

# WEDNESDAY, FEBRUARY 22

## #1 Physical and Mathematical Sciences Grad Oral

February 22 — LSU 324

Morning Session: 9:00 – 10:30 a.m.

### Kimberly Campos

*Assessing Air Pollution Exposure of Historically Marginalized Communities in South Los Angeles Through a Bicycle Mobile Monitoring Campaign*

Research Mentor: Tianjun Lu (Earth Science)

Air quality in the Los Angeles region poses an environmental health concern, with previous studies suggesting that air pollution exposure disproportionately burdens historically marginalized communities. Unfortunately, persons of these communities experience barriers when accessing frequent and affordable air quality monitoring, causing a knowledge gap in environmental exposure information. One way to increase access to exposure information is to leverage effective monitoring methods within these communities. For example, mobile monitoring can increase spatial coverage and density for sampling when compared to traditional stationary monitoring. This study conducted a mobile air quality monitoring campaign on a bicycle to assess the spatiotemporal distribution of particulate matter and black carbon pollution in five South Los Angeles communities: Carson, Compton, Gardena, Lynwood, and San Pedro, California. The results of this study will help identify air pollution hotspots to serve as ideal locations for long-term stationary air quality monitoring, thereby increasing access to exposure assessments and aid in air quality improvement efforts for these communities.

### David Saldana

*Dendrochronological Investigations Utilizing Jeffrey Pine in the San Jacinto Mountains*

Research Mentors: Justin Valliere (Biology), Parveen Chhetri (Earth Science)

Over the past century we have observed global temperatures rise as a result of anthropogenic activities. Due to this change the spatiotemporal effects of droughts have increased as natural hazard. The purpose of this study to understand the changing response of California mixed conifer forests to the ongoing effects of a changing climate. We have selected Jeffrey Pine (*Pinus jeffreyi* Grev. & Balf.) near Idyllwild-Pine Cove in the San Jacinto mountains. Jeffrey Pine is one of the most abundant species in the transverse cismontane regions its spatial distribution is within the bounds of various ecotones. By analyzing its annual growth using Ring Width Index (RWI) we hope to understand the nature of past drought events and help predict future events. Cores processed using standard dendrochronological methods. Ring width was measured with CoreRecorder and verified with the Velmex tree-ring measurement system and software (J2X). Visual cross dating and statistical tests (COFETCHA, ARSTAN, treeclim, bootres, and dplR) were used to remove age related noise. Findings from this study will help forest managers and United States Forest Service manage the changing southwestern forest ecosystem.

## **Azure Fisher**

*The Environmental and Geospatial Injustice of Freight Truck-Related Pollutants in South Los Angeles County*

Research Mentor: Tianjun Lu (Earth Science)

Los Angeles warehousing storage is almost at full capacity and planners are looking to expand warehousing to compensate for increasing supply chain demands. In turn, expansion will increase various warehouse related pollutants that greatly impact air quality. Warehouse expansion is centralized in areas with low to medium income racial minorities in highly urbanized areas, such as South Los Angeles, and this population would face the environmental externalities associated with warehousing at a higher rate. This study collects empirical research of air quality in different socioeconomically dominated tracts in Carson, Compton, and Torrance, California to better understand the relationship between warehousing related air quality impacts and socioeconomic status. Air quality samples are obtained using a bicycle-based mobile monitoring campaign with multiple instruments (e.g., DustTrak, microAeth/MA200, and Sonometer) from January to March 2023. Common warehouse related pollutants to be observed are black carbon, PM10, and PM2.5. These pollutants have the potential to lead to several environmental health impacts, including disproportionately higher issues with asthma, cardiovascular impacts, lung cancer, lower birth weights, higher infant mortality, and more. This study offers valuable empirical evidence of air quality in association with socioeconomic factors in the hopes of decreasing warehouse-related pollutants presence and concentration in highly vulnerable areas.

## **Elizabeth Hernandez, Michael Wood, Christopher Rojas, and Joanna Campos**

*CSUDH's Zero Waste Efforts and Capabilities*

Research Mentor: Parveen Chhetri (Earth Science)

Zero waste is both an initiative and mandate that many universities, government entities, and businesses must comply with within the coming years. California State University, Dominguez Hills aims to achieve this by 2025. The purpose of this study is to establish a set criterion to evaluate California State University, Dominguez Hills on their Zero Waste efforts and capabilities. This study has determined Zero Waste defined as: 90% of all waste generated be diverted to the respected stream, no more than 10% of waste generated be landfill, and utilize a campus wide three-bin system. Waste audits were conducted to evaluate the percentage of waste per location and their respective stream. Waste was weighed, sorted, and logged resulting in a total of 36 individual stream composition values. The Health Center and Theatre had a total waste composition of 7.82% compost, 34.14% landfill, and 34.14% recycling. La Corte Hall had a total waste composition of 17.44% compost, 58.17% landfill, and 24.39% recycling. The Natural Sciences and Mathematics had a total waste composition of 12.31% compost, 69.37% landfill, and 18.32% recycling. The Social and Behavioral Sciences had a total waste composition of 6.81% compost, 78.9% landfill, and 14.29% recycling. Based on our findings, California State University, Dominguez Hills does not fall within the Zero Waste criterion only meeting one out of three requirements, the three-bin waste system.

## **#2 Behavioral and Social Sciences Undergraduate Oral**

**February 22 — LSU 326**

**Morning Session: 9:00 – 10:30 a.m.**

### **La Porsche Jackson**

*1992 Rodney King Riots vs. 2020 George Floyd*

Research Mentor: Karen Bowdre (Interdisciplinary Studies)

This presentation will examine the 1992 Rodney King Riots to that of the George Floyd 2020 riots. The PowerPoint will also explore race, equality, and mental illness .

### **Juana Hernandez Jaime**

*Analyzing the Impact of Social Networks on Alcohol Recovery Identity*

Research Mentor: Kevin Montes (Psychology)

Research indicates that an individual's social network can have an impact on their decisions to begin the alcohol recovery process. However, scant research has examined the impact of one's perception of their social network as it relates to one's alcohol recovery identity. The current study examined whether the number of individuals in one's social network that are perceived to be dependent on one being in alcohol recovery would be associated with individuals reporting higher levels of alcohol recovery identity. Participants who self-reported drinking heavily completed an online survey on Amazon's Mechanical Turk (N=250). Participants identified the number of individuals in their various social networks (e.g., family, friends, significant others, co-workers) who they perceived as being dependent on their alcohol recovery process. Participants also completed the Alcohol Recovery Self Concept Scale. Findings from the multiple regression analysis indicated that the overall model (with four social network predictors) was statistically predictive of alcohol recovery identity. The predictors in the model explained 31% of the variance in alcohol recovery identity. Participants' perceptions of their family ( $B=.128$ ,  $p<.001$ ) and friends ( $B=.121$ ,  $p=.007$ ) were found to be statistically significant predictors of alcohol recovery identity. Treatment/prevention efforts that target individuals' perceptions of their social networks (i.e., family/friends) may help to facilitate the alcohol recovery process.

### **Ellie Zelaya**

*Over Tourism and Under Tourism: How Social Media Affects Where We Travel*

Research Mentor: Sarah Taylor (Anthropology)

The modern traveler's reliance on social media is changing the tourism industry as we know it by driving "overtourism" in some regions destroying the tourism industry in other locations due to their lack of "instagramability". When comparing the UNTWO's 2019 list of 10 least visited countries to their more popular neighboring countries we begin to see how social media shapes the choices tourists make and the effects this has on destination economies. This presentation

explores this and discusses what it means for tourists, destinations, and those of us who study the phenomenon.

