16th Annual STUDENT RESEARCH CONFERENCE

Student Research Conference

Poster Presentation Abstracts

March 1-5, 2021

- ➢ Behavioral and Social Sciences
- ➢ Biological and Agricultural Sciences
- ➢ Business, Economics, and Public Administration
- ➢ Education
- ➢ Health, Nutrition, and Clinical Sciences
- ➢ Humanities and Letters
- ➢ Physical and Mathematical Sciences

Behavioral and Social Sciences

Chelsea Ramos, Jael Castro, Alberto Cedillo, Michelle Garcia, Anahi Gomez, Emily Guevara, Sophia Lozano, Gerald Martinez, Carmen Oceguera, Janelly Reyes, Iris Rico, Paula Rodriguez, Gilberto Sanchez, Diana Valdez, and Faviola Varela, Undergraduate Student
Latinx Perceptions on Mental Health
Faculty Mentor: Steven Frieze, Psychology

Attitudes and perceptions of the Latinx community towards mental health issues have been explored by some researchers, but focused on depression and males (Cabassa, 2007). The purpose of this study is to explore the attitudes and perceptions of the Latinx community towards mental health issues. By examining how they have influenced whether a member of this community seeks out help or makes an effort to secure help regarding mental health related concerns. This study aims to survey approximately 2,500 participants. The sample will be men and women from all segments of the Latinx community. All participants will be 18 years of age or older. The ages of the participants will need to be as diverse as possible in order to reflect the entire spectrum of Latinx views. For the purpose of this study, the investigators are focusing only on the Latinx community. All participants once giving consent will be given a survey where they will answer questions pertaining to their communities, their families, and their own beliefs towards different mental health conditions. The first step in increasing the use of mental health services by Latinxs is to determine what barriers exist and find out how they prevent individuals from accessing these resources. Second, this information will help to develop evidence based interventions. The findings from this research study will shed light on a barrier that has not been focused enough on in recent research.

Efrain Arroyo, Undergraduate Student
Using Google Earth for Archaeological Research: A Virtual Ssurvey of the Inca Road Network between Machu Picchu and Choquequirao
Faculty Mentor: Jerry Moore, Anthropology

In the face of a global pandemic, disciplines that rely on field research, like archaeology, have had to adapt to remote investigation settings. Following the launch of Google Earth (GE) in 2005, researchers have postulated and tested its utility for archaeological research. Archaeologists have recognized its potential as a tool for visualization, educational purposes, and research applications like remote sensing. For example, since 2016, the GlobalXplorer Project has demonstrated the utility of satellite imagery for identifying and monitoring looting, in addition to discovering and preserving sites previously unknown to archaeologists. However, more research is needed to assess its usefulness to the survey of previously studied areas in mountainous and heavily forested terrain like in the Central Andes. Known as Tawantinsuyu, the Inca Empire, during the fifteenth and sixteenth centuries, was the largest indigenous polity ever to exist in the Americas, spanning western South America. The Inca road network known as the Qhapaq Ñan connected the vast territories of the empire with approximately 40,000 km (25,000 mi) of roads, trails, and paths. To test the utility of GE images for virtual survey, this project surveyed 60 square kilometers of the Inca road network between the archaeological sites of Machu Picchu and Choquequirao in the Cusco region of Peru. Using the GE 'path' and 'placemark' tools to identify and trace the Inca roads, this project proves the viability of using a publicly accessible and free satellite imagery platform to complete a preliminary survey that is a necessary antecedent to ground-truthing. The survey and analysis of my results proved the use of GE for archaeological prospection along with creating plans of roads. The preliminary results of this project indicate that archaeologists should be able to identify and quantify the Inca road network using GE, allowing them to better prepare for eventual pedestrian survey.

Elizabeth Mallonee, Undergraduate Student
Honoring the Dead and Defining Territory – The Role of Irish Court Tombs in the Neolithic
Faculty Mentor: Jerry Moore, Anthropology

For at least 100,000 years humans have been ritually burying their dead. Over time, mortuary and funerary rituals became more elaborate and required a physical space in the form of architecture for the ritual to take place. The location and position in the landscape, and how space is utilized in these structures often reflect the world view of the community conducting the ritual. This same notion can be observed in the Irish megalithic tombs of the Neolithic. With the shift from hunting-foraging, to agriculture, the transition in world view was represented in the architecture built for the dead. The purpose of this research is to examine the concurrent construction and use of Irish megalithic tomb typologies during the Neolithic. Specifically, I focused on the role and function of Irish court tombs within the communities that built them. I also examined how court tombs were utilized among the other megalithic tomb typologies in the Irish landscape. The main method used was a directed reading that included a survey of foundational literature on the topic of Neolithic Ireland – specifically megalithic tombs, archaeological theory, and excavation reports of Irish court tombs. Additionally, I used QGIS to test the hypothesis of patterns of distribution of Irish court tombs in relation to other megalithic tomb types. The results of this study will help demonstrate a relationship between megalithic types and human behavior during the Neolithic.

Elizabeth Trost, Undergraduate Student
Transplant Tourism and the Business of Organ Donation
Faculty Mentor: Sarah Lacy, Anthropology

There is an ever-growing need for organs around the world. Most countries have two legal ways of procuring cadaver organs but every year thousands die waiting for a donor. To meet this need some argue that living donors should be compensated in exchange for selling their organs on the open market. The issue of compensation for donation raises several ethical concerns. How could a country prevent its vulnerable citizens from selling pieces of themselves in an effort to escape poverty? The reality is that several countries have a well-documented history of selling the organs of prisoners, exploited ethnic minorities, and the poor to wealthy foreigners who can afford the travel and medical expenses. Less than twenty years ago the World Health Organization attempted to address the issue transplant tourism by drafting an international agreement to make such activities illegal. Countries like China and India agreed to reform their policies for procuring organs and to regulate travel into their respective country's for the purpose of undergoing transplant surgery. But when I compare the numbers for living versus deceased organ donation globally there are clear indications that the organ black market persists to this day. It is my intention with my research to show a correlation between countries with robust state-funded health care and high legal organ donation outcomes as well as show how the ratio of deceased to living organ donation changes in countries suspected of illegal organ trading.

Gabrielle Makrdichian, Nicole Figueroa-Sierra, Shaina Nguyen, Undergraduate Student
Video Games and Memory
Faculty Mentor: L. Mark Carrier, Psychology

During the current pandemic, the need for entertainment and escape has become higher than ever before. The video game industry has been steadily growing, but research on the effects of video gaming has been slow moving. While previous studies have focused on video games and aggression and cognitive functions as a whole, there have not been many studies focusing on memory specifically. The purpose of this study is to focus on and compare the memory capabilities of individuals that regularly play video games and those who do not play video games. The study of the design will be a quasi-experimental interview-style design and focus on multiple aspects of memory using multiple memory tests. We will test the hypothesis that video game players have better spatial and long-term memory than people who do not play video games. The study design will have minimal risk to participants which will only include possible fatigue during the online interview process, which will be mitigated with available breaks. There will be no in-person contact during this study. The findings of this study will add to our collective knowledge of how video games affect the human brain. There may also be potential benefits to the video game industry and gamers in general.

Jael Castro, Joshua-Zion Hunter, Ronald Jackson, Anahi Gomez, Karina Jaimes, Alumni
2020-2022 CSUDH 'It Takes A Village' Discussion and Action Series
Faculty Mentor: Monique Turner, Psychology

The United States is known for its diverse and unique population, with citizens from varying cultural backgrounds. Unfortunately, there still are racial and social injustices against these marginalized groups. This presentation will discuss the racial and societal discrimination experienced by individuals within the Black/African American & African diaspora descended community on the CSUDH campus. Moreover, the movement of "It Takes a Village" has started discussions between students, faculty, and staff to activate one's awareness of racial injustices on campus, especially within the classroom and curriculum. Discussion forums were held on a virtual platform in Zoom Breakout rooms where qualitative data was collected. The first discussion event, "It Takes a Village: Black Lives Matter, Healing and Solidarity," was held in the summer of 2020 and consisted of 275 participants (n=275) and included a collaboration of faculty, students, affinity groups, and the Executive Academic Senate including President Thomas A. Parham, ASI, and Toro Dreamer Success Center, representatives of Africana Studies Department, Rose Black Resource Center, Veterans Resource Center, and the Positive Psychology Lab. The discussion forum consisted of students and faculty having difficult conversations on systemic racism and one's experience with microaggressions, both in the United States and on campus. The title of this multi-organization collaboration event is called "It Takes a Village" because much like the African proverb, our motive is to bring the campus community together to help nurture the growth towards social justice and racial equality for students, faculty, and staff members of all backgrounds. The purpose of "It Takes a Village" throughout the academic years to come is to provide a safe environment for students and faculty of color to have a dialogue about the racial struggles they have faced in the past are currently facing, and how we, as a community, can be a catalyst for change.

Janet Mejia, Heather Chaides, Lesli Hernandez Arevalo, Yoel Meza, Patricia Saldana, Arlene Barraza, Yessica Chavez, Undergraduate Student
Defining Community Engagement
Faculty Mentor: Sarah R. Taylor, Anthropology

Community engagement can be defined in many ways. It all depends on whom you ask. Although community engagement can mean a variety of activities, everyone benefits from it. This research aimed to investigate what community engagement means and the willingness of the students of California State University, Dominguez Hills (CSUDH), to participate in community engagement activities. This research employed a mixed-methods approach and a constructivism point of view to further evaluate: (a) what activities students at CSUDH view as community engagement, (b) what community engagement opportunities students wish to see more of, (c) the times that students are available to participate and dedicate to those activities, (d) the benefits students identify from participating in those activities, and (e) the likeliness of students to choose a minor centered on community engagement. The qualitative portion consisted of ten interviews in total; four student and six alumni conducted via zoom or phone. We also included auto-ethnographies from the seven members of the research team, all of whom are currently students of CSUDH. The interviews were color-coded for themes using jamboards. The quantitative portion consisted of fifty-six electronic surveys. Overall our findings concluded that having more availability of community engagement opportunities for CSUDH students can empower them to get involved and open opportunities to receive and give to their respective communities. Early on during their undergraduate years, the involvement of students can increase awareness of matters important to the community and potentially make a difference in their communities even after graduation.

Jean Pickard, Undergraduate Student
Monterey Chert Trace Element Analysis: Source Provenance at the Palos Verdes Peninsula, Ca. – Proposal
Faculty Mentor: Jerry Moore, Anthropology

At the southern end of Santa Monica Bay, along the precipitous cliffs of the Palos Verdes Peninsula, lies the archaeological site known as CA-LAN-138, home to the prehistoric Tongva-Gabrielino who exploited and possibly controlled vital area resources such as Monterey chert. Monterey chert provenance is a valuable source of archaeological data, with research questions predicated on our ability to associate a lithic artifact with its source. Through recent advancements in geochemical analysis, the provenance of local Monterey chert sources can now shed light on the lifeways of the Tongva-Gabrielino including mobility patterns, lithic procurement strategies, and trade activity. Further study may also inform researchers on what control, if any, the Tongva-Gabrielino had over local chert sources. If it is the case that the Tongva-Gabrielino controlled Monterey chert sources on the Palos Verdes Peninsula, then we expect Monterey chert to be found only at Tongva-Gabrielino sites and not at Chumash, Tataviam, and other neighboring group sites. Therefore, the goals of this study are to determine the geochemical composition of local Monterey chert sources to establish source distinction, and to study the relationship between these sources and lithic artifacts from CA-LAN-138. The first objective is to collect specimens from known chert outcrops on the Palos Verdes Peninsula. Following specimen collection, trace element analysis of chert samples will be conducted using mass spectrometry to determine whether the outcrops are geochemically distinct. These findings will not only add information to a growing provenance database for chert sources in the Monterey Formation, but they can be used to develop x-ray fluorescence (pXRF) calibrations for non-destructive analysis of chert artifacts held in nearby museum collections.

Jean Pickard, Efrain Arroyo, Travis Gray, Jackeline Hernandez, Jennifer Marquez, Deborah Snook, Undergraduate Student
Community Engagement Integration into Teaching and Research in Different Majors
Faculty Mentor: Sarah R. Taylor, Anthropology

This research is part of a larger project studying the feasibility of a Community Engagement minor at California State University Dominguez Hills (CSUDH). Our team focused on three stakeholders (students, faculty, and alumni) and their opinions on how a Community Engagement minor might be beneficial for students while pursuing their chosen major, and how it can be integrated into teaching and research in different majors. In addition, we studied whether a minor in community engagement would be beneficial to individuals pursuing postgraduate studies and those entering the job market after graduation. This information may prove useful in determining whether students would seek out a Community Engagement minor should one become available. A Community Engagement minor could benefit students by developing new skill sets through hands-on experience working within a community setting. Our research methods included qualitative interviews via Zoom, qualitative questionnaires via email, and quantitative surveys via Google Forms. Our results reveal that among the stakeholders there are strong trends showing which majors are most inclined to pursue a Community Engagement minor and which community engagement experiences are most important to certain majors. Considering the results of this study, we recommend that CSUDH pursue the creation of a Community Engagement minor.

Juan Venegas, Undergraduate Student
The Mexico Underground Railroad
Faculty Mentor: Miguel Gutierrez, Chicana/Chicano Studies

Although the prominent depiction of the Underground Railroad includes enslaved African Americans escaping into places such as northern "free" states and Canada, there was a more promising path that went south into Mexico that is relatively unheard of today. This research examines the historical contributions of Mexicans aiding enslaved African Americans in their escape to Mexico during the 1800s. It also reinforces the forgotten and historical bond between Mexicans and Black Americans in combating white supremacy to promote each other's well-being. This era in history marks themes such as Manifest Destiny and its consequences, U.S imperialism, and pro-Black politics. This time period is also notable because it includes important historic examples of Black and Brown solidarity such as Afro-mestizos participating in Mexican independence and proactive Mexican involvement in freeing enslaved Blacks from bondage in the U.S. The examination of these historical contributions will elucidate how Mexico's dismantling of its racial casta systems and abolition of slavery transcended beyond its borders decades prior to the abolition of slavery in the United States. To conduct this research, I have used primary and secondary data collected from archives, interviews, and published reports.

Limor Henricka Vink, Nicole Figueroa-Sierra, Diorlene Arca, Denise Aguiluz, Bryan Almeida, Anita Kapila, Alicia Smith, Graduate Student
What is Your Alcohol Recovery Language? A Mixed Methods Examination of Language Used by College Students to Describe Alcohol Recovery
Faculty Mentor: Kevin Montes, Psychology

The current mixed methods research study reports on findings from focus group interviews to examine the language that college students use to describe alcohol recovery. Two focus groups were conducted with college students (N=18) who reported life-time alcohol use. All participants were asked questions regarding language perceived to be associated with alcohol recovery. Data were examined within a thematic content analysis framework. The four central themes related to alcohol recovery that emerged were: harm reduction-based recovery, abstinence-based recovery, social determinants of recovery, and individual differences in recovery. Other concepts that frequently emerged included: relapse, stigma, comorbidity, and drinking identity. College students rated the terms "recovered", "drinking reduction", and "sobriety" as being highly representative of being in recovery whereas the terms "bars" and "light drinker" were identified as not being representative of recovery. The themes and rating of terms in the current study were consistent with current conceptualizations of recovery. Given the paucity of research on alcohol recovery among college students and high prevalence of alcohol use disorder (AUD) in this population (Wu, Pilowsky, Schlenger, & Hasin, 2007) in combination with the low rate of seeking treatment for an AUD by college students, the current study's findings represent a critical first step to understand college students' beliefs about alcohol recovery. Understanding common themes of alcohol recovery will help guide future assessment and treatment of AUD.

Nancy Sanchez, Undergraduate Student
Ethical Issues Surrounding the Archaeological use of LiDAR Technology
Faculty Mentor: Kenneth Seligson, Anthropology

As a remote sensing device LiDAR technology has become an essential part of archaeological investigations since 2008, when it was first used to create 3D spatial data models of archaeological sites. While LiDAR technology has contributed to research, further ethical standards need to be incorporated for archaeologists when collecting, processing, and sharing LiDAR data. In order to incorporate ethical standards that protect the privacy of the indigenous communities, archaeologist must work closely with indigenous collaborators. Developing and following ethical guidelines that recognize the potential negative impacts towards the heritage of the indigenous communities living, near archaeological sites, would additionally help address the concerns of the indigenous communities who are unaware of archaeologists conducting research. While the objectives of the researchers and of the indigenous communities may be different, the two parties may work together to both allow for the documentation of archaeological sites using LiDAR and allow indigenous communities to access data pertaining to their heritage. The collected LiDAR data should involve the indigenous communities living nearby the archaeological sites who can provide input regarding what specific cultural features should not be published or revealed through the use of LiDAR technology. If archaeological researchers continue to disregard the ethical considerations of the indigenous communities, it would damage the goal of preservation and respect for the indigenous heritage. In many cases, the surrounding issues of LiDAR, why LiDAR is important, and how to address these issues now can be solved by executing universal ethical guidelines that will benefit both parties respectively.

Nancy Sanchez, Rubin Landa, Edgar Godina, Jesus Galvan, Madison Medhat, Ariana Reyes, Angelica Alvarado, Undergraduate Student
The Importance of GE Class Selection for the Community Engagement Minor
Faculty Mentor: Sarah R. Taylor, Anthropology

In order to move forward with the Community Engagement Minor the evaluation of students taking GE courses for the minor needs to be analyzed. It is through this paper that demonstrates the importance of how GE's are viewed by the students, alumni, and professor perspectives. While the target audience is the student's opinion of GE's and how the students feel about them the professor's perspective demonstrates how important GE's are compared to the student's view of selecting GE's. The perspective from the professor's point of view is meant to give a general understanding of how GE courses are meant to impact the students knowledge and the importance of GE courses to the students. By analyzing how students feel about GE courses, the paper would portray how GE's were important to the students and how they chose GE's. The student and professor views impact both sides of how GE's are chosen and with the collected data it would answer the question of GE being important for the Community Engagement Minor. Connecting how GE's impact both students and professors it would answer the question of how students would feel about GE's in the Community Engagement Minor. This research would further display that the importance of the target audience is to demonstrate if students would be interested in taking the minor with additional GE courses or if they would willingly choose the Community Engagement Minor.

Nicole Figueroa-Sierra, Martha Jimenez, Karla Pacheco, Marco Flores, Patricia Maya, Brian Juarez, Gerquetta Jackson, Undergraduate Student
Researching Researchers: Reviewing Racial Disparities within Journal Editorial Boards
Faculty Mentor: Ashley Membere, Psychology

Racism and anti-blackness have been prevalent problems in the U.S. but have recently garnered mass attention after the George Floyd protests. These police killings forced society to reflect on the deep-seated issues ingrained into the U.S. such as racial injustice and inequality, and lack of diversity. But has academia addressed these issues internally? Although prominent journals have created calls for papers about racism within organizations, there are still racial disparities within the editorial board of publishers. We set out to determine the disparities within these academic journals and to analyze who is behind these positions of power; that ultimately decides what is published. Using the information within each journal's editorial board, the researchers coded the perceived racial demographics of the senior editorial board members. Perceived race was coded using the information provided via their university faculty pages or academic websites such as Google Scholar as guided by prior research (Berry, 2006; Roberts et al., 2020). Editors were classified as either Black and/or a person of color in order to highlight differences in representation between the two groups. Based on 528 senior editor positions in 45 industrial/organizational psychology, business, and management journals, we have found major disparities in the racial representation for editors in chief and associate editors. Although people of color are very much in the minority with only 20% composing senior positions, Black senior editors only compose 2% of these positions. These findings showcase the anti-blackness that occurs within academia and the need for equality, equity, and inclusion in these academic spaces. More recruitment, support, and resources should be provided to Black scholars so that they can rise to these positions of influence. Ensuring diversity in these leadership positions is imperative because it allows for an eclectic scope of research to be dispersed.

Shaina Nguyen, Undergraduate Student
Factors that Contribute to Success in Online College Courses
Faculty Mentor: L. Mark Carrier, Psychology

Because of the ongoing pandemic, online courses have become an increasingly popular alternative to traditional face-to-face (F2F) courses. As a result, it has become ever more important that college students are able to navigate through these differing forms of course delivery to obtain the same quality of education and success as they would with F2F courses. In this paper, we compiled a multitude of factors that prior studies have shown contributes to success in online college courses. We found that there were reoccurring factors—some student controlled, some technical, and some external—that lead to a higher grade in online courses such as: elimination of distractions, engagement with peers, attendance of an orientation course, and the overall design of the online course.

Yadira Ramirez, Gabrielle Makrdichian, Jael Castro, Nicole Figueroa,
Melanie Gerner, Undergraduate Student
www.Fakenews.You: Cognition's Influence on People's Reactions to False Internet Information
Faculty Mentor: L. Mark Carrier, Psychology

Online media is an influential source for general news-related information, but much of the content lacks credibility. Although fake news has important implications in politics, health, and environmental science, little empirical research has been conducted on the factors driving people's reactions to false information online. This study identified patterns of behaviors and analyzed what factors drive online news reading behaviors. Participants (N = 2,283), which consisted of people living in five university communities around the U.S., took an anonymous, online questionnaire through SurveyMonkey.com. The survey included scales on attitudes and beliefs about fake news, behaviors related to false online information, media exposure, politics and voting, technology addiction, conspiracy beliefs, emotions, and mental processes to identify behavior patterns. Cluster analysis and logistic regression were used to analyze the data. The logistic regression showed that people who plan to vote in the 2020 U.S. election are 2.3 times more likely to be vigilant about the information they consume than those who do not intend to vote. In addition, angry individuals and people with disordered thinking are 1.4 and twice as likely to generate fake news, respectively. The conspiracy seekers are 4.6 more likely to post false information; these findings may raise awareness of the types of people who are more likely to generate and spread false information and may be used to create effective interventions directly targeting these specific groups. The main research question that will be addressed: How does our cognitive processing relate to our fake news behaviors?

Yesenia Gonzalez, Undergraduate Student
Impacts of the COVID-19 Pandemic on Women and Men's Well-Being
Faculty Mentor: Giacomo Bono, Psychology

A pandemic is not only a medical issue; it also has an impact on people's mental health, causing problems such as depression, anxiety, and stress (Javed, Sarwer, Soto, & Mashwani, 2020). According to Liu et al. (2020), Sun et al. (2020), and Wang et al. (2020), women have experienced more psychological harm than men. However, in a study conducted by Bono, Reil, and Hescox (2020), grit was correlated to higher resilience and lower psychological impact and gratitude to lower impact on academic performance. The purpose of the current study is to analyze how student's well-being has been impacted due to the COVID-19 pandemic. College students (N=301) took a survey to examine the impacts of the pandemic on their positive and negative affect, satisfaction and meaning in life, and social anxiety and depression symptoms. I will be using part of the full sample to obtain equal size groups for males and females. This study will examine whether two protective factors (grit and gratitude), well-being outcomes (affect and satisfaction and meaning in life), and mental health outcomes (depression and anxiety) differ by gender. It is hypothesized that during the COVID-19 pandemic, women present more negative affect and social anxiety, and depression symptoms and less satisfaction and meaning in life than men.

Yessica Chavez, Undergraduate Student
Race Based Medicine
Faculty Mentor: Sarah Lacy, Anthropology

One of the manifestations of 'personalized medicine' in the absence of widespread, inexpensive genomic data is race-based medicine. This has been applied to many disease states, but specifically the effects of BiDil on the Black community as a response to heart failure rates highlights the consequences of race as a method of biologically asserting correct medicine for sociological groupings of people. BiDil became the first FDA therapy approved drug for a specific racial group. Looking at data from the initial patent and rebranding of the pill on the market today, there are significant aspects that bring up questions of the validity of BiDil in treating Blacks better than it would have served any other group. Clinicians have spoken on this issue and recognized how they have contributed to distribution of the drug based on their evaluations. A significant number admit they have determined patients' race through observing physical features, and believed that racially defined groups are biologically distinct. Race is considered a poor categorization for human variation because it has no biological standing yet medical institutions still use race as a proxy for genetics, resulting in inequitable medical care. Because race has no biological basis in medicine, a move toward race-conscious medicine is a better alternative to address factors such as socioeconomic status, environment, and discrimination. Medicine is not an institution immune to racism and it should be addressed.

