that it is nearly inescapable.

Environmental Science and Policy

36. Striding with Othello: Bridging Shakespeare to a New Generation of Learners
Presenter(s): Emmery Llewellyn
Advisor(s): Dr. Samantha Dressel, Dr. Noah Golden, Dr. Kyle Grady

In light of how the English Language Arts (ELA) standards embeds the Western canon in secondary school curriculum, Shakespeare's work represents the failure of public school educators to make connections with an increasingly multicultural generation of students. As a way to bridge the required reading of Shakespeare with the lived realities of diverse students, ELA teachers must carefully plan meaningful units on a Shakespearean text that integrates current discourses, harnesses relevant tools and literacy practices, as well as stimulates authentic, student-led discussions. Shakespeare's tragedy, Othello, allows for such a classroom experience. The theme of "otherness" in the play, expressed through clear racial prejudices, serves as a point of connection between an old text written by a legendary white, male playwright with present-day media. In a detailed unit plan, I demonstrate the relationship between text and pedagogy. This intersection exposes the ways in which teaching Othello allows high school students to question dominant representations, to engage in deep rhetorical analysis, to challenge established norms through critical media production, and to make personal connections with traditionally dominant texts. Overall, this method reframes the Western literary canon in a way that appreciates Shakespeare in a high school classroom without the playwright existing as the only, lasting voice.

FFC

37. US Perspective On Global Warming And Climate Change
Presenter(s): Eriq Vargas
Advisor(s): Dr. Ann Gordon

The Earth is impacted negatively due to the effects of global warming. In this paper, I analyze national survey data, from the Chapman University Survey of American Fears, to assess what causes public fear of climate change. I found that age is an important factor in level of fear of climate change. I also examined whether if a person is more likely to fear climate change if they are part of a specific political party or ideology, and if one's own fear of not having enough money in the future correlates to having a fear of global warming and climate change. Among my findings done for this paper, the preliminary quantitative research shows that people between the ages of 18-49 worry more about climate change than people who are 50 or older. This research will show that climate change is very real, and the fear of it is rampant and growing in our population, hopefully triggering a response for reform.

38. Greek Mythology's Impact on Sports Team Names
Presenter(s): Casey Altobell
Advisor(s): Dr. Eileen Jankowski

Greek mythology has had a significant influence on our world today and is used as a root for many things, including many soccer and football team names, especially in professional play. Across the globe, we can see everywhere that the ancient Greek culture has made an influence. In the United States, the Tennessee Titans are a prime example of this impact. The Titans are used in Greek Mythology to be powerful deities that came before the traditional gods of Olympus and were written to represent the creation of the world,

giving each Titan a relationship to natural elements, such as the earth and the sky. Nashville, Tennessee is considered by many to be the "Athens of the South", which may have influenced the name change from the Tennessee Oilers to the Titans. If we look about 800 miles north, in the Canadian Football League, we can see another case of ancient Greek influence on team names in the Toronto Argonauts. The Argonauts, in the case of the Greeks, was the name given to Jason and his crew in their quest to find the Golden Fleece, which was a symbol of authority. Originally the name of a Toronto Rowing Club, the Argonauts transformed into a football team in 1873 with Jason as their mascot for the past 145 years. In Europe, the impact of ancient Greek culture shows even more prominently. There are several European soccer clubs that have names of Greek derivation, including Ajax FC in the Netherlands. In Greek mythology, Ajax was a mighty and dominant warrior that played a huge part in Homer's Iliad and the Trojan War. Each of these mythological figures is considerably powerful and are suitable names for sports teams because of their excellence.

39. Rising and Setting: A Comparison of Sun Deities
Presenter(s): Ethan Lee
Advisor(s): Dr. Eileen Jankowski

Each day it rises and sets, making the journey without fail through the sky. The sun has always been a part of human history and has played a key role in shaping many religions. While Greek mythology and Shinto religion have differing representations of the sun, both respect and raise-up the sun as one their most important gods. Both Amaterasu and Apollo are major deities in their respective pantheons and each represents more than just the sun. Apollo represents a masculine sun. The glory of light and the shining divinity. He is the patron of archery, athletic competition, and music. Amaterasu, on the other hand, is patron to the feminine energy of the sun. She reigns over the life-giving energy and light that the sun provides. Even though the two gods represent different sides of the divine sun, both have tragedy woven into their stories. While the specific nature of their tragedies differ, they reflect the cultural constructs that produced these deities. In this project I will be exploring and analyzing the stories of these two gods and role that they play in each society.

40. Sun Wukong
Presenter(s): Hunter Peeff
Advisor(s): Dr. Eileen Jankowski

In Chinese religions there are thousands of deities, gods, and immortal heroes that are glorified throughout art and culture. Some of the most popular figures originated during the Han Dynasty (206 B.C.to 220 A.D.). During their rule China was home to many mythological traditions, which include their predecessors, the Huaxia, as well as Tibetan mythology, Turkic mythology, Korean mythology, and Indian mythology. Due to the mass amount of myth circulating in China at the time, stories became fused with others, combining characters and blurring events in stories. Perhaps the most famous of the (multi-myths) is the story of Sun Wukong. Sun Wukong was a monkey born of stone that acquired supernatural powers by Taoist practices. He performs many great acts of valor and strength in order to prove his worthiness to his people and the gods. His characters popularity comes from the numerous abilities and powers he is able to call upon during his travels. After learning that Heaven mocked him by giving him the title of Protector of the Horses, Sun Wukong rebels against them, resulting in his imprisonment under the mountain by the Buddha for the next five hundred years. Sun Wukong immortalized figure in Chinese religion is most similarly compared to Hercules in ancient greek mythology through their hero's journey in order to establish their reputation and character. Both of these mythological superheroes

started training under the very best teachers of their respected lands at a very early age. Theirs lives progress with trials and tribulations that shape their character and determine their ultimate destinies. Famously, their stories coincide when they are required to complete a certain number of labors for righteous goals. Both Hercules and Sun Wukong are forced to serve under someone inferior in power to them in order to teach them humility and forgive them of their pasts misdeeds. This dynamic between Hercules of Greek mythology and Sun Wukong of Chinese mythology is best exemplified by their progress through the hero's journey and becoming immortalized hero's in myth.

41. Vampires: Breathing Life into the Undead "Monsters" of Mythology
Presenter(s): Lauren Sieberg
Advisor(s): Dr. Eileen Jankowski

What has made bloodsucking, immortal creatures so captivating in innumerable myths from across the world? In what ways do certain undead "monsters" vary from culture to culture? Lastly but perhaps most importantly, what can vampires in fiction—both recent and ancient—teach us about what makes a monster and what makes a man? Through the careful analysis of numerous vampire myths from different time periods, locations, and cultures, I aim to delve into the significance of vampires in fiction and explore how people have perceived such distinctive creatures throughout history. This search for the first notable, obvious vampire myths dates all the way back to Ancient Greece. In multiple cases, people from all cultures and time periods often developed their vampires with etiology in mind. Vampire myths were frequently used to explain what the most recent scientific breakthroughs could not, such as the early tuberculosis outbreaks in 19th century New England. On the other hand, multiple vampire tales have been regarded as myths told to dissuade the public from participating in "shameful," often sexual acts, presented as a means of encouraging purity in all aspects of life. In more recent years, vampires in works like Twilight and Carmilla (the web series, not to be confused with the 1872 novella by Joseph Sheridan Le Fanu) have often retained their ancient ties to sexuality and romance. However, they have also begun to develop into much more complex, three-dimensional characters rather than adhering to their more traditionally evil archetypes with each passing decade. By dissecting how views on immortality, power, sexuality, and even vegetarianism have developed over time within these stories, we can further understand how vampires have lacked or gained their own degree of humanity throughout fiction.