## **Josahandi Cisneros**

*Higher Education and the Automation of Inequality*

Research Mentor: Katy Pinto (Sociology)

The accelerating incorporation and reliance on Artificial Intelligence (AI) and Data-Driven algorithms that assist us in sensitive domains such as, education, social services, and the criminal justice system, have given technology systems the power to automate inequality through algorithmic discrimination. While recent research has identified the narrow technical approaches technologists often take to solve social problems (known as "inattentive blindness") as one of the main contributors to algorithmic bias and discrimination in AI systems. There is little research examining the materialization of this phenomenon in higher education. As such, we conducted a quantitative survey study among California State University Dominguez Hills (CSUDH) students in the Computer Science/Technology related fields, to investigate if this phenomenon can also be observed among university students. Our investigation employed a survey questionnaire designed to measure the "level of significance" participants attributed to statements from two different categories, one associated with important real-world social & ethical considerations of technology systems and the other one associated with technical & economic ones. Results demonstrated that students in the Computer Science/Technology fields attribute a greater overall significance to technical and economic considerations in comparison with social and ethical ones. This is a compelling indication that "inattentive blindness" might also be a considerably persistent pattern among university students.

## **#4 Behavioral & Social Sciences, and Business, Economics, and Public Administration Grad Oral**

**February 22 — LSU Ballroom C**

**Morning Session: 10:45 a.m. – 12:15 p.m.**

## **Fraissy Guijarro**

*Policing Public Schools*

Research Mentor: Qiyuan Roger Jin (Public Administration)

For many years, schools and communities have sought policies to protect and keep students safe. However, culture and recent school activities have changed the way parents and administrators see the benefit in policing school. The effectiveness of school and police partnership has been studied throughout the country for many years. The increase in school shootings has had parents and school administrator to be selective and persistent in school safety. The increase in crime and violence in some parts of the United States, left parents and communities demanding more police presence around schools, especially before and after school. Similarly, there is an increase

abuse in power by campus officers that do not answer to school administrators and not having direct authorization over those officers. Studies have suggested that SLE or SROs do not improve school safety and by other means increases the criminalization of school discipline. Parents and students have fought back to administrators and school boards to encourage and educate on school safety without police involvement on their campus. We challenge the following: How does policing in schools affect the high-school students' well-being in minority communities? With research, we can expect to find data that policing in schools has to be reimaged to benefit the student population and not just administrators. By answering the question, we can better understand if serving the schools with police officers is beneficial for a student's mental health rather than affect their views against police officers. Finding an answer how policing affects students well-being can help improve the policies in low socioeconomic communities especially those in dominantly Black and Latino schools. We have found students fear their safety and feel targeted when in school due to law enforcement presence. The fear can ultimately lead to minimizing mental health for the young.

## **Caroline Cusolito, Laurel Brislin, Araz Espinoza, and Deniece Caraballo**

*OT in the Trees: Perceptions of Outdoor OT*

Research Mentor: Sheryl Ryan (OT)

Background: Outdoor occupational therapy (OT) is a practice characterized by the natural environment as a therapeutic tool. For children, it allows a free expressive outlet, unplanned sensory experiences, and a context in which therapists can facilitate developmental goals. Outdoor OT is an emerging field of practice, with a limited research base, especially in pediatrics. The purpose of this study is to describe the perspectives of outdoor occupational therapy providers. Methods: This study uses a qualitative case study design using semi-structured interviews and photo-elicitation to gather responses from four participants. We used qualitative thematic analysis to determine themes. Results: Findings indicate that outdoor environments used for occupational therapy sessions allowed for freedom of movement, opportunities for child directed activities, and provided natural sensory experiences for the children to learn to regulate. Conclusion: OTs felt that the natural outdoor environment provided children with natural sensory and therapeutic components embedded in the outdoor experience, such as innate sensory experiences (i.e. rain or mud) and the ability to freely move their bodies. Outdoor OT was preferable to clinic/indoor OT for these reasons and helped children specifically to engage in outdoor play and self-regulation. So, outdoor OT may be particularly beneficial for children who are sensory seeking, sensory avoiding, or crave the therapeutic value and benefits of an outdoor environment.

## **Aina Ali, Paula Basto, Seth Almberg, and Iram Aziz**

*"A Powerful Form of Resistance": Mindfulness and Personal Relationships in the LGBTQ+ Population*

Research Mentor: Sheryl Ryan (OT)

Background: LGBTQ+ adults experience stress related to occupations involving social participation as a result of stigma and discrimination that they have endured throughout their lives, at both the societal and institutional levels. Research on mindfulness practices has shown its benefit of

reducing stress and improving social relationships; however, there is limited studies on how LGBTQ+ adults use this practice in their social participation. Purpose: The purpose of this study was to unveil mindfulness practices in the LGBTQ+ population and the impacts it may have on social participation to better understand how mindfulness may be used as an intervention by occupational therapists (OT) with adult LGBTQ+ clients. Methods: The researchers utilized a qualitative phenomenological design approach, using semi-structured interviews and photo-elicitation methods. A total of 6 participants were interviewed. Researchers conducted a thematic analysis to determine common themes. Results: Four themes emerged: mindfulness practice, life challenges, relationships, and acceptance. Results indicated that mindfulness practices were diverse and often included breathing techniques, meditation, and yoga. Discussion: The findings indicate that mindfulness practices as simple as breathing, meditation, and yoga were experienced by our participants as a powerful form of resistance to the stigma experienced in everyday life. They expressed that mindfulness had a positive impact on their personal relationships and helped them find acceptance and resolve within themselves. OTs and mental health professionals should consider obtaining training or further their knowledge about mindfulness to add this practice to their intervention tool kit.

## **Gautham Alampalli Amarnath**

*First-generation college students and IT career: From the Career Anchor Perspective*

Research Mentor: Nancy Deng (Information Systems)

The study focuses on the challenges and career anchors related to first-generational college students (FGCSs) to consider a professional career in information technology (IT). First-generation students who obtain a STEM degree or any degree for that matter increase the likelihood that their family members will do the same, creating an intergenerational effect which can lead to a more diverse community. Prior studies have revealed the barriers to their IT career choice, including stereotype, lack of interest, lack of technical capital, and lack of perceived job opportunity in IT. This study will adopt the career anchor perspective and examine if a FGCS career anchor is associated with their likelihood to choose an IT major. The research question of the study is: Is there a relationship between career anchor and IT major choice of first-generation college students? The study was conducted at urban, public minority-serving university in the western United States. This university had a total enrollment of just under 15,000 students at the time the data was collected. We gathered a data sample of 118 responses through a two-period online survey that included both open-ended and structured questions. We performed initial data analysis using Excel and will use SPSS for further regression analysis. We expect to find some interesting relationships between the key variables. Our study highlights that higher education institutions and policymakers need to understand each student's unique computing experience and career orientation toward IT in order to motivate more minority students to enter the IT career.

## **Madeline McKinley, Sunny Kim, Noemi Magtoto, and Karen Lim**

*Swiping Right on the Spectrum: The Form, Function, and Meaning of Online Dating for Autistic Women*

Research Mentor: Sheryl Ryan (OT)

Online dating has become one of the most prevalent ways to participate in intimate partner relationships, a fundamental occupation leading to a fulfilling and purposeful life. While studies have shown that autistic adults desire romantic relationships, there is a lack of research that explores how autistic women in particular experience online dating. The purpose of this study was to describe how autistic women experience online dating. Method: Researchers conducted a phenomenological study, which focuses on understanding the essence of a unique experience. Four autistic women ages 25-35 participated in a semi-structured interview. Three out of the four participants also completed supplemental photo elicitation. A qualitative thematic analysis was utilized to develop the themes. Results: Three themes emerged: (a) the advantages of online dating, (b) the role of self-awareness, (c) and the presence of negative experiences. Conclusion: Online dating was preferred because it provided a boundary and customizable features. Participants also exhibited strong self-awareness in recognizing and reflecting on their naivety, understanding what they were looking for in a partner, and communicating that across. Participants shared negative experiences that were rooted in ableism or related to stalking. Occupational therapists who support autistic women should incorporate dating-related interventions to develop self-awareness, self-protection, and self-advocacy skills.