Joseph Villarreal, Graduate Student
The Neoliberal Mirage: How Everyone was Tricked into a System that has just Generated Inequality
Faculty Mentor: Esther Castillo, Sociology

The theoretical framework of neoliberalism has appealed during the second party of the xx century, yet it is starting to lose traction thanks to the enormous inequality that it has provoked. In this analysis, it is discussed by comparing and contrasting literature and theories regarding neoliberalism; and how it has evolved from a discipline of economists at universities to a doctrine that has shaped the form of many governments around the world. In the United States alone the Gini coefficient never was higher than during the present time, and all is thanks to fourth years of a rampant neoliberal agenda in the American institutions. Not only neoliberalism shaped the economic and political life of the American people, but it also changed the social landscape of the American mindset. Before the sense of community was strong, the idea that structural causes were responsible in great magnitude was widely accepted, yet now this idea it's seen as an excuse of the individual to not take responsibility for its actions. Individualism and self-help has despised the community brotherhood and social and collective action of helping each other. Under these premises we can see that the desunification and social erosion that neoliberalism is causing is evident; all for the liberty of the individual to not have restrictions in his/her eternal persecution of self-realization, but in the process of protecting our individualistic liberties we are losing our collective rights!

Biological and Agricultural Sciences

Albert Barrios, Michael Reed, Nataly Arias, Undergraduate Student
Examining Genetic Signatures between Fast and Slow Growing Tumors in African American Triple Negative Breast Cancer
Faculty Mentor: Shehla Pervin, Biology

Breast cancer is an evolving disease that constantly interacts within tumor cells and surrounding stromal cells for tumor initiation and progression. These interactions brought meaningful attention to these molecular crosstalks between tumor cells and host contributing cells. Our in vivo study suggests stark genetic differences between two African American Triple Negative Breast Cancer cell lines, MDA-MD-468 and HCC70. Our study found that MDA-MB-468 displayed slow growth phenotype and HCC70 displayed a more aggressive phenotype that resulted in accelerated tumor growth. To determine specific signaling pathways was contributed to these phenotypes, RNAseq analysis was performed. RNAseq analysis was performed for both human and mouse genes in both fast and slow growing tumors. Analysis of the transcriptomic landscape in the slow growing tumors, we found attraction of cytotoxic T cells and apoptotic signatures. We analyzed xenograft tissue morphology via immunohistochemistry. We also examined the role of Mammary Cancer Stem Cells (MCSCs) and Embryonic Stem Cells (ESCs) markers via Aldefluor cell cytometry, immunoblot analysis, and RNA sequencing. Upregulation of MCSCs/ESCs markers coincided with more aggressive behaviors in tumor progression. Where we observed upregulation in MCSCs/ESCs markers in HCC70 xenografts and reduced expression in MDA-MB-468 xenografts. We also observed pro-tumor activities in HCC70 xenografts such as angiogenesis. These observations highlight the tumor microenvironment as a path to determine key players from both cancer and host origins that may promote aggressive behaviors for accelerated tumor progression. We are further analyzing RNAseq data to elucidate key players in the tumor cells as well as the host and their interactions for their contributions to their phenotypes. Our lab's commitment is to further characterize these subtypes of cells that may play an essential role in tumor-promoting activities for aggressive tumorigenesis.

Alicia Salmeron, Graduate Student
Infiltration Rates within Two Different Sites at CSUDH.
Faculty Mentor: Kathryn Theiss, Biology

Since the birth of California State University, Dominguez Hills (CSUDH) in the 1960s the campus community has continually grown and so has its environmental footprint. With the addition of gray infrastructures, human-engineered roads and pipelines, there is an increase of impermeable surfaces, which do not allow water to penetrate the soil. There is also an increase in built environments, such as buildings and pavement. Impermeable surfaces on the campus has created less space for plant life as well as less surface area that allows rainwater to infiltrate the ground, causing the plants to struggle for water. With high temperature, low rainfall, impermeable surfaces, and stressed plant life on our campus, I am provided with the perfect built environment for research. My research is focused on the infiltration rates within two sites on campus: CSUDH Vernal Pool (VPS) and CSUDH green waste (GWF) sites. These two areas have been altered to accommodate campus growth and the soil has been altered creating impermeable surfaces. My research plan is to test the infiltration rate at VPS and GWF, before and after the rainy season. I will also map out each site using a handheld GPS devise. By mapping out each infiltration test, I will be able to track the progress or lack thereof over the course of my project. I will also alter the VPS and GWF, with a total of 30 sites at each location by planting California native plants with and without fertilizers. My research on campus will allow me to dive deeper into understanding how I can help our built environment return to a permeable greenspace and make a difference in our community and our climate.

Jose Garfias, Michael Reed, Nataly Arias, Albert Barrios, Undergraduate Student
Increased Angiogenesis and Embryotic Stem Cell Signatures Contribute to Delayed Growth of MDA-MB-468 Xenografts
Faculty Mentor: Shehla Pervin, Biology

Breast cancer is composed of a heterogeneous group of malignant cells that constantly communicate with their microenvironment to promote tumor progression. These cross-talks between tumor cells and microenvironment determines growth kinetics and phenotypes of various tumors. Our lab has found MDA-MB-468 breast cancer cells initially gives rise to slow growing tumors, which maintain this phenotype for 3-4 months after which an accelerated growth observed. RNA Seq analysis for both human and mouse genes was performed to determine key players that maintain and drive these tumor phenotypes. RNA Seq data shows early MDA-MB-468 xenografts expressed CXCL9 and CXCL10 chemokines, known to attract cytotoxic T cells and induce apoptosis. Early slow growing xenografts also expressed TNF alpha cytokines that induce apoptosis. In sharp contrast, the fast growing MDA-MB-468 xenografts expressed increased angiogenic and embryonic stem cell gene signatures. These embryonic stem cells, and other biomarkers have been validated by immunoblot analysis, PCR and immunohistochemistry. Our lab is also examining key players from both tumor and host origins that interact to promote tumor growth. We are further characterizing significant pathways of host and tumor cell that could initiate the tumor growth. Our lab's commitment is to further understand whether tumor cells or the host is triggering changes to the tumor microenvironment.

Kelly Hendergart, Justin Elloran, Graduate Student
The Relationship between Median Household Income and Average Yearly AQI in LA County
Faculty Mentor: Parveen Chhetri, Earth Science

Environmental racism is a problem that is at the forefront of today's political discussions, but the focus is largely on variations in pollution levels between lower and high GDP countries. Less developed, poorer nations are typically bombarded with much higher levels of air pollutants, while higher GDP countries tend to bear less of a burden. For our study, we looked to see if this trend was also reflected on a more regional scale by examining the average yearly Air Quality Index across 12 different monitoring stations throughout LA County, which we then compared with median incomes from those respective zip codes. Both income and AQI data were from 2017, as this was the most complete dataset available. While we did not find a statistically significant correlation between average AQI and median income, this may be due to the scale that this study took place on. In the future, we would like to expand this to the entire state of California in addition to incorporating data from a larger time frame to account for any irregularities and obtain a more complete picture.

Kevin Kausen, Alumni
Side Illuminated Liquid Level Optical Fiber Sensor for Hydroponics
Faculty Mentor: Claudio Egalon, Physics

The hypothesis of my summer research was centered around the idea that the higher the refractive index difference between a side illuminated optical fiber and its surrounding environment, the higher the light intensity guided by the fiber. This hypothesis was partially supported by experimentation conducted in July and August of 2020. For these experiments, simple tap water was used as the fiber's surrounding medium. Further experimentation determined that this device can be used as a liquid level sensor with a potential resolution of 3 microns. In the future, we present the data documenting the sensor response to a variety of sucrose solutions having different indices of refraction. Evidence collected during Summer 2020 strongly suggests that the higher the refractive index difference between the optical fiber and its surrounding environment, the higher the light intensity guided by the side illuminated fiber. This is an important step in providing evidence for Dr. Egalon's patented technology's usefulness in measuring liquid levels. Further experimentation will be conducted utilizing the campus' urban farm.

Lari Smith, Undergraduate Student
Identification of Marine Sponge Natural Products that Inhibit the Type III Inhibition System in Pathogenic Bacteria
Faculty Mentor: Erin McCauley, Chemistry

The objective of this project was to identify metabolites from marine sponges that act as inhibitors of the bacterial type three-secretion system (T3SS). The T3SS is a virulence factor commonly employed by pathogenic strains of Gram-negative bacteria to infect their hosts. This system allows pathogenic bacteria to inject malicious proteins into the host and subvert that host's defenses. By developing inhibitors to the T3SS, it may be possible to block the virulence of pathogenic bacteria without putting selective pressure on the organisms like typical antibiotics do, thus side-stepping the critical issue of antibiotic resistance. The McCauley lab maintains an expanding library of marine sponge extracts from biodiverse regions around the world. These sponges are known to harbor a wealth of unique complex metabolites; therefore, these extracts may be an excellent source of metabolites that may modulate the activity of proteins involved in T3SS based pathogenicity. This project was a collaborative effort between the McCauley lab and the Auerbuch Stone lab at the University of California Santa Cruz, who have been studying the T3SS for a number of years. My research involved purifying the metabolites of interest, and elucidating the structures using high resolution mass spectroscopy and NMR.

Natalya Cardona, Miriam Weinberg, Ebonie Bennett, Undergraduate Student
Identifying Novel Chemical Scaffolds from Marine Derived Fungi using Mass Spectroscopy based Molecular Networking.
Faculty Mentor: Erin McCauley, Chemistry

Over 65% of all approved therapeutic drugs are either natural product, natural product derivative, or their pharmacophores are natural product inspired. Natural products are secondary metabolites produced by living organisms. They have played an important role in traditional medicine for thousands of years and continue to be an essential part of the current healthcare system. The success of these compounds and their derivatives as therapeutic agents is largely due to their high structural diversity and specific biological targets. The overall objective of this research was to identify novel natural products from an under explored source, marine derived fungi. This was achieved by fermenting 50 unique fungal strains in liquid media and extracting the biosynthesized natural products. The extracts were divided into peak libraries using flash chromatography and the peak library fractions were analyzed using liquid chromatography-mass spectroscopy (MS) using a tandem (MS-MS) format. The MS-MS data was analyzed using Global Natural Products Social Molecular Networking, a program that allows for visual spectral networking of the bacterial natural products present in the park libraries. This enables the identification of clusters of compounds that had unique chemical scaffolds. The compounds were purified using high performance liquid chromatography and their structures were determined using 1D and 2D NMR spectroscopy.

Raul Gutierrez, Erik Martinez, Undergraduate Student
Identifying Genes That Play A Role In Long-Term Stationary Phase
Faculty Mentor: Karin Kram, Biology

Escherichia coli can adapt to live in an environment without any additional nutrients for long periods of time. When E. coli grows in an environment where nutrients are scarce, they enter long term stationary phase (LTSP). We can use this phase in the lab as a proxy for a more natural environment and observe how cells adapt to these conditions. It is not yet known which genes may be important for survival or adaptation in this phase. In order to identify nonessential genes that play a role in survival during LTSP, we competed cells in the KEIO collection with   wild type (WT) E. coli cells. The KEIO collection is a set of E. coli strains, each with a single- gene deletion of a nonessential gene, representing all non-essential genes – a total of 3985 strains. We performed competitions with WT cells during ten days of incubation, into LTSP. We observed cell growth after one, five, and ten days of incubation. After screening the entire collection, we identified 101 gene deletions that affected the cell's ability to compete with WT. 29 strains with deletions had an advantage over WT cells, whereas the remaining 72 strains had a disadvantage when competed against the WT. While some of the identified strains did not show a difference in growth once competitions were in tubes versus the 96-well plates used for screening, we were able to confirm that some of the strains did have a difference in growth compared to WT cells. Several strains, including those missing sucC (encodes enzyme involved in central metabolism), dgkA (encodes an enzyme involved in lipid biosynthesis), mprA (produces a regulator involved in antibiotic resistance and efflux), cpxA (encodes a sensor kinase that responds to cell envelope stress) or hns (encodes a protein that regulates stress-related genes by condensing DNA) were outcompeted by WT cells during LTSP, indicating that these genes are essential for survival in long-term cultures. Overall, we have identified several genes that are important for survival in LTSP, and can begin to determine why these genes play a role in survival into LTSP by determining their function in long-term cultures.

Business, Economics, and Public Administration

Sara Garcera, Undergraduate Student
Handwritten Journaling, Creative Thinking, and Humanity
Faculty Mentor: Orie Berezan, Management & Marketing

Reflective learning is the process of engaging more deeply with knowledge, beyond comprehension. It takes the learner through three stages: awareness, critical analysis, and ultimately perspective transformation. Ideally, this results in the ability for students to separate facts from attitudes or their emotional responses, and students challenging their own ideals from a new perspective. This is especially important with topics that are sensitive in nature, such as loneliness. Although journaling has been utilized in the classroom for areas such as educational psychology and social work, it is not widely practiced in business courses such as marketing. The question is: Can reflective journaling in business school result in a higher level of learning? This project investigates the relationship between learning outcomes and the reflective journaling process in an undergraduate marketing and humanity class at a large university on the west coast. The data was collected from the assignments of 17 students on the topic of social media and loneliness and were analyzed to evaluate the students' learning experience using content analysis through the lens of Bloom's Taxonomy. The opportunity provided a unique learning experience and a hands-on approach to allow marketing students to experience learning in a new light, through their handwritten journals. Additionally, student feedback on the course was collected and will be analyzed in conjunction with the journaling results. All analysis, results, and implications will be presented on Student Research Day.

Jennifer Atenza, Miguel Espinoza, Jennifer Atenza, Genesis Lara, Johnathan Perez, Undergraduate Student
Police and Community Relationships Post 2020
Faculty Mentor: Zheng Yang, Public Administration

Our research will delve into the question of what will relationships between police and the communities they serve look like in the aftermath of the George Floyd killing and the subsequent civil unrest that followed this tragic event. How will police and communities rebuild? What will their dynamic be? Will the quality of services be diminished as a result? Based on the literature, we will see the injustices communities face. The literature touches on the need for change.

Marcia Torres, Andrea Galindo, Adam Zamarripa, Keith O'Shea, Undergraduate Student
Juvenile Delinquency in Los Angeles
Faculty Mentor: Zheng Yang, Public Administration

Variables such as exposure to crime, race, gender, economic status, and location all have a tremendous impact on the status of an individual that would commit a crime. This study investigates the idea that juvenile crime is conducted at a higher rate in big cities within the United States than that of suburban cities. It was hypothesized that children living in big cities in the United States are more likely to become criminals later in life than those who grow up in suburban areas. Our study will be that based on empirical data, participants will be selected at random from both inner-city and suburban areas, primarily our Questionnaire/Survey introduces general questions regarding our case. These questions will begin with closed-ended questions, shifting into open-ended questions to encapsulate information to support our field of study. This group expects little to no confusion to occur within our pool of participants, ensuring proper execution in the experimental conditions are accomplished.

Luis Ocon, Undergraduate Student
An Analysis of Challenges Encountered in IS Development
Faculty Mentor: Myron Sheu, Information System and Operations Management

Amid the fact that the average success rate of enterprise information system (IS) projects continues to be low even after rapid advances in information technology and project management for several decades, this research focuses on commonly encountered risks in IS projects and analyzes how these risks are responded and how the responses affect project outcomes as an attempt to reveal why IS projects continue to fail and thus digitizing an enterprise is still so challenging. Resulting from our previous work, we hypothesize that information systems are much more complex as they are expected to play a pivotal role in most business functions and therefore the risk pattern of IS projects may have evolved, and that as we keep adding more information systems to the enterprise infrastructure, a piecemeal approach won't work and a framework for the digital integration of an enterprise must be established first. The study presented in this paper examines such risk and response patterns that should allow us to draw some thought-invoking implications that may collectively call for a managerial focus of our endeavor to digitize an enterprise: a) Risks embedded in IS projects due to business issues are significantly more dangerous than ones due to technical and even people issues; b) Complexity may become a significant source of risks encountered in IS development, especially due to business issues; c) As a result, risk mitigation may not always be effective, in particular, under a time constraint and in a tactic fashion; and d) Finally, findings from the research confirms that business issues involving business functions and processes are more difficult than data processing and technical infrastructure to resolve and thus impose impactful challenges that make piecemeal efforts at the project level ineffective.

Madison Reyna, Graduate Student
Effects of COVID-19 on Student Needs and Learning
Faculty Mentor: Rama Malladi, Accounting, Finance and Economics

This research project includes an analysis of data that was collected at CSUDH from students at the beginning of the COVID-19 pandemic. The purpose of the survey was to capture student needs, concerns, and suggestions so that the institution was better able to align resources and support students. A total of 1718 students responded between mid-May and mid-April. The needs assessment took into consideration an adaptation of Maslow's (1943) hierarchy of needs for the school environment. That is, the University should know about and work to address basic needs and safety so that students are able to form relationships, establish a sense of belonging, develop esteem, and to learn. Community research estimates that more than 60% of local residents have basic needs and many of the students included in the sample are Pell eligible and first-generation college students. The research is therefore also informed by bandwidth recovery theory, which states that students need help to reclaim cognitive resources lost to poverty and related challenges (Verschelden, 2017). The research question that guided this project was, are there differences across lower and upper division students in their expectations and concerns at the beginning of the COVID-19 pandemic? Specifically, we tested the following hypotheses: (1) Lower division students are more likely to have basic needs, as compared to upper division students, (2) Students with basic needs are more likely to report other needs (such as financial and healthcare), and (3) Students with basic needs preferred different support compared to those with other needs. The findings confirmed the three hypotheses and provided useful data for faculty to consider as they develop and adjust syllabi, classroom management, and approaches to interacting with students.

Education

Daisy Cruz Cervantes, Graduate Student
Inclusion in Preschool: Using Embedded Instruction (EI) and Augmentative and Alternate Communication (ACC) to Teach Expressive and Receptive Language Skills to Preschool Children with Intellectual Disabilities
Faculty Mentor: Kai Greene, Special Education

This study seeks to analyze how effective the combination of embedded instruction (EI) and the use of an augmentative and alternate communication (ACC) board has on preschool children with intellectual disabilities in the acquisition of expressive and receptive language skills. The subjects in this study will include one preschool child with an intellectually disability who is enrolled in an inclusive preschool program. The subject has access to the general education curriculum and the EI Primary Target Goals (PLT) will be in accordance with the subject's individual education plan (IEP) goals. The results of this study can benefit educators, students, and parents alike and can help better equip parents with the tools necessary to meet the language needs of their children in the home setting. Students can also gain language skills as a result of this study, thus allowing them not only to communicate basic needs but also independently partake in scheduled classroom activities, transitions and routines. The results of this study can also help educators effectively deliver embedded instruction in combination with an ACC core board in the near future through online platforms, thus helping bridge the gap between home and school settings. Parents and educators can learn effective intervention strategies that can be extension of the learning and home environment due to parents having to attend online distant learning intervention sessions.

Maria Ramos, Graduate Student
Teachers Perception on the Effectiveness of Embedded Instruction during Distance Teaching
Faculty Mentor: Kai Greene, Special Education

The purpose of this study is to examine teachers' perceptions of the effectiveness of the Embedded Instruction (EI) professional development (PD) training to be conducted via distance learning. Embedded Instruction is a program and evidence-based teaching strategy used in the early childhood special education classroom. EI involves using a naturalistic instructional approach by embedding the teaching of specific skills to students during daily activities, routines, and transitions in their preschool classrooms (Rakap, 2017). The EI training is a two-day training that focuses on teaching first year participants how to integrate EI into their classroom. During the training first year participants along with their coaches complete four modules that cover What to Teach, When to Teach, How to Teach, and How to Evaluate EI in their classroom. Subjects for this study will be 10 preschool teachers who will receive professional EI training during the 2020-2021 school year and are currently teaching in an early childhood special education class. Participants will complete a pre- and post-training questionnaire to evaluate the effectiveness of the EI training. Participants will be asked to complete six open-ended questions six weeks after completing the EI training. During the open-ended questions teachers will be asked to discuss their implementation of EI in the classroom. EI is being done outside this study, however this study is evaluating EI based on teacher's perception.

Melanie Gerner, Undergraduate Student
Reducing Invisible Equity Gaps to Increase Student Parent Persistence and Success
Faculty Mentor: Thomas Norman, Management & Marketing and Ana de la Serna, Communications

Which resources do student parents need to ensure they earn college degrees at the same rate as students without children? Around 1 in 5 of all college students are student-parents (IWPR, 2019). Student-parents face many obstacles to completing college and are less likely to complete school than students without children (USGAO, 2019). According to a 2017 IWPR report, 32.6% of college students who have children completed a degree or certificate within six years of enrollment compared to 56.1% of students who do not have children, even though student-parents on average have higher GPAs. Student-parents who do not complete their degree are often left with student debt, leaving them worse off financially than before enrolling in college and less prepared to support their families or contribute to society. In this mixed-methods study, I will use online survey data of student-parents at a medium-size urban university, and data from in-depth interviews of student-parents. I will compare the effectiveness of comprehensive childcare options, specialized whole person advising, and expanded financial support in increasing student persistence and ultimately graduation. I will then blend the quantitative and qualitative data to test my hypotheses. When student-parents' unique needs of childcare, added financial support and specialized advisement are realized, graduation rates should increase. The upfront cost of free childcare, a case manager, and an extra $2,000 a year to student-parents, specifically single mothers earning a bachelor's degree, is considerably less than the increased tax revenue realized after her graduation (IWPR 2019). A 2018 study of student parents at City University of New York investigated "time poverty", finding many student-parents are left without options for childcare (Wladis et al, 2018). Common frustrations student-parents are met with are institutions that do not recognize their unique needs and professors who misunderstand or do not consider their obstacles and struggles.

Mélissa Maragnes, Graduate Student,
Early Start Denver Model Professional Development Training
Faculty Mentor: Kai Greene, Special Education

This professional development training (PDT) will inform general education preschool teachers, special education preschool teachers and parents of students with Autism Spectrum Disorder (ASD) on how to use the Early Start Denver Model (ESDM). Autism Spectrum Disorder is a developmental disorder of variable severity that is characterized by difficulties in social interaction and communication and by restricted or repetitive patterns of thought and behavior. Therefore, the ESDM provides alternative strategies and teaching techniques that can help promote a boost in language, social and cognitive skills, and verbal and social development. As well, the ESDM approach aims to reduce the severity of some negative behaviors and eradicating others. The ESDM professional development training may be useful for teachers who work in preschool general education inclusive settings, for Special Education teachers but also for parents of students with ASD since they are the ones who spend most of their time with their child. The ESDM will provide alternative strategies and teaching techniques that can help improve social, cognitive, and communication outcomes for young students with autism spectrum disorder and therefore positively impact inclusion of the students with ASD. As a result, students with ASD may master goals and may perform similarly to their typical developing peers. The risks are minimal and may be due to body regulation or dysregulation, time of the day, illness, personal issues, environment and other internal and/or external factors.

Health, Nutrition, and Clinical Sciences

Alex Perez, Undergraduate Student
Mapping Accessible Shelters in LA County Using Geographic Information Systems (GIS)
Faculty Mentor: Parveen Chhetri, Earth Science

There is no physical map that can visually locate drop-in and transitional housing shelters in Los Angeles County. With the GIS software (ESRI ArcMap) and geocoding approach, I have mapped the shelters that have accessible locations, capacity, languages, population focus, intake phone numbers, hours and days of operation, cost or lack thereof, as well as the agency providing the service. The main focus was to find 24-hour shelters that would be free of cost and open to the public. Also taking into consideration the distance from public transportation because many people in LA County do not have access to a car, programs within a mile distance from the Metro Trains were mapped and highlighted. There are different types of shelters available and the resources that each provides differ. Therefore, maps were also prepared to show drop-in shelters, immediate and short term, temporary, and transitional housing. Immediate and drop-in shelters can also be categorized as emergency shelters, and these shelters provide the basic needs, food, medical, but often have a time limit or are not able to meet the capacity of folks who are requesting shelter. Many drop-in shelters focus on providing preventative and emergency services, of course, shelter being a priority, but any of the additional services depending on the provider and the funding. Therefore, maps highlighting all these shelter locations and facilities will be helpful for those in need of these services.   Keywords: GIS, housing shelters, mapping, Los Angeles.