42. Celtic and Greek Mythology: Revealing Parallels Between King Gods and Overarching Beliefs
Presenter(s): Lucy Guyer
Advisor(s): Dr. Eileen Jankowski

Celtic polytheism, or paganism, was widely practiced between 500 BCE and 500 CE across the six Western European nations of Brittany, Cornwall, Wales, Scotland, Ireland, and the Isle of Man, a territory collectively referred to as the "Celtic fringe." The Dagda reoccurs in Celtic mythology as the god of wisdom, druidism, and the otherworld. The Dagda is typically seen as cognate with Zeus, in that they are similarly revered as the king gods and fathers of their tribes. He is commonly seen with a cauldron that ensures eternal abundance in the otherworld, a club that both kills the living and revives the dead, and a harp that is able to play three kinds of music: the sorrow-strain, the laugh-strain, and the sleep-strain. Celtic deities present themselves to be just as fallible, unpredictable, and subject to human vices as Greek gods, but unlike Zeus, the Dagda is portrayed as a comical figure who dresses inappropriately and is easily distracted. He mates with Morrigan, the goddess of nature and war, which ensures victory and security for his people and produces his children, Ogma and Brigit. The Celts believed that the indestructible

human soul determined, by its actions, how it would be reincarnated into human, animal, or even plant form. Thus, the otherworld was seen as a positive concept, where a constant resurrection of souls took place until one reached Nirvana, the state of supreme bliss that liberated the soul from the repeating cycle of death and rebirth. Through my research, I aim to compare and contrast the faces of Greek and Celtic mythology and the religious ideologies these two deities represent.

43. Japanese Mythology: The Kitsune's Influence on Eastern Culture and Society
Presenter(s): Nicole Spray
Advisor(s): Dr. Eileen Jankowski

The Japanese fox, also known as the kitsune, plays a significant role within the culture and mythology of Japan. The mythology of the kitsune developed from the close relationship that foxes and humans had in Ancient Japan. By shapeshifting into many different forms, the kitsune symbolize important mythical status as powerful possessors of strong intelligence and good fortune. They are said to be a spirit-based entity with paranormal powers that can take over human forms and human abilities. The supernatural significance of the kitsune is heightened by its association with Inari, the Shinto spirit. They serve Inari as good omens that possess the power to ward off evil, serve as his guardian spirits, and aid against evil energy. The kitsune represent the ethical values and morals of Japanese society, while also embodying the difficulties and harsh realities faced through an Eastern society. The kitsune's power of benevolence or malevolence depends on an individual's choices, which influences the behaviors and decisions of many Japanese citizens today. They are seen to reward the honest, kindhearted, and pious, and manipulate the evil, envious, and violent. This thesis will explore the mythological influence that the kitsune have on the moral compass of Japanese citizens.

44. God of Mischief: Loki
Presenter(s): Tori Blas
Advisor(s): Dr. Eileen Jankowski

Loki is commonly recognized as one of the many characters inhabiting the cinematic universe of Marvel. There, he is the son of Odin, brother of Thor, and the god of mischief. In the original context of Norse mythology, all but one of those descriptors are incorrect. Besides being an antagonist that often opposes Thor in the Marvel franchise, he has significance in Norse mythology from being the only god living in Asgard despite descending from giants of Jotunheim to his role in the end of Asgard and the Aesir, better known as Ragnarok. He is seen as a god despite not embodying any traits valued by the Norse people and not being worshipped as one either. Being the god of mischief, Loki also regularly deceives others either through illusions and shapeshifting or his cunning nature and schemes. Why have this god at all? Loki often betrays and tricks the gods for fun or for his own self gain, but he will also help them although it is usually when the situation aligns with his desires or when he sees no other option. In this research, Loki will be examined in his many faces and forms, and show why he is critical to Norse mythology as well as how he's been translated into modern media.

45. The Power of Amun-Ra
Presenter(s): Yusuf Baqai
Advisor(s): Dr. Eileen Jankowski

Amun-Ra, a God known to the Egyptians as titles such as the "Supreme God" was truly someone who Egyptians dare not offend. Symbolized by the ram expressing fertility and war, two powerful forces that create and end humans. Though this may be true, he was not always known that way. Originally, Amun-Ra was known as Ra who was recognized as the "Sun God." He not only created himself, but he was the

creator of the entire universe. He was known to have so much power, that some historians believe that the ancient Egyptians had a monotheistic belief. Ra also possessed many stories known to the Egyptians such as bringing light to the sky for the people on Earth and the Underworld demonstrating his power. Amun on the other hand was a patron of pharaohs and combined with Ra and was later known as Amun-Ra. Though to the Egyptian people he was an important God, they could never imagine the influence that Amun-Ra would have for the future. Amun-Ra for one influenced the Greeks and the idea that Zeus according to them was the king of gods. Amun-Ra had an influence on Christianity and Judaism, two major Abrahamic religions that are still massively practiced today. As shown through this, it is clear to say that Amun-Ra had a strong influence on the different religions Abrahamic or not that occurred in the future after the downfall of the ancient Egyptians. In general, the fusion of the sun god Ra with the patron of pharaohs began a pattern of imagining a god with two sides, one that explained the nature and cosmos, and the other implied a concern for the individual people. Though Egyptians focused more on pharaohs, its evolution to concerning for the individual demonstrates the shift from tyrannical rule.

46. Pollock, Streb, and the Beauty of Falling

Presenter(s): Bethany Violett
Advisor(s): Dr. Wendy Salmond

Painter Jackson Pollock and choreographer Elizabeth Streb have both made strides in their respective fields, surpassing previous limits in art. They have challenged how painting and dance are normally created by extensively exploring gravity and its effects. While the two may be experts in completely different art forms, their innovative ways to utilize this force bring them closer together. This investigation compares their methods and intentions when creating art, as expressed through their own words and an analysis of their work. Pollock drips and flings paint onto a horizontal canvas, whereas Streb studies physics in order to create sudden impacts with the ground that leave her audience stunned. Despite their differences, both artists have extensively experimented with unusual techniques, including new ways to work with the effects of gravity and the rotation of their work, in order to demonstrate the beauty in falling and to test the limits of art.

47. Peggy Guggenheim: The Woman Who Introduced Modern Art to the World

Presenter(s): Cem Ozbek, Ali Selmar-Stich
Advisor(s): Dr. Wendy Salmond

In the early 20th century Europe, amidst the chaotic and unpredictable life that was going on at the time, Peggy Guggenheim, a jewish woman that lived within the aristocratic circles in Paris, found it in herself to rescue and cherish art. Her patronage started with rescuing first hand paintings from Nazi doom and ended with a collection she left in her palazzo in Venice. This research fills a gap behind the history of how Modern Art in the 20th century and the faces that represent it came to be. We argue that Peggy Guggenheim was a pioneer woman in the modern art world that self-realized her ideas, and in fact wasn't dragged around by important artist men in her life. From jump starting Pollock's fame to opening the first art exhibit in U.S. made up of solely woman artists, we trace the progress of Peggy Guggenheim's life. By exploring the important turning points of her life -as well as the life of 20th Century art-, following the interviews she gave, accounts on her life and later commentary on her influence by experts; we ask the question, what does the name "Peggy Guggenheim" represent today?

48. The Lifespan of Fauvism

Presenter(s): Julian Patterson
Advisor(s): Dr. Wendy Salmond

This project will explore the lifespan of Fauvism from 1905-1908, functioning as the first notable modern art movement. Favoring bright colors and bold brush strokes over detail and realism, Fauvism played a large role in bridging both Post-Impressionism and Cubism into the twentieth century. Looking to the origins, facilitation, variations, and lasting impact of the Fauve pieces will help to unveil the specific aspects that made the art style as important as it was during its short lifespan and to help gage the influence of Fauvism today. The unique attributes of Fauvism will be identified, but a large emphasis will be placed on how these unique characteristics such as vibrant colors and aggressive technique helped to Fauvism and catalyze young artists to innovate in art culture by facing creativity and imagination rather than the limitations of reality. This want for progress and change in art will also be focused on, especially in considering how long the effects of Fauvism have lingered on the art scene, whether that be in the form of new artists creating Fauve pieces or new styles inspired by Fauvism.