## **Gianna Martinez**

*ADHD and Educational Support*

Research Mentor: Roger Qiyuan Jin (Public Administration)

To grasp the need for expansion/clarity on IDEA to be more inclusive on IEP eligibility, we will seek to show the relationship between children with ADHD who have not received early intervention from an IEP and study the question, "does the difficulty of being approved for educational services, negatively affect children with ADHD by creating a larger educational gap than they currently have?" Building a better education service program that has policies to also include those who have mild to moderate symptoms as well as all are being affected cognitively not just those with severe symptoms. If children/adolescents are left without any help in the long term it affects them academically and how they succeed. Therefore, it is hypothesized that there is a positive relationship between children/adolescent academic success and receiving school support, so IEP/504 plans policies should be expanded to assist them. The hypothesis was then tested using variables from a dataset that the National center of Health Statistics developed by conducting a phone interview with parents of ADHD students. The multiple regression linear probability model was used to analyze the variables which found that students with more severe symptoms are more likely to receive education support services versus students who have mild-to moderate ADHD symptoms as their performance is not considered severely impaired. The implication of the findings contributes to supporting the expansion and review of the IEP/504 plan policies for more inclusion for ADHD youth. This study contributes to the ongoing research being conducted in the educational field of ADHD, as it explores what education programs should be changed. By altering the policies of the educational support programs it will assist more

children/adolescents with ADHD on getting approved for services and will likely improve their educational outcomes by decreasing the likelihood of an education gap.

## **#7 Education and Humanities Grad Oral**

**February 22 — LSU 324**

**Afternoon Session: 1:00 – 2:30 p.m.**

**Diane Dizon**

*Exploring Student Veteran Intersectionality and its role in Belonging at 2- and 4-year Institutions*

Research Mentor: Alfredo Gonzalez (Chicana and Chicano Studies)

To what extent, if at all, do student veterans have different levels of belonging if they attend community colleges compared to four-year institutions? How do intersectional characteristics impact their sense of belonging? Previous studies conclude that student veteran belonging is based on understanding their relationship to the institution. However, most studies use student veterans as a proxy that entails all characteristics of their individual experiences. It is important to note that many student veterans are considered to be non-traditional and are usually first-generation college students. Less is known about their intersecting identities and student veteran experiences. Utilizing the 2020-2021 Healthy Minds Study, a nationally representative sample of college students, this paper examines student veteran belonging by focusing on racial differences and first-generation status at both 2- and 4-year institutions.

**Siray Rodgers**

*A Revitalized Approach to Building and Restoring Communities Across Neighborhoods in America Using Multicultural and Alliance Building Techniques for 'Restorative Practices'*

Research Mentor: Nancy Erbe (Negotiation)

Being central to your community binds partnerships and cognitive awareness between parties despite demographics, political stance, or ability to participate in agreement for outlined procedural methods. At local community levels, research will prove necessary for social stratification and norms - as an international to geopolitical hemispheric staple to dynamic enterprise, representatives of respective community engagement centers prove the ability and conflict resolution in respective, chosen restorative methods for bilateral establishments. In essence, "restorative methods and restorative practices are practicum for the university's enhancement of community/ campus ties. The solidifying and methodological activations in peace/ healing components of mediation as well as conflict resolution have constantly proven true to the academy and of course university level. The accessibility to having peace centers or recognized, structured course curriculum in the form of workshops for students, faculty, and staff concretely binds all factions of the academic enterprise to the solid foundations involved in negotiations which can ultimately create a controlled safe space having the ability to peace protest as necessary, but also pure refinement for divinity. As a musician and athletics coach, my



educational values and commitments to the public school system have consistently held true by nature of these inclusionary methods and practices ranging from community healing circles to contract negotiations. The peace movement and education obtained from gaining harm-free methods or more practically known as non-violent civil rights protest have historic and metaphysical transcendence unmistakable to large and apportioned subgroups, clubs, faculty and students alike because every guest and participant at the university level should have access and real experiences to the practical solutions created for dynamic peace and group participation. Akin to the education in a museum or resonance in an auditorium or theater, every university should have a peace and healing center. The methods and scope will prove true.

## Megan Ravare

*Schools as Places of Possibility: Portraits of Black Women Educator-Activists*

Research Mentors: Nallely Arteaga, Stephanie Cariaga, & Edward Curammeng (Education)

Far too many Students of Color experience emotional, intellectual, and even physical suffering in U.S. schools. The dire state of schooling in America beckons a paradigm shift from retributive methods of education reform towards new methods of emancipatory education. For centuries, Black women educators have demonstrated a commitment to educate for liberation. Today, many Black women educators continue to uphold this legacy of educational activism. This thesis centers the stories of Black women educators who use their work in education to uplift Communities of Color. Through portraiture, the author examines how three Black women educators advance notions of love, healing, joy, and justice for Students of Color within the traditional school system. The author provides a close examination into the lives and pedagogies of Black women educators to uncover larger truths for transforming schools from sites of suffering to places of possibility.

## Jessica Miller

*Ambient Rhetoric in Patricia Highsmith's The Price of Salt: Places, Spaces, Food, and Sound*

Research Mentors: David Sherman, Kimberly Huth, & Helen Oesterheld (English)

A rhetorical analysis of Patricia Highsmith's *The Price of Salt*, applying an Ambient/Feminist New Materialist criticism, carries salient implications for a reconceptualization of identity and agency specifically in issues of marginalization and oppression within the lesbian/queer community. I posit that widening the lens to focus on the protagonist Therese's ambient environs and her weddedness with the world connects the intersectionality of her social, environmental, and materialist environment and continuously shapes her identity in a reciprocal cycle. An analysis and close reading of places that Therese and Carol encounter on their road trip, spaces both real and imagined, connections to food, and the element of sound all prove to show the interrelated dynamic of ambient rhetoric. Therese's attunement to objects, spaces, places, and sounds in her ambient world work together to affect individual agency and emotional, informational, and material change in situations that simultaneously disclose some possibilities and foreclose on others.

## Nate Hertweck

*Creative Meaning-(Re)Making & Antiracism in First-Year Composition*

Research Mentor: Mara Lee Grayson (English)

Traditionally, all roads to a college degree travel through first-year composition (FYC). Today, an effective FYC class is an antiracist one, and it's not just writing students create there, it's meaning. This active meaning-making process seeks to engage students to assign new significance through discussion, writing, revision, and reflection – and creativity is key. Yet the very makeup of FYC, its deeply rooted position in Eurocentric academia, involves intrinsically racist and hegemonic challenges, demanding even more from teachers and students to identify and unlearn white language supremacy by (re)making meaning. Fortunately, composition is a creative process, and FYC classrooms provide opportunities to construct a creative environment for cultural sharing, self-invention, and collaborative learning. Student agency – the capacity, control, and freedom to write what one thinks and means – has value as both a raw material for and a byproduct of this creative environment. What's missing is a common pedagogical starting point for teachers and genuine creative power for students. Through exploring the landscape of newly mapped-out learning spaces such as Mary Louise Pratt's "contact zones," Aja Martinez's "counterstory," and Homi Bhabha's "third space," perhaps teachers can guide students to unmake some of what David Bartholomae calls "inventing the university" by (re)making meaning in FYC. In this 10-minute oral presentation, I will explore existing theory and scholarship on meaning-making and antiracist pedagogy to consider how FYC approaches, philosophies, and curricula might better engage student agency and diversity. I will also imagine meaning-making and creativity in the context of the creation and expansion of identity beyond socially constructed demographic categories. Finally, through trekking across the overlaps and gaps in existing scholarship on meaning-making and antiracism, this thesis aims to encourage further discussion around how composition can better include, serve, and prepare students to actively create meaning and exercise agency in their writing.