Humanities and Letters

Ev Campos Martinez, Undergraduate Student
Understanding Butch Lesbian Culture: Are Butches A Dying Breed?
Faculty Mentor: Jennifer Brandt, Women Studies

In this study, I explore the genealogy of the butch lesbian identity and the erasure of butch lesbians from academia and society, specifically focusing on Black butch lesbians and butch lesbians of color. The genealogy begins on the origin of the butch lesbian identity and moves to defining butchphobia, the act of purposely excluding, disliking, and denying butch lesbians or masculine of center folks the space, as well as the support, to exist and contribute to culture and society. I argue that butchphobia connects to the erasure of Black butch lesbians and butch lesbians of color. I proceed to explain the significant contributions of butch lesbians in the Pride movement, Stonewall Riots, and how butch lesbians contributed to the women's liberation movement during the 1960s and 70s. In the genealogy, I also examine how race and language have shaped the experiences of Black butch lesbians and butch lesbians of color. Subsequently, I examine social media being a powerful tool when it comes to butch lesbian representation, and I highlight its role in creating more positive spaces for collective action and community. Despite these gains, the erasure of butch lesbians is still happening in academia and society, therefore, I will include aspects of my journey and experiences with the butch lesbian identity. I, myself, have had difficulty finding literature, readings, and work made by Black butch lesbians and butch lesbians of color because of the erasure of these identities in academia. Lastly, I argue that it is a disservice to future generations, especially queer youth, to continue the erasure of butch lesbians from academia and society.

Melissa Rodriguez, Undergraduate Student
Serial Killers and their Characterists
Faculty Mentor: Zheng Yang, Public Administration

Children who are exhibiting these behaviors may have a higher risk of violence as an adult. Behaviors such as starting fires, wetting their bed, cruel to animals are all red flags. What they don't explain is that these are signs of asking for additional help. It doesn't mean that they automatically grow up to become a serial killer. In all of the articles we read, we were able to see that becoming a serial killer is a process that starts during their childhood. There is a theory that people are born serial killers, however, the type of trauma someone goes through in their life can affect why they kill. Childhood trauma is the common reason behind why someone might kill. If a child is abused in any way, it can obviously lead to that child developing mental issues because of whatever traumatic experience they had. If that child develops mental issues because of the experience, it can cause them to have resentment towards not only the people that have abused the child but people that just look like the abuser. If that is the case, then in the future the person that has grown up with that resentment might kill the abuser or people that look like the abuser.

Raquel Serrano, Undergraduate Student
All Social, No Justice? A Feminist Critical Analysis of the Performativity of Social Justice via Instagram
Faculty Mentor: Jennifer Brandt, Women Studies

The purpose of my research is to investigate the performativity of social justice demonstrated through social media; specifically, via the Instagram accounts of @Emilys_list (an established organization that promotes and funds women in politics) and @blmlosangeles (creators of Black Lives Matter, a movement created by women to call for action in response to anti-Black racism). Social justice movements have brought attention and activism to racial, sexist, homophobic, and xenophobic issues. To continue that action, I will analyze social justice through a feminist lens, analyzing performance on Instagram because of the severity of possibilities that are at risk when masses of people are being reached. Through my research, I am exploring the origins of social justice, its evolution, the language around social justice, its effectiveness, and its performance on social media. In America, not only is social media accessible, it is a platform that is commonly used as a news source and form of activism. I argue that although social justice has shown to be successful in improving the state of humanity, we are in the time often called the Digital Wave by feminists, requiring that restrictions and guidelines need to be placed to ensure social justice when engaging in activism.

Physical and Mathematical Sciences

Allison Pary, David Saldana, Scarlett Zamora, Graduate Student
A Comparative Evaluation on the Performance of Food Waste Diversion at California State University Dominguez Hills
Faculty Mentor: Justin Valliere, Biology

To mitigate the effects of anthropogenic activities acting on our climate, we should work towards the reduction and prevention of emissions. The production of excess methane (CH4) gas from decomposing biological materials in landfill waste (LW) threatens us with not meeting the standards of climate model RCP 2.6 goal, of Net-Zero emissions by 2050. Consequently, the implementation of a plan for the conservation of resources such as energy, water, and food in a waste management system was created as a viable procedure to meet these standards at California State University Dominguez Hills (CSUDH) with the inception of the Office of Sustainability. This study statistically evaluated the effectiveness of potential food waste (FW) diversion on campus. Waste audits (WA) were utilized to calculate the potential FW diversion over measured LW mass in 2018 and 2019. These years were selected because of the substantial difference in student outreach programming conducted (food recovery, toro token system, proper waste workshops) and funding received by the Office of Sustainability in the span of those two years. We compared amounts of food waste diverted in 2018 and 2019 using a two-tailed paired t-test to evaluate if there was a significant reduction of potential FW within LW mass measurements following increased outreach/education efforts on campus. Thus, we surmise if there is a significant contrast in the FW diversion mass in future WA we can attribute this success to efforts pioneered by the Office of Sustainability. Based on the results of the paired t-test we determined there is a significant relationship outreach educational programming has on FW diversion. Furthermore, future studies on the subject can determine if mandatory campus-wide education aimed at improving awareness of sustainability issues on campus could yield an even greater reduction in FW that is sent to landfills.

German Bravo-Villasenor, Graduate Student
Hexavalent Chromium Emissions and Sensitive Receptors in Los Angeles County
Faculty Mentor: Parveen Chhetri, Earth Sciences

The AQMD (Air Quality Management District) supervises emissions of metal TAC (toxic air contaminants) facilities. Hexavalent chromium is one of the most common metals under the TAC list (list created by the Office of Environmental Health Hazard Assessment). Chromium is emitted by industrial processes such as electroplating, surface coating, pigments, dyes, leather tanning, stainless steel production and welding. Continuous exposure to hexavalent chromium in air is associated with an increased risk of cancer and symptoms like irritation of the respiratory system, as well as allergic reactions such as shortness of breath. One critical factor of metal TAC facilities is the distance to schools, hospitals and residential areas, also called sensitive receptors. Distance to sensitive receptors affect permitting, operating hours and housekeeping strategies. AQMD rules 1480, 1469 and 1469.1 delineate the details of housekeeping and reporting for facilities that emit hexavalent chromium. The objective of this project is to use GIS to represent the air concentration of chromium over LA County as well as the distance of some facilities to sensitive receptors such as schools and hospitals. Location of chromium TAC facilities was taken from the Toxic Release Inventory website, readings of chromium sensors were taken from the EPA (Environmental Protection Agency) website and location of sensitive receptors was taken from the LA County Enterprise Geographic Information Systems website. An interpolation tool was used to estimate the concentration of chromium over LA County for the year 2019, the buffer and near tools were used to estimate the distance between facilities and sensitive receptors.

German Bravo-Villasenor, Graduate Student
Particulate Matter Distribution in Carson City
Faculty Mentor: Tianjun Lu, Earth Sciences

PM (Particulate matter) is composed of air pollutants that have a radius below 10 or 2.5 micrometers. These kind of contaminants are associated with cardiovascular and respiratory health conditions. There are different sources of PM but some of the most common include smokestacks, construction sites and fires. Emissions of sulfur dioxide and nitrogen oxides may also lead to the formation of PM in the atmosphere. The EPA and Air Quality Management district monitor particulate matter, this is done with the use of sensors located in different cities. In LA County there are approximately 13 sensors that record PM 2.5 readings, this is a relatively small number of sensors, in addition not one of those sensors is located in Carson City. The objective of this project is to use low cots sensors to monitor the variation of PM 2.5 in Carson City and CSU Dominguez Hills. Data obtained can be used to analyze the average exposure of individuals as well as the potential health risk.

Jason Williams, Undergraduate Student
Identifying Novel Chemical Scaffolds that Exhibit Selective Cytotoxicity against Solid Tumor Cell Lines using Mass Spectroscopy based Molecular Networking
Faculty Mentor: Erin McCauley, Chemistry

The overall objective of this research was to identify novel natural products with selective cytotoxicity against solid tumor cell lines. This research project was achieved in partnership with Dr. Fredrick Valeriote at the Henry Ford Health System. My research project involved analyzing natural product extracts that exhibited the desired cytotoxic activity using a liquid chromatography- tandem mass spectroscopy (MS-MS) format. The MS-MS data was analyzed using Global Natural Products Social Molecular Networking (GNPS), a program that allows for visual spectral networking of the natural products based on their chemical scaffolds. These scaffolds were then compared to a database of known natural products in the GNPS framework. By comparing the natural products present in the extracts to the known natural products in the GNPS database, dereplication of previously reported natural products were quickly identified. This allowed for prioritization of extracts that contained putatively novel chemical scaffolds. These natural products were then isolated into the pure compounds from the complex extracts using high-performance liquid chromatography. Along with the structural elucidation of the pure compounds using mass spectrometry and NMR spectroscopy. After which the pure compounds were returned to Dr. Valeriote to be rescreened against the appropriate cell line to determine which compounds were responsible for the observed cytotoxic activity.

Karla Rubi, Yilda Echeverria Morales, Undergraduate Student
Investigating Triple String Societies in Approval Voting
Faculty Mentor: Carolyn Yarnall, Mathematics

In approval voting, people vote for each choice/candidate they find acceptable and the winner is the one that receives the most votes. This number of votes is called the agreement number. Often we model approval voting in "linear societies" where intervals in the line correspond to what each voter finds acceptable. In this research project, we began by investigating "double interval societies" and moved to working with "triple string societies". Double interval societies have real-world applications such as when trying to create a schedule and set a meeting and one person has available from 8 am-11 am and 4 pm to 7 pm and another from 9 am to 11 am and 2 pm to 5 pm and so on. With a string society however, every person has a set amount of intervals and each interval is the same size. In a triple string society, each person has three intervals of all the same size as everyone else. We use n as a way to describe the number of people. A diameter, d, is a set number of how many it can overlap with at once. For example, on one person's shift, they can work with a maximum of 3 more people, which can be in rotation or swapped for others at any time. Following up on that example, in total there would be a maximum of four people on shift at once and that number four would be applied as the agreement number, $a(S)$. Agreeability is described in two numbers, for example with $(2,2)$ agreeability, everyone sees each other at one point in their shift intervals. We want to see the maximum number of people, n, in a $(2,2)$ agreeable society for each agreement number, $a(S)$.

Raju Bista, Graduate Student
Are Tree Migrating Upslope in the Langtang National Park, Nepal?
Faculty Mentor: Parveen Chhetri, Earth Sciences

One of the discerning change global warming has brought is in the edge forests such as in arctic and alpine treeline. The general expectation is warming should ameliorate the tree growing conditions in the temperature sensitive ecotone. To assess the regeneration dynamics of Abies spectabilis (fir) in treeline ecotone in Langtang National Park nepal, the fir individuals within three transects (forestline to species limit) were sampled for their age using Dendrochronological approach. Trees were cored at the base, and branch whorls were counted for seedlings. The elevation distribution of recruitment was assessed in different age groups. There was not a clear indication of upslope recruitment surge toward recent decades, however, substantial presence of young individuals showed promising ecotonal densification in the rather young stand. While this was a preliminary observation of how the newer recruits are establishing, the spatial heterogeneity in the distribution calls for examining other factors masking the seedling and sapling performance under warming climate. Key words: Age structure, Regeneration, Stand densification, Treeline, Treeline shift.

Valeria Arredondo, Undergraduate Student
Discrete Approval Voting Models
Faculty Mentor: Carolyn Yarnall, Mathematics

Approval Voting is a system of voting in which everyone votes for all candidates they align themselves with. In this context, the "agreement number" is the maximum number of voters who are similarly aligned. The "piercing number" is the minimum number of candidates so that every voter is represented. Approval voting is often used to model scheduling: in this setting the agreement number is the maximum number of people who can meet at the same time and the piercing number is the number of meetings needed so everyone can attend a meeting. In past work, most approval voting models are continuous (e.g. linear), but in this project, we used discrete models. Our main goals were to determine how to best represent a set of voting data and to obtain an algorithm that gives the minimum piercing number for this data. We used mathematical ideas from discrete mathematics and graph theory to achieve this goal.

Yilda Echeverria-Morales, Karla Rubi, Undergraduate Student
Using Circular Societies to Model Scheduling Problems
Faculty Mentor: Carolyn Yarnall, Mathematics

Approval Voting is a system of voting in which each person votes for all candidates that they approve of, and the winning candidate is the one who receives the most votes. While there are many ways of modeling approval voting, in scheduling, we might model on a line, which was my partner's focus, or on a circle that represents a twenty-four-hour clock, which was my main focus. Each interval, or arc in the circle represented time availabilities. The agreement number represented the number of people available to meet at the same time. When everyone could not meet simultaneously, I began to construct new societies where each voter had two separate time availabilities, or double intervals, that showed how many meeting times people would need to have so that everyone was able to meet at least once. This created a piercing number that determined the number of meeting necessary for everyone to attend. I constructed circular societies with a certain agreement and piercing numbers in my research without using double intervals.

16th Annual STUDENT RESEARCH CONFERENCE

Student Research Conference

RoundTable Abstracts

Monday and Tuesday, March 1-2, 2021

- ➢ Behavioral and Social Sciences
- ➢ Biological and Agricultural Sciences
- ➢ Creative Arts and Design
- ➢ Education
- ➢ Engineering and Computer Sciences
- ➢ Health, Nutrition, and Clinical Sciences
- ➢ Physical and Mathematical Sciences

Behavioral and Social Sciences I

Alicia Smith, Maribel Gomez, Karina Jaimes, Theresa Serrato, Frances Rubio, Mariah Jacobo, Jessica Reyes, Undergraduate Student
Examining Academic Success in First-Generation College Students and Identifying the Factors Most Conducive to Their Success
Faculty Mentor: Erin Barrett, Psychology, Monique Turner, Psychology, Steven Freize, Psychology

Studies show that 56% of college students identify as first-generation college students (RTI International, 2019). First-generation college students are the first in their family to attain a 4-year degree (Peralta & Klonowski, 2017). Non-first Generation College students may have access to specific resources that first-generation college students do not, and as a result, they may face several challenges toward attaining success. Academic success encompasses academic achievement, mastering learning objectives, persistence, and satisfaction (York et al., 2015). First-generation college students, in particular, may significantly benefit from the implementation of specific success strategies such as facilitating faculty mentorship, extracurricular activities, and psychotherapy. Potential moderating factors may also play a role in their academic success, such as trauma, substance use, and parenting styles. In this study, a measurement of each of these factors will be analyzed for their impact on students' academic success. Most research on first-generation students focused on single factors; this study will explore a comprehensive model of student success by examining multiple factors that may lead to successful outcomes. The information gained from this study will guide first-generation students, schools, and families toward implementing the resources that are most conducive to academic success.

Casey Caprioglio, Graduate Student
An Ethnographic Study of the Influence of COVID-19 on First year Residents and Nurses
Faculty Mentor: Esther Castillo, Sociology

It is normal to be anxious before the first day in a new job, but what if your first day is in the middle of the worst pandemic in 100 years and only a few weeks ago you graduated Medical school? In the news, we hear almost every day from doctors and nurses with years of experience at the top of their fields, sharing just how devastating and traumatic their jobs have become during this crisis. What if you had minimal experience? Even though you have finished hundreds of supervised clinical hours to get your degree, you are now accountable for making life or death decisions regarding your patients' treatment. Thousands of hardworking students graduate medical school and nursing school every year, yet throughout this pandemic, they are hardly mentioned, if at all. This ethnographic study aims to gain insight into how the pandemic has and will affect the mental well-being and attitudes about public health in first-year residents and new graduates. This round-table discussion will provide input and suggestions on how to evaluate my findings through a sociological lens.

Cat Munsen, Sarah Franks, NaKayla Williams, Graduate Student
Abolitionist Reform to Reimagine Policing: Defund the LAPD and Reinvest in Black Communities
Faculty Mentor: Fynwinn Prager, Public Administration

Data and statistics show that in the City of Los Angeles, Black citizens are at a much higher risk of experiencing police brutality, even death, at the hands of local law enforcement. This policy paper will address the urgency of biased police violence resulting from the racism so deeply ingrained in the American policing system. From the collective cry for abolishment of the status quo, we have chosen three specific reform alternatives to analyze. The recommendation arising from our analysis is to "defund and reinvest". Specifically, we are recommending to defund the LAPD by 50% by the beginning of the 2024 budget cycle and reinvest those funds in social services, programs, and infrastructure called for by Black communities. Ultimately, violent and fatal interactions between Black Angelenos and police can be eliminated, and community trust restored, by addressing the underlying needs which prompt unnecessary police intervention. Our analysis demonstrated the other two proposed reform alternatives, investments in (1) hiring and training practices and (2) community policing and civilian oversight are consistently met with state and federal barriers that are simply too great to overcome in bringing about meaningful change at the local level. Most importantly, defunding and reinvesting addresses the root causes of an inherently flawed policing system which targets people of color.

Francisco Gonzalez, Undergraduate Student
Los Angeles Punk Rock
Faculty Mentor: Steven Frieze, Psychology

For my project, I will be addressing different literacies inside of the Los Angeles Punk Scene. Upon first glance, Punk Rockers seem like dirty, stupid, radical kids, but in reality their world has values and rules. Punk rockers have constantly been ridiculed for their dress, but I believe that a Punk Rockers dress can show many different literacies. For my project, I will use a sociocultural understanding of literacy to show how literacy is deeply embedded in the punk scene. Marian Souto-Manning an Haeny S. Yoon's book Rethinking Early Literacies: Reading and Rewriting Worlds states, "Every neighborhood and community has particular, rich, and worthy ways to make meaning that are no better and no worse than other community's ways with words" (Souto-Manning, pg. 127). I will show different examples of clothing that represents different subcultures found inside of punk rock. I will be using items of clothing to describe Vegan Straight Edge punks, Anarchy Punks, and Skinhead Culture. Using these items, I will show how these scenes differ, but all equally tell a story of the effects of oppression onto a young person. By examining the dress of these people, we can learn the messages that they are attempting to convey. I will also be discussing my own experience in the Los Angeles Punk Rock scene and talk about different stories that led me to the punk rock culture. Finally, I will add a few more resources for further research into the history, values, and lifestyle of the Punk Rock Scene. Through this project, I hope to convey the importance of listening to young people's views and beliefs, rather than oppressing students into 'normality'.

Jessica Moron, Nasim Karimi, Undergraduate Student
The Differential Impact of Covid-19 on Communities. Is the Pandemic Leaving a Lasting Mark on the Latinx Community?
Faculty Mentor: Steven Frieze, Psychology

The research study purpose is to measure multiple impacts of the current twenty-first century Coronavirus Disease (COVID-19). As COVID-19 continues to spread across the country and globally (pandemic), COVID has a profound impact, especially on minorities (Farquharson & Thornton, 2020.) According to The Department of Managed Health care (2020), Coronavirus is a virus that affects individual's lungs and airways. As of November 2020, The Center for Disease Control and Prevention has declared a grand total of over nine million COVID-19 cases and an ongoing death count of over two-hundred-thousand people nationwide. According to the U.S. Center for Disease Control and prevention (2020), as COVID-19 continues to emerge, the virus is disproportionately impacting minority communities specifically those within the lower socioeconomic ladder facing racism, discrimination, and oppression. There is a limited literature review on the impingements this current pandemic has on differential ethnic communities. In addition to understanding the medical and psychosocial impacts COVID has on communities, it is noteworthy to comprehend the communities' resilience as they adapt (cope) with the pandemic. This study aims to guide medical and psychosocial services when developing programs.

Joseph Villarreal, Graduate Student
First Generation Latinx Perspective of Law Enforcement and Police Brutality
Faculty Mentor: Danny Madrid, Sociology

In this ethnographic analysis of first generation immigrants to the United States, it's presented a perspective of their view with the polemic that police brutality represents as well as the protest against this incident caused. Not only the interviewees' exposed different views of the different dinámica that they lived with police but they also shared patterns in common that helped to shape a vision of what is the Latinx's experience in this country when they are first generation. The different interviewees were heterogeneous on their background this helped to enrich the perspectives and ideas of the premises that helped them to shape their identities and opinions. Ultimately the opinions and expectations of the parties in this study surprise and develop the reader a deeper understanding of the police and law enforcement activity and interaction in Latinx communities and neighborhoods in the greater LA area.

Maria De La Torre, Undergraduate Student
Understanding the Neurobiological Factors that Support Addiction using a Rat Model of Cocaine Abuse
Faculty Mentor: Philip Vieira, Psychology

Cocaine is a highly addictive psychostimulant and has long been used to model addiction in animals. Our goal is to understand how it affects the brain, particularly the mesolimbic dopamine pathway that is closely tied to reward processing. This project focuses on specific proteins being altered by chronic cocaine administration due to an increase in the neurotransmitter dopamine on brain regions involved in reward processing, such as the nucleus accumbens (NAc), ventral tegmental area (VTA), and the prefrontal cortex (PFC). Cocaine has been shown to affect these brain areas in several ways, including by increasing expression of the transcription factor ΔFosB. ΔFosB has been shown to correlate with neural structures that affect the mesolimbic reward pathway. In this project, we plan to analyze differences in expression of ΔFosB depending on acute (short-term) and chronic (long-term) exposure to cocaine. Additionally, we will study differences between male and female rodents exposed to cocaine. After drug exposure, rodent brains will be sent to CSUDH from our collaborators, and we will process this tissue using immunohistochemistry. Once we isolate specific brain structures, the brains will be sliced into 50 micron sections, stained with different antibodies that recognize our target proteins, and imaged using fluorescent microscopy to compare levels of ΔFosB. Ultimately, this project will further our understanding of how the brain supports addiction and the differences seen based on sex and length of drug exposure.

Matthew Taylor, Graduate Student
Pledge of Allegiance: The Political Efficacy of Historically Black Greek Letter Organizations
Faculty Mentor: Alexis McCurn, Sociology

The proposed study is a work in progress for a future dissertation. The state process of race creation along with practices of anti-Black discrimination in policymaking has created an observable history of inequity within the United States concerning political agenda that support Black American interests. In efforts of addressing this social problem, the researcher aims to investigate the Black counterpublic as an influencer of public policy, specifically through the evaluation of the sociopolitical practices of Historically Black Greek Letter Organizations (HBGLOs). To determine a metric of success, the researcher posits the following questions (1) How accurately have Historically Black Greek Letter Organizations represented the political attitudes of Black people living in America from 1990 to the present? (2) What significance, if any does membership in a HBGLO have for Black civic leaders? (3) How have members of HGBLOs fared introducing policy into legislature that is successfully passed or in becoming elected officials themselves?' The proposed methodology will utilize qualitative surveys and interviews to provide primary data collection. The researcher will also conduct qualitative and quantitative content analysis of secondary data to better establish their anticipated findings with existing research. The Black counterpublic allows the function of politics beyond the bourgeois public sphere. Studying its institutions might offer effective strategy to challenge U.S. racial inequality.

Tania Lugo, Undergraduate Student
Opioid Use Disorder and Sleep: Investigating the Neurobiological Correlates
Faculty Mentor: Philip Vieira, Psychology

Drugs of abuse such as opioids have detrimental effects on sleep when consumed chronically, including difficulty falling asleep and maintaining sleep, and altering the amount of time spent in different stages of sleep. Disrupted sleep has numerous documented negative consequences and has been shown to increase the risk for relapse when experienced during withdrawal from a substance. The neurological underpinnings of this relationship are not well understood, but likely involve long-lasting changes in protein expression. ΔFosB, a transcription factor found in the brain, is a purported 'molecular switch' of substance use disorder, supporting long-term neurobiological changes that underlie addiction. Overexpression of ΔFosB in the striatum is linked to compulsive drug-intake, drug-seeking and relapse. Although there is evidence that chronic drug administration induces ΔFosB expression in reward areas of the brain, its role in brain areas that are implicated in stress and sleep processing is not known. The proposed study aims to investigate whether chronic oxycodone administration induces ΔFosB in these brain areas, including the locus coeruleus, hypothalamus and the striatum. Brain slices will be taken from 3 female and 3 male Long Evans rats exposed to oxycodone (opioid treatment) and those not exposed to oxycodone (vehicle treatment). The number of ΔFosB-positive cells in the locus coeruleus, hypothalamus and the striatum will be assessed via immunohistochemistry. The data generated by this work may better inform us about the complex relationship between sleep and substance use disorders.