49. The Influence of the Judson Dance Theater

Presenter(s): Kate Reilly, Kaia Whitney
Advisor(s): Dr. Wendy Salmond

The Judson Dance Theater has completely changed the nature of American dance. By digging deeper into the structure behind dance movements, and rejecting all known fundamentals of dance at the time, the group has completely redefined the artform. As well as defining exactly what modern dance is, and why it is indeed an artform. They now proceed to have an exhibit at the MoMA in New York which is running until February, where the history made by the Judson Dance Theater is being re-appreciated, showing that they're still prominent position in todays art culture. This theater truly changed dance as we knew it from their beginning in the early 1960's. We plan to explore how the audience reacted upon their initial debut to society and how largely they influenced other choreographers. Over their fifty plus year, this group has continued to spark change in the art community. In this project, we plan to also explore the way the Judson Dance Theater not only borrowed from contemporary art pieces, but how they influenced them as well. It is worth finding out more about the great minds behind this changed artform due to the great impact that it has had not only on the dance world, but in the artworld as well.

50. Henri Toulouse-Lautrec's Depictions of Queer Women

Presenter(s): Maria Neis
Advisor(s): Dr. Wendy Salmond

Henri Toulouse-Lautrec was famous for painting prostitutes in the Moulin Rouge. He drew them realistically, while they were not working. However, he painted women in other bars and brothels as well. Some of the other bars, such as Palmyr's Bar, were gay bars, and many of the women who worked at the Moulin Rouge were queer. Paris was becoming less and less straight as the Bohemian Revolution began, and Toulouse's art reflects this extremely new time period full of self-exploration and new ideas. He painted women together in both romantic and sexual situations. Homosexuality was not illegal in France in the late 1800's, but it was seen as immoral by many. Some say that Toulouse-Lautrec painted queer women to express his own latent homosexuality. Others believe that he was painting the women realistically, trying to show the public that non-heterosexual people existed. Some think that he was fetishizing queer women, while others believe that he was telling the story of what happened behind the

doors of a brothel when closed. In this poster, I will be exploring the different explanations of why Toulouse chose to paint queer women so frequently, even when homosexuality was seen as taboo in the late 1800's in France.

51. The Remarkable Evolution of Disney Heroines
Presenter(s): Valerie Lee
Advisor(s): Dr. Wendy Salmond

This research explores how the Walt Disney Company has evolved from showcasing stereotypical princesses to diversified female protagonists in its animated movies. Over time, Disney films have moved away from gender stereotypes to showcase a variety of cultures. Modern society has shifted to celebrate females with different ethnicities, body shapes, and values. Disney has also undergone a cultural shift that reflects the current image of a woman. The diverse representations of women through the nationalities, personalities, and qualities of Disney princesses has educational importance because it reveals what our culture has developed into and what it is moving towards. The evolution of Disney heroines provides better role models for young viewers and contributes to our understanding of how our civilization comprehends constantly evolving ideas.

52. The Mind of Keith Haring
Presenter(s): Ashley Glisson
Advisor(s): Dr. Wendy Salmond

Artist Keith Haring was dedicated to making public pieces that expressed social messages. I want to explore the mind of Keith Haring in detail and how its creations left a mark on the world around him. In order to do so, I will complete a close visual analysis of five works: Crack Is Wack, CityKids Speak on Liberty, Free South Africa, Untitled (1982), and Silence = Death. I intend to delve deeper into Keith Haring's mind and understand why he created what he did. I want to show how Keith Haring made an impact on society by raising awareness about drug addiction, sexuality, and building a community. Keith Haring used art as an outlet to express his feelings and opinions towards social issues occurring in the 1980s. Also, Haring created pieces that sparked and strengthened social movements because of his inclusion of the community in his paintings. The part that I appreciate the most about Keith Haring's artwork is how determined he is to stay true to himself by including his personal opinions in his art, even if they are controversial.

Film

53. Liberté, Égalité, Sororité: The Representation of Strong Women in French Films
Presenter(s): Emily Cameron
Advisor(s): Dr. John Boitano

Since the birth of film, Hollywood's number one rival for cinematic artistry has been France, home to one of the world's largest film festivals (Cannes Festival of Film). It is also a country with a rich history of feminist movements and feminist scholars that helped to define feminism for so many women throughout the 20th century: Simone de Beauvoir, Hélène Cixous, and of course New Wave filmmaker Agnès Varda. 2017 and 2018 will undoubtedly go down in history as a shift in how we look at sex in the film industry, with the ousting of prominent men and the progression of the #metoo movement. Film has always served as a keen eye to contemporary culture and therefore its portrayal of women is undoubtedly the way society views women in each respective era. In light of recent strides, as well as backslides, in the

representation of women, it's important to look at women's portrayal in film in not only Hollywood, but the world's other leading force in cinema (and feminism): France. Simone de Beauvoir claimed that women must "transcend" their own circumstances from being an "other" to the subject of her own journey (The Second Sex). Similarly, Hélène Cixous encourages women to lose the shame of their own power and to write their own stories (Laugh of Medusa). From French New Wave, to World War II films lamenting the devastation from the Occupation, to popular French films starring French actress Audrey Tatou (Amélie or Coco Before Chanel), to indie films about women of color garnering critical acclaim and festival awards, how has the representation of women evolved (or devolved) in the last 60 years? Examining films using the philosophies of Beauvoir, Cixous, and feminist film scholar Laura Mulvey (who identified the damaging properties of the "male gaze" in cinema), among others, it's clear that the way women are viewed in French society continues to expand, and yet there are still so many areas where women are only now broaching the surface and must continue to break glass ceilings.

Health Sciences and Kinesiology

54. The Effects of Chronic Sleep Deprivation on Tumor Necrosis Factor Alpha and Bone Health in Menopausal Rats
Presenter(s): Cameron James, Joshua Tam, Noah Barrett
Advisor(s): Dr. Frank Frisch

Osteoporosis affects one in four post-menopausal women, and approximately one in three of those women will experience a fracture due to osteoporosis in their lifetime. Sleep deprivation may be a contributing factor in the acceleration of osteoporosis due to the increase in pro-inflammatory cytokine production which may potentiate the diminished estrogen signaling. Tumor-necrosis factor alpha-type (TNFα), a pro-inflammatory cytokine of interest, stimulates osteoprotegerin ligand (OPGL) to increase the degradation of bone. Bisphosphonates, like Zolendronate, are the most commonly prescribed treatment for osteoporosis because they decrease osteoclastic activity. This study analyzed the effects of chronic sleep deprivation and Zolendronate on TNFα concentration and relative bone strength of thirty-two ovariectomized Wistar rats in a five-week protocol; groups included control (C), sleep deprived (SD), sleep deprived with Zolendronate (SDZ), and Zolendronate (Z). TNFα concentrations were determined by enzyme-linked immunoassay and bone strength was determined by a three-point bending test. The calculated TNFα concentration values for the groups were: C (M=23.97 pg/mL, σ=1.87 pg/mL), SD (M=25.56 pg/mL, σ=2.56 pg/mL), SDZ (M=24.02 pg/mL, σ=2.17 pg/mL), and Z (M=27.26 pg/mL, σ=2.22 pg/mL). The calculated bone strength values for the groups followed: C (M=161.42 N, σ=19.37 N), SD (M=162.21 N, σ=24.29 N), SDZ (M=165.97 N, σ=22.61 N), and Z (M=156.44 N, σ=20.46 N). There were significant differences (p < .01) in serum concentration of TNFα in the group taking Zolendronate, but we found no differences in bone strength between the groups – but the trends suggest that in larger sample sizes, differences would emerge. We believe that further research measuring the changes in cytokine concentration throughout a longer sleep deprivation protocol would be a fruitful.

History

55. How One War Changed One Nation
Presenter(s): Natalie Shanaa
Advisor(s): Dr. John Boitano

This project examines the question, "What were the reasons for the 1979 Iranian Revolution and the overthrow of Reza Shah and to what extent did it affect the women of Iran?" This essay begins by introducing Shah Reza Pahlavi and states the primary causes for his flight in 1979. This essay later explains the reasons as to why and how this social revolution was triggered. Some on the main aspects that spurred the revolution was the Shah's social and political intentions, as well as his intentions to push towards modernization. Modernization later takes up the end of the essay because of it was the biggest reason why the population revolted and ties into the effect it had on women in both pre and post revolution Iran. Reza Shah mainly modernized Iran by putting in place many policies to give women more rights, such as the Family Protection Act which granted women the right to divorce, vote, work in office, and changed the minimum marriage age to eighteen. We start to see how many rights women have actually gained under the Shah's reign and such facts are later highlighted by the great contrast seen through the explanation of women's rights in post-revolution Iran under Khomeini's rule. By the end of the essay the conclusion is reached that although a social revolution took place because of Reza Shah's rule of false promises, untraditional ways, and his push for change, in fact, the amount of violence and inequality is nothing compared to violence and inequality in Iran once under Khomeini's rule. The essay comes to a conclusion that besides the very religious and the clergy, this revolution is deeply regretted and that everyday women fight their oppression by revolting both directly and indirectly.