## **#8 Biological and Health Sciences Undergrad Oral**

**February 22 — LSU 326**

**Afternoon Session: 1:00 – 2:30 p.m.**

## Chandra Jones

*Black and Yellow: Corona Coloration in Encelia farinosa*

Research Mentor: Sonal Singhal (Biology)

*Encelia farinosa*, commonly known as the brittlebush plant, is a plant found in Mexico and the southwestern states of the United States. *E. farinosa* has been found to exhibit a variation in coloration of the corona in different geographical environments. In the southern region of California, *E. farinosa* has a yellow corona. Into Mexico, *E. farinosa* is found to have a brownish black corona. Using a genetic dataset of 46 individuals of *E. farinosa* and field observations of 112 localities, we are exploring the genetic basis for this color variation and the environmental factors that maintain it. Our study will help us understand the genetic basis and potential adaptive role of

corona color in *E. farinosa*. Our field observations have been compiled into 15 geographic groups based on geographic similarities. The 15 geographic groups displayed a gradual transition from yellow corona *E. farinosa* in southern California to black corona *E. farinosa* in Baja California, Mexico. A two population hypothesis best fits the initial genetic data. Using principal component analysis (PCA), we were able to map the yellow to black transition on a cline model and use raster data files that represented different climatic variables along the range of *E. farinosa*. We found that the trend in temperature and precipitation best fit the yellow to black transition cline. The results of this analysis will help us further understand how phenotypic transitions in this species map to environmental transitions.

## **Daniel Apt, Michelle Mohr, Callum Lapper, and Muhammad Nabeel KhanQadri**

*Ecological Impact of Trees on CSUDH Campus*

Research Mentor: Parveen Chhetri (Earth Science)

Trees serve a vital role in both natural ecosystems and urban environments. Trees provide important ecological services such as fresh and clear air, create shade, which reduces surface temperatures, as well as serve as habitats for some species. Trees also sequester carbon and other greenhouse gasses and filter out any air pollutants. For our study, we quantified the ecosystem services such as pollution removal, carbon sequestration, reduction in UV exposure, amount of shade that trees provide to the campus of CSUDH, and building energy savings, by collecting individual tree species, as well as location data, DBH (diameter at breast height), and canopy coverage provided by all the trees on campus within the main campus sector (areas with academic or administrative buildings, excluding Extended Ed). This data allowed us to understand the services provided by trees directly on the main campus, as well as calculate the monetary value of trees on campus in regard to energy savings, carbon sequestration, and aesthetic values. Using the i-Tree eco program, provided by USDA Forestry Service, as well as Geographic Information Systems (GIS) we were able to map and quantify the ecosystem services that trees provide to our urban campus setting. Moving forward our existing data and the model used can allow the Landscape Committee to make informed decisions about the impact of any new tree planted on campus in order to best offset our impact on the environment, while also addressing the energy needs of our campus.

## **Joshua Quiran**

*MIC Assessment of SFunga against Aspergillus strains using CLSI method*

Research Mentors: Erin McCauley (Chem & Biochem), Ashraf Ibrahim, Teclegiorgis Gebremariam (UCLA)

Invasive pulmonary aspergillosis (IPA) due to *Aspergillus fumigatus* is a serious fungal infection in the immunosuppressed patient population. In addition, infections with *Aspergillus* species that are resistant to current antifungal therapy have been on the rise. Despite the introduction of new antifungal agents, mortality rates remain high, and new treatments are needed. SFunga has developed a derivative of amphotericin B (AmB) with improved therapeutic index (AM-2-19-OAC/DSG-PEG2000 [SF001]). SF001 binds to fungal ergosterol with far greater selectivity than AmB. Specifically, SF001 poorly binds to the mammalian sterol, cholesterol and therefore is less toxic

than AmB. Furthermore, similar to AmB, SF001 is less prone to development of fungal resistance and binds to fungal sterol ergosterol with far greater selectivity than AmB. The purpose of this study is to assess the activity (MIC) of this new drug against non fumigatus *Asperigellus* species and compare the MIC

to standard of care posaconzole and liposomal amphotericin B (L-AMB). Methods: To determine the minimum inhibitory concentrations (MICs) of the new antifungals, we will use microdilution following the CLSI method for filamentous fungi. Results: Six strains of *Aspergillus lenulus* (Al1-6) MIC (ug/ml) – MIC 90: L-AMB ranges 8->8, Posa 0.008-0.5, and SF001 0.125-1.0, MIC50: L-AMB ranges 8->8, Posa 0.004-0.25 and SF 001 0.0625-0.5; Six strains of *Aspeigellus calidoustus* (Ac1-6) MIC (ug/ml) – MIC 90: L-AMB ranges 0.5->8, Posa 0.5-4, and SF001 0.125-0.5, MIC50: L-AMB ranges 2->8, Posa 0.25-4 and SF001 0.0625-0.25. Conclusions: SF001 demonstrated in vitro activity in inhibiting/killing against different *Aspergillus lenulus* and *Aspeigellus calidoustus* which was superior/equal to the current standard of care. Continued investigation SF 001 as a novel, antifungal agent against Mucorales is warranted.

## Aysa-Monae Collins

*The Impact of Maternal Pregnancy Complications and Prenatal Care on Infant Mortality*

Research Mentor: Enrique Ortega (Health Science)

In recent years, the United States has seen an overall increase in infant mortality rates, notably in underrepresented populations. In 2020, the infant mortality rate in the United States was 5.4 deaths per 1,000 live births. The Non-Hispanic Black population is at the highest risk for infant mortality compared to other races and ethnicities. Specifically, in 2019, the infant mortality rate for non-Hispanic Black women was 10.62 per 1000 live births, which is 2.5 times higher than the rate for non-Hispanic White and Hispanic women. The most recent research on this topic identifies maternal pregnancy complications as one of the top five leading causes of infant death. Studies cite prenatal care to reduce the risk of infant mortality. This study examined five infant mortality risk factors: the trimester prenatal care began, the number of prenatal care visits, the identification of one clinical maternal risk factor, one clinical abnormality at birth, and maternal morbidities after birth. Using the Centers for Disease Control and Prevention, National Vital Statistics System, CDC WONDER Online Database, 4,201 infant mortality reports in California for 2017-2020 were analyzed for women aged 20-39. There were 485 infant mortality reports for non-Hispanic black women who began prenatal care within the first to the third month of pregnancy for 2017-2020, for a rate of 7.4 per 1000 live births. Further statistical analysis showed that even when women have no clinical maternal risk factors and begin prenatal care within the first trimester, non-Hispanic Black women experience infant mortality 3.3 times higher than white women and 2.1 times higher than Hispanic women. This study found that early and adequate prenatal care does not significantly decrease the risk of infant mortality. In addition, race may act independently from other patient demographics as parental care can impact the outcomes of women of other ethnicities.

**#10 ONLINE Behavioral & Computer Science, & Business**  
**February 22 — Streamed Live in LSU 326 – [Zoom Link](#)**  
**Afternoon Session: 2:45 – 4:15 p.m.**

**Carlyn Tanner**

*Training an AI to play Snake Game using Machine Learning and Pytorch*

Research Mentor: Bin Tang (Computer Science)

The goal of this project is to successfully create an AI to play the game Snake (pygame version), as well as create and train a neural network to play the game better than a human could. I will be utilizing online tutorials and information on Pytorch and machine learning. I will be doing this project in python and expect to have a neural network that can reach high scores on Snake and end up with a much greater understanding of machine learning and Pytorch.

**Giovanni Rivera**

*Nash Equilibria of Data Preservation in Base Station-less Sensor Networks*

Research Mentor: Bin Tang (Computer Science)

In this project, we study the Nash Equilibrium (NE) for data preservation in base station-less sensor networks (BSNs), wherein sensor nodes could behave selfishly. NE is the solution concept for a non-cooperative game involving multiple selfish players, while BSNs refer to emerging sensing applications deployed in remote and inhospitable environments (e.g., underwater exploration). We design a suite of data preservation games that achieve NEs while minimizing energy consumption in the data preservation process. We analyze and quantify the efficiency loss of data preservation NEs by studying the price of anarchy and the price of stability, the ratios between the quality of the worst and best NEs to the quality of a minimum cost flow-based social optimal solution. Finally, we conduct extensive simulations to validate our theoretical results.