Griselda Rivera-Orochena, Undergraduate Student
Blindspot:The Double Erasure of Queer Central Americans
Faculty Mentor: Alexandro Hernandez, Chicano/Chicana Studies

Central American immigrants and US Central Americans currently face a significant amount of issues. For example, immigration laws that forbid them to receive asylum, poverty in their homeland and in the U.S., and exclusion within their own communities. I will conduct ethnographical research on queer identities in resistance to heteronormative patriarchy in U.S. Central American culture. Specifically, I will investigate how LGBTQIA2+ Central Americans in Los Angeles demonstrate queer cultural agency at Latinx dance events such as Cumbiatón and Latinx poetry nights. The objective of this research is to create LGBTQIA2+ cultural pathways to future mentors of Central American students who need assistance in navigating spaces of higher education. It is crucial to show these communities that someone as unique as them can hold educational positions to help create welcoming spaces for all.

Biological and Agricultural Sciences

Jonathan Baello, John Coulston, Armando Tejas, Graduate Student
Identifying and Comparing Gut Microbiomes in Zebrafish, Danio Rerio, to Understand Host-Microbiome Interactions
Faculty Mentor: Fang Wang, Biology

The human intestinal environment harbors a complex community of microbes, otherwise known as the gut microbiota. Gut microbiota and human hosts play a dynamic role in our clinical understanding of human health and disease. Examples of this can be linked in the etiology of noncommunicable diseases ranging from cardiovascular, neurologic and metabolic illnesses. In recent years, zebrafish have become viable models to investigate the gut microbiome. Zebrafish embryos are externally fertilized and optically transparent, thus allowing for easy observation and progress. Additionally, this animal model provides practicality in laboratory use as there are genetic and molecular tools readily available that will aim to discover the molecular mechanisms of host-microbiome interactions. We collected fecal microbiota samples from wild-type zebrafish, both male and female, from 6- to 24-month-old subjects. In this study, we have samples from 6-month old males, 6-month old females, and samples from 24-month old males and 24-month old females. After DNA was isolated from the fecal samples, PCR was used to amplify bacterial 16S RNA gene V4 region to facilitate the identification of microbiomes. Sequencing libraries were prepared from the PCR amplification, and subsequently sequenced by Illumina MiSeq. We are currently utilizing bioinformatics tools Nephele and Qiime to analyze the sequence data. Qiime is an extensive, open-source, and community developed microbiome analysis pipeline. Nepehele is a web-based platform for microbiome data analysis, which employs different pipelines, including Qiime, and provides an intuitive visualization output for ease of analysis. This project serves not only to investigate the generality of wild-type zebrafish gut microbiome, but also accounts for the dynamic effect of age and sex. While the gut microbiome has been well-explored in numerous studies, there lacks information on skin microbiota. This deficit in research justifies future investigations for a comparative study to understand host-microbiome interaction at further lengths.

Paul Dinh, Graduate Student
Giving our slow growing coral a little boost
Faculty Mentor: Charlene McCord, Biology

While coral reef ecosystems account for less than 1% of the ocean, these magnificent formations provide a home to over 25% of all marine life. It is believed that coral reefs have the highest biodiversity of any ecosystem on Earth. This ecosystem also provides millions of people with food, medicine, erosion protection and revenue from both fishing and tourism. Therefore it is vital that we keep our coral reefs healthy and thriving. Unfortunately our coral reefs are in danger. Large scale bleaching events are occurring increasingly frequently, making it impossible for coral reefs to properly recover. Scientists have responded with a variety of different methods but success has been difficult to measure. One method involves coercing specifically selected coral to sexually reproduce in hopes of creating more resilient offspring. Another method involves creating small fragments of a coral colony which, when grown in close proximity of each other, will fuse together. This method shortens the amount of time needed for a coral to reach a larger size and therefore sexual maturity. In my work, I plan to apply both of these methods to traditionally slow calcifying/growing coral in hopes of more rapidly producing coral that are able to sexually reproduce. To produce increasingly resilient coral, we must select those that survive bleaching events and pass on their genetics to a new generation of coral. We hope to compare different proven methods of coral growth as well as test for new ones?

Mayra Hernandez, Undergraduate Student
Effects of Nitrogen Deposition, Climate, and Fire on Soil Nitrogen Availability
Faculty Mentor: Justin Valliere, Biology

The scientific community acknowledges the strong effects of nitrogen availability on plant richness. Nitrogen (N) deposition due to air pollution has led to increasing N availability in ecosystems worldwide, with negative impact on plant diversity. Elevated N deposition could also interact with other factors such as climate or disturbances. Through the analysis of existing data sets and publicly available climate data we will evaluate N levels on plant-life to gain a better understanding of the effects of environmental fluctuations on the variability of soil N. Environmental fluctuations that occurred at the Santa Monica mountains in the years 2011-2018 will be analyzed via statistical software to determine possible correlations between N availability in the soil and those fluctuations. Depending upon the magnitude of correlation between various environmental conditions (e.g. drought, fire, precipitation, temperature and humidity) and their respective soil N levels, we may be able to create a rudimentary model of the expected effects on the plant communities, including their diversity and the presence of invasive species.

Creative Arts and Design

Paris Orozco, Undergraduate Student
Male Gaze in Art
Faculty Mentor: Kirstin Ellsworth, Art & Design

The portrayal of women and women working in prostitution may evoke similar depictions by male artists. Male artists may be more inclined to depict women in prostitution in a more sexually charged appearance in contrast to a woman they may not view in a sexual manner. This representation of women in varying societal roles such as motherhood, sex work, or companionship can be intertwined. Male artists such as Edgar Degas, Henri de Toulouse-Lautrec, Gustave Courbet, and Egon Schiele. The male artists' relationships with women heavily influence their perception and depiction of women.   In this paper I want to focus on how the male gaze influences art. I chose these artists because of their notable use of women in their pieces. I wanted to include sex workers in my paper so I could identify how the artists perceived them. Did they view them as people or merely as sexual objects? Exploring the artists' preferred body types were necessary to include as well. I compare Degas and Lautrec's portrayal of women's bodies to Schiele's in reference to age and weight. My goal is to create a discussion about sexual liberation versus objectification.

Education

Jennifer Hernandez-Rosa, Undergraduate Student
Early Teacher Retention Issues among Working-Class Students of Color.
Faculty Mentor: Jarod Kawasaki, Teacher Education

Overall teacher retention has been a constant issue impacting schools throughout the U.S., which has led to multiple research studies aimed at solving the problem. However, while research has focused on the broader issue of retention, less has been done with retention among the teachers serving working class students of color. Our goal is to shed light on this issue and in doing so provide more understanding and awareness. In our study, we surveyed 200 graduates from the CSUDH COE teacher education program and conducted four separate focus groups in which we had(n=13). Four main challenges emerged from the survey data. The data with respect to the ratings for classroom teaching 36% of the participants agreed that designing instruction for students with special needs is a high challenge. Thirty-two (32%) do not have enough resources to provide enrichment for gifted students and the same percentage also wanted more support of English language development for English language learners. When asked about outside the classroom aspects, 51% needed the proper guidance to support students that have experienced any form of trauma (i.e., social discrimination, violence, abuse). Maintain work, life, and family balance at 44%. Addressing issues of equality around race, sexual orientation, social-economic status, gender, disability, language, and immigration was 42%. These early findings suggest that early career teachers need mental and emotional support systems. Institutional norms (e.g., probationary teacher status, administrative oversight) can also trigger reluctance from new teachers when combining social justice teachings that include but are not limited to race, gender, or sexuality. This leads to the support of students that have experienced trauma within equality in their schools. Restorative justice can aid in the transformation in building trust within a teacher-student relationship. In my presentation, I will share additional survey data and qualitative responses from the focus groups (currently being analyzed) to highlight the needs and challenges of early career social justice educators.

Melanie Gerner, Undergraduate Student
Reducing Invisible Equity Gaps: The Effects of Whole Person Advising on Student-Parent Graduation Rates
Faculty Mentor: Thomas Norman, Management & Marketing and Ana de la Serna, Communications

Reducing Invisible Equity Gaps: The Effects of Whole Person Advising on Student-Parent Graduation Rates Does whole-person advising increase graduation rates for student-parents? Around 1 in 5 of all college students are student-parents (IWPR, 2019). Student-parents face many obstacles to completing college and are less likely to complete school than students without children (USGAO, 2019). According to a 2017 IWPR report, only 32.6% of college students who have children completed a degree or certificate within six years of enrollment compared to 56.1% of students who do not have children, even though student-parents on average have higher GPAs. Student-parents who do not complete their degree are often left with student debt, leaving them worse off financially than before enrolling in college and less prepared to support their families or contribute to society.   In this mixed-methods study, I will use online survey data of student-parents at a medium-size urban university, and data from in-depth interviews of student-parents. I will compare the effectiveness of comprehensive childcare options, specialized whole-person advising, and expanded financial support in increasing student persistence and ultimately graduation. I will discuss the benefits of whole-person advisement on student-parent outcomes. I will then blend the quantitative and qualitative data to test my hypotheses. Whole-person or "holistic" advising includes individualized advisement (Schroeder et al, 2015), in the case of student-parents providing resources for childcare, financial aid, academic and professional advisement. The upfront cost of free childcare, a case manager, and an extra $2,000 a year to student-parents, specifically single mothers earning a bachelor's degree, is considerably less than the increased tax revenue realized after her graduation (IWPR 2019). A 2018 study of student parents at City University of New York investigated "time poverty", finding many student-parents are left without options for childcare (Wladis et al, 2018). Common frustrations student-parents are met with are institutions that do not recognize their unique needs and professors who misunderstand their struggles.

Veronica Khalil, Graduate Student
A Bilingual Study-Utilizing Dynamic Assessment to Measure Narrative Language in English Learner Preschool Students with a Speech and Language Impairment.
Faculty Mentor: Kai Greene, Special Education

The purpose of this study is to analyze the effectiveness of a bilingual narrative-based intervention to increase narrative production for preschool age English-Spanish bilingual children with a language impairment. This study will analyze results of narrative samples of preschool English Learners (ELs) identified with a speech or language impairment (SLI). Participants of this study will receive a dynamic assessment (DA) intervention in both English and Spanish over the span of four weeks. Dynamic assessment is an effective intervention tool because it focuses on learning rather than norm comparisons (Pena 2014). This study will also include a pre-assessment which will take place prior to intervention and a post-assessment, administered after intervention. Due to COVID-19 the study will be conducted virtually via ZOOM. Intervention will focus on expressive language and narrative production skills. Participants of this study will be four-year-old bilingual students with a speech or language impairment. The results of narrative samples in English and Spanish will be compared and analyzed. Potential benefits for the students include increase in narrative language production. For teachers, this research can provide alternative strategies and teaching techniques that can help increase narrative production for bilingual students with a speech or language impairment within the preschool classroom.

Kelsey Loup, Graduate Student
Game Point: Career Readiness among College Athletes
Faculty Mentor: Pamela Robinson, Graduate Education

Student athletes are a part of the conversation on every campus near and far. From NCAA regulation violations to grade changes for the star quarterback, student athletics are widely discussed amongst the college realm. However, career readiness is seldom the topic being discussed in regards to these college celebrities. The reality is that many of our star athletes will not progress to professional status upon exiting college. As the students who do not become successful athletes outside of college begin to explore career options, it begs the question, are they prepared for life after college and what has the college campus done to prepare them? Through personal conversations with former collegiate athletes, it has been noted that student athletes do not receive the career services necessary for them to be successful after college, nor do they have the time to participate in career service opportunities due to athletic obligations. The proposed research would explore student athletes' definition of career readiness, their own perceived capabilities in regards to career readiness upon leaving college, and their personal experiences with career service centers on campus. It is hypothesized that student athletes will be unable to define career readiness, that they will rank their own career capabilities higher than they actually are, and that they will have little to no experience with career service centers on campus. Future research would explore ways to engage student athletes in career readiness on college campuses and better prepare them for life after collegiate athletics.

Engineering and Computer Sciences

Anand Mishra, Graduate Student
Improving Sentiment Analysis by Introducing Emotion Detection
Faculty Mentor: Mohsen Beheshti, Computer Science

This project revolves around the idea that we can program a computer to understand and react to basic human emotions and ideas. Currently, there are two very promising and popular systems that are competing for mass acceptance and popularity are TensorFlow and PyTorch developed by giants of the technology world Google Inc. and Facebook respectively. They take two completely different methodologies in the ways of processing the Natural Language processing system that is essential in the learning process. Pytorch takes the approach that the system can be developed using purely software perspective whereas the Tensorflow system uses a combination of specialized hardware and software combination to give us the best and purest Machine learning experience. In this project, I have attempted to learn how to use various techniques based on the TensorFlow Libraries and Keras Framework to analyze reviews and create a Convoluted Neural Network that can determine if a review is positive or negative based on the terms and words that the reviewer has used. On the second part I shall show how to use PyTorch and BERT to analyze, compare and contrast the differences between the two fundamental approaches to Sentimental Analysis using ML and Deep Learning which is a branch of artificial intelligence employing deep neural network architectures that has significantly advanced the state-of-the-art in computer vision, speech recognition, natural language processing, and other domains. In this paper we shall go over some of the steps that I have used to implement the project as well as introduce and familiarize ourselves to the concepts of Convoluted Neural Network, Machine Learning, TensorFlow, Keras, Datasets, etc. Alongside this, we shall shed some light over basic concepts and techniques that are considered as the industry standard in ML and AI applications. Keywords: Keras; TensorFlow; Convoluted Neural Network; Machine Learning; Framework; Deep Learning

Health, Nutrition, and Clinical Sciences

Cesar Ovando, Undergraduate Student
Sobrevivendo en las Tierras Altas: Guatemalan Maya Continuities, Resistance, and Adaptions in the Colonial Era
Faculty Mentor: Doris Namala, History

For centuries, our perception of the colonial period in Spanish America has first and foremost been understood from a Eurocentric perspective. As Iberian accounts continue to have a dominant influence over several American societies, the portrayal of the colonial period has rashly triumphed the Spanish's efforts in military campaigns, forced conversions, and colonization. However, that wasn't the case as scholars have recently turned to archival materials, particularly indigenous language texts, to question and argue against the traditional Eurocentric narrative. This direction became a school of scholarship known as the New Philology, a branch of Mesoamerican ethno history that uses indigenous accounts to investigate and reconstruct native peoples' perspectives in history. By doing so, scholars promote indigenous agency. The New Philology has dominantly focused on colonial Central Mexico due to the research that was conducted by James Lockhart in the twentieth century. However, other scholars like Matthew Restall and Kevin Terraciano have expanded the historical school's research pool into other regions beyond Central Mexico like Yucatan and Oaxaca. While no notable scholar has claimed Guatemala, precisely the highlands, fit within the scope of the New Philology, I believe it does since the indigenous peoples of Guatemala, the Maya, were affected by this Eurocentric narrative. For my research project, I hope to investigate the Mayas' cultural continuities, resistance efforts, and adaptation techniques during the colonial period. I will mainly focus on the K'iche and Kaqchikel Maya communities as they were mostly involved and impacted by colonial institutions and policies. Despite the current situation with the pandemic, I managed to encounter various online sources, both primary and secondary, to aid me in my research to investigate and reconstruct the Maya's image and perspective in the colonial era.

Myrta Rivera, Graduate Student
Media Mass Murder
Faculty Mentor: Brian Jarrett, Negotiation, Conflict Resolution & Peace Building Program

The study I plan to undertake examines the social construction of white and blue color crimes through the news production process. I plan to interview law enforcement, media personnel, and dark web media outlets, three parties integrally to get their input into their production process. It is used to investigate respondents' opinions regarding the news they post. Respondents will be questioned about their awareness of and views concerning the news/media production process, the underlying issues raised by their research, where they get their news, and how they examine it. My research will provide both the descriptive and analytical findings that emerge from the narrative investigation and the data collected. Interviews will reveal the tripod themes affecting how news changes our society and how the respondents who watch these news outlets are desensitized and sensitive to the information that runs through the telecommunication systems. My research will include the role of public information officers, the business and media constraints, the media's construction of its news, and how it impacts our criminal justice policy. The study will outline a framework of themes that serve as filters and lenses that currently shape how our crime news is being shown to society on an hourly basis. I want to investigate to what degree each group is aware of their distortions, the symbiotic and/or conflictual relations they produce, their rationale, and justifications for their actions. The why behind their opinions, justifications, and processes that shape crime in the news outlets and social media dark web.

Physical and Mathematical Sciences

Jason Guerrero, Undergraduate Student
Identification of Bioactive Natural Products from Marine Sponges that Exhibit Selective Cytotoxicity Against Solid Tumor Cell Lines.
Faculty Mentor: Erin McCauley, Chemistry

Natural products are secondary metabolites produced by living organisms. They have played an important role in traditional medicine for thousands of years and continue to be an essential part of the current healthcare system, as over 65% of all approved therapeutic drugs are either natural product, natural product derivatives, or their pharmacophores are natural product inspired. The success of natural products and their derivatives as therapeutic agents is largely due to their high structural diversity and specific biological targets. Marine sponges have proven to be an excellent source of cytotoxic compounds and there are currently three sponge derived anticancer drugs that have been clinically approved and one that is in phase III clinical trials.   This research project was achieved in partnership with Dr. Fredrick Valeriote at the Henry Ford Health System. Dr. Valeriote screened hundreds of marine sponge extracts from the National Cancer Institute–Natural Products Repository (NCI-NPR) against a panel of solids tumor cell lines with low five-year survival rates including pancreatic (PANC-1), lung (H-125), ovarian (OVC-5), brain (U251N), and liver (HepG2). My research project involved the isolation of the pure natural products from the complex sponge extracts using high-performance liquid chromatography. Along with the structural elucidation of the pure compounds using mass spectrometry and NMR spectroscopy. After which the pure compounds were returned to Dr. Valeriote to be rescreened against the appropriate cell line to determine which compounds were responsible for the observed cytotoxic activity.

Student Research Conference

Oral Presentation Abstracts

Wednesday, March 3, 2021

- ➢ Behavioral and Social Sciences
- ➢ Biological and Agricultural Sciences
- ➢ Education
- ➢ Humanities and Letters
- ➢ Physical and Mathematical Sciences

Behavioral and Social Sciences I

Carla Lopez, Undergraduate Student
The Roots of Ethnic Conflicts
Faculty Mentor: Adam Sanford, Sociology

The United Nations (UN) should utilize their prime position in the international community to help settle ethnic crises, but before doing so, they must understand why ethnic conflicts occur. This paper explains how arbitrary borders, power conflicts, and territorial disputes increase the likelihood of ethnic conflicts, and it briefly explores management approaches for the UN. This paper draws on existing ethnic conflict research and examines the African, Hutus-Tutsis, Chinese, and Israel-Palestine ethnic conflicts as case studies. Arbitrary borders threaten physical and cultural security and ultimately induce disunity. Power struggles are manifested as weak states, resource competitions, and problems of privilege. Territorial disputes can be in the name of territorial integrity, symbolic/religious importance, or statehood. Management strategies for the UN include assuming the role of supporters, interveners, or mediators.

Cesar Ovando, Undergraduate Student
The Nearly Impossible Conquest of the Guatemalan Lowlands: The Advantages of the Indigenous Maya in Central Petén
Faculty Mentor: Kenneth Seligson, Anthropology

When discussing the historical events of Mesoamerica's conquest period, most scholars tend to focus on regions that were already extensively studied, like Central Mexico, for it has a diverse collection of primary source materials. Scholarship has recently touched on Guatemala's conquest, but due to the region's geography, the research has mainly stayed in the highlands. Not much historical examination of the invasion has been done in Guatemala's lowlands. It is a bit odd considering that the Spaniards didn't conquer the area until the end of the seventeenth century, which is more than a hundred years later from other campaigns like Central Mexico, Highland Guatemala, and Yucatan. My research has ultimately focused on the conquest of the Guatemalan lowlands, specifically Central Petén. From preliminary research, I had questioned why it took the Spaniards more than a hundred years later to conquer the indigenous peoples of lowland Guatemala, the Maya. The answer is simple: the Spanish's ignorance got the best of them as they were not fully prepared for the lowland landscape. For this research project, especially during the pandemic, my primary source materials were limited. So, I ultimately relied on the methodologies of archeology and geography to support my argument. In addition, I believe that this narrative fits within the scope of Matthew Restall's coined term, The New Conquest History, which highlights multiple participants and accounts under the examination of understudied American regions.

Chloe Aftalion, Piper Asten, Amber Ferrari, Jennifer Duffy, Graduate Student
Commonalities in Treating Eating Disorders: The Experiences of Occupational Therapists
Faculty Mentor: Sheryl Ryan, Occupational Therapy

Background: In 2019, 30 million individuals were diagnosed with an eating disorder in the United States and every 62 minutes someone dies of an eating disorder (National Association of Anorexia Nervosa and Associated Disorders, 2019). This group of disorders typically have a significant impact on an individual's daily life and prevent them from participating in activities that help provide meaning to their lives (Clark & Nayar, 2012; Gardiner & Brown, 2010). The most effective treatments involve a multidisciplinary approach, including occupational therapy. However, currently there is a lack of research published in occupational therapy literature to inform the practice of occupational therapists treating individuals with eating disorders. As Rebekah Mack (2019) made clear, "Occupational therapy's role is distinct and crucial in treating eating disorders (EDs), yet the literature lacks explanation of interventions and contributions specifically related to occupational therapy and EDs." Purpose: This qualitative phenomenological research study attempts to understand how occupational therapists are treating individuals with eating disorders in light of this gap in occupational therapy literature. Method: We conducted semi-structured interviews with three practicing and licensed occupational therapists who have treated at least one client with an eating disorder. Results: Three themes emerged from our data: there's no 'I' in team, focusing on the necessity of having supports in place; uniquely you, which stresses the importance of using a holistic approach; and state of mind, which addresses the reframing of negative thought patterns. Implications: Guiding principles defining our role and scope of practice are the missing piece to occupational therapists cementing their place as valued members of a multidisciplinary treatment team for individuals with eating disorders. Future research in this area should aim to better inform practice for clinicians working in these settings, and provide interventions that are proven to be effective in treating eating disorders through an occupation-based lens.

Colleen Vuong, Naomi Nelson, Shayna Quach, Brandon Thomas, Graduate Student
The Lived Experiences of Minority Mothers in the Neonatal Intensive Care Unit and the Role of Occupational Therapy
Faculty Mentor: Sheryl Ryan, Occupational Therapy

The aim of this qualitative study was to understand the meaning of the lived experiences of minority mothers in the Neonatal Intensive Care Unit (NICU) to gain insight on what support and barriers they have encountered and how occupational therapists can incorporate these findings into practice. Minorities in the U.S. include people of non-white cultural backgrounds, ethnicities, and native languages. This population is more likely to receive suboptimal care due to disparities in treatment. Studies suggest that racial disparities could take place in the form of neglectful behavior and degrading communication, and these differences can affect the health of the mother and infant (Sigurdson et al., 2018). Using a phenomenological approach, we conducted interviews with eleven minority mothers who had a child in the NICU regarding their experience. We focused on communication with the staff and whether or not cultural or ethnic differences resulted in more positive or negative experiences for the mothers. The interviews were transcribed and data was analyzed to develop code descriptions and identify themes. Common among all the participants was the perception of receiving social support from family, friends, or outside resources, such as support groups. Participants perceived their social support as opportunities to connect and share resources with other families. Other themes representing major influences on how the mothers interpreted their NICU experiences included varying degrees of ethnocentrism, trust and communication between the mothers and NICU staff. Results suggest that minority mothers have a variety of needs that should be addressed to improve well-being. Implications suggest that cultural barriers represent a significant hurdle that must be overcome in order to ensure that equitable care is guaranteed for all patients. This study may inform occupational therapists of the cultural barriers that exist, and may help derive meaningful support to enhance occupational performance of minority mothers.