Music

56. Creating Music with Math: A Study of Statistical Physics and Music Composition via Maximum Entropy Analysis
Presenter(s): Kyler Zach
Advisor(s): Dr. Daniel Alpay, Dr. Jessica Sternfeld

Imagine working for a TV show, and the job involves producing new music for a new episode every week. How would one do this in a timely fashion? How would one produce music that is similar to what has already been composed without plagiarizing it? These questions will be addressed from a mathematical perspective. The goal is to find the best way to create new monophonic music via a special principle that is used in many different fields of science, such as thermodynamics, information theory, and biology. Within the profession of composition, there are many ways of using mathematics to compose; in this thesis, I use the Principle of Maximum Entropy to create music. Many people have used this approach to generate music, and all have achieved different results. The problem in previous attempts was that the authors either made the music out to be too simple without enough mathematical parameters in the calculations, or the methods used to calculate the various probabilities (eg. Markov Chains) gave poor results and turned out to be an inaccurate way of analyzing music. My approach differs from others, because instead of looking at individual notes, I will utilize the strategy of pairwise interactions. This method creates new music after analyzing pairs of notes from a given monophonic partition via maximum entropy. It creates original music that is similar in style and closely resembles the original partition. This

music does not plagiarize the given partition, and the criterion is that the generated music must sound "aurally pleasing." Finally, I will look at what others have done in this field and compare their results to mine. Through comparing results of different methods, I will argue that this is the most efficient and artistically successful way of creating music using mathematics.

57. **África Comienza en Los Pirineos: An Argument for Spanish as a Standardized Musical Language**
Presenter(s): Danny Kawadri
Advisor(s): Dr. Jessica Sternfeld

In today's music conservatories, Italian, French, German, and English are established as the definitive musical languages for conservatory students. This is the repertoire that we sing in-these are the languages that we must recognize and digest. Western Europe is in fact the birthplace of many musical developments and stylistic movements. It would only make sense that, from an academic standpoint, we would require students to familiarize themselves with the repertoire and history of these countries. There is, however, an argument to be made for amending this list. Throughout time, Spain has been swept aside as a European culture; instead of having been integrated into Europe, Spain remains an outlier as a result of movements to directly and indirectly exclude Iberia from participating in this rich European history of musical development. This difficult history comes with a flurry of unintended consequences that affect institutions of music to this day. When juxtaposing the discrimination that faced Spain centuries ago with the current air of prejudice against Latin culture and resentment of Latin immigration into the US, there is a compelling argument as to why Spanish is not considered a viable musical language. This paper serves to connect past and present cultural discrimination against Hispanic peoples to modern language requirements for American music conservatories and argues for the inclusion of Spanish into modern American musical curriculum.

58. **"Ghoulish to Groovy": The Development of the Electronic Film Score**
Presenter(s): David Karbo
Advisor(s): Dr. Jessica Sternfeld

Though electronic instruments have been around for centuries fewer than traditional orchestral instruments, developments in technology have exponentially increased (and continue to increase) the amount of potential that these instruments have to offer. Since its conception in the 1930s, the electronic film score has evolved from a one-sided tool used to reinforce visual and archetypal ideas to a means of communicating complicated emotions previously found only in traditional scores. Analysis of the history of electronics in film can be summed up by three common threads: changes in the use of electronics to enforce unnatural and inhuman ideas in science fiction, the development of employing electronics in a dramatic context to highlight humanity and emotion, and advancements in technology that allow for new compositional methods and timbres. This paper will explore examples of where the electronic film score has been, as well as where it's going, by analyzing eight films (The Day the Earth Stood Still [1951], Forbidden Planet [1956], A Clockwork Orange [1971], Chariots of Fire [1981], Tron [1982], Blade Runner [1982], Looper [2012], and Her [2013]) in order to decipher common themes, stark differences, and changes over time.

59. The Cherry Pickers' Garden: Nationalism's Evolution in 19th C. German Music

Presenter(s): Matthew Mattila

Advisor(s): Dr. Jessica Sternfeld

What does Hinduism have to do with Wagnerian Opera? The music of the beginning and end of the nineteenth century in Germany is entirely different. In the early 1800's, a rising tide of nationalism slowly manifests itself in musical literature across Europe through the gradual implementation of folk songs, folk rhythm, and nationalistic subject-matter for programmatic genres. This is evident in works as early as Beethoven's later symphonies through Weber and the Wagnerian operatic works that the Nazis eventually rallied to. Existing scholarship has attempted to connect nationalistic emergence in the music of other European countries to rejection and rebellion against "European musical-traditionalism." However, the prevailing viewpoint of musicology additionally concedes Germany as the center of this European musical-traditionalism. If this is so, why then does German nationalism develop in music at all? One theory offers that a receptive atmosphere for nationalist themes, cultivated by the war for liberation against Napoleon, fostered this growth. However, I argue the emergence connects to a surprising and unique intellectual-orientalism from the Far East. The nineteenth-century-fields of German Philosophy and Philology not only share a deliberation of ancient Hindu knowledge from texts like the Vedas but also intersect with and influence German music. In this paper, Wagner's final Opera, "Parsifal" is analyzed for its Hindu themes, compositional elements, and Vedic philosophy using Wagner's writings, correspondences, and reflections on his influences. Additionally, this paper will also trace Wagner's influences and how exactly German scholars appropriate Hindu wisdom and pass along a mutated catharsis from it.

60. The Mechanicity and Art of Commercial Music: Nine Inch Nails and Radiohead

Presenter(s): Myles Angel

Advisor(s): Dr. Jessica Sternfeld

In a music industry that values categories and similarities, how can you tell if a band is ahead of its time and an outlier? There are many musicians and bands who fit into categories with one another, particularly in genre. However, there are very few who are groundbreaking, innovative, unique, and catalytic in their influence on an entire genre and the commercial music realm. Two bands which successfully did this are Nine Inch Nails and Radiohead. The two groups consistently incorporated previously unused elements into their music and lyrics, produced new and original sounds, and were able to present their innovations to a mainstream audience all while bucking the music industry's attempts to influence and control their creative expression. For example, I will discuss lyrics that address topics that other bands do not touch on such as self-destruction, uses of instrument's such as the ondes martenot, the groups' strong beliefs towards the industry and their own music, how live performances are drastically different than how things are in the studio, construction of albums, and how both groups demanded full control of the music they put out, amongst other things. I will show that this is true with analysis' of their music, their audience, their independent thinking, creative integrity and influence, and how they have evolved and greatly impacted an entire genre and the music industry over the years.

61. "What's Better Than the Arts?": Community Music Therapy as a Tool of Transformative Justice

Presenter(s): Safieh Moshir-Fatemi
Advisor(s): Dr. Jessica Sternfeld

Music therapy grew into a profession during and after World War II, when people provided music for veterans in the stages of convalescence. Almost a century later, music therapy is used to treat a wide variety of conditions among mental and physical health in a spectrum of diverse age groups, from children to people of advanced age. More recently, music therapy has been sought out to help individuals in marginalized communities at high risk for entering the criminal justice system via community music-making. Music therapy has also been employed in correctional settings such as juvenile detention centers and prisons to improve individuals' quality of life, reduce rates of recidivism, and facilitate a healthy reentry into society. In this paper, I will summarize the events and phenomena that have led to the school-to-prison pipeline, the prison industrial complex, and the mass incarceration of black and brown people. I will then analyze the efficacy of music therapy programs in communities at high risk and in correctional settings. Using a lens of transformative justice, I will prove that music can be an effective tool of transformative justice in high-risk communities and—with the divestment in prisons and investment in music starting at a young age—eliminate the need for correctional facilities altogether.