**Alexis Main**

*Employment Lockup After Penal Lockup: The Opportunities Within Fair Chance Hiring in California*

Research Mentor: Thomas Norman (Management and Marketing)

The continual progression of society involves establishing rights for marginalized communities. The advocacy and implementation of the Fair Chance Hiring Act in California embody the endorsement for ex-convicts to go through the job hiring process without preexisting bias from employers. The preceding bias surrounding previously incarcerated individuals prevents the hiring process from being effectively implicated. As a result, many ex-felons struggle to find and maintain jobs. Research studies the demographics surrounding priorly incarcerated individuals and statistics demonstrating the discrimination they face. The research analysis concluded that premature views on candidates often obscured the judgment of employers, reinforcing stereotypes of former convicts that overshadow any potential rehabilitation they have experienced. As a result of inaccessible jobs, the financial impact of continuous job rejection

greatly debilitates the ability of once-institutionalized to re-enter society. These issues faced by former felons are the grounds that ignited the Ban the Box movement, which evolved into the Fair Chance Hiring Act. Since enactment, criminal history is a factor that is analyzed once a conditional job offering has been executed. The Fair Chance Hiring Act in California permits criminal stigma within the workplace and facilitates significant opportunities for former convicts to reintegrate into a non-biased society that equalizes job prospects.

## **Jennifer Rebollo**

*Health Disparities Among Pancreatic Cancer Patients*

Research Mentor: Ken Seligson (Anthropology)

This research proposal aims to answer how health care access and culturally-mediated factors contribute to health disparities among patients diagnosed with pancreatic cancer. The goal of this research is to determine what factors can impact patient outcomes and the mechanisms through which they affect the outcomes. The project hypothesizes that racial and ethnic stereotypes, cultural factors, and socioeconomic factors all can have significant impacts on access to healthcare and treatment. Proposed methods are both qualitative and quantitative. Qualitative research methods will include analysis of secondary sources and interviews with patients and caregivers. Analysis of statistical sources will provide quantitative data. This mixed methodology approach allows me to address my hypotheses using a holistic approach and provides evidence of the role that biases play in the medical field. My ultimate findings demonstrate how cultural ideologies can affect diagnoses and treatment of pancreatic cancer. The project results can be utilized in the future for outreach, advocacy, and awareness initiatives to high-risk and underserved communities.

## **#12 Health, Nutrition, and Clinical Sciences Grad Oral I** **February 22 — LSU Ballroom C** **Evening Session: 6:45 – 8:15 p.m.**

### **Jonathan Alcantara, Hara Calderon, Anthony Gonzalez, and Kyle Gusto**

*Autistic Adults and their Experience with Employment*

Research Mentor: Sheryl Ryan (Occupational Therapy)

Being employed is important to autistic adults, yet the autistic population has a low employment rate compared to other neurodiverse populations. While there is a vast amount of research on the autistic community and barriers with employment, most studies are designed to describe the perspective of employers and utilize a medical model of disability. There remains limited research on detailed experiences of autistic adults and the meaning of employment to them using a social model of disability that emphasizes a neurodiverse approach. This qualitative interview study provides insight into the experience of autistic adults with employment. Seven participants were interviewed and their responses were thematically analyzed. Data analysis generated five themes: use of vocational services or mentorship, workplace stressors, workplace supports,

disclosure of neurodiversity to employers, and the meaning of employment. The themes reflect a narrative that begins with obtaining a job position, experience within the workplace, and meaning of employment. The findings indicate that support with job development through the use of vocational services and mentorship help autistic individuals find and obtain job opportunities. Furthermore, supportive social environments and flexible scheduling within the workplace facilitated effective job performance. In addition, most participants disclosed their neurodiversity and found their employers to be accommodating, however, disclosure required careful consideration of the employer's receptiveness to neurodiversity due to previous experience of stigma. Lastly, autistic adults found their employment meaningful as participants felt productive, fulfilled, and independent. These findings contribute to the understanding of autistic employment for occupational therapists in order to promote the collaboration with autistic clients and improve employment performance and participation. Within current practice, occupational therapists working with older adolescents who desire employment can provide resources for vocational services. Also, occupational therapists can act as consultants to employers to train staff on neurodiversity and to promote an inclusive workplace.

### **Ashley Cespedes, Abigail Hakimi, Ariana Castillo, and Beatriz Adanza**

*Through the Lens of Substance Users in Recovery: A Photovoice Study*

Research Mentor: Sheryl Ryan (Occupational Therapy)

Substance use continues to be a prevalent societal issue. Excessive substance use can lead to physical harm in one's body as well as social and emotional distress. Traditional treatment methods, such as psychotherapy and medications, remains the prevailing way for sobriety. Even with this existing evidence, about 85% of individuals relapse within a year of traditional treatment methods. There is a gap in understanding how people use activities in their daily lives to support sobriety. In combination with these methods, occupational therapy can help to establish meaningful habits and routines to maintain lasting sobriety. Method: Three participants over the age of 60 were recruited via snowball sampling. A photovoice method was used for data collection and analysis to provide insight into the various activities that helped substance users maintain sobriety. Results: Two main themes were identified: (a) Changes in social support creating an impact in the recovery process and (b) Selection and engagement in activities that lead to the improvement of quality of life. Discussion: Authentic relationships and engagement in restorative activities play a significant role in maintaining sobriety. This study suggests the need for a heavier emphasis on community-based practice that supports authentic relationships. Results of this study can be used by healthcare providers to adopt a new occupation-based lens when creating individualized treatment plans.

### **Rebekah Boning, Nicole Stephanie Pantaleon, Julie E Schustack, and Amber Schwartz**

*Behind the Mask: Impression Management in Women With ADHD*

Research Mentor: Sheryl Ryan (Occupational Therapy)

Attention Deficit Hyperactivity Disorder (ADHD) is a neurodevelopmental disorder that is often associated with young boys. Women with ADHD, an underrecognized population, may present differently and often suppress or hide behaviors that go against the societal "norm." However,

the phenomenon of masking has not been well studied. The purpose of our study is to investigate why women may hide ADHD and the impact it has on occupations. Methods: This study used a qualitative, phenomenological approach using thematic analysis to organize data into categories. We recruited 11 women with ADHD internationally using social media platforms and conducted 1-hour semi-structured interviews that focused on the phenomenon of masking. The theory of neurodiversity, which views ADHD as a unique way of being and not a pathology, framed the study and its implications. Results: Data analysis revealed that masking has a profound negative impact on mental health, leading to feelings of anxiety, depression, exhaustion, and low self-esteem. Our study revealed that social pressure and unsupportive environments led to higher scenarios of masking. Participants did not feel the need to mask in the presence of positive environmental factors, such as strong social systems and supportive environments. The unmasked experience led to feelings of liberation, acceptance, and inner peace. Implications: Our participants all had unique and interesting lives with much to contribute. Our findings show that women with ADHD should advocate for inclusive spaces and seek out accepting peers. OTs who encounter women with ADHD should tailor interventions that prioritize social support and environmental changes. Healthcare advocacy needs to focus on policies that promote a societal shift towards supporting people with neurodivergent qualities.

## **Nichole Campbell and Nicholas Fernando**

*A Retrospective Lived Experience: Benefits of a Faculty-Student Research Mentorship from Graduate Nursing Students' Perspectives*

Research Mentor: Sally Mahmoud (Nursing)

In 2021, the American Association of Colleges of Nursing (AACN) published a competency guide for ten nursing domains. Domain 4, "Scholarship for Nursing Practice," emphasizes that graduate-level nurses must be able to generate, critically analyze, and disseminate new knowledge to transform healthcare. Often, advanced nursing degrees are earned through virtual learning, offering flexibility to working nurses with families or barriers to in-person learning. However, social maladaptation also exists; examples include increased isolation and limited access to faculty. A proposed solution to better prepare graduate nurses while overcoming the disadvantages of virtual learning is to increase faculty-student mentorship opportunities. A literature review demonstrated that nursing faculty-student mentorship effectively improves nurses' education. However, while the benefits of mentorship are well conveyed in the literature, a knowledge gap exists specific to research-focused mentorships for graduate students. Fortunately, the authors had the opportunity to participate in a tailored faculty-student research program offered through the School of Nursing and would like to share their experiences and endorse this mentorship as an ongoing model of practice. Purpose To highlight the lived experiences of a faculty-student mentorship and illustrate how the program strengthened graduate students' knowledge beyond curriculum objectives. Conclusion and Future Implications: The mentorship experience and outcome reinforced the need for similar opportunities for graduate students interested in pursuing careers in nursing academia and clinical research. The newly implemented research mentorship program proved effective in augmenting virtual learning for the graduate-level nursing student. The mentees propose that research mentorship programs spark the desire for further pursuits to advance nursing research and education. Proposed learning requirements include the research process through hands-on activities leading to abstract submission, oral and poster presentations, and manuscript writing with intent to



disseminate. Definitively, the real-life experience gained through this research mentorship model will likely translate into career readiness beyond graduation.