Cristina Garcia, Michelle Alfonso, Greg Dolmage, Briana Fajardo, Graduate Student
The Lived Experience of Sons Caregiving for their Parents with Alzheimer's Disease or Dementia
Faculty Mentor: Sheryl Ryan, Occupational Therapy

Background: Dementia negatively impacts the occupations of daily living both for the care receiver and caregiver. Dementia cases are increasing and so are the numbers of family caregivers. This population is primarily female, but there is a growing number of males taking on the caregiving role (Alzheimer's Association, 2020). Previous research has addressed the female and husband caregiver population, with little evidence on the roles, routines, or experience of son's caregiving for parents with dementia. Understanding this niche population informs occupational therapists on how to better support these clients and potentially prevent or reduce the negative effects that can come with caregiving. Purpose: This phenomenological study was conducted in order to better understand sons' caregiving for a parent(s) with Alzheimer's disease or dementia. Method: The research included four sons aged 48 to 62 years old currently living in Los Angeles County, caregiving for their parent with Alzheimer's or dementia, and recruited through a caregiver support network. The researchers conducted semi-structured interviews via video-conferencing to better understand their lived experience as a caregiver. Findings: The following four themes emerged from the data: (1) A Day in the Life--how sons define their role, self-perception, and routine, (2) Challenges of Caregiving--role transitions, isolation, self-neglect, and stress factors, (3) Adaptive Strategies--physical activity, reflection, supports, and resources, and (4) Looking Forward--plans for parents including end-of-life, caregiver education, plans for self, and finding pride in the role. With this knowledge, caregiver resource centers can advocate for increased funding to allow for the inclusion of occupational therapy services. These occupational therapy services include caregiver training in ergonomics and safety, and mental health services such as stress or grief support.

Crystal Solano, Sarah Anne Nakamura, Michelle Vuong, Natalie Pinchuk, Graduate Student
The Impact of Performance Patterns & Spirituality on Post-Rehabilitation Individuals Recovering from Substance Use Disorder
Faculty Mentor: Sheryl Ryan, Occupational Therapy

Purpose: In 2018, 20.3 million individuals had a substance use disorder, yet only 1.4% received proper treatment (Substance Abuse and Mental Health Services Administration, 2019). Furthermore, 80-95% of individuals in rehabilitation centers relapse within 12 months (Hendershot et al., 2011). Therefore, it's crucial to focus on facilitating success post discharge for long term changes in addictive behaviors (Nettleton, 2020). Our study uses a photovoice methodology to explore the habits, routines, roles, rituals and spirituality of two individuals who have attended a rehabilitation center within the last five years and are striving towards sobriety. Methods: The participants provided 5-10 photos of their habits, roles, routines, rituals or spirituality factors which have affected their recovery, followed by a one hour interview. Results: The themes that emerged included doing the next right thing, which signifies the importance of keeping their mind focused on achieving the next item on their to-do list; not by my own strength, the importance of relying on spiritual entities or social supports to navigate sobriety; family means nobody gets left behind, which recounts how the family members have impacted our participants' decision to get help; all or nothing, the principle that recovery requires 100% dedication and commitment; let you down, the perceived inability to live up to their roles; and wrong place, wrong time, the impact of social and physical environments on recovery. Implications: Occupational therapists working with this population can improve existing recovery programs or establish new programs that facilitate healthy habits and routines, enable social interactions, and encourage mentorship post rehabilitation. Additionally, incorporating cognitive behavioral therapy groups may help individuals become conscious of their patterns, triggers, and recognize when their healthy habits and routines are becoming disrupted by shame and guilt. Further, occupational therapists can advocate for a larger presence in substance use recovery.

Daisha Campbell, Undergraduate Student
Anti-Immigrant Attitudes in the United States
Faculty Mentor: Yeaji Kim, Political Science

What influences an individual's feelings for undocumented immigrants? It is certain that the views towards undocumented immigrants are controversial within the United States. For instance, Americans have perceived President Trump's words on anti-immigration fanatical and questioned his approach towards the nation's immigration system as they are in support of immigration. However, there are those that oppose undocumented immigrants and feel radically in their opposition. By employing the American National Election Studies (ANES) 2020 Time Series Study, this research examines how party-identification, education, and age affect individuals' feelings towards undocumented immigrants. This research expects the results as followed; from regression analyses, Republicans are more likely to have colder feelings towards undocumented immigrants than Democrats; people with higher education are more likely to have warmer feelings towards undocumented immigrants than people with lower education; and older people are more likely to have colder feelings towards undocumented immigrants than those that are young.

Elizabeth De Leon, Veronica Rodarte, Yunnia Jimenez, Jessica Vazquez, Undergraduate Student
The Effect of Using Red versus Green ink on a Quiz on women's Memory Recall: Exploring Premenstrual Tension and Anxiety
Faculty Mentor: Tatiana Basanez, Psychology

Past studies have found that reading material in red ink color decreases cognitive recall relative to other colors (Smajic, Banister, & Blinebry 2014). We measured the effect of red ink color (versus green) on quiz scores and hypothesized anxiety and premenstrual syndrome (PMS) would mediate the effect. Women (N = 108) were randomly assigned to ink color conditions: green ink (N = 52), red ink (N = 56) to learn about a plant-based diet and then all answered a recall test. Women who read a green ink quiz had higher scores (mean = 7.77, SE = .17) than those with a red ink quiz (mean = .80, SE = .17). ANOVA indicated that the difference was statistically significant $F(1,104) = 860.08$, $p < .001$. There was also a main effect of anxiety. We provide recommendations for future research and exam practices.

Heather Bocianski, Julia Adams, Nader Abolhosn, Elisabeth Bolten, Graduate Student
The Lived Experiences of Identity Reconstruction in Individuals with an SCI who Participate in Outdoor Recreation
Faculty Mentor: Sheryl Ryan, Occupational Therapy

Background/Purpose: A spinal cord injury (SCI) results in paralysis, often from the waist or neck down (Moore, Agur, & Dalley, 2015). It requires affected individuals to come to terms with their new reality through physical and emotional rehabilitation in which they are faced with reconstructing their identity due to a sudden external change conflicting with their unchanged internal self (Beringer, 2004). Although occupational therapists acknowledge it is important to support identity reconstruction processes for SCI individuals, few studies explore the extent to which outdoor recreation activities and settings play in identity reconstruction. The purpose of this research is to address this gap in the literature by investigating the meaning of outdoor recreation and its attributes for SCI individuals. Methods/Results: Researchers conducted a qualitative phenomenological study. Participants were recruited through online SCI outdoor recreation organizations via convenience sampling and snowballing. Thirteen participants who were between the ages of 31-71, had a sustained SCI, and engaged in outdoor recreation at least three times during the past 12 months completed semi-structured individual interviews. The results demonstrated that outdoor and activity meaning are inseparable and outdoor recreation supported their identity, social participation, and quality of life. However, participants experienced barriers to inclusion and inequitable access to their outdoor recreation activities in comparison to able-bodied individuals. Implications: Due to the benefits of an outdoor context, including outdoor engagement may enrich therapeutic sessions. This also suggests therapists should aid individuals with SCI who engaged in outdoor recreation pre-injury to be able to regain these meaningful occupations. These results additionally imply therapists should provide this population with resources, such as outdoor SCI support groups, to increase access to participation. To further increase equitable access within nature, it is important for therapists to advocate for policy changes and to promote self-advocacy within treatment planning.

Biological and Agricultural Sciences I

Liz Solis, Undergraduate Student
Delimiting Species in the Australian Lizard, Ctenotus
Faculty Mentor: Sonal Singhal, Biology

Ctenotus is a genus of skinks that is the largest group of lizards living in Australia. For this reason, Ctenotus has been used as a core species in understanding general biodiversity patterns across the desert and tropical regions of Australia. Although 100 species have been identified within the genus, we do not fully understand their taxonomic diversity because the species were initially grouped based on morphological characteristics. However, this type of grouping often does not correlate with genetic data. Some species of Ctenotus exhibit very few differences in morphology but are genetically quite different. Therefore, genetic data was incorporated to identify individuals to their correct species. In this study, my collaborators and I analyzed the genetic and morphological data for a species complex of Ctenotus lizards: Ctenotus duricola and C. zasticus. Raw nuclear data was collected from 37 individuals to assemble and filtered to create a single-nucleotide polymorphism (SNP) dataset. The SNP dataset was used to construct a phylogenetic tree using the IQtree program and population clustering analysis using sNMF. This allowed us to accurately identify the number of genetic populations, visualize which individuals belong to the same genetic population, and determine how genetically different these individuals are based on population groupings. Our analysis showed there are four genetic populations, and individuals within each genetic population show little genetic diversity. To further understand how genetically different and similar individuals are within Ctenotus, we analyzed mitochondrial DNA (mtDNA) sequence from the same individuals. We created a multiple sequence alignment using MUSCLE which allowed us to generate a map that illustrates species descriptions, and provide a clearer biogeographic history. Furthermore, given that C. zasticus is a vulnerable species affected by conversion of land due to mining, our results will also allow us to make better well informed conservation decisions.

Gabriel Angulo, Eric Thai, Undergraduate Student
Geomorphic Processes and Patterns Controlling the Spatial Structure of Treeline in Makalu Barun National Park, Eastern Nepal Himalayas
Faculty Mentor: Parveen Chhetri, Earth Science

Very few studies have been carried out to investigate the role of geomorphic factors structuring the spatial pattern of Treeline ecotone in the Nepal Himalayas. To address this research gap geomorphic conditions at Treeline ecotone of Makalu Barun National Park, eastern Nepal were investigated by using Landsat satellite images and Aster's Digital Elevation Models (DEMs). Treeline was manually delineated in Landsat image after radiometric calibration, atmospheric correction, and topographic normalization. The extracted Treeline layer was overlaid with DEM to assign the elevation value. Geomorphometric parameters such as slope and aspect were generated from the DEM using ArcGIS and ENVI software. The Treeline layer was overlaid on the slope, aspect, and landforms features layer to examine the effect of terrain conditions on Treeline ecotone. Results showed that the average Treeline elevation was around 3858 m and highest Treeline was around 4101 m. In most of the Makalu Barun National Park slope angle was greater than 35o which was too steep for the forest establishment. This indicated that in many parts of the park Treeline was controlled by the geomorphic feature. A more detailed investigation of the geomorphic pattern and process at Treeline ecotone would help to track the tree line advance in response to climate change.

Gregory Lazzarino, Undergraduate Student
Using Amps to Determine Transformation Efficiency in CRISPR
Faculty Mentor: Harneet Grewal, Physics

An overview is presented of a way to quantify the effectiveness of a bacterial transformation with CRISPR. Bacterial transformation through CRISPR can be observed using Glowing Fluorescent Protein or GFP emitting photons upon excitation and using that light to generate a quantifiable result. Microbes which up-took a foreign sequence and integrated it into their genome will fluoresce in the area of the spectrum of which the protein permits but the rate at which this occurs can be inaccurate due to having only our eyes for observation. The photons which are released upon excitation by a wavelength of greater energy can be utilized to determine the effectiveness of a transformation integrates a GFP. By using a photo resistor which decreases its resistance when exposed to incident radiation, the current produced from the light emitted allows for quantification. E. coli bacteria transformation efficiency which have been modified through CRISPR can be measured by another means that visual observation cannot provide but rather by the physical phenomena of light and by calculating how much energy is produced from these E. coli bacteria plated on petri dishes.

Raul Gutierrez, Bronte Shelton, Luke Fisher, Undergraduate Student
Comparative Genomic Analysis of Halophilic and Xerophilic Microbes to Elucidate Adaptation to Chaotropic and Low Water Activity Environments.
Faculty Mentor: Douglas Bartlett, Marine Microbial Genetics, UCSD

Studies on the molecular mechanisms of microbial adaptation in chaotropic and low water activity (aw) environments are poorly understood. Chaotropic environments are characterized as salt rich, MgCl2 and CaCl2, which lowers the availability of water for biological processes. PATRIC, an integrated genomic browsing tool containing vast libraries of sequenced genomes, can help us identify unique genetic markers in chaophilic and xerophilic microbes. Halophilic microbes are characterized as obligate hypersaline with the ability to tolerate exposure to chaotropic agents. Microbes with the greatest tolerance in these extreme environments must have advanced adaptive methods. Halobacterium salinarum and Haloquadratum walsbyi are chaotolerant and well adapted to low water activity. Haloquadratum walsbyi is unique among the halophilics as having the highest tolerance for chaotropes and its square shape. Performing comparative genomics using fully sequenced halophilic archaea such as Halobacterium salinarum NRC-1, a model halophile, and Haloquadratum walsbyi C23, we were able to identify genes that confer adaptation to chaotropic and low environments, as well as individual adaptations that may be responsible for the varying levels of tolerance in chaotropic environments. Characterizing genes associated with chaotolerance and low aw adaptations can help elucidate the cellular functions that make these microbes unique. Chaotropic brines may be used as analogs to study the origin of life and the possibility of suitable environments hosting extremophilic microbes on other planets like the Martian brines and the icy moons of Europa; therefore, studying the microbiome of chaotropic environments are essential in the field of astrobiology. In order to adapt to these chaotropic environments , microbes must be able to retain water, reserve energy for biomolecular repair, metabolize alternative carbon sources, utilize alternatives to oxygen in electron reduction, pump out harmful ions, as well as being able to uptake and synthesize compatible solutes. Here, we have identified several genes that may help elucidate the molecular mechanisms of adaptation in chaotropic and low aw environments.

Education I

Icela Pantoja-Zamudio, Undergraduate Student
Child Language Development: Influence of Multilanguage Exposure and Socioeconomic Status.
Faculty Mentor: Megumi Kuwabara, Child Development

Being able to understand language is a vital skill for humans. In this study, I explored the potential differences in children's language development and home literacy environment based on two demographic factors; the number of languages spoken at home, and socioeconomic status. I focused on both; language development and the home literacy environment because a previous study conducted by Umek et al. (2005) has found that the frequency in which parents engage in literacy related activities is also related to language development in their children. The first question focused on the potential difference between those children who are exposed to one language at home compared to those children who are exposed to multiple languages. This question is important because U.S. Census data shows that 45% of California residents speak more than one language at home, which highlights that many children are being exposed to multiple languages. The second question focused on the potential differences based on socioeconomic status, particularly, the different impacts of income and education. I collected data from 20 parent-child dyads in which parents were given two wordless picture books and asked to tell stories to their children (shared-book reading session). After the zoom session, parents were asked to fill out the surveys about their demographic information and Home Literacy Environment Questionnaire (Umek et al., 2005). These sessions were transcribed for all words children and parents said. From the transcription, I coded the number of words (types and tokens) children said as an indicator of their language development. Preliminary results show that there is no difference in language development based on two demographic factors. However, there is a differential impact of income and education on the home literacy environment. I will discuss the implication of what these results mean for language development.

Sarah Mecklenburg, Graduate Student
"Special Education and General Education Teachers Attitudes and Perceptions on How They Feel About Students with Intellectual Disabilities and the Bullying of Students with Intellectual Disabilities"
Faculty Mentor: Kai Greene, Special Education

This study was aimed to determine special education and general education teacher's attitudes and perceptions on how they feel about students with intellectual disabilities and the bullying of students with intellectual disabilities. The groups studied were five general education teachers and five special education teachers. These teachers will be surveyed from an elementary TK-8th grade and Pre-K-5th moderate/severe intellectual disabilities school. The research design is qualitative. The five general education and five special education teachers were administered a survey on their attitudes and perceptions on how they feel about students with intellectual disabilities and the bullying of students with intellectual disabilities. Bullying is not a new issue in education. Bullying happens with all students, but especially with students with severe intellectual disabilities. What is being done to prevent bullying from even starting? Can teachers prevent bullying by teaching and implementing tolerance from a young age? Do teacher's attitudes and perceptions of students with disabilities affect student's acceptance of people with disabilities? This research helps understanding the attitudes that general education and special education teachers have towards students with moderate/severe intellectual disabilities. The five general education and five special education teachers were administered a survey on their attitudes and perceptions on how they feel about students with intellectual disabilities and the bullying of students with intellectual disabilities.

Humanities and Letters I

Anna Doney, Undergraduate Student
The Performance and Specificity of Death in Renaissance Tragedy and Its Impact on Perception and Catharsis
Faculty Mentor: Kimberly Huth, English

Renaissance tragedy as a genre is uniquely characterized by its historical time period, violent and bloody deaths, and its use of a stage for performance. These moments are not cut and dry as they are specific dramatic portrayals on stage. The staging of these violent and painful moments and their subsequent deaths specificity, provides the audience with some form of emotional experience. In this essay I will examine the deaths in two Renaissance tragedies, John Webster's The Duchess of Malfi and Christopher Marlowe's Tamburlaine (Parts 1 and 2). This essay will look at the specific nature of the main characters' deaths and what the audience gains or experiences through these deaths through the Aristotelian idea of "catharsis" which entails a purging of "pity and fear" after experiencing a tragedy. I argue that the purging of "pity and fear" depends solely on the nature of violence and pain and the presentation of death within the genre of a Renaissance tragedy and without this inherent violence these works would lack meaning. The deaths in these works differ greatly in their violence and pain presentation, and because of their unique nature they are perceived with a different level of "catharsis".

Daisy Martinez, Undergraduate Student
Chaucer's Philosophical Discussion in The Canterbury Tales
Faculty Mentor: Debra Best, English

Throughout The Canterbury Tales, Geoffrey Chaucer seeks to find an explanation to complex issues such as human suffering and religious concerns as is seen with a variety of topics and characters such as: the use of religious figures, forbidden love, the interference of God and planets, the role of fate and destiny, Fortune, and the role of human will; Chaucer's philosophical concepts among his tales provide insight to the discussion of religious beliefs or concerns of his time—which are still relevant in our time. Although there is no "correct" way of deciphering Chaucer's personal stance with these motifs, there is a striking pattern throughout several of his tales; for instance, "The Knight's Tale", "The Man of Law's Tale", and "The Clerk's Tale" make use of these religious themes to spark philosophical discussion about fate, free will, Fortune, and Providence. Humans' free will is recognized, but is also limited when it comes to inevitable events led by chance, fate, destiny, Fortune etc. When examining each tale individually and collectively, this research will discuss how Chaucer supports the belief that in spite of free will and powerful forces of Fortune, fate, and god or goddesses (or planets), God's will is most powerful as He can overrule anyone's decisions and can change the course of events at will.

Jackson Martinez, Graduate Student
The Flâneuse and Phantasmagoria in the Cosmopolis
Faculty Mentor: Andrew Kalaidjian, English

This piece will focus on gender and sexuality of the flâneuse. The flâneuse are exposed to forms or oppression that further marginalize and exile them, but because of their socioeconomic status in having closer ties to dominant discourse societies. The flâneuse experiences alterity differently; they are marginalized for the gender, yet fetishized because of it. The flâneuse is a certain paradox under the trope of Poe's understanding of being the "man of the crowd" because of the male gaze. Therefore this project will examine how issues of gender and sexuality in Barnes' Nightwood and Woolf's Mrs. Dalloway, become problematic in being subjugated to the male-gaze because of misogynistic hegemonies ruling the city. Both Parsons and Elkin note that because of the "ambiguously gendered trope" and the emergence of women in the cityscape, flâneuse is beyond being emphatically, "possible," but it adversely becomes reluctantly problematic because of its fetishized attributes. In Barnes' Nightwood, we learn more about Robin Vote as a flâneuse via testimonials by Doctor Matthew O'Connor and Nora Flood, which emphatically reveals that "question of visibility," according to Elkin. Barnes, however, uses Robin Vote's flâneuse as a critical subversion of hegemonic order by using her somnambulant milieu of flânerie as a way to interpolate both misogyny and heteronormativity. Woolf, on the other hand, revels in integrating her flâneuse, as a comment on the complex nature of her relationships with Peter Walsh and her husband Richard Dalloway. Clarissa Dalloway's stream of consciousness vividly interpolates that very "invisibility" quality in her flânerie because she is constantly highlighting the very minutiae of details that are both in the public space-a space in which women are subjugated to the male-gaze, both a psychological and spiritual space, that is entirely her own.

Jasmine Abang, Undergraduate Student
Immigration, Reproductive Rights, and Mexican (American) Women.
Faculty Mentor: Doris Namala, History

During the early 20th century, California experienced an influx of Mexican immigration. The political and economic realities in México under President Porfirio Díaz favored foreign investment and the Mexican elite's interests. This condition left ordinary Mexicans without land and no opportunities to sustain their livelihoods, forcing a continuous movement of rural people to cities searching for employment. Many settled in Los Angeles, where farming expanded on a larger scale. The Los Angeles white farm-owning elite supported and protected the flow of cheap labor from México because it was prosperous. They also thought that Mexicans would be returning to their country after the growing season was over. However, immigrants began to find permanent settlement in the city, igniting fears and angst amongst the Anglo-Nativists over wellness and overpopulation. To preserve a white Los Angeles, the first line of defense was to segregate public institutions such as public health. California soon adopted Eugenics ideology and used forced sterilizations as the permissible way to manage the Mexican population growth. My project explores the impact of segregated health care in Los Angeles on Mexican women immigrants' in the mid to late 20th century. I will focus on the Los Angeles County USC Medical Center, which eugenic historians coined as the epicenter of these aggressive, coerced, and racialized medical procedures. Additionally, I will also demonstrate that despite the ban of Eugenics and sterilizations, white elites and policymakers could find loopholes to continue their efforts to have reproductive control over brown immigrant women's bodies.

Jeremy Quinonez, Alumni
Revisiting Lumumba's Political Identity through a Colonial Lens in De-Colonial Congo (1956-1965)
Faculty Mentor: Bianca Murillo, History

In 1960, the Congolese people elected Patrice Lumumba as Prime Minister of the Congo. In 1961, after a complicated development on international events, the CIA financed Belgium troops murdered Lumumba via firing squad. This paper will focus on Belgium's colonial attempt to use the media to attack Lumumba's political image. From 1956-1960, it will elaborate on the rise of Belgium's media attempts as a counter to the growing support of Lumumba's pro-independence identity. It will then focus on this same struggle in the context of the U.N. and Ralph Bunche's presence in the Congo. Consequently, it intersects with U.S. reaction against Lumumba's political identity in the summer of 1960.The final section will assess Belgium, U.S. and U.N. attempts to damage Lumumba's political identity by using the media and their political voices. The three sections will add to the strong scholarly work on Lumumba by combining the chronological approach of previous historians to interrogate a critical time period in one of many of Lumumba's political struggles. This essay will argue that from 1955 to 1965, Belgium and the United States sought to protect their economic exploitation of the Congo by using the media to delegitimize Patrice Lumumba's political legacy as violent, uncivilized, and unworthy of independence.

Physical and Mathematical Sciences I

Omar Santizo, Claire Ladan, Justin Hathaway, Undergraduate Student
Improving Undergraduate Chemistry Education Analyzing Biochemical Redox Analytes Using a Student-Built Potentiostat
Faculty Mentor: Barbara Belmont, Chemistry and Biochemistry

Electrochemistry is usually the last topic presented in the undergraduate general chemistry sequence, and often this is the only time it is presented in the undergraduate science pathway. Consequently, students as well as instructors are weak in the topic. One of the reasons for this is that electrochemistry equipment is too expensive and fragile for the undergraduate lab, hence there are seldom undergraduate lab experiments available to reinforce electrochemistry learning. To counter this problem, the Belmont Research Group has developed a low-cost potentiostat kit for students to assemble for cyclic voltammetry experiments, using Maker-community components and an Arduino-like processor known as the Teensy processor. The proposed presentation describes work done to create a portfolio of experiments to use with our "Teensystat" that demonstrates reversible, quasi-reversible and irreversible redox reactions at concentration ranges of 2-20 mM. The research project involved developing optimum reaction matrix conditions, and determining accuracy, precision, and detection limits for each analyte. The resulting portfolio of cyclic voltammetry experiments is comprised of four analytes – ascorbic acid, acetaminophen, N-acetyl cysteine and potassium ferricyanide. While the potassium ferricyanide experiment is used as a device performance benchmark, the three other analytes were chosen to motivate the biomedical interests of most undergraduate science students. The experiment portfolio helps students understand redox through cyclic voltammetry, develop skills in excel for data analysis, develop an appreciation for electronics and computer interfacing, and correlate the biochemical perspective of each reagent.