Philosophy

62. Patient Autonomy and Evidence Based Medicine

Presenter(s): Nicholas Piscitelli
Advisor(s): Dr. Michael Robinson

The purpose of this research project was to explore the relationship between evidence-based medicine and patient autonomy. Patient autonomy is the ability of patients to freely make informed medical decisions in accordance with their own value preferences. Evidence-based medicine is a medical decision-making model that prioritizes evidence-based research (such as randomized controlled trials) while diminishing the role of physician judgement. Evidence-based medicine has largely become the standard within the healthcare community. The goals of evidence-based medicine are to improve efficiency, reduce medical errors as well as costs, and to improve clinical outcomes. However, it is not clear what effects of evidence-based medicine on patient autonomy. In order to evaluate this relationship a literature review was conducted exploring the relevant philosophical arguments regarding patient autonomy within medical ethics, as well as a review of the reasons for rejection of the medical paternalism model as a comparison. Medical paternalism was a previous medical decision-making model that was rejected in large part due to the negative impact it had upon patient autonomy. Upon review of the available literature, it appears that evidence-based medicine functions in a similar way to medical paternalism in relation to patient autonomy. Within medical paternalism the role of the physician was the source of potential negative effects on patient autonomy. The role of evidence-based research in the evidence-based medical decision making model restricts access to information and fails to incorporate individual value preferences in a similar way to medical paternalism.

Political Science

63. America's Need for a Healthier Democracy
Presenter(s): Dominic Ashley
Advisor(s): Dr. Ann Gordon

In the political environment we find out selves in, Democrats and Republicans fight tooth and nail to gain political power over the other. This has created a hyper-partisan political environment where political decisions are based off of party affiliation and the agendas of the two parties. Now, when voters head to the polls to fulfill their duty as a member of our democratic society, they are voting for elected officials and propositions based on party affiliation. Democratic voters will simply vote democrat where republican voters will vote republican without taking the time to reflect which candidates are truly the best suited for office and which propositions will truly be beneficial to have passed. In other words, today's voters blindly vote in for their party rather than reflecting amongst themselves and making decisions organically. An uneducated and ill-informed electorate allows the two dominating political parties to mislead and misinform voters in order to receive more votes and support. This is bad for democracy as it is discouraging citizens to vote and get involved with politics. The premise of democracy is that the individual citizens have a say in what government does and when citizens are not properly equipped or motivated enough to participate politically, citizens are further removed from politics, thus weakening democracy's premise. Having a well informed and educated electorate promotes political participation and weakens influence of large political parties. With citizens more engaged, motivated, and active in politics, democracy thrives as public opinion is better reflected in policy decisions are made in government, which is a fundamental component of democracy. Therefore, and educated and well-informed electorate is key to a healthy and sustainable democracy.

64. Religiosity's Relation to Racism
Presenter(s): Crash Shahinian
Advisor(s): Dr. Ann Gordon

Is religion racist? Many would say "no", but an equal amount would cry "yes". This paper will use data collected from Chapman University's Fear Survey to answer this question, while also reviewing a number of peer reviewed sources to discuss their findings and how it relates to the data collected from Chapman University's Fear Survey . The question this paper seeks to answer is "Does the extent on one's religiosity affect whether the extent to which they are racist?". To determine this I will be cross analyzing data from the Fear Survey in which individuals answered how religious they consider themselves to be, and how much they fear a non-white America. Many topics in America have come to the forefront of politics, such a immigration, hate crimes, and racism, as a direct result of the 2016 presidential election in America. I seek to analyze if religion has an effect on ones viewpoints concerning the previously mentioned topics via using the date from Chapman University's Fear Survey. Finally, this paper explores the implications of religion's role in the promulgation of racism.

65. "They're Bringing Crime": White Fear and Closing Borders

Presenter(s): Hanna Rosenheimer
Advisor(s): Dr. Ann Gordon

Leading up to the 2016 election, popular rhetoric surrounding immigrants to the United States took a marked turn. This change can be partially explained using Piotr Cap's proximization theory, a threat-based discursive model that relies on locating threatening events in proximity to the audience in order to justify preventative or protective measures. Quantitative public opinion data from the Chapman University Survey of American Fears suggests that a disbelief in immigrants' ability to assimilate is strongly correlated with a fear of immigrants committing crimes. White Americans who hold these beliefs typically tend to favor or strongly favor preemptive punitive action against noncitizen residents, including but not limited to increased policing, raiding homes and businesses, and deportation. The anticipation of elevated criminal activity within the immigrant population is used to motivate both individual and state-level action against immigrants, irrespective of real-world statistics regarding citizen and noncitizen crime rates. Further, a comparison of attitudes toward changing demographics in Europe and America places the American immigrant and refugee situation in a broader global context. Finally, current and historical case studies of nations more and less hostile towards refugees and immigrants attempt to identify the present-day actors that stand to benefit from pushing the narrative of the immigrant as latent criminal and citizen as defender of the nation.

66. Religiosity, Partisanship, and the Culture War

Presenter(s): Jace Jenican
Advisor(s): Dr. Ann Gordon

In the American political lexicon, the "Culture War" being waged over the last half-century has been largely defined as the emotional politics surrounding polarizing social issues such as abortion, LGBTQ+ rights, and immigration. Many arguments from the conservative side of these cultural questions stem from religious values—in particular, Christian values; whereas many liberal opinions stem from a secular worldview. Therefore, this paper will explore how Americans' religiosity relates to their opinions on these cultural issues and will compare how the effect of religiosity differs among these three issues. Further, the paper will explore whether there are other factors than religiosity that correlate with polarization on culture war issues more than religiosity, primarily partisanship. From these analyses, this paper will seek to determine whether religious values or partisan and ideological tribalism is a greater predictor of one's opinions on culture war issues. I predict that, while public opinion on these issues and religiosity are certainly related, self-reported ideology and partisanship will have a stronger relationship. Among the findings of this paper, based on data from the Fear Survey and American National Election Survey, it has been found that there are statistically significant relationships between religiosity and fear of illegal immigration, and religiosity and anti-LGBTQ+ stances.

67. Investigating the Link Between Conspiracy Theory and Climate Denial

Presenter(s): James Kendrick
Advisor(s): Dr. Ann Gordon

Despite the overwhelming scientific consensus of anthropogenic climate change, nearly half of all Americans remain skeptical and do not worry about its effects. Previous research has linked partisanship, gender, and level of religiosity as strong indicators in predicting a person's beliefs about anthropogenic climate change. This paper looks to the role of conspiracy theory and distrust in government to expand the explanation for why average Americans remain so divided in accepting the threat of anthropogenic climate change. My central hypothesis is that Americans who put faith in conspiracy theories and who are

highly mistrusting of government are much less likely to believe in and fear the effects of anthropogenic climate change. Using data from the 2017 Chapman Survey on American Fears, I will examine how the belief that the government is hiding information about alien encounters, the 9-11 attacks, the moon landing, the illuminati, and mass shootings are linked to someone's level of fear in regard to global warming/climate change. If this research shows a definitive link between belief in conspiracy theories/mistrust in government and a lack of concern with anthropogenic climate change, we will be one step closer to understanding why so many Americans stand against the scientific consensus. By better understanding this phenomenon, we can uncover better ways to convey the seriousness of our climate reality to all Americans and take more unified action in mitigating its negative effects.

68. Tradition in Transformation: A Look at Jewish Voting Behavior

Presenter(s): Joseph Fisher
Advisor(s): Dr. Ann Gordon

Politics and voting are experiences influenced by an individual's life experience, culture, and upbringing. The Jewish-American experience is an unique one, as American Jews exist across all socio-economic barriers, in all locales, and share an experience which is both intrinsically linked to their Jewish identity and completely their own in the wake of the American Dream. Research has shown that Jews typically vote left-of-center for religious, cultural and historic reasons (Cohen & Liebman). However, recent research (Weisberg) challenges the strength of that assumption and suggests a possible shift towards Republicanism beginning after the 2012 election. This work will look at current voting behaviors of Jewish-Americans, via the National Election Survey as well as the 2013 Pew Survey of American Jews. This work will seek to explain patterns in Jewish-American voting behavior, focusing on differences between Jews of different age groups and degrees of religiosity. The Jewish-American cultural identity is fluid and diverse, and yet there remains a certain ethos by which the community is united. This work will search to find areas in which this ethos binds together American Jews, as well as areas in which it fails to do so, and will seek to find explanations for these variances. We expect to find that the shift towards Republicanism is led by older and wealthier Jews, while 'Jews of No Religion' have retained the cultural liberalism associated with the American Jewry.