## **Makenna Lu, Michelle Joyce, Barbara Lopez**

*The impact of the post-professional occupational therapy doctorate (POTD) on the career trajectories of occupational therapists*

Research Mentors: Sheryl Ryan and Claudia Peyton (Occupational Therapy)

Background: The field of occupational therapy is a growing career. Currently, OTs are required to have a masters degree for entry level practice, but there is also a post-professional occupational therapy doctoral degree (POTD) that has been offered for over thirty years. While there have been many who have completed this program, there is a lack of research about how completing a POTD program affected their career. Purpose: The purpose of our study was to describe how completing their POTD impacted their career trajectories. Methods: We conducted a qualitative study design using narrative analysis. We recruited 7 participants through convenience sampling and conducted all interviews over Zoom. Researchers asked questions about the participant's careers before, during, and after receiving their POTD. Researchers coded transcripts individually then came together and triangulated the data to find common themes among participants' stories. Results: Data analysis generated 4 themes regarding participant's career trajectories: (1) the positive influence of mentorship; (2) prior clinical experiences inspired the focus of their study; (3) the POTD curriculum supported participants' ability to reach their professional goals; and (4) the POTD developed their critical thinking skills that contributed to their advancement as professionals. Implications: Results show that OTs who completed the POTD program became higher level clinicians; took on leadership roles in research, academia, and advanced practice; and promoted the pursuit of best possible practice in OT. OTs currently practicing with a masters degree who are interested in obtaining their doctorate degree may consider it based on outcomes seen by fellow clinicians who have completed this degree.

## **#13 Physical, Mathematical, and Biological Sciences Grad Oral**

**February 22 — LSU 324**

**Evening Session: 6:45 – 8:15 p.m.**

### **Gabriel Angulo**

*Ponderosa Pine Regeneration Response to Climate and Geomorphic Influences, Prescott National Forest, Arizona*

Research Mentor: Parveen Chhetri (Earth Science)

Global climate change is creating notable responses in the structure and dynamics of the forest ecosystem. Patterns observed include high tree mortality and changing radial growth patterns in dry southwestern United States. Ponderosa pine (*Pinus ponderosa*) is one of the dominant tree

species of the southwest woodland, and research on its regeneration in response to climate change is lacking. The prior research studying the area's regeneration found that pine species are not regenerating as quickly as other species. Ponderosa pine forests form in drier, warmer environmental conditions, creating scattered stands in the region. These stands are highly susceptible to rapid regime change influenced by wildfire, climate warming, and drought. Therefore, we investigated the regeneration and establishment of Ponderosa pine in Prescott National Forest, Arizona. Study plots were established in relation to mature tree height. Regeneration in previous studies have been found at two tree lengths away from mature individuals (Davis et. al. 2019). The median year of germination was 2014. We found a significant correlation between the germination year and August's PDSI (the wettest month for the study area). This means PDSI has influenced the germination of Ponderosa pine. Most regeneration was found on Northeast facing slopes, and we found more juveniles in lower degrees of slope. Findings from this study will help forest managers and USFS to manage the changing southwestern woodland.

## **Michelle Mohr**

*Changes in recent summer temperatures are influencing the radial growth of Pinus ponderosa in Prescott National Forest, Arizona*

Research Mentor: Parveen Chhetri (Earth Science)

A tree-ring growth response study was conducted in Prescott National Forest, Arizona to determine the climatic variables that may be altering the growth patterns of Pinus Ponderosa (PIPO). Final findings include a constructed species chronology to understand growth variations in response to past and ongoing climate conditions and possible weather phenomena attributed to the region, such as El Nino/La Nina events. Data collected from four sites in Prescott National Forest include two tree cores from thirty mature individuals, tree diameter at breast height, tree height, tree canopy, and GPS location. The data collected was compared between individual study plots to determine how the plots differ in age classes and ring width variations to define the overall age structure of the different sites within Prescott National Forest. We also analyzed the changes in growth variability in response to climatic variables. Palmer Drought Severity Index (PDSI) values as well as Mean Temperature and Mean Precipitation were used to correlate years of growth with monthly and seasonal climatic variables. This was done by studying Ring Width Index (RWI), which enabled us to infer how changes in climate have altered the historical success of Ponderosa Pine in Prescott National Forest. The 244 tree core samples were measured using the dendrochronology program Cdendro and crossdated using COFECHA. The final stages of research involved using the dplR program in R to construct RWI chronology graphs to highlight pointer years of low growth and correlate them with known drought years in the region. From the four sites, the variable that was found to be the most influential on the growing season were summer temperatures. This suggests that although precipitation patterns have remained relatively consistent in the monsoon season, higher temperatures in the summer due to climate change are inhibiting the growth of Ponderosa Pines.

## **Alexander Centner**

*Coffee Borer Beetle's Habitat Expansion due to Climate Change*

Research Mentor: Parveen Chhetri (Earth Science)

The Coffee Borer Beetle (*Hypothenemus hampei*) has ravaged the world of coffee production. The beetle has been found to reduce the quality and amount of coffee harvested on infected farms. Previous research has used genetic testing to try to determine habitat spread of the beetle. The Coffee Borer Beetle has spread across the world and is found in all coffee producing countries except Nepal. This study used historical documents, published research, and other sources to determine a timeline for the Coffee Borer Beetle's habitat expansion. Data collected and analyzed also suggests that climate change is correlated to the insect's expansion. A viable solution that this study reviewed is the implementation of agroforestry techniques.

## **Jorge Hernandez, Ashley Wickerman, Albert Barrios, and Rajan Singh**

*Recruitment of Cytotoxic T Cells and Neutrophils Maintain Dormancy in MDA-MB-468 Triple Negative Xenografts*

Research Mentor: Shehla Pervin (Biology)

Of the many subtypes of breast cancer, the triple negative is one of the most aggressive forms that is difficult to treat. Triple negative breast tumors are unpredictable, and some of them undergo prolonged periods of latency followed by rapid growth and poor prognosis. We used a murine xenografts model of MDA-MB-468 triple negative breast cancer to examine prominent pathways that contribute to tumor mass dormancy and reduced growth. Double immune fluorescence and immunohistochemistry showed a necrotic core formation and increased cell death within the stem cell population carrying the ALDH1 marker during the dormant phase of the tumors. RNA sequence analysis showed increased expression of chemokines regulating the chemotaxis response of cytotoxic T cells and neutrophils within the tumors. Immune cells markers and key players like TNFs, INF- $\gamma$ , and NADPH oxidase complex contribute to the anti-tumor "N1" phenotype of neutrophils modulating ROS during the dormant phase of the tumors. Increased expression of granzymes, gasdemirins and caspases that are known to induce apoptosis were observed increasing cell death during the dormant phase keeping tumors in a dormancy state. When comparing MDA-MB-468 dormant tumors to fast growing HCC70 tumors, immune evasion gene PDL1 (CD274) was highly expressed in HCC70 during the same dormant period blocking T cell-mediated responses and reducing apoptosis activity.

# THURSDAY, FEBRUARY 23

## #17 Physical & Mathematical Sciences Undergrad Oral

February 23 — LSU 326

Morning Session: 9:00 – 10:30 a.m.