Orji Ezieme, Graduate Student
Hazardous Air Surrounds West Carson
Faculty Mentor: Parveen Chhetri, Earth Science

With the increase of industrialization and vehicle activities, the air in Los Angeles California, is polluted to an unsafe level. West Carson which is a hub of industrial activities is under a serious threat of this hazardous air. West Carson and nearby cities like Wilmington, Long Beach, and Torrance are the hot spots of harbor activities and heavy industrialization in the entire California. A good part of this area is Assembly Bill (AB) 617 communities of top priority. Meaning that they are pollution burdened, rated as poor community, and grossly disadvantaged. The CalEnvironScreen 3.0 placed them at 96% health burdened. This is in consideration of the disproportionate increase of asthma, congenital birth defect of multigeneration, breathing disorder, chest pain, premature birth, blood disease, and various strange sicknesses. This paper focuses on identifying two main triggers of air pollution - truck survey and particulate matter released from emissions of heavy industrialization and excess truck activities. The Coalition for Clean Air under grant of California Air Resource Board, partnered with Del Amo Action Committee and other environmental Justice groups: Coalition for A Safe Environment, University of Southern California, Comite' Pro Uno, and Pacoima Beautiful, for this. West Carson where I focused, does not have existing base information on truck survey and particulate matter count. Yet the air quality index scale is frequently on red-alert. The projected outcome of the research will guide the city and county, and stakeholders to gear up on the workable and timeous strategy to cut down on these triggers, as the health situations in this area are worsening by the day and the regular air quality monitor is needed.

Raju Bista, Graduate Student
Climate-driven Differing Growth Performances of Cohabitant Abies spectabilis and Betula utilis in the Subalpine Forest in Dhorpatan Nepal
Faculty Mentor: Parveen K. Chhetri, Earth Science

The fir (Abies spectabilis) and birch (Betula utilis) are often found coexisting in sub-alpine forest of the Nepal Himalayas. Several studies have been carried out on radial growth patterns in their mono-dominant stands. However, no previous and comparative study has been recorded from the Dhorpatan Hunting Reserve, western Nepal. To assess the temporal growth performance of these cohabitant species, tree-ring samples were collected from 30 trees of both species (two cores from each tree) from the mixed stand at elevation range of 3300-3500 m a.s.l. Standard ring-width chronologies of both species were developed with dplR package in R, applying cubic spline to remove non-climatic signals. The ring width chronologies were correlated with climatic variables. We found differential and contrasting growth responses to climate over time. Birch showed positive growth response to precipitation and negative response to spring temperature. Whereas, radial growth of fir was correlated negatively with precipitation and positively with temperature in spring. Moving correlation analyses revealed the divergent influence of spring climate on these species. Increased temperature and decreasing precipitation appeared to be stronger in growth limitation of the birch, whereas, the positive   influence of higher temperature on fir growth is gradually diminishing. The significant rising trend of temperature by 1970s coincided with growth decline of birch and increase in fir, as indicated by Basal Area Increment (BAI). Thus, the changing climate appeared to drive the   successional dynamics in the mixed stand such that fir has potential to occupy the area with continued current climatic trend. Key words: Basal Area Increment, Dendrochronology, Radial growth, Tree ring, Himalayas

Mary Bishop, Alumni
Planning for Conflict with Urban Coyotes
Faculty Mentor: Tianjun 'Luke' Lu, Earth Science

While it is generally known that coyotes exist within Southern California urban environments, the heartbreak of losing pets to urban coyotes continues and humans themselves are beginning to experience urban coyote attacks. Information is available about 'coyote proof' yard fencing and cages for domestic livestock (e.g., chickens), but other advice is an unworkable "Keep dogs and cats indoors." Questions remain on how Southern California stakeholders including but not limited to individual households (e.g., pet owners), veterinarians, and government officials (e.g., urban planners) can achieve greater awareness, understanding, and preparedness for the inevitable conflicts with urban coyotes. Literature review, websites search, and crowd-sourced incidence reporting were conducted. Surprising information about coyotes was found. Physically, coyotes are capable of jumping 6 feet high, and are proficient diggers. Highly adaptable and ever the omnivore, coyote population densities are far greater in urban areas than in rural and wild areas. Their populations in Los Angeles County and Oranges County are the densest in the state. Recent studies of coyote stomach contents in these areas reveal more specific information than previous scat studies have. Preliminary results find cats are 8 percent of the urban coyote diet, and leather boots are not unheard of. In addition, different from the rural and wild area coyote, the urban coyote temperament is bolder and more aggressive. Except for removal of individual coyotes that have become aggressive toward humans, evidence shows removing urban coyotes from an area is not a long term solution. This study suggests that planning for conflict with urban coyotes must become second nature. Practical solutions by pet species, involving impenetrable barriers, are available and need to be implemented with the same prophylactic mindset as wearing seat belts while driving. These solutions need to be adapted and supported for households of all income levels.

Student Research Conference

Oral Presentation Abstracts

Thursday, March 4, 2021

- ➢ Behavioral and Social Sciences
- ➢ Business, Economic, and Public Administration
- ➢ Engineering and Computer Sciences
- ➢ Humanities and Letters

Behavioral and Social Sciences

Helen Chan, Kimberly Ayala, Sabrina Belen, Christina Chu, Graduate Student
The Ethnicity of Occupational Therapists in Southern California: Experiences in the Workplace and with Clients
Faculty Mentor: Sheryl Ryan, Occupational Therapy

According to the U.S. Department of Health and Human Services (2017), White healthcare workers comprise 64.4% of the healthcare workforce. Similarly, this statistic holds true for the racial diversity within occupational therapy, where the majority of occupational therapists are White. As research has shown that clients demonstrate positive feedback with healthcare providers who are of same ethnic backgrounds, undergraduate programs have implemented programs to increase ethnic diversity in healthcare professions. However, discrimination in the workplace still presents as an issue, even within the occupational therapy profession. Although ethnic diversity within the healthcare profession has increased, there lacks research on occupational therapists' experiences related to ethnicity in the workplace. The aim of this qualitative study was to examine occupational therapists' perception of ethnicity in the workplace and client interactions within Southern California. A multiple case study was used to compare and contrast the workplace experiences of six female occupational therapists. Of the six participants, two identified as Latina, one as African American, and three as mixed ethnicities. Participants conveyed various narratives related to their experience working with clients and colleagues of the same and different ethnicities. Seven themes emerged: easier to connect, building connections through experiences, workplace experiences, stereotypes, negative client interactions, learning from others, and perspectives of ethnic diversity. While structured support was provided to all participants within the workplace, many experienced barriers and challenges such as discrimination and underrepresentation as therapists from a minority population when working with clients. Results from this study indicate the need for more diversity within the field of occupational therapy and increase the understanding of the experiences of occupational therapists of varying ethnic backgrounds. Additionally, occupational therapy curriculum and conferences should continue to address ethnicity and cultural sensitivity in order to address the AOTA 2025 vision of equity, inclusion, and diversity.

Janet Mejia, Alumni
Generational Outlooks on Hospice Enrollment: Does Acculturation Matter?
Faculty Mentor: Sonja Ulrich, Anthropology

When it comes to evaluating end-of-life decisions, many factors can influence a family's course of action. Factors such as wealth, cultural background, level of acculturation, family size, and educational level have influenced hospice enrollment. This research study employed a mixed-methods approach, guided by the constructivism worldview, to examine 25 cross-sectional surveys and four interviews to evaluate the research question: How does the current generation feel about becoming caregivers to terminally ill family members? The level of acculturation matters when opting for hospice enrollment and taking on the role of at-home caregiver. The hypothesis is: the is that the higher the acculturation level, the more likely a California State University, Dominguez Hills student is to choose hospice enrollment for a terminally ill loved one, with care most likely to occur at a facility or home with hired caregivers. Since one of the variables is acculturation, the lower the level of acculturation, the more likely a family member will be the primary caregiver. The outcome of this research supported the hypothesis that acculturation influences students undertaking the role of primary caregiver to a terminally ill loved one. The surveys were hand-sorted and cross-tabulated. Respondents were mostly female, except for one of the different cultural backgrounds and immigrant descent. The four interviews are from four staff members of a hospice located in Southern California, lasting about 30 minutes each. The interviews were recorded, transcribed, and color-coded. All samples were collected during the fall 2020 semester of POL 494 (in place of BEH 490).

Josef Noah Joshua Dizon, Samantha Betts, Cindy Carrillo, Lauren Fukuyama, Graduate Student
The Lived Experience of Intimate Relationship of Adults with Cerebral Palsy
Faculty Mentor: Sheryl Ryan, Occupational Therapy

Cerebral Palsy (CP) is the most common physical disability in childhood (Centers for Disease Control and Prevention, n.d.). Currently, more children with CP are surviving into adulthood, but current literature lacks representation of the lived experiences of adults with CP (Siven, 2008, & Young, 2007, as cited in Kembhavi et al., 2011). Thus, a need for research involving their experiences in adulthood, including engagement in intimate relationships, has emerged. The purpose of this study was to understand the lived experiences of adults with CP regarding the formation of an engagement in intimate relationships. A convenience sample of five participants, aged 24-39, were recruited via online groups and social media. Semi-structured interviews were conducted using a qualitative phenomenological approach. The results highlight the unique barriers adults with CP face in intimate relationships such as reframing their lens on their disability as part of their identity, disclosing their disability to potential partners, navigating sex and relationships, and fighting stigma. Participants also voiced the same intrinsic desire for committed relationships found in many adults without disabilities. Additionally, participants expressed that intimate relationships were not often discussed with health care providers and that they learned about sex and relationships through other means. These results indicate a need to destigmatize disabilities and normalize intimate relationships of people with disabilities. Occupational therapists can create a positive impact on society by advocating for people with CP by facilitating conversations about intimacy in their practice, promoting positive identity development, and normalizing sexuality among clients with CP.

Juliet O'Brien, Rachel Reyes, Mele Weaver, Graduate Student
The Occupational Aftermath of Sexual Assault Survivors
Faculty Mentor: Sheryl Ryan, Occupational Therapy

Sexual assault is a public health concern that is staggeringly prevalent. One in three women globally report having experienced sexual violence (World Health Organization, 2013). While numerous aspects of sexual assault have been studied, there is limited attention in the existing literature to the changes in survivors' everyday activities. The purpose of our research is to explore how activities or 'occupations' change after the event of sexual assault. As future occupational therapists, it is our hope that this will enable us to deliver and promote trauma-informed, client-centered care for this population. Our qualitative study examines the narratives of four women who have experienced sexual assault at least two years prior to our meeting. Their stories were gathered individually in semi-structured interviews conducted via the online platform Zoom. Research was guided by the Occupational Therapy Practice Framework (AOTA, 2020), which examines the full breadth of human occupation organized into nine key areas: activities of daily living, instrumental activities of daily living, rest and sleep, education, work, play, leisure, social participation, and health management. Triangulation between researchers revealed that changes to occupation post-sexual assault range from unnervingly similar in pattern to profoundly different. The following themes emerged: Contextual Influences that trigger, support, or influence well-being; Social Disengagement resulting from strained relationships and altered social skills; Loss of Self resulting from changes in routines, roles and health management; and Occupation as Power exemplified by instances of taking control. Tellingly, all participants felt failed by the systems in which they lived. We propose that multidisciplinary support is necessitated to meet survivors' occupational needs and trauma-informed care is crucial for individuals who have experienced sexual assault. Recognizing that trauma alters a person's daily life activities and defending every survivor of sexual assaults right to engage in meaningful occupations can reform healthcare perspectives and practices.

Kori Kutsch, Megan Guerra, Katy Kelley, Katy Kwan, Graduate Student
Lived Experiences of Parents Who Have Adopted Children with Mental and Behavioral Health Challenges
Faculty Mentor: Sheryl Ryan, Occupational Therapy

Between 1998 and 2019, the number of adoptions with public agency involvement almost doubled (Children's Bureau, 2006; Children's Bureau, 2020). As the rates of adoption have increased, so have the rates of mental and behavioral health challenges in adopted children (Burke et al., 2018). The 2000 census identified 11.8% of adopted children having a disability, 6.9% of stepchildren, and 5.2% of biological children (Hill & Moore, 2015). Adoptive parents have reported their child's mental health challenges as a main source of stress and need for support, but few studies have focused on their lived experiences. The purpose of this qualitative phenomenological study was to understand the lived experiences of parents who have adopted children with mental or behavioral health challenges. Participants included 7 parents who were at least one year removed from their adoption date and have reported at least one behavioral or mental health challenge experienced by their adoptee. Through in-depth interviews, the researchers explored the lived experiences of adoptive parents with a focus on the adoption process, challenges, support, and routines. Themes included: feeling unprepared, belief in adoption, power of a diagnosis, and the bright side. As advocates for their adoptive children, participants experienced difficulty with receiving appropriate services and understanding their child's unique challenges; but all believed that their adoption was meant to be. Adoptive parents and their families can benefit from service providers who understand the adoption process and the challenges that it comes with. As the adoption rates in the U.S. rise and the number of adoptees with mental and behavioral health challenges increases, occupational therapists must advocate to have a greater role on multidisciplinary teams in adoption and foster care services. Occupational therapists need continuing education on trauma and attachment related issues in order to provide more adoption-informed family based interventions.

Lauren Viloria, Courtney Ramirez, Michael Tran, Caresse Zhong, Graduate Student
Understanding the Occupation of Drag
Faculty Mentor: Sheryl Ryan, Occupational Therapy

Drag performers employ unconventional identities that stray from society's gender norms and roles (Greaf, 2016). However, heteronormative society imposes stigmas on these gender identities that create barriers to health, transphobia, and gross misunderstanding (Acker, 2017; Hopkins, 2008; Sharber, 2018). The purpose of this study is to understand the occupation of drag and its participants for the field of occupational therapy to better serve this population. There is a gap in the literature on this population, as drag has historically been a hidden and taboo occupation until recent times. We conducted semi-structured interviews over Zoom with three participants who engaged in drag. Using the SHOWeD photovoice method, we asked our participants to present us with ten photos that represented their personal meaning of drag (Lienberg, 2018). Following the explanations of their photos, we asked probing questions to construct a holistic narrative of their experience. Findings suggest that the occupation of drag is more multifaceted than what is understood, even by those within the LGBTQIA+ community, with its participation going beyond employment and leisure participation. Major themes derived from our participants included discussions of the origin of their drag personas, representing culture, breaking stereotypes, and overcoming barriers. Participation in drag is used as a means to express one's culture, to further explore and build camaraderie in the community, and defy gender norms. The role of occupational therapy is to help clients engage in occupations that are meaningful to them. The findings of this study gives insight into the personal experiences of drag performers that have not been previously explored in occupational therapy research. In order to provide holistic, client-centered care, it is important to have an inclusive and diverse scope of practice. Through this research, we can help practitioners build a foundation of knowledge of an occupation that is impactful to many people.

Lorimelle Grace Dedace, Graduate Student
Filipino Colonial Mentality Influencing Help Seeking for Mental Health Services
Faculty Mentor: Quang Duongtran, Social Work

This research is a pilot study that will illustrate colonial mentality and its construct amongst Filipino nationals in the Philippines, Filipino-American immigrants, and Filipinos born in the United States, to understand colonial mentality's moderating effect on provider ethnic preference, decision to seek help for psychological problems, and choice of therapy modality (in-person, telephone, or web-based). Current research shows low utilization rate of mental health services and high stigma among Asian immigrants. Presently, Filipinos represent the second largest group of Asian Americans, with an estimated population of 4 million, in the United States. The Health Belief Model in Rosenstock (1974), a recognized applied theory that was developed in the early 1950s by social psychologists, will be examined to understand the construct of colonial mentality among the identified population that was mentioned. Two research questions will be explored: (1) "is there a direct effect of colonial mentality on beliefs and help-seeking behaviors among residents in both the United States and Philippines?" and (2) "does colonial mentality influence preferences of therapists and therapy formats?" (Dalmacio, 2019; & Pew Research Center, 2020). In this study, 10 adults (aged 18 to 65) residing the Philippines and United States will equally participate, utilizing the criterion sampling method. The variables are colonial mentality measured by the Colonial Mentality Scale (CMS) by David & Ozaki (2006), provider ethnic preference measured by similar ethnic, language, or regional backgrounds, and therapy format preferences measured by in-person, telephone, video or web-based. The consent approval to participate is under review at CSUDH. Data collection will begin in early January, and analysis will be completed in late January. Participants will receive a formal research introduction by telecommunication. The consent will be elaborated on the first page. This research expects that there is a correlation among colonial mentality, ethnic congruence, and therapy format preferences.

Melanie Ramirez, Mary Grace Perez, Justin Navarro, Bernice Verzosa, Graduate Student
The Impact of Stroke on Transportation Use in the Greater Los Angeles Area
Faculty Mentor: Sheryl Ryan, Occupational Therapy

Many stroke survivors experience reduced mobility due to the physical and cognitive consequences of a stroke. Stroke significantly impacts community mobility, including the ability to drive and use public transportation, and leads to limited community engagement. No occupational therapy research has been conducted on post-stroke transportation experiences in a major city in the U.S. To add to existing literature and better inform occupational therapy services, this narrative analysis study aimed to understand the transportation experiences of stroke survivors in L.A. County. Three participants, ages 53 to 66 and who were at least six months post-stroke, were remotely recruited from a community center serving L.A. County. Each participant underwent two semi-structured interviews focused on their pre- and post-stroke transportation experiences and conducted via telephone or Zoom. Interviews were transcribed and coded by at least two researchers before undergoing thematic analysis. To depict the participants' transportation experiences before, immediately after, and years following their stroke, individual chronological stories were also written. There were five themes found: (1) limitations, restrictions, and loss, (2) "regaining and relearning," (3) "I feel blessed," (4) planning and waiting, and (5) resourcefulness. Factors that promoted transportation use post-stroke were compensatory or adaptive strategies, equipment, devices, social support, resilience, and diverse transportation options. Factors that inhibited post-stroke transportation use were physical limitations, vehicular features, and environmental factors. Immediately post-stroke, participants experienced a pattern of decreased transportation use and occupational engagement, followed by a gradual increase of both during the long-term recovery period. Participation in work and leisure occupations were reduced or lost. Results demonstrated the impact of stroke on the person, their environment, and valued occupations. This study revealed the value of community-based occupational therapy in promoting transportation use, occupational engagement, and community reintegration during the long-term recovery of post-stroke individuals.

Business, Economics, and Public Administration

Sara Garcera, Undergraduate Student
Handwritten Journaling, Creative Thinking, and Humanity
Faculty Mentor: Orie Berezan, Management & Marketing

Reflective learning is the process of engaging more deeply with knowledge, beyond comprehension. It takes the learner through three stages: awareness, critical analysis, and ultimately perspective transformation. Ideally, this results in the ability for students to separate facts from attitudes or their emotional responses, and students challenging their own ideals from a new perspective. This is especially important with topics that are sensitive in nature, such as loneliness. Although journaling has been utilized in the classroom for areas such as educational psychology and social work, it is not widely practiced in business courses such as marketing. The question is: Can reflective journaling in business school result in a higher level of learning? This project investigates the relationship between learning outcomes and the reflective journaling process in an undergraduate marketing and humanity class at a large university on the west coast. The data was collected from the assignments of 17 students on the topic of social media and loneliness and were analyzed to evaluate the students' learning experience using content analysis through the lens of Bloom's Taxonomy. The opportunity provided a unique learning experience and a hands-on approach to allow marketing students to experience learning in a new light, through their handwritten journals. Additionally, student feedback on the course was collected and will be analyzed in conjunction with the journaling results. All analysis, results, and implications will be presented on Student Research Day.

Alan Augusto Santos Couto, Brenda Arellano, Undergraduate Student
The Impact of Students' Backgrounds on Their Excel Learning Effectiveness
Faculty Mentor: Sheng Yi, Accounting & Law

Learning Excel can be a challenge for college students. Students who just enter college and who are first in their family to attend college tend to face extra challenges in learning digital skills such as Excel because they have a greater disadvantage than their peers during their academic career. Nevertheless, Excel is a skill that employers are looking for from college graduates. Prior research states that Microsoft Excel is the most ubiquitous analytics tool in business (Formby, Medline, and Ellington 2017). Geiger (2015) also finds that 78% of middle-skilled jobs require digital skills like Excel. In this paper, we plan to study how students' Excel learning effectiveness varies among their different backgrounds. In addition, we will study the impact of different types of teaching methods on students' Excel learning effectiveness. In particular, this study will answer the following questions: 1) Will students' background (transfer student, first-generation student, and ethnicity) affect their Excel learning effectiveness? 2) Will students learn better with hands-on instruction or by watching video examples? Informed by digital skill training research, we predict that transfer students will score higher than first-year students; students from different ethnic backgrounds will show different Excel learning effectiveness; a first-generation student will score lower than their peers; and the hands-on instruction will be more effective than video examples. To test our hypotheses, we will collect quantitative data from pre-workshop and post-workshop surveys, and from post-workshop Excel tests from students attending CSU Dominguez Hills. The unit of analysis is students. We will perform quantitative data analysis by using statistical techniques including ANOVA and regression. Data analysis results and research implications will be presented and discussed. The findings of this research will contribute to the digital skill development of undergraduate students from diverse backgrounds in a minority-serving university.

Jennifer Van, Graduate Student
Engaging Citizens in the Budget Process: Implications on Police-Community Relationships
Faculty Mentor: Rui Sun, Public Administration and Sarah Britto, Public Administration

In 2020, the rise of the "Defund the Police" movement brought increased citizen interest in municipal budgeting and a desire to have their voices reflected in these budgets, especially regarding law enforcement spending. Prior to this, many local governments have been moving towards increased citizen engagement in their budgeting processes through budgeting transparency, increased outreach, and added avenues for participation. This study uses a mixed-methods approach. The quantitative portion examines the relationship between the level of citizen engagement undertaken by municipal governments and their police expenditures using primary data from a survey of 38 cities in the Los Angeles metropolitan area, the cities' budget documents for FY2020, Census Bureau's American Community Surveys, and FBI's Uniform Crime Reporting Program. The study also includes a qualitative analysis of police department websites and budget narratives for evidence of community engagement efforts. The study is expected to contribute to both public budgeting and criminal justice literature and provide practical implications for municipal management and civic engagement.

Lauren Hull, Graduate Student
Effects of Law & Public Policy on the Supply of Women's Healthcare Providers in California
Faculty Mentor: Fynnwin Prager, Public Administration

California's shortage of women's healthcare providers has steadily increased over the past decade. Many different factors have been asserted as the root cause of this issue, resulting in numerous policy proposals aimed at increasing the number of providers in the state. This study uses policy analysis to evaluate the effects of such policies on the basis of their ethicality, political feasibility, cost-benefit tradeoffs, and effectiveness (in terms of the number of people with access to care). Within the context of policy proposals for addressing the shortage, significant controversy has arisen specifically over the function of California's current physician supervision mandate for Certified Nurse Midwives (CNMs) and its capacity for reducing access to healthcare by restricting scope of practice. This study evaluates the effects of the physician supervision requirement, the effects of allowing autonomous practice for CNMs, and the effects of funding obstetrician-gynecologist (OB-GYN) residencies to determine the most effective policy for increasing the number of women's healthcare providers in the state. The results of this study indicate that the physician supervision requirement does more harm than good, and suggest that policymakers should pursue a multi-pronged approach to solving the provider shortage by both removing physician supervision requirements for CNMs and funding OB-GYN residencies.

Rushi Patel, Megan Baker, Undergraduate Student
An Empirical Study of Undergraduate Students' Interest in Technical and Analytical Jobs and Their Motivation to Learn Excel Skill
Faculty Mentor: Nancy Deng, Information System and Operations Management

Studies have shown that 80% of middle-skilled jobs require job applicants to have a basic understanding of Microsoft Excel and that having advanced knowledge in analytics skills leads to higher job acceptance rates and compensation (Ellington, Formby, and Medlin, 2017). We want to study student's motivation to learn Excel skills, which can help prepare students for future access to internships and the job market early on in their education. Specifically, the purpose of the study is to determine the relationship between the choice of a STEM career and motivation to learn Excel. Our research questions include: (1) Are students who want to do technical, analytical positions more likely to show higher motivation to learn Excel? (2) Are they more likely to achieve better learning than other students? Guided by prior research on digital skills and STEM careers, we predict that the students who are interested in technical, analytical positions will be more likely to show a higher motivation to learn Excel, and those students will be more likely to show a higher motivation to learn Excel. To test our hypotheses and answer the research questions, we collect quantitative data from student participants in Excel workshops and analyze data using statistical procedures including correlation and ANOVA. The independent variable will be future STEM career choice; the dependent variables will be the student's motivation to learn and their Excel learning effectiveness. Control variables include students' demographic background and prior knowledge in Excel. The study participants are students at Cal State University Dominguez Hills. The unit of analysis is student. Findings of the study will be presented and discussed. The study will provide useful guidelines for undergraduate students who are interested in the new job market of data analytics and data science.