69. Religion, Fear, and Belief in the Apocalypse

Presenter(s): Katie Agrela
Advisor(s): Dr. Ann Gordon

Apocalypticism seems to be inextricably tied to religiosity. Those who believe in conspiracy theories also seem to believe in the apocalypse. What about religion makes people believe in the end of the world? Does believing in the worst-case scenario automatically predispose someone to believe in conspiracy theories? The Chapman FEAR survey will be used to demonstrate the relationships between all relevant data. Researchers on the topic have attempted to correlate belief in conspiracy theories with anomia, the feeling of alienation. Other researchers have seen how apocalypticism is taught through the various religions. People with religious backgrounds are often taught to fear the end of days, which tends to come standard with most religious texts. Apocalypticism, then, seems to become abundant among those people. If those who believe in the apocalypse also believe in conspiracy theories, then it seems that the relationship to religiosity is direct and linear as well. If it is, then religion may be responsible for leading to belief in the absolute worst-case scenario. Religion could be highly correlated with seemingly irrational beliefs and behaviors. The relationship between belief in the apocalypse and belief in the Christian Bible was examined and shows that there is a correlation. The question of fear comes into play, when it is seen

that the belief in the apocalypse does not correlate with fear of the same event. It seems that Christians have strong beliefs, but fewer fears. Interestingly, people who consider themselves to be somewhat religious have a greater fear in regard to conspiracy theories and the apocalypse. It is possible that religion provides a comfort against the feeling of fear.

70. Juvenile Delinquency, Race, and Socio-Economic Status
Presenter(s): Kennedy Hammock
Advisor(s): Dr. Ann Gordon

The relationship between socio-economic status, ethnicity and race have a strong correlation that affects how low income neighborhoods function within their own societies and how they are perceived by others. Lower economic statuses along with other physical and psychological stressors lead to lack of economic achievements, poor health and a rise in rates of juvenile delinquency. African American children represent 32% of children who are arrested, and 42% of children who are detained. Because of the societal perception of African American culture as delinquent, they are incarcerated at higher rates than those who submit to the dominant culture. The NAACP claims that if African Americans and Hispanics were incarcerated at the same rates as Caucasians, jail populations would decrease by almost 40%. This research will explore the differences in data when comparing the variables of juvenile delinquency and race as well as juvenile delinquency and socio-economic status. The results of the data analysis from the United States Department of Justice Office of Juvenile Justice and Delinquency Program concludes that there is a disparity in juvenile offense between race caused by redlining and inequities in resources. The expected result for this thesis should conclude in a higher correlation between socio-economic status and juvenile delinquency caused by institutionalized racism that has embedded itself into American culture.

71. National Television News and the Creation of America's Fear of Terrorism
Presenter(s): Maddison Pilgrim
Advisor(s): Dr. Ann Gordon

What determines if a fear is irrational? Is it the likelihood of occurrence? The possibility of harm? How can Americans be so afraid of something so unlikely to happen? In this case, how is Americans' fear of terrorism so prevalent and overarching in society? One possible answer: the link between the American public's greatest fear and national television news are highly relational. The content of each determine each other greatly. The reliance on national nightly television news and high fears of terrorism in the US correlate due to the framing of terrorist attacks, overwhelming coverage, and the dramatization created for ratings and viewership. Additionally, Americans' growing fear of terrorism enables national news networks to capitalize on and take advantage of this interest, dedicating mass amounts of time, creating specials, and overplaying dramatic packages. What implications does this have on our American public? Relying on the Chapman University Survey of American Fears (2017) I explore how afraid Americans are of terrorist attacks and how often Americans watch national nightly network news. Findings indicate that those who watch more national nightly network news are more likely to be afraid of terrorist attacks. The agenda-setting power of the American news media enables this correlation and indicates a causal relationship. Understanding the existence of this connection is fundamental to examining the power of the media in directing not only the thoughts and fears of Americans, but their potential actions.

72. **The Emergence of Democrats Voting Republican, Fears About Race, and a Breaking Point for the Working Class: A Look at the 2016 Presidential Election and Donald Trump's Historic Win**
Presenter(s): Madison Demaris
Advisor(s): Dr. Ann Gordon

The 2016 Presidential election shocked everyone, including the candidates, with the results directly refuting most of the widely accepted surveys and polls. What fears, demographics and ideas changed in the election to make it a historic defeat for the democratic party? Why exactly did Trump win and why was it such a surprise? I examine and compare the results from 2012 and 2016 of the American National Election Study and the Chapman Survey of American Fears to discuss what has changed in the minds of Americans. In the continually polarized media, I have seen theory after theory about what exactly happened. Some people theorize that it was Russia, white women, lack of democratic voter turnout, Trump actually listening to what Americans want, and so on. One of the biggest theories we examine is that the working class finally hit a breaking point and wanted someone to listen to them, and this was Trump. Trump catered many of his political speeches to hit on the issues of working-class voters. There has also been an emergence of Democrats voting Republican in 2016 for a variety of reasons. Finally, we will discuss how race played a major role in this election, unlike what we have seen before. Race has always been a critical contention for many Americans, but this election proved more important than ever. In my findings, I examine how racial issues are more important than every single other issue for voters. This includes the fear of white people no longer being the majority in the US, which proved to be significant.

73. **Empowered or Disenfranchised? Lesbian, Gay, Bisexual, and Transgender Voting Behavior in the United States**
Presenter(s): Mitchell Rosenberg
Advisor(s): Dr. Ann Gordon

In a society where one's sexual orientation often makes them feel left out, targeted, or not heard or listened to, it begs the question of how much LGBT individuals feel inclined to involve themselves in the political system. Uncovering whether or not the LGBT population feels more empowered to vote or feels that their vote does not or will not make a difference will provide an important insight into our nation's minority communities. A key study surrounding this topic evaluated LGB individuals' voting behavior in the 2000 Presidential Election. This study primarily focused on these individuals' party identification and the reason behind their vote. The area I am evaluating differentiates itself from this study because I plan to look into general voting and political behavior and interest, as well as issues these individuals care the most about, as opposed to solely who they voted for and why. This area is largely unstudied, especially with the transgender community, allowing this research to make great strides in representing the LGBT group as a whole. The American National Election Study survey from 2016 will be used to demonstrate political activism, voting behavior, demographics, and sexual orientation within these communities. Based on an initial review of the data collected, it seems to show that members of the LGBT community are more likely to be politically active than heterosexual individuals, citing that the LGBT community has more to lose in an election or subsequent decisions made by elected officials. Based on my research of studies done, I cannot find other areas of research that have specifically addressed this field. I believe the findings of this study will shed greater light onto minority communities' participation in the political system.

74. **The Effects of Political Identification and Demographic Data on Islamophobia and Fear of Terrorism**

   Presenter(s): Sora Reid

   Advisor(s): Dr. Ann Gordon

The initiative of this research paper is to investigate if one's political identification has any effects on Islamophobia and their fear of terrorism. In order to conduct this research, three other hypotheses using people's demographic data were tested to create more connections as well as findings. These hypotheses testing one's religion, one's income, and how one receives their news, and how those might be significant to Islamophobia and fear of terrorism. One finding showed that people who identified as conservative shared that they were more "afraid" of a terrorist attack than the mean of the group who identified as liberals were afraid of a terrorist attack. Relying on data from the 2018 Chapman University American Fears, we gained stronger insight and knowledge on the important components relating to a real world issue that is seen day to day.