### Matthew Delgado and Alejandra Arjon

*A detailed study of the correlation between Late Gadolinium Enhancement (LGE) and Cardiac Sarcoidosis (CS) using Machine Learning Methods*

Research Mentor: Yi Grace Wang (Mathematics)

Cardiac Sarcoidosis (CS) is an inflammatory condition where tiny collections of immune cells form granulomas in the heart tissue and can interfere with normal functioning. This can result in heart rhythm abnormalities, cardiomyopathy, or heart failure. Late Gadolinium Enhancement (LGE) on Cardiac Magnetic Resonance (CMR) with contrast agents, is a technique for the assessment of myocardial scar formation and regional myocardial fibrosis. The high correlation between positive LGE of the whole heart and adverse outcomes of CS have been well studied. However, the LGE measurements in different regions of the heart wall greatly vary in patients with CS. Thus, it is critical to understand which regions of the heart wall are mostly correlated with adverse outcomes. This understanding can potentially improve the accuracy of clinical diagnosis of severe CS and can help with the pathology of CS in general. In this project, we will identify the specific regions of the heart of the LGE that contribute to the strong correlation with adverse outcomes. More specifically, we will investigate two methods of division: a traditional manual division of the heart into 17 segments and an automatic fine division of the heart into 216 segments. Feature selection methods from machine learning, an emerging field where data are processed to automate decision-making, will be applied to select the best subset of segments that are mostly correlated with adverse outcomes. A thorough comparative study between the manual and automatic divisions will also be conducted.

### Moises Juarez Aboytes

*Strange Matter: Understanding Neutron Stars & Nuclear Fusion via Hyperon Decay*

Research Mentor: John Price (Physics)

With major challenges still hampering research progress in the areas of nuclear fusion and neutron star structure, it is imperative that novel approaches be developed using alternative types of particle beams that have the promise to reveal the inner workings of protons, neutrons and atomic nuclei. Notable candidates for this approach are short-lived beams with which we can study these particles in a new way. These beams pose a problem analytically as they cannot be detected fast enough during their typical lifespan, however they have the potential to be reconstructed from the detection of final state particles. It is this reconstruction that must be shown however to be practical and sufficiently precise. This research considers the elastic scattering process  $\hat{p} + \hat{p} \rightarrow \hat{p} + \hat{p}$  using data from the CLAS Collaboration at the Thomas Jefferson National Accelerator Facility in Newport News, VA. The scattered  $\hat{p}$  particle, which decays after

traveling just a few centimeters in our target, is reconstructed from its decay products. The proton is detected directly: when combined with the  $\hat{p}$  particle, the initial  $\hat{p}$  (beam) particle can be reconstructed. Using events in which the decay products of the  $\hat{p}$  and an extra proton are detected, we tested for the hypotheses  $\hat{p} \rightarrow \hat{p} + \hat{p}$  by determining the mass of the incident beam particle using energy and momentum conservation alone. This report will present the motivation for this study, describe the method of analysis, and discuss future possibilities using this technique.

## Michael Pinkerton

*A Case for Feasibility of Short-Lived Beams for Nuclear Physics Research*

Research Mentor: John Price (Physics)

Abstract The development of new types of particle beams is vital to the study of nuclear physics as it can lead to new insights into the structure of the proton, neutron, and the atomic nucleus. Currently there is little existing data of processes induced by short-lived beams. These beams present a problem for analysis as they do not survive long enough to be detected directly. Properties of the short-lived beam particle can be deduced by reconstructing the event from the final-state particles, but the precision of this method must be tested. This research is a proof-of-concept experiment, in which the elastic scattering process  $pp \rightarrow pp$  is measured using data from the CLAS Collaboration at the Thomas Jefferson National Accelerator Facility in Newport News, VA. Using events in which two protons are detected emerging from a liquid hydrogen (proton) target, we tested for the process  $pp \rightarrow pp$  by determining the mass of the incident beam particle using energy and momentum conservation alone. During this run, the particle accelerator produced a photon beam of varying energy; the hypothesized proton beam particle for this measurement was produced within the target by the photon beam. To understand this, we need to know both the number of beam protons produced, and the number of target protons the beam interacted with. The beam flux (beam protons) can be measured directly by performing an analysis in which only a single proton is detected, and counting the number of such events. The target thickness (target protons) can be calculated from the angle of the beam proton. This presentation will present the history and motivation of the short-lived beam project, present the current state of the analysis of the  $pp \rightarrow pp$  elastic scattering process, and suggest future applications of this technique.

## Guadalupe Mora, Nataly Mendoza, and Joey Kim

*Mathematical modeling of the spread of infectious diseases*

Research Mentor: Alexander Chen (Mathematics)

The COVID-19 pandemic has drawn attention to the critical need to understand how infectious diseases can enter and spread through a population. More worrisome is the prospect of several diseases spreading throughout the population at once, as is the case with the recent uptick in cases of COVID-19, influenza, and respiratory syncytial virus (RSV) all inundating hospitals with patients. The population is segmented into a set of susceptible, infected, and recovering subpopulations that interact through the classic SIR differential equations model. Susceptible individuals become infected at a certain baseline rate, dependent on the properties of the disease. Infected individuals will likewise recover at another rate. This work builds on the SIR model by examining several scenarios of interest in the interaction of several diseases or variants of the same disease within a population. In particular, we examine seasonal effects in some of the diseases and the extent to which one disease can exacerbate or mitigate the effects of

another. We compare our model results with data of case numbers in the Los Angeles area, the United States, and the world.

## **#19 ONLINE Health Sciences, Business, and Education**

**February 23 — Streamed Live in LSU 324 – [Zoom Link](#)**

**Morning Session: 9:00 – 10:30 a.m.**

### **Jeannicet Bello**

*The Influence of the COVID-19 Pandemic on College Students of Color and Their Experience with Returning to Campus*

Research Mentor: Kelin Li (Sociology)

This study will examine the impact of COVID-19 on college students of color, evaluate the importance of health protocols, and assess the effect of the COVID-19 pandemic on everyday living, mental well-being, and experiences of racial unfairness among college students of color. This study will also examine the impact of returning to campus during the COVID-19 pandemic. I will analyze data collected from these surveys to examine how demographic, social, and lifestyle factors impact general well-being and their comfort with returning to campus. 2. Background In March 2020, the World Health Organization officially declared the start of the COVID-19 pandemic. COVID-19 is a respiratory illness caused by a virus that has been advancing and developing worldwide. In California, the pandemic has hit higher education institutions since April 06, 2020. At this time, community transmission of the COVID-19 virus has already occurred across the state widely, which has significantly impacted everyday life, well-being, and the occurrence of racial discrimination among college students and communities of color. There is a critical need for a better understanding of COVID-19 efficacy, immunogenicity, and other elements as time advances and the circumstances of daily changes among these populations. There is also a need to assess how public higher education institutions promote the studies in the curriculum and address the learning needs of the students beyond the traditional classrooms. 3. Subjects a) 100 college students of color (18 years or older) b) Study Location: I will recruit participants using social media, my family, friends, colleagues, neighbors, or referrals. Data collected from this study may help researchers better understand the patterns of social relations, health status, and lifestyles among college students. It could also help colleges, students, employees, and their neighborhoods. The data collected could also help guide other health protocols.

### **Jason Leung**

*The Effects of Evidence-Based Interventions on Hematopoietic Stem Cell Transplant Caregiver Strain and Burden: An Integrative Review*

Research Mentor: Terri Ares (Nursing)

Hematopoietic stem cell transplant (HSCT) patients undergo intense treatment for their cancer and require extensive support from their caregivers. As a result, HSCT caregivers have high levels of strain and burden throughout the trajectory of care for the patient. Cancer caregiver interventions such as

psychoeducation, supportive care, and cognitive behavioral therapy are recommended for practice. However, there are limited information and studies on the impact of interventions specific to HSCT caregivers. This integrative review aims to explore the effects of evidence-based interventions on the strain and burden of HSCT caregivers. A literature search was conducted through CINAHL, PubMed, MEDLINE Complete, and the Cochrane Library of Systematic Reviews for scholarly articles published between 2018 and 2022. Nine articles met the search criteria and were reviewed. Utilizing the Johns Hopkins Nursing Evidence-Based Practice appraisal tool, each study was ranked for their level and quality of evidence. Four themes emerged through the synthesis of the literature: (1) the psychological effects of caregiver interventions; (2) the self-awareness of caregiver strain and burden; (3) the importance of self-care management; and (4) the satisfaction with the interventions. The findings reiterate the existing knowledge of caregiver interventions and provide new insight into future caregiver programs. HSCT caregiver interventions can significantly impact the mental health, self-efficacy, and quality of life of caregivers, which may improve patient outcomes and care satisfaction. Strategies to address caregiver strain and burden within the healthcare system are a high priority as the number of caregivers continues to increase. Advanced practice nurses play a crucial role in assessing caregiver distress, raising awareness of the problem, developing innovative caregiver programs, and advocating for healthcare policy changes.