Susana Saborio, Undergraduate Student
Understanding Adversities of Gig Workers from Different Online Platforms and By Worker Characteristics
Faculty Mentor: Nancy Deng, Information System and Operations Management

In the new age of digital transformation, many people seek to become gig workers for popular online platform companies in order to gain job flexibility and financial independence. Gig workers are classified as independent contractors who work for popular online platforms such as Uber and Instacart. Gig workers stem from the gig economy, a labor market characterized by the prevalence of freelance work as opposed to permanent jobs. Although gig workers obtain the flexibility to be their own boss while managing a healthy work life balance, many of them are faced with the harsh realities of the gig economy: inconsistent low paying rates and safety concerns. The purpose of the study is to find out if gig workers from different types of platforms face adversity and if their experiences differ by their characteristics of gender and age. Informed by prior research, this study predicts that workers face different adversities from working with the two different platforms – ride-hailing and delivery – and female and older gig workers are more subject to higher risks than male and younger gig workers. To test our hypotheses, we surveyed 56 active gig workers on the ride-hailing platforms (Uber and Lyft) and the grocery and food delivery platforms (Instacart and Postmates) and performed statistical data analysis. The findings show that more women worry than men about their physical safety while working, and older people are more concerned about contracting Covid-19 when coming in contact with patrons. Although many workers find that gig work is an alternative to making extra income to pay their bills, our study shows that not all gig workers have the same experiences. The study contributes to our understanding about the adversities of the platform-based workers in the gig economy.

Nirnay Thoolkar, Graduate Student
Studying Resiliency and Retention of university on Student Recovery Planning Survey
Faculty Mentor: Rama Malladi, Accounting, Finance and Economics

In response to COVID-19, as part of the President Challenge, our university had formed a committee and they conducted a recovery planning student survey of the emerging corona gap to study resiliency among faculty and the students. Survey included how our university had experienced the spring 2020 term and what are the plans for the fall 2020 semester to support the success based on the needs and the suggestions. We used various statistical tools and techniques like Python and Tableau to analyze these survey data. Students are worried about the classes and had basic needs which included food and housing insecurity, 47% respondent had psychological stain due to remote learning and major impact on finances.

Joshua Mean, Alumni
Thriving in College during a Pandemic: Explaining COVID-19 Affected Student GPA Performance using the Thriving Quotient
Faculty Mentor: Rama Malladi, Accounting, Finance and Economics

The COVID-19 pandemic has changed the paradigm for students enrolled in higher education. Students have been required to shift to an online or distance learning model, and have encountered unprecedented financial, personal, and health challenges due to the virus. In this study, we investigate the relationship between student's most recent COVID-19 affected term GPA performance and their "Thriving Quotient", a factor-based model that measures student success and has demonstrated high reliability. Each of the factors represents an element of academic, intrapersonal, or interpersonal thriving that has been empirically demonstrated to be amenable to change within students, rather than a fixed personality trait over which we have little control. The study utilized data collected by California State University Dominguez Hills as part of the President's Challenge: Understanding and Building Academic Resilience, Community and Retention at CSUDH. The President's Challenge seeks to understand the qualities that define academic resilience using qualitative and quantitative analysis, while recommending implementations for improvement. The data was modeled using Ordinary Least Squares regression in the R programming language. In our results, we showed that Thriving Quotient factors "Engaged Learning" and "Spirituality" were the strongest predictors of student GPA performance.

Engineering and Computer Sciences

Deepa Kishore Malani, Dhanraj Rana, Graduate Student
Transcript Reader (Android app)
Faculty Mentor: Bhrigu Celly, Computer Science

When the Computer Department takes new admissions or transfer students, they need to manually check students' transcripts to evaluate which courses satisfy prerequisites for the program. This manual task is laborious and time-consuming. We have developed an Android application, called 'Transcript Reader' that helps to reduce this manual work using Optical Character Recognition (OCR) technology. Transcript Reader manages a database of prerequisite courses for CS department. Using this app, the Admission department personnel can scan the students' transcripts using a device camera, and then the app will fetch only prerequisite courses and corresponding grades. This app also allows to edit and save students information into the database. This project was developed using Android Studio IDE and Java language. Google MLK its text recognition API was used to detect and recognize the text from transcripts.

Phillip Aguilera, Undergraduate Student
Virtual Network Function Load Balancing in Cloud Data Centers Using Machine Learning
Faculty Mentor: Bin Tang, Computer Science

Virtual network functions (VNFs) are software versions of the hardware middle boxes including firewalls, load-balancers, and web proxies. Due to their management flexibility and inexpensive manufacture cost, they are more frequently used in enterprise cloud networks compared to their hardware counterpart. However, due to their limited processing capability, there is a need to load-balance them. In this project, we study how to load-balance VNFs in dynamic virtual machine (VM) traffic that commonly exists in cloud data centers. We implement a fat tree-based cloud data center, and design two VNF load-balancing algorithms viz. a greedy algorithm and a reinforcement learning algorithm. We compare their performances via different network parameters including number of VM pairs, traffic rates of VM pairs, and processing capacities of VNFs.

Jennifer Ly, Undergraduate Student
VM Migration for Dynamic VM Traffic in Policy Aware Data Centers
Faculty Mentor: Bin Tang, Computer Science

Policy aware data centers initially are configured with the emphasis on making the virtual machines (VMs) as resource efficient as possible. However, network loads are dynamic and can change their behavior at any point in time. Our research goal is to find the most efficient path to migrate the VMs with the lowest communication cost. Currently, we designed a minimum cost flow based VM migration scheme, which is difficult to implement. We propose to use machine learning techniques to calculate the minimum cost VM migration more efficiently. Machine learning techniques like reinforcement learning can allow the VM migration to be adjusted as needed as variable values begin to change (e.g., traffic rate, VM pairs, migration coefficient, and the number of middle boxes). With this philosophy, the VMs should almost always be optimally placed.

Sterling Abrahams, Graduate Student
Migrating Virtual Network Functions in Dynamic Cloud Data Centers Using Reinforcement Learning
Faculty Mentor: Bin Tang, Computer Science

Virtual network functions (VNFs) are virtualized middle boxes such as firewalls, load-balancers, and web proxies. They have been actively deployed in cloud data centers to achieve performance and security guarantees of the cloud user applications. Previous research shows that migrating VNFs (i.e., whether and where to migrate a VNF from one switch to another) inside a dynamic cloud data centers could improve QoS such as reducing the traffic and delays among communicating virtual machines (VMs). However, it only focuses on a static and short-term scenario - because of the overhead involved, not migrating at all can be the optimal decision. How to migrate VNFs continuously in a dynamic cloud data center in a long-term is a challenging and unsolved problem. We first show that an optimal VNF scheme according to current traffic status could be myopic, resulting in more traffic and time delays in the long term compared to even the no migration scenario. Then we use reinforcement learning (RL) to model the VNF migration problem and the VNFs. In particular, we model VMFs as RL agents and let them decide how to migrate based on the dynamically changing VM traffic in the data center network. Because the nature of the problem is continuous, a temporal difference learning agent may be the best choice. We show that the RL-based approach outperforms the optimal but myopic VNF migration in terms of long-term network traffic and time delay.

Yeswanth Saidu Sai Polu, Graduate Student
A Dynamic Data Resilience Algorithm for Sensor Networks
Faculty Mentor: Bin Tang, Computer Science

Many of the sensor network applications are deployed in challenging environments, wherein sensors do not always have connected paths to a base station and propose a new data resilience problem. Such applications include underwater/deep sea sensor networks, seismic sensor networks, and volcano monitoring networks. Existing research endeavors to maximize data resilience in such networks by offloading the overflow data from data nodes to initially high-energy storage nodes. We show that this approach does necessarily result in high data resilience level (DRL) that quantifies the data resilience performance. We propose a new algorithm that selects high-energy storage node dynamically. As the high energy storage nodes could change after each data offloading, choosing a best storage node in each iteration can help in achieving optimal data resilience. Using extensive simulations, we show that the dynamic data resilience algorithm outperforms the existing research in terms of achieved DRLs.

Humanities and Letters

Joseline Gonzalez, Undergraduate Student
"Padre, Perdóname!": Machismo, Family Structures, and Safe Spaces in Empanada and Butterfly Boy
Faculty Mentor: Roderick Hernandez, English

This research paper examines the relationship between queer identities and Chicana/o family dynamics, as presented in Chicana/o literature. Due to Chicana/o families regarding themselves as close-knit, little space is given to an opposition to their family dynamics. The nuclear family structure is mirrored in Chicana/o families and therefore, excommunication and isolation exists to parties that seemingly oppose rigid gender roles and gender expectations. The excommunication is fueled by religious beliefs within the communities, which includes the violent implementation of catechism in young adolescent girls. Homophobia and sexism is seen through the physical violence and harassment of the characters when they identify as queer. Through my literary analysis of Empanada and Butterfly Boy, I argue that Chicana/os must leave their homes and families in order to build safe-spaces and simultaneously practice their sexualities. First, I will analyze the concepts of machismo and femininity as it facilitates the character's identity and resistance to traditional roles. Then, I will be investigating the ways in which queer identities are framed as oppositions to Chicana/o families through religion and beliefs. Finally, I will explain the importance of safe-spaces especially for queer-identifying characters and revealing how the Catholic Church and Chicana/o households are juxtaposed with these safe-spaces.

Katie Colln, Graduate Student
Medieval Women as Monsters: Taming Beast and Beauty
Faculty Mentor: Debra Best, English

In this paper, I will be exploring the topic of women as monsters in Medieval texts. The paper will focus on how women are described and introduced in Middle English Romances and it will discuss women who step outside of gender roles in their text. The question this paper attempts to answer is this: does the objectification of women and the constant attempt to define women by their sexuality in Middle English Romances reveal a medieval view of women as monsters? Is this view reflective of a male anxiety over feminine power and is this literary take on women an attempt to reaffirm the patriarchal views of the time? This interrogation into the place of women in English romances will expand a perspective of societal views on gender during the later Medieval period, and it will develop an interest in understanding how those views came to shape modern gender constructs.   In this study I will be focusing primarily on the medieval text Bevis of Hampton, more specifically the characters of Josian and Bevis mother. Josian is a character who is well liked and elevated as a female heroine in most medieval scholarship. My argument will challenge that view in a sense. This paper will argue not so much with her heroic attributes but with why those attributes are present and what they reveal about views of women at the time. I will be examining the similarities that Josian holds with traditional monsters in literature, both in her physical description and in her actions, as well as addressing how these similarities ultimately align her with something that is "other" and unnatural. I expect to connect Josian's ability to move on the gender spectrum with a monster's ability to inhabit liminal spaces, using both research on Josian's fluid femininity (from Myra Seaman) and research on monster theory (from Misty Urban and Jeffrey Jerome Cohen). My tentative argument is that the objectification of women paired with their ability to blur gender roles places them in a space reserved for the unnatural, ultimately subjugating them in Medieval society as men attempt to conquer and tame both species.

Maha Furrukh-Butt, Undergraduate Student
Subverting Servants in The Revenger's Tragedy
Faculty Mentor: Kimberly Huth, English

Nobles in early modern English literature and theater were socially divided from lower classes and well protected, making it difficult for revengers from lower classes to fulfill their purpose. A common way nobility interacted with those in lower classes was through their servants and employees. This paper will argue that through this relationship of employer and employee, the revenger fashions himself and creates a space where they have the chance to get close to the noble who has wronged them, gain the noble's trust and enact their revenge. In Thomas Middleton's play, The Revenger's Tragedy, the protagonist Vindice, takes advantage of this complex dynamic and gets his revenge on the Duke. I analyze Vindice's revenge through the theoretical lenses of Greenblatt's self-fashioning and Althusser's interpellation. Class distinction between nobles and their servants is important because it provides nobles with a sense of importance and a false sense of security. Nobles are also used to being surrounded by servants since birth which makes their presence mundane and unassuming. In Middleton's play the Duke's request is immoral—he asks Vindice to find him a woman to sleep with. The nature of this task creates a secrecy between the employer and employee which separates the Duke from his protection. The Duke puts himself in a situation where only Vindice will know his whereabouts, and because of this secrecy, Vindice is able to get his revenge without being caught in the act. The Revenger's Tragedy shows a scenario in revenge tragedy where a lower-class revenger is able to use their class and employee position to take advantage of a noble and get their revenge.

Matthew Hernandez, Undergraduate Student
"Please Don't Kill Me": Confronting Racist Violence in Contemporary Young Adult Literature
Faculty Mentor: Helen Oesterheld, English

This research project concerns the representation of racist violence in contemporary young adult literature as a form of confrontation ☐ both of the traditional genre of young adult literature and of the young person's ability to challenge racism and respond to violence. I focus on two novels Children of Blood and Bone (2018) by Tomi Adeyemi and All American Boys (2015) by Jason Reynolds and Brendan Kiely—written in the wake of the murders of Aiyana Stanley-Jones, Trayvon Martin, and Michael Brown. While Adeyemi imagines a fantasy world in which only black people exist, and Kiely and Reynolds depict a realistic and diverse American town, both works center the responses of young adults to violence in locales that are permeated by racism. Representative of the experiences of many young black people in contemporary America, these novels illustrate a traumatic coming of age for black youths, making special note of the many deaths of unarmed people of color at the hands of law enforcement in the United States. I examine and redefine this emerging subgenre of young adult literature through the framework of confrontation. I argue that these novels confront contemporary instances of racist violence in the U.S., calling their readers to feeling and ultimately to action, by utilizing narrative employments of realist events of racist violence, describing these events through counter narratives in a dialogic relationship between characters. Ultimately, these narratives model ways in which young people can seize agency and create change by addressing the melancholic maturation that has been experienced by both the characters and readers, and demonstrating the pathways of protest, resistance, and rebellion open to them.

Student Research Conference

Oral Presentations Abstracts

Friday, March 5, 2021

➢ Behavioral and Social Sciences
➢ Creative Arts and Design
➢ Health, Nutrition, and Clinical Sciences
➢ Physical and Mathematical Sciences

Behavioral and Social Sciences

Nadia Saleh, Abigail Reihanian, Nancy Saucedo, Laura Toda, Graduate Student
Coping Experiences amongst Caregivers for Persons with Chronic Conditions
Faculty Mentor: Sheryl Ryan, Occupational Therapy

Ninety percent of the nation's 3.5 trillion dollars in annual healthcare expenses go toward people with chronic and mental health conditions (Centers for Disease Control and Prevention [CDC], 2020). Due to an increase in dependency, persons with chronic conditions require care and support often provided by informal caregivers. The one-year value of unpaid caregiver activity was estimated at around $450 million dollars in 2009 (CDC, 2019). Therefore, in providing care, informal caregivers have an economic impact on society by reducing burden within the healthcare system. Although burden is significantly reduced within the healthcare system, caregivers are susceptible to experiencing burden related to their role, impacting their well-being. Thus, the ability for caregivers to cope with the burden they experience is crucial for them to continue in their caregiver role, resulting in continued benefits for the healthcare system. The purpose of this study was to examine the long-term coping experiences across caregivers for people with chronic conditions. Using a phenomenological approach, the researchers conducted five semi-structured interviews with three female and two male informal caregivers. Seven common coping mechanisms emerged: schedules and routines, repressing emotions, support, accepting minor inconveniences, learning from others, communication, and engaging in meaningful activities as methods to foster resilience and overcome challenges. Universal methods of coping seem to exist across caregivers for people with chronic conditions. To preserve longevity in their roles, coping strategies were adjusted overtime as the chronic illness progressed, indicating a need for caregivers to make lifestyle changes. Given the savings for the healthcare system, funding must be redirected to multi-disciplinary teams, including occupational therapy, to meet caregiver needs. Occupational therapists can aid caregivers in making the needed lifestyle changes by providing them with tailored coping strategies throughout their journey and providing education and self-management techniques for long-term care and role preservation.

Peter Fuqua, Karla Santa Cruz, Undergraduate Student
Food Culture in Cambodia: Influences and Practices
Faculty Mentor: Susan Needham, Anthropology

Cambodian food culture takes influences from several areas. Traditionally, the Tonlé Sap Lake has been Cambodia's center of food and commerce, but today several transnational entities are vying for control of the lake's resources. Khmer culture remains an important part of modern Cambodian food culture, however, and many Cambodians maintain their traditions by keeping gardens and fruit trees in their yards. The purpose of our research was to understand Cambodian food culture and its sources. We performed our ethnographic research over four months, focusing on four Cambodian students attending the Paññasastra University of Cambodia (PUC). The students were between the ages of 19 and 22, and all lived at home with at least one parent. Three of our informants were female, and one was male. We collected our ethnographic data through several methods. First, our informants self-reported their living conditions using PowerPoint presentations, which we discussed at length. Second, we interviewed two of our informants individually, over Zoom. To supplement our data, we performed library research that provided vital information about the Cambodian transnational environment. Our findings show that Cambodian food culture is influenced by its transnational environment and traditional Khmer culture. Our research maps out the transnational context of food in Cambodia. It examines what food people eat, the processes by which they prepare it, and the horticulture they partake in to supplement their diet and maintain their culture.

S. Cortez-Flores, Graduate Student
The Descent of the Institutionalized Marriage: Queer Latinx Millennial/ Gen Z Perspectives of Same-Sex Marriage
Faculty Mentor: Katy M. Pinto, Sociology

My research focus is on the impact same-sex marriage has on Queer Latinx Millennials and Gen Z individuals' lives. Most of the literature concerning the effects same-sex marriage has on the Queer community leaves the Queer Latinx Millennials and Gen Z population mostly out of the discussion. Through 18 in-depth interviews consisting of open-ended questions, I explain the intricacies of their perspectives, values, and symbolism associated with same-sex marriage. The majority of those interviewed understand the importance same-sex marriage holds for the Queer community at large but did not necessarily hold the same beliefs for themselves. Many participants have a problem with the institution of marriage and the expectations the legal title marriage holds. The participants' understanding of the institution of marriage appears to mostly stem from their familial model, although further research should be conducted to explore the intricacies of those relationships. Further research should be done to explore Latinx family life as it relates to gained understandings of marriage and relationships and Queer people.

Shanna Massachi, Nicole (Nicky) Lai, Alexander (Alex) Mastrovito, James (Jimmy) Merrigan, Graduate Student
Grief, New Pet Ownership, and Occupational Participation: Pets Breaking Down Occupational Barriers
Faculty Mentor: Sheryl Ryan, Occupational Therapy

Grief is a common and expected experience following a major life loss or change. Grief often causes valued occupations, such as social participation and activities of daily living, to lose meaning and become increasingly difficult to maintain. Therefore, grief affects occupational participation or individuals' involvement in everyday occupations that are vital to development as it allows individuals to gain skills, find purpose, and form bonds with others. It is the responsibility of occupational therapy practitioners to contribute to the recovery of grieving individuals. Past research illustrates the benefits of engaging in healthy occupations while grieving and the therapeutic benefits of animal assisted therapy and service dogs on a host of physical and emotional conditions. Previous research also demonstrates the benefits of pet ownership as pets provide companionship, affection, and physical contact, while also decreasing rates of loneliness and depression following a social loss. Although there is a high prevalence of pets and universality of grief among the general population, no occupational therapy research explores the ways in which pet ownership during grief impacts occupational participation. This qualitative study hoped to better inform professionals on ways in which pet ownership can impact the daily life of grieving clients. This study consisted of seven participants and seven semi-structured interviews, which utilized narrative methodology. Photo-elicitation was also utilized with some participants to further enrich their narrative. Researchers individually and then collectively analyzed interview transcriptions and drew out major themes. Results indicated that pets benefited most grieving participants as they offered their owners with an outlet, motivation, participation, and a connection to what they were missing. Each of these themes represented greater occupational engagement in participants' day to day lives. Occupational therapy practitioners can consider not only animal assisted therapy, but also pet ownership as a way to increase occupational participation among grieving clients.

Stephanie Hoang, Jennifer Dabin Kim, Ada Le, Zachary Michaels, Graduate Student
The Experience of College Students with Depressive Symptoms Participating in Online Instruction during COVID-19 Pandemic
Faculty Mentor: Sheryl Ryan, Occupational Therapy

The rising COVID-19 pandemic statistics have led many countries around the world to take preventative social distancing measures. Students are one group heavily affected by these measures as a majority of the world's population of students have transitioned into online instruction. The change in instructional methods has caused many to adapt, and based on current research, these physical protective measures may be causing mental distress, especially amongst populations living with mental health disorders, specifically depression. This provided a unique opportunity to conduct research to explore the experience of students with depression and their ability to engage meaningfully in their academics and their everyday life. This phenomenological study used a semi-structured interview process to better understand the experience of American students with depressive symptoms who are attending online instruction during COVID-19. We conducted in-depth interviews with six full-time students. All participants are above the age of 18, attended online instruction within the year 2020, and experienced depressive symptoms within the past year. With these six interviews, we were able to code their narratives into common themes such as lack of motivation, isolation, lack of structure, and benefits of social distance learning. Most of these themes hindered participants' desire to engage in meaningful occupations to relieve their depressive symptoms. Our findings suggest these students were not adequately addressing their depressive symptoms due to COVID-19 stressors and daily life stressors. This is important in regards to occupational therapy because activity-based interventions improve the well-being and overall mental health of individuals. Occupational therapy programs are uniquely equipped and situated to provide activity-based interventions to promote healthy coping mechanisms during stressful times. In addition, occupational therapy programs can provide individuals with additional strategies focused on addressing their depressive symptoms through wellness check meetings, support groups, and safe spaces.

Sydney A. Johnson, Undergraduate Student
Rolling With the Girls
Faculty Mentor: Olga Kozanian, Psychology

The purpose of this review, is to observe for the relevance and the possibility of discovering a solid connection between the frequent use of MDMA with more intense depressive symptoms and burnout; more than occasional users receiving legitimate treatment, with the stimulant. For this particular proposed research study, a self-report questionnaire is utilized to predict the data collected within the observed demographic, female being the dependent variable; between the ages of 18-30 the independent variable. Measuring for the probability of the control variable, frequent/polydrug users of the drug experiencing an onset of intense adverse effects with long term use. Specifically, recreational MDMA users within the festival and rave communities. Testing for various effects of the drug on whereas the occasional user experiences, beneficial effects of infrequent use. Various studies observed, have shown that MDMA induced neuropsychological dysfunction have been conducted on very young adults. Yet, there is still so much more to learn about the impact of ecstasy's effects later in life. Especially when keeping in consideration, that both serotonin and cognition declines as a result of aging. While the unregulated drug is constantly abused over time from recreational use, there are reports of higher chances of the substance being taken with little to no refraction periods. The drug also exhibits beneficial effects for psychological struggles when it is regulated with proper dosing administered, during treatment trials for occasional users. Completing this study has revealed some truly insightful discoveries, with more findings during the research process. Validating my hypotheses. However, the satisfaction with the quality of life really is determined by how the user is handling this life altering drug.

Taylor Duffy, Daniel Correa, Denise Aguiluz, Isabel Munoz, Graduate Student
Socio-cultural Factors, Health Status Indicators and Health Beliefs that Predict Diabetes Risk among Latinx College Students
Faculty Mentor: Silvia Santos, Psychology and Maria Hurtado-Ortiz, Psychology

This study used a logistic regression to examine which socio-cultural factors (gender, generational status, assimilation, and income), health status indicators (family history of diabetes and BMI), and health beliefs (mastery and self-efficacy) distinguish Latinx college students who are at diabetes risk from those who are not at risk. The sample consisted of 156 Latinx college students (34% male; 66% female) with a mean age of 23.26. Participants' diabetes risk was measured using the NIH Diabetes Risk Test. The overall regression equation was significant and provided a good fit of the model, χ^2 (11) = 54.77, p < .001, Nagelkerke R^2 = .463. The study revealed that Latinx women were 4.44 times more likely to be classified to be "at-risk" for diabetes than "not at-risk" whereas the reverse was found to be the case for men. In terms of the health status variables, BMI emerged as a significant predictor of diabetes risk status with every one-unit increase in BMI, the odds of diabetes risk was 1.41 times greater than being "not at-risk". Lastly, self-efficacy health beliefs was a significant predictor of diabetes risk status. With every one-unit decrease in self-efficacy, the odds of being classified as "at-risk" for diabetes was approximately two times greater than being classified "not at risk" for diabetes. Lastly, 81% of the cases were accurately classified; specifically, 62% of those who are "not at-risk" for diabetes were accurately classified, and 91% of those who are "at-risk" for diabetes were accurately classified. This study indicates that it is important for future interventions centering on Latinx young adults should emphasize the promotion of self-efficacy health beliefs as a protective factor in lowering diabetes risk and to consider the importance of gender and weight status as risk factors in diabetes.