Psychology

75. **Effects of Task Instruction and Cognitive Load in the Rubber Hand Illusion**

   Presenter(s): Cristina Uribe

   Advisor(s): Dr. Amir Raz

While the body ownership distortions induced by the Rubber Hand Illusion (RHI) largely rest on feedforward multimodal integration of sensory information, recent studies suggest that higher-order cognitive processes modulate these effects. In order to test the influence of these higher-order processes, we plan to use a within-subject design where participants will undergo the RHI under 4 experimental conditions: 1) Attending to the visual signal and synchronous stroking of the arm; 2) Attending to tactile sensation and synchronous stroking of the arm; 3) Attending to visual signal and asynchronous stroking of the arm; 4) Attending to tactile sensation and asynchronous stroking of the arm. These conditions will be counter-balanced across subjects. The crossing of attended sensory signal and attention target will allow us to measure the variation of the magnitude of the effect across these 4 conditions. We hypothesize that modifying the attention to the visual and tactile stimuli will alter the RHI. Although previous studies have emphasized how important body ownership is in self-referential processing and the phenomenology of agency, few studies have looked at the cognitive aspect related to body ownership. (Armel & Ramachandran, 2003; Tsakiris & Haggard, 2005; Farmer, Tajadura-Jimenez & Tsakiris, 2012). This study will help us have a better scientific understanding of the role of cognitive factors in feelings of body ownership. Most importantly, this study will provide insight into essential questions of cognitive science. These understandings will be useful for future research on various related medical conditions, such as phantom pain and asomatognosia.

76. **Body Swap Illusion**

   Presenter(s): Jyelyn Bold

   Advisor(s): Dr. Amir Raz

Prejudice represents a fundamental social concern that often leads to discrimination and violence. Research suggests that prejudice based on race and other group differences is deeply ingrained in the human brain (Amodio, 2014; Kubota, Banaji, & Phelps, 2012; Molenberghs, 2013). Yet, other studies show that it is possible to reduce prejudice through perspective-taking (Todd & Galinsky, 2014) and empathy

(Finlay & Stephan, 2000). Today, virtual reality equipment can produce an embodied and automatic form of perspective-taking, where someone literally adopts the visuospatial perspective of another. In this setting, multisensory and synchronous stimulation can lead to the illusion of possessing an arm, or even the full virtual body of a different ethnic origin (Farmer, Maister, & Tsakiris, 2014; Maister, Slater, Sanchez-Vives, & Tsakiris, 2015; Peck, Seinfeld, Aglioti, & Slater, 2013). Moreover, research suggests these kinds of illusions reduce unconscious negative prejudice by merging the sense of self and other on an unconscious level (Maister et al., 2015). Therefore, the purpose of the following research project is to investigate how effective embodied perspective-taking is in reducing racial prejudice and increasing empathy, which will be measured using validated measures of explicit and implicit attitudes and a validated questionnaire, respectively. We plan to accomplish this by inducing an illusory body swap effect by having participants receive visuospatial input through a head-mounted display, from a camera attached to the head of an experimenter who is of a different race than the participant. Both the participant and the experimenter will then engage in synchronous movements, which permits the onset of this body ownership illusion. As a result, we expect that participants will experience the illusion that their body is actually that of a person who is of a different race, and will consequently report a decrease in prejudice and an increase in empathy towards that racial group.

77. The Relationship Between Instagram Use and Self-Esteem
Presenter(s): Marley Bratman, Karly Bokosky, Maddy McClung
Advisor(s): Dr. Austin Lee

What is it that causes individuals to have a lower or higher self-esteem? Although there are too many factors in this world that we can account for, in this study we chose to look at social media and its effect on people's confidence in their own worth and/or abilities. Today, social media, specifically Instagram, is becoming more popular among youth. Previous research has found that college students, who scored high on social media addiction, reported lower levels of self esteem compared to those who scored low on social media addiction. Additionally, research has found that addictive behavior on social media was higher in women more than men. Consequently, the amount of use of Instagram may have the ability to impact individuals negatively. In order to measure this component, participants will complete a survey with questions relating to the amount of time and addictive use on Instagram and their self-esteem. Oher questions included in the survey will measure participant's social comparison while using Instagram. This research hypothesizes that the more time college aged students (18-23) spend on Instagram, the lower their self esteem will be.

78. Expanding the Etiological Models of Anxiety: The Dynamical Interactions Among Creativity, Embodiment, And Imagination
Presenter(s): Anneke Virk
Advisor(s): Dr. David Pincus

Anxiety disorders are understood to be caused by a complex combination of biopsychosocial factors, including: traumatic life events, biochemical imbalances, attachment style, temperament, and epigenetic interactions.   Nevertheless, the prevalence of anxiety disorders suggests that there is room for improvement in etiological research and the refinement of validated approaches to treatment. The purpose of the present study is to identify potential missing factors, as well as the potentially complex and dynamical interactions among those factors, in the etiological models of anxiety disorders. Ultimately, gaining a better understanding of how anxiety disorders can be more effectively conceptualized and treated. Independent variables to be measured include emotional reactivity and neuroticism, which are

already known to be associated with the development of clinical anxiety. The new variables to be added include: creativity (i.e., divergent thinking), embodiment (i.e., self-body relations and agency), and imagery ability (i.e., vividness and immersion). Dependent variables to be measured are psychological distress, obsessive-compulsive traits, and, anxiety levels. Full measures of each variable will be administered in a one-month pre-post design, to allow for static predictions and also the prediction of change scores in dependent measures across the 30-day period. In addition, shortened measures of all variables will be administered on a daily basis to allow for dynamical systems analyses. A traditional multiple-regression research design will test the influence of each independent variable on the dependent variables, each of which is hypothesized to have significant positive correlations with anxiety as well as OCD. The influence of creativity, embodiment, and imagery ability on general psychological distress is expected to be of lower magnitude, demonstrating a specific relationship with anxiety. The dynamical analysis will allow for a relatively novel analysis of individual and networked-variable analyses involving potentially complex change over time.

79. <u>Believe in Yourself: The Effect of Coping Self-Efficacy on Resilience</u>
Presenter(s): Marie Bedel
Advisor(s): Dr. Tara Gruenewald

Resilience refers to a bouncing back to normal levels of psychosocial functioning after experiencing a stressor. An array of factors have been hypothesized to affect resilience including demographic characteristics, environmental factors, and psychological resources and processes. One psychological factor hypothesized to promote resilience is self-efficacy, which reflects one's belief in one's ability to cope with challenging situations (Bandura, 1977). Self-efficacy has been found to mediate and moderate associations between stress experience and psychological outcomes in observational studies. However, the cognitive, affective, and behavioral mechanisms that underlie these associations still remain relatively unknown. The purpose of this study was to look at whether enhancing individuals' perceptions of their self-efficacy would affect psychological and behavioral processes believed to render individuals more resilient to stress. Study participants were recruited from a student participant pool and completed study activities online. Participants were asked to provide their assent to participate, then complete demographic measures followed by measures of trait self-esteem, resilient coping style, and emotion regulation. They were then randomly assigned to a self-efficacy induction or control writing task. Following, participants completed state affect measures, assessments of proactive coping and a state measure of self-esteem. To date, 45 participants have completed the online study. We hypothesize that those exposed to the self-efficacy induction will exhibit a greater level of proactive coping, as well as more positive emotion, less negative emotion, and higher performance state self-esteem, as compared to those not primed to think of themselves as efficacious. Study findings will provide an experimental test of whether enhancing perceptions of self-efficacy can affect individuals' proactive coping responses as well as emotion and self-esteem states which may influence resilience to stress.

Sociology

80. Living in Harmony: Does Caring About the Earth Allow for Decreased Sectarianism?

Presenter(s): Alexis Sutterman

Advisor(s): Dr. Ann Gordon

Who owns the Earth? The air? The sky? According to the U'wa, an indigenous tribe in Colombia fighting against multinational corporate oil drilling on sacred lands, no one does. The U'wa regard themselves as guardians of the sacred with the unifying mission to "respect for that which is alive and that which is not alive, for the known and for the 'unknown'." Echoing Buddhism, members of the U'wa believe that all of Earth's creations are connected. Thus, the U'wa do not embark on this mission to benefit solely their tribe; they seek environmental justice to protect all of the Earth and its inhabitants. Among a world driven by self-interest and countless divisions among the human population, this ideology is radical; yet it is also common among so many environmental activists. Indeed, the Sierra club asserts that it is "dedicated to exploring, enjoying, and protecting it for everyone." Understanding this, it seems that human rights and social justice activists can learn from the messaging, organizing, and core belief system of environmentalists—those who shed their artificial affiliations and categorizations (race, sex, gender, nationality class, etc) to unite for the common good of all of humanity. This paper thus explores the following research question: Does caring about the environment lead to decreased sectarianism? This paper utilizes results from the 2018 Chapman University Survey of American Fears to assess whether caring about the environment means people are a) more or less worried about engaging with those who are different than they are; b) more or less worried about war and civil unrest; and finally, c) more or less likely to hold discriminatory views.

Strategic and Corporate Communication

81. Understanding Adoption Factors of Cyberinfrastructure During Early Exposure

Presenter(s): Jenny Kim, Sal Ochoa III, Paloma Leiton, Sebastian Medina, Hannah Kim

Advisor(s): Dr. Kerk Kee

Without adoption, new technologies will not have an impact in the world of practitioners. As cyberinfrastructure (CI) is a complex and emerging technology with a huge federal investment over the last decade, it is important to understand what factors draw potential and new users towards CI adoption in early exposure during awareness stage. With this understanding, CI organizations and stakeholder groups can more strategically promote CI adoption to further capitalize the investment in building a national CI. In order to achieve this goal, we pose the research question, "What factors draw potential and new users towards cyberinfrastructure adoption in early exposure?" We analyzed in-depth interviews with 20 experts from the CI field. Analysis results reported in this poster include the following common themes: collaboration, research, capacity, learning, and problem solving. These elements explain why there is adoption after early exposure of cyberinfrastructure.

82. **"Power Up": A Strategic Communication Campaign to Increase Campus Awareness About Cyberinfrastructure**

Presenter(s): Kamaile Galindo
Advisor(s): Dr. Kerk Kee

This project is motivated by the research question (RQ), "Can the awareness of cyberinfrastructure (CI) be further increased at the university level through a strategic communication campaign?" In order to answer this RQ, this project aims to create, design, and implement a series of posters to raise CI awareness at the university level. According to Atkins and colleagues (2003), CI is a platform of revolutionary technologies. Increased usage of CI will promote the growth of science and engineering research and education across a diverse set of disciplines and fields. However, because of its complexity and lack of tangibility, there exists an awareness gap. Therefore, many faculty, staff, and students at university campuses across the country do not know what CI is and why CI is relevant to them, their work and life. The posters will be implemented as a starting point for the target audience described, with visuals and representations of CI that is eye-catching to raise curiosity to further understand CI. Each poster conveys a different theme and uses a different communication strategy to grab and direct audience's attention to CI. The posters out of this campaign can be used by CI stakeholders across different campuses, including big research universities, state public universities, liberal arts universities, and community colleges.

World Languages and Cultures

83. **The History of French Electronic Music: Its Invention, Evolution, and Influence**

Presenter(s): Josh Whitaker
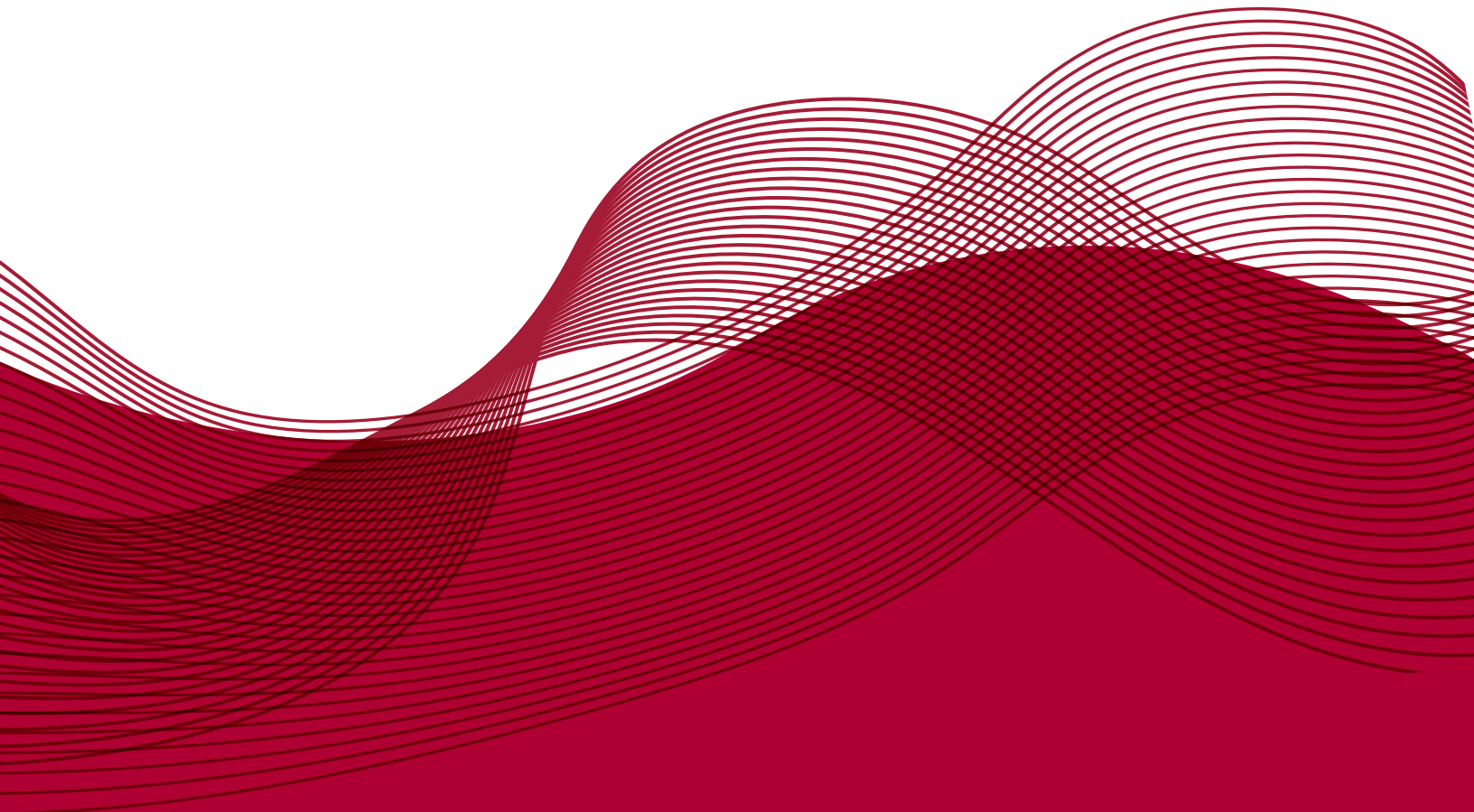**Advisor(s):** Dr. John Boitano

This research is an exploration into the rich history of electronic music as an invention, an art medium, and an export in the country of France. Drawing from academic books written on the subject, as well as first-hand journal entries from the scientists and engineers who initially discovered and utilized sound objects in Paris in the 1940s and 50s, the rise of a new form of music composition is outlined. Initial forms of electronic instruments, such as the Theremin or the Martenot, are placed on a timeline that leads up to the modern synthesizer, capable of producing the sounds we are so accustomed to in music today. France played a significant role in the early scientific exploration of the possibilities of electronic sounds in music, with the government-funded Institut de Recherche et Coordination Acoustique/Musique being a center point of many important studies and breakthroughs. Electronic music soon began to make the jump from the laboratory to the radio, and the methods of success from 70s French hits such as Jean-Michel Jarre to Cerrone are analyzed in this paper, as well as their echoing influence on the global music industry. French electronic music perhaps reached its prime in the late 90s and early 2000s with a strong wave of producers like Daft Punk and David Guetta entering the scene, who stormed the pop landscape with hit after hit, establishing France as a powerhouse for the creation of electronic beats. This era of "French Touch" music continues to this day, with many French DJs using electronic synthesizers and methods developed and explored over the second half of the 20th century to create catchy songs that are danced to and enjoyed around the world.

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