Teresa Lam, Jaclyn Ingram, Alexandra Krizek, Annika Lin, Graduate Student
The Occupational Experiences of Women with Late Autism Spectrum Disorder Diagnosis
Faculty Mentor: Sheryl Ryan, Occupational Therapy

Across literature, the ratio of males to females diagnosed with ASD is consistently reported as 4:1 (Dworzynski et al., 2012). However, a growing number of women are being diagnosed with ASD later in life, some of whom feel that the criteria for diagnosis is extremely biased towards the male perspective. Additionally, there is a lack of literature focusing on specific occupations, their strengths, what support looks like, and factors that acted as enablers. This qualitative phenomenological study sought out to build a holistic understanding of how individuals in this population experience their occupations in order to inform scholarship of the needs of women with late ASD diagnosis. This study consisted of five participants that met specific inclusion criteria. 60 minute semi-structured interviews were conducted through Zoom video conferencing and journal artifacts were collected to describe their current occupational experiences. All interviews were recorded, transcribed verbatim, and triangulation was addressed to derive themes. Themes of thriving and surviving in a hostile environment were identified across all participants' narratives. Our findings reveal that many individuals in this population, amidst internal and external difficulties, can lead occupationally fulfilling lives. Our findings contribute to a better understanding of how women with late ASD diagnosis experience their occupations. Although patterns were evident across participants, they all led very unique lives and had unique needs. With such knowledge, OT practitioners may be better equipped to provide more individualized support and advocate more effectively for this population.

Vanessa Flores, Jennifer Dee, Michelle Franco, Graduate Student
Dating and Sexuality Experiences Among Transition-Age Individuals With Autism Spectrum Disorder: A Narrative Study
Faculty Mentor: Sheryl Ryan, Occupational Therapy

Many transition-age individuals (TAI), or those between 18 and 27 years of age, have been in romantic relationships and have engaged in sexual intercourse by age 18. However, individuals with autism spectrum disorder (ASD) generally have significant deficits in social communication and interaction, which often result in difficulties with dating and sexuality. Furthermore, there is a lack of research exploring dating and sexuality in TAI with ASD. Using a narrative approach, this study aimed to better understand the experiences in dating and sexuality among TAI with ASD. Three participants, ages 19 to 22 years, completed an online survey and participated in a 1-hour interview via phone call or Zoom video conference in which we collected narrative data about their experiences. Through narrative analysis, we created a chronology of each participant's narrative, then coded for themes. This revealed themes related to the participants' story beginnings, impact of their ASD identities, and navigation of relationships, turning points, and start of their next chapters. As the participants began their dating journeys, their ASD identities led to difficulties with understanding others, insecurities about ASD, and masking. The participants encountered both challenges and supports as they navigated their romantic and intimate relationships. Major turning points in their narratives included learning more about ASD and identifying and addressing barriers to successful relationships. These changes marked the start of new chapters with a stronger sense of self and satisfactory, fulfilling relationships. These outcomes suggest that dating and sexuality are meaningful occupations for TAI with ASD. Occupational therapists can provide this population with guidance and support by teaching social skills and addressing the need for supportive social environments and community-based resources. Additionally, occupational therapists can advocate for increased education about neurodiversity, which encourages others to look beyond the ableist perspective and promotes a greater acceptance of people with ASD.

Clare Brodak, Manisha Maddi, Alumni

Thematically Analyzing the Library Gerth Archives COVID-19 Special Collection, Institutional Needs Assessment and Recovery Datasets, and a Primary "Thriving Quotient +" Survey to Understand Toro Resilience and Thriving in the Time of Coronavirus.
Faculty Mentor: Kirti Celly, Management & Marketing, Rama Malladi, Accounting, Finance and Economics and Alana Olschwang, University Effect Plan & Analytics

During the unprecedented COVID-19 pandemic, California State University, Dominguez Hills' (CSUDH) President Parham sponsored a challenge to understand student resilience. Considering the significant historically under-served populations attending CSUDH and the extended global health emergency, it is institutionally important to understand the factors affecting student thriving. Three separate studies were qualitatively and thematically analyzed: Gerth Archives COVID-19 Special Collection (CSUDH Library); University Effectiveness, Planning & Analytics` Needs Assessment and Recovery surveys (UEPA, spring and summer 2020); and the primary Thriving Quotient™ (TQ™) survey (researchers, Fall 2020). This research describes the process and outcomes of the thematic analysis for each study. In Study 1, using the TQ™ model, the team collaboratively developed initial codes for the Gerth submissions. Four raters working independently to identify themes found support for the coding system with positive perspective, healthy coping strategies, sense of community, and spirituality dominating in the student responses. In Study 2, the coding scheme developed is applied to the UEPA data sets, and refined to reflect additional themes. Study 3 uses the superset set of codes developed in the first two studies to explore qualitative TQ™ data. Two raters are examining if, how, and why CSUDH students are thriving during COVID-19. Collectively, these studies are a complement to quantitative research conducted separately and simultaneously. Based on the emerging results from the primary study, there is merit in CSUDH developing student resilience and thriving by focusing on and supporting the aforementioned themes at an institutional level. The published TQ™ research suggests that the university can build a student body that is thriving at a higher level through such focused institutional support than without such support. As the first study of its kind in the CSU, this research could have implications for CSUs with similar student demographics and the system as a whole.

Creative Arts and Design

Keya Hossain , Undergraduate Student
Artifact Piece (1987) - The Living, Breathing Specimen
Faculty Mentor: Kirstin Ellsworth, Art & Design

The North American landscape of settler imperialism beginning with the 16th century Spanish and English colonies have created lasting effects for existing indigenous groups throughout the continent. Although the nature of imperialism has changed throughout the history of colonial settlements and expansion up through the present day United States, the same principles remain. When indigenous groups occupied much of the land, colonialism manifested itself through the massacre and violent relocation of native peoples for the forceful expansion of U.S. territories, shrinking Indian sovereignties and compromising their resources. Imperialism has since evolved into present-day native poverty, food insecurity, corporate and government land abuse, and generational trauma. This provides a springboard to understand and apply Post-colonial analytical principles to James Luna's Artifact Piece. Post-colonialism here is defined by the reactions and realities of colonized groups after the colonizing force has gone, either forcibly through gaining independence or otherwise. This manifests itself through changes in socio-political structures, economics, culture, language, and collective self-awareness. Post-colonial theoretical principles function as a means of dissecting the many facets of oppressive imposition, the relationships between colonizer and colonized, cultural shifts and exchange, and by extension, the development of individual identity. I argue that Artifact Piece employs Post-colonial theory in its concept and demonstration, serving as a critique of colonial hegemony in both the historical and contemporary sense with regard to anthropological exhibition practices, otherism, and colonial gaze.

Khasnaa Juma, Undergraduate Student
Art and Environmental Sustainability in High Fashion
Faculty Mentor: Devon Tsuno, Art & Design

Art and Environmental Sustainability in High Fashion. My art is research about the harmful impacts of fast fashion, and the textile industry on the environment. My sculptures and photographs focus on sustainability, leverages art to increase the visibility of   pollution within consumerism culture, and presents alternatives in design and fashion. "The global fashion industry emits 1.7 billion tons of CO_2 per year — more than the amount produced by international flights and shipping" (Hagana). My artwork titled, Scraps but Make it Fashion, demonstrates how "upcycling" in clothing production and fashion is a beautiful and more sustainable process to reduce such pollution. Using acrylic paint, recycled fabrics, thread, and found objects, I construct pieces that I document and present with photographic self-portraits. "About 60% of synthetic fabrics are made of fossil fuels and 85% of that material will end up in landfills, where it won't decay and decompose (Robin). I use elements of sculpture and within the traditions of American quilt making, Muslim hijabs and abstract painting to create art that provokes change. Young, Robin, and Allison Hagan. "The Environmental Cost Of Fashion." The Environmental Cost Of Fashion | Here & Now, WBUR, 3 Dec. 2019, www.wbur.org/hereandnow/2019/12/03/fast-fashion-devastates-environment. 11 Dec. 2020

Meredith Gossland, Graduate Student
Propaganda Art as a Social Construct in the 21st Century
Faculty Mentor: Kirsten Ellsworth, Art & Design

Social constructs only exist when people collectively acknowledge them as real. Money, time, government, and propaganda all have no meaning whatsoever until society agrees that they exist and assign meaning to them. Art as propaganda, likewise, is only propaganda when there is a collective agreement that its purpose is to influence public opinion. This paper will examine art as propaganda; how the artistic process, color, context, publication, and current events turn a simple work of art into the social construct of propaganda.   In the new era of truth, false narratives, and the digital dissemination of propaganda it is important to understand how social constructs create and give power to the meaning of propaganda art. How do artists use their crafts to create that propaganda and give it legitimacy? Art is a powerful force that can affect one's emotions, opinions, and views about the past, present, and future. Can this power be contained? How and why is art chosen versus language to convey information? Is it a better way to convey information or does it create false narratives due to misunderstandings of the art? This presentation will look at propaganda art as a social construct and hopefully will lead the audience to question art and its meaning and how that meaning is assigned by society.

Pravinesh Chand, Undergraduate Student
"Silence is Not Our Strength: Challenging Gender Norms in Indian Culture"
Faculty Mentor: Shaunte Caraballo, Theatre Arts

Gender identity is the conscious and subconscious identification of one's sex, or an individual's sense of self in terms of gender. Though gender roles are manifested in society by observing the differences of social behavior and appearances determining one's sex based on one's gender. If a person identified themselves as female, the person would be labeled as female based on "feminine" qualities defined by society. However identities cannot be categorized because they consist of many varied components. These traditional gender norms discriminate one's self-identity, allowing society to determine a person's gender. This performance piece explores violence based on gender in Indian culture. Indian cultural norms present women as oppressed and their power submitted to patriarchal rules. These norms were presented in ancient texts, customs and traditions that still occur to this day. Vedic traditions are known to be male dominated, however, in the historical analysis of the status of women in the literature of Vedic India, women were treated with grace and consideration. This poetic performance piece is inspired by the Hindu texts confining roles of a person's gender. It utilizes research from Annamarie Jagose's "Queer Theory", "the Law Code of Manu" and other male dominated scriptures, along with the "Devi Mahatmya"; a religious text that defines the supreme to not be of masculine but of feminine nature. The performance addresses the problem of gender oppression and role-taking norms. It presents reasons why these norms do not define an individual's gender identity nor their roles in society.

Health, Nutrition, and Clinical Sciences

Jocelyn Dominguez, Undergraduate Student
Alcohol Use & Perceptions among College Students
Faculty Mentor: Archana M. Sharma, Community Health Option

Background: Heavy drinking is a practice common among college students and is viewed as a social norm among students who have shown to be socially rewarded when conforming to their peers' alcohol use and punished if they consume more than their peers (Balsa et al, 2010). Studies have shown that Hispanic/Latino/a students with high alcohol accepting norms were less likely to have consumed any alcohol than Caucasians with similar beliefs, and that the size of minority population may influence the relationship between social norms and drinking (Labrie et al, 2012). Objective: The purpose of this study is to analyze how alcohol use among undergraduate students at CSU Dominguez Hills (CSUDH) and Loyola Marymount University is influenced by their peers and family. Using social media we recruited participants. The survey examined student's perception of alcohol use, how much they consume and perceptions of family and peer alcohol consumption, as well as other predictors such as sensation seeking and acculturation. We hypothesize that the more student's family and peers consume and approve of alcohol the more they will consume and perceive regular alcohol consumption as acceptable. Methods: The study will also focus on the Latinx student population due to 64.3% of the student body at CSUDH being part of the Latinx community, in comparison, LMU is a predominantly Caucasian student body with only 23.3% being Latinx. The target sample size, for each campus was the same (n=185), participants are adult, currently enrolled undergraduates students. Analysis/Results: The analysis planned for the study will include bivariate and regression analysis and comparison between the two universities. Data collection is ongoing and analysis is expected to begin spring 2021. Discussion. Further research can help analyze how social relationships on and off campus influence alcohol consumption among college students, and especially Latinx students.

Judy Lee, Tien (Alison) Ho, Celeste Lau, Angelica Mones, Graduate Student
Experience of New Motherhood on Occupations, Roles, and Routines
Faculty Mentor: Sheryl Ryan, Occupational Therapy

Research on new motherhood has shown that there are disruptions in engagement in meaningful activities and daily routines. The purpose of this research is to examine how having a newborn child impacts the roles, routines, and meaningful activities of new mothers in order to provide evidence for the involvement of occupational therapy in primary care settings. This study examined how the meaningful activities, roles, and routines of new mothers have changed as they transition into new motherhood. Participants were recruited by purposive sampling through a convenience and snowball sample. A qualitative phenomenological method was used to interview ten participants who were all new mothers in their first year of postpartum. Interviews were conducted for approximately one hour with each participant. Our results revealed that participants experienced drastic shifts in their identities and routines due to unforeseen challenges related to breastfeeding and mental health. Although the majority of the participants were able to adapt to the life changes of new motherhood, some were still struggling to adjust. The areas within participants' lives that enabled them to adjust to the demands of new motherhood were facilitated through engagement in self-care activities, receiving social support, and evolving their meaningful activities into meaningful activities that could be shared with their child. The outcomes of our study suggest that occupational therapy could be beneficial for new mothers by becoming a part of the discharge team in order to mitigate the difficulties they experience during the transitional period of becoming a mother.

Kelli Kato, Gabrielle Jee, Kira Makuta, Kelli Kato, Graduate Student
Perceptions of Nature-Based Occupational Therapy for the Geriatric Population: A Photovoice Study
Faculty Mentor: Sheryl Ryan, Occupational Therapy

Nature-Based Occupational Therapy (NBOT) has been shown to improve the quality of life in the aging population and possibly reduce healthcare costs for long-term assisted living residents (Detweiler et al., 2012). Current research indicates that older adults often do not experience the benefits of nature exposure; elderly nursing home residents spend the majority of their time indoors, lack sunlight exposure, and may experience breathlessness, coughs, and overall poor respiratory health due to indoor air quality (Bentayeb et al., 2015; Durvasula et al., 2010). To examine the critical role occupational therapists play in promoting health and wellness in this population, the current photovoice study was conducted to identify the facilitators and barriers faced when using NBOT as an occupation-based treatment intervention for older clients. The qualitative research design incorporated photographs and captions as well as a focus group with two occupational therapists who have worked with the older adult population and implemented NBOT into their practice. Data were collected, analyzed, and interpreted into emerging themes that encompassed the hardships of the COVID-19 pandemic, the healing nature of the outdoors, the lack of budget, design flaws, and lack of knowledge regarding NBOT in the field. The outcomes of this photovoice study illuminated the facilitators as well as the complex barriers to the implementation and maintenance of NBOT in the area of geriatrics. The results of this study inform future practice in which occupational therapists advocate for the inclusion of NBOT in the educational curriculum while also involving themselves in the design of therapeutic outdoor spaces that facilitate safety and healing. Finally, outcomes of the study indicate the need for research regarding interdisciplinary NBOT teams and occupational injustices that affect the geriatric population.

Sylvia Pabon Andraca, Graduate Student
Does the Use of Oral Glucose Lower Neonatal ICU Admissions or Lengths of Stay in Asymptomatic Neonates at Risk for Transient Hypoglycemia?
Faculty Mentor: Terri Ares, School of Nursing

Transient neonatal hypoglycemia is a condition that can affect up to 15% of all uncomplicated births. Neonatal hypoglycemia (NH) has been linked to neurodevelopmental delays and brain injury, so early identification and treatment are critical. The recent introduction of oral dextrose therapy has been shown to correct hypoglycemia better than feedings alone and is starting to be adopted as a new standard of practice in more hospitals world-wide. An integrative review was conducted to see if the addition of dextrose gel to a NH protocol can reduce the need for NICU admission or lower hospital lengths of stay in otherwise healthy late-preterm and term babies at risk for neonatal hypoglycemia. A literature search was done using nursing and medical research databases, and 8 experimental and quasi-experimental studies out of 33 screened were included in the review. Emerging themes included variability in NH protocols and implementation between studies; statistically significant lower NICU admissions in babies treated with oral glucose; reduced cost of treatment; and an insignificant impact on hospital length of stay among babies treated with oral dextrose. Based on the data, and given the safety and effectiveness of oral dextrose in correcting NH, along with the cost-savings associated with lower rates of NICU admission, the author of this integrative review recommends the use of standardized protocols using oral dextrose as a first-line treatment for NH in the first 48 hours of life. Additionally, further research should be conducted to better determine the most effective protocols for oral glucose treatment, as well as to investigate the long-term neurodevelopmental impact of said treatment.

Kamila Trzanek, Undergraduate Student
Clinical Laboratory: Lessons Learned from COVID-19
Faculty Mentor: Payman Nasr, Clinical Sciences

COVID-19 pandemic is currently overwhelming the healthcare systems across the world. Aside from the hospitals' ICU's, clinical laboratories are also facing unprecedented demand, primarily due to the surge of testing and the urgency for rapid results turnaround time. As new assays are being implemented with increasing availability to the public, and the COVID-19 cases surge, laboratories struggle in terms of productivity and efficiency. The current report aims to identify the primary challenges facing clinical laboratories during the pandemic. Information from the CDC and other scholarly sources, as well as interviews with the laboratory personnel in the Los Angeles metropolitan were conducted to identify the obstacles in the laboratory operation during the pandemic. The analysis identifies both internal and external obstacles that presented challenges for the effective laboratory operation. As the pandemic reached its peak, the main internal challenge was to meet the staff shortage as an increasing number of staff were either in quarantine or recovering from the infection. These individuals are often highly trained and difficult to replace. Their absence contributes to a significant reduction in productivity and a slower turnaround time. Cross-training of laboratory employees in the different departments is one way to decrease the impact of unforeseen employee shortages and, in turn, to improve turnaround time and productivity. The main external challenge involved the supply chain demand for reagents and personal protective equipment. Central distribution of medical supplies at the level of the Federal government that reduces outbidding practices and ensures regular distribution of supplies deem necessary for a prompt laboratory response. In summary, the clinical laboratory is an essential element of communicable disease surveillance; therefore, improving multidisciplinary training for the laboratory staff, as well as ways to secure the laboratory supply chain will strengthen the laboratory response in future pandemic investigations.

Physical and Mathematical Sciences

Eric Thai, Graduate Student
Treeline-Nepal
Faculty Mentor: Parveen Chhetri, Earth Science

As the treeline plays an important role in the mountain ecosystems, the conservation of natural resources, maintaining biological diversity, controlling the geo-hydrological cycle, water resources management, and providing other ecosystem benefits that it is necessary to understand the development of it. Research depicts a stable treeline, an upward shift, and densification across different areas across Nepal. Temperature is considered one of the most influential factors capable of influencing treeline ecotone, but vegetation phenology, hydrology and anthropogenic effect are also important. A land cover map will be developed to represent the surface of the earth. Image classification techniques are applied to label a certain range to a specific feature such as snow, forest, grassland, etc. A normalized difference vegetation index (NDVI) will be incorporated to see changes in the shrubs line and treeline. NDVI is used because its function can differentiate characteristics between bands on a multispectral raster data, the reflection of surface cover, to separate different land features. This reflectivity allows the observer to tell the differences between certain types of vegetation and soil. This enables us to view vegetation change when looking at many Landsat imageries. After which atmospheric correction will remove the effects of clouds and aerosols from the image. Remote sensing (RS) and geographic information systems (GIS) will be used to address the following questions: How has the shrub cover in Nepal's alpine zone changed in the last few decades? Are shrubs proliferating faster than trees in response to climate change and if so what are the driving factors? And what are the factors that maintain the treeline position and how will climate change influence this stability?

Karlee Rivera, Undergraduate Student
Does Los Angeles County Property Value Alter Due to Proximity to Fault Lines?
Faculty Mentor: Parveen Chhetri, Earth Science

Los Angeles is a densely populated area with a high risk of seismic activity from the San Andreas Fault (SAF). The southern segment of the SAF is predicted to produce a magnitude 7.8 earthquake in the near future projecting strong shaking onto Los Angele County. The SAF is a transform fault slices California into two parts. Due to the transpression from the SAF, smaller faults are created across LA County. The purpose of this study is to examine if there is a correlation between fault lines and property values. Furthermore, whether areas near a fault line decrease property values because of the risk of an earthquake. The study area is Los Angeles County in the three cities: Carson, Inglewood, and Norwalk. The research method used Geographic Information Systems (GIS) to create maps of both vector data of fault lines and raster data of property values in the three cities. The data used were locations of active and hazardous fault lines from United State Geological Survey (USGS) and property values from LA County GIS Database. The property values to the location of the fault lines did not overlap on the GIS maps. We did not find a significant relationship between fault lines and surrounding property value. However, the property value was more related to major highways and significant locations. Therefore, this shows the proximity to a fault line will not significantly affect the property value. Residents and business owners did not let fault lines affect their decision making to purchase the property. Future research can explore whether faults that are overdue for activity earthquake and have high risk of seismic activity have effect on property value. Another inevitable question can be whether residents located near faults were informed or care that their property is at high risk of earthquakes.

Michael Franco, Undergraduate Student
Distribution of Bristlecone Pines in Future Climate Change Scenario
Faculty Mentor: Parveen Chhetri, Earth Science

Bristlecone pines (Pinus) are a very resilient and long-lived group of pine trees composed of a subset of three closely related species Pinus longaeva, Pinus aristate and Pinus balfouriana. These trees are specialists, residing in areas of rugged topography, nutrient-poor soils, and arid climate. The natural range of bristlecones is generally constricted to subalpine groves in Nevada, Utah, N. Mexico, Arizona, Colorado, and California and are listed as being of least concern or not threatened on the endangered species act. With the advent of climate change the question of if the natural range of these pine species will increase or decrease due to changes in precipitation, temperature, growing season, predation, and other local habitat factors. This research focuses on predicting the impact of these factors using Geographic Information Systems (GIS) and Species Distribution Models (SDMs) and determining the future range and viability of these species in climate change scenarios. Uncertainty in how climate change will affect bristlecone pines is present however, modeling has suggested that these species will experience more frequent stressors like heat, drought, intraspecies competition and fire. These factors will increase tree mortality, especially at lower elevation ecotones and increase the likelihood of tree line shift.

Michelle Mohr, David Saldana, Gabriel Angulo, Raju Bista, Undergraduate Student
Tree-ring Climate Response of Jeffrey Pine in the Cascade Creek Watershed, Northern California
Faculty Mentor: Parveen Chhetri, Earth Science

Understanding forest responses to climate change has become more important and urgent than ever in the context of anticipated climate adversity. Aiming to have insights on stand and species level response to climate variables and retrospective growth dynamics of Jeffrey pine (Pinus jeffreyi) forest stand in northern California, tree-ring cores were sampled from the sub-alpine forest in Cascade creek watershed, Lake Tahoe Basin. The 370 year-long standard ring width chronology developed was correlated with temperature, precipitation, and Palmar Drought Severity Index (PDSI) to assess climatic variables controlling tree radial growth. The years 1757, 1782, 1886, 1859, 1876, 1920, 1929-30, 1977, 1988-89, 2001- 2002, 2008, 2014 exhibited noticeable low growth (narrow ring) with the 20th century pattern consistent with available drought data. Years 1747, 1749, 1792, 1828, 1866, 1868, 1913, 1969, 1984, 1998, 2011 exhibited robust growth (wider ring). Ring width, ring width index (RWI) and basal area increment (BAI) chronologies showed an increasing growth trend in recent decades. Climate-growth response analysis showed the hot and dry summer limits tree growth, whereas, warm and wet winter is conducive to tree growth. Significant growth correlation with previous year climate (stronger with PDSI), positive (insignificant) correlation with spring temperature but absence of correlation with precipitation in current spring may be suggestive of potential growth stimulation by warming and lengthening growing season in near future. However, since the ring width chronology consisted mostly of mature trees and because old cambial age has a tendency of signal divergence, further studies incorporating younger trees, study of forest structure, composition, disturbance factors, along with cohabitant species would provide deeper insights on growth performance in relation to climatic changes.