## **Carlos Mora**

*Adopting a Policy for Social Media Use to Improve Organizational Effectiveness in Nonprofit Health Care Organizations*

Research Mentor: Rui Sun (Public Administration)

As stewards of the public good, nonprofit organization (NPO) leaders seek and strive to maximize funds as well as optimize processes to yield greater organizational effectiveness. NPOs that strategically use social media and develop policies to enable this process possess greater organizational capacity and effectiveness. Using survey data of 100 NPOs, the study tests three hypotheses regarding the effects of a social media plan on marketing, fundraising, and employee empowerment. The logistic regressions revealed that adopting a policy for the use and management of social media is valuable to the organization in terms of marketing, but not necessarily in fundraising and employee empowerment. In addition, supplemental qualitative analysis of open-ended questions in the survey supports the idea of open systems that rely on and benefit from developing relationships with other organizations and the environment. Social media plays an important role in maintaining an open communication channel through which NPO leaders can interact and respond to public and organizational needs which ensures their ongoing support and development. By focusing on enhancing their social media presence, NPOs improve organizational effectiveness, finances, and services to the public.

## **Cindy Knapp**

*Reducing Unplanned Extubation Occurrences in the NICU: An Integrative Review*

Research Mentor: Terri Ares (Nursing)

Neonatal unplanned extubation (UE) is a significant risk to infants requiring mechanical ventilation associated with increased length of stay and adverse outcomes. Over the last several years, it has become understood that UE is type of avoidable harm in the hospital, which has led to research on how best to prevent these events. This integrative review was done to evaluate the available evidence on the best

practices to keep endotracheal tubes (ETT) in place. A literature search was conducted of the PubMed, CINAHL and Cochrane Review databases for articles published 2014 – 2022 with the search terms of "unplanned extubation, accidental extubation, unintended extubation, self extubation" and "neonat\*". The inclusion criteria were that the studies were in the English language, primary research, a prevention or intervention-based study, and an exclusively neonatal patient population. Articles were excluded based on the following: review articles, secondary sources, prevalence studies, pediatric or adult patient populations, or poster presentations. This yielded 11 articles, 2 of which were quasi-experimental, and the remainder were published quality improvement work. The overwhelming theme from this review recommends that a bundle of best-practice interventions should be implemented addressing standardized ETT securement, safe patient handling via 2-person care, and use of bedside signage to raise awareness of ETT safety. The successful studies in this review had an emphasis on staff education and visibility of UE metrics incorporated into their unit culture. This review proposes several research opportunities to allow more specific recommendations to be made on the components of a best-practice bundle and to make a more complete understanding of how each practice impacts UE rate and ETT security.

## **Kara Zorzoli, Andrew Bergum, Cassie Morton, and Devon Thompson**

### *Comparing Dynamic Alignment Tools on Prosthetic Legs for Unilateral Trans-Tibial Amputees: A Case Study*

Research Mentors: Julie Werner (Occupational Therapy), and Jennifer Lučarević, and Mojtaba Kamyab (Orthotics and Prosthetics)

Prosthetic alignment has a profound impact on the performance of the device. However, there is confusion about alignment considering that it is currently performed based on visual interpretation of gait rather than using kinetic analysis in the clinical setting. Therefore, the intention of this study is to discuss how dynamic assistive technology contributes to greater objectivity in dynamic alignment in one case study, especially how that pertains to socket reaction moments and furthering student education. It is hypothesized that if objective measurement tools are used for prosthetic alignment, it will be easier for a student practitioner to perform appropriate dynamic alignment. This was tested by completing a case study of one individual comparing two different alignments, one done using traditional methods and the other done utilizing the Orthocare Smart Pyramid. Data analysis for each of these alignments were recorded and compared to the individual's baseline values which were taken in their current prosthesis. The Orthocare Smart pyramid did not contribute to improved alignment. In this particular case study, the results showed that the Smart Pyramid alignment performed inferiorly to the traditional alignment methods in most of our measurements. However, there were many limitations in this study that could have led to this result. More research is needed to fully understand the effectiveness of dynamic alignment technology and both its clinical and educational application. Keywords: alignment, dynamic, smart pyramid, gait, trans-tibial, education tools.



## **#20 Health, Nutrition, and Clinical Science II Grad Oral**

### **February 23 — LSU Ballroom C**

**Afternoon Session: 1:00 – 2:30 p.m.**

**Shelby Shelman, Ellyson Martens, Eric Simington, and Conner Irvin**

*Custom Injected Silicone Liner for a Rotationplasty Running Prosthesis*

Research Mentor: Mark Muller (Orthotics and Prosthetics)

California State University Dominguez Hills students endeavored to fabricate a custom-made injected silicone liner for a subject with a Van Ness rotationplasty that would be suitable for a prosthetic running leg. A comparison between the custom-made silicone liner and the subject's current preferred interface for running would be done, focusing on the fit, comfort, cushion, and durability of two interfaces. The team hypothesized that the custom silicone liner would provide better fit, comfort, cushion, and durability than the existing interface of a Silipos sock under an athletic sock. This hypothesis was partially accepted, as a 20ply thick Dragon Skin NV silicone liner competed well with the existing interface, while also providing added cushion to bony prominences. Next steps are to proceed in fabricating a running prosthesis based off the 20ply thick Dragon Skin NV silicone liner, and conduct a comparison between the silicone liner and the existing interface when used with the prosthesis.

**Hannah Smith, Armen Saryan, and Nyi Nyi Sett**

*The Form, Function, and Meaning of Online Dating for an Adult with a Spinal Cord Injury: A Narrative Study*

Research Mentor: Sheryl Ryan (Occupational Therapy)

Background: Online dating is a modern occupation which has become a widely accepted form of searching for and matching with potential romantic partners. Individuals with spinal cord injuries (SCI) participate in this occupation, yet there is limited information in the existing literature about the accessibility and inclusion of online dating spaces for these individuals. Using the definition of occupation as the form, function, and meaning of everyday activities, this study aims to describe the types of dating platforms used, impact on quality of life, and meaning of online dating for people with SCI. Methods: Utilizing a qualitative, single subject narrative analysis approach, the researchers interviewed an individual with quadriplegia about his online dating experiences. The interview transcript was coded using 'a priori' themes (a) form, (b) function, and (c) meaning of online dating with quadriplegia. Results: The narrative analysis generated two sub-themes to describe the form of online dating for an individual with SCI: (1) the facilitation of real-time interactions and (2) the navigation of disability disclosure. Function was emphasized by a (3) trade-off of opportunities and challenges and (4) a broadened personal view of human connection. Meaning was expressed through (5) cycles of disappointment and hope that fostered a (6) journey of self-discovery shaped by his past, present, and future. Conclusion: This study illuminated the nuanced interaction between the unique challenges of being a person with a disability in online dating spaces and the opportunities afforded through searching for connection in an online environment. The results offer insight into the need for inclusion within traditional online dating platforms. Additionally, by recognizing this modern occupation and implementing it into their practice, occupational therapists have the opportunity to improve their clients' quality of life.

## **Carly Wong, Erica Ni, Alice Sinclair, and Daphne Wang**

*The Long Haul: Stories of Persons with Long COVID and Their Loved Ones*

Research Mentor: Sheryl Ryan (Occupational Therapy)

Background: COVID-19 has had a significant impact with 50.4 million confirmed cases worldwide. Many individuals who have contracted COVID-19 have developed long term symptoms which have become known as "Long COVID" (LC). As both COVID-19 and LC are novel in nature, there is limited research on the topic at hand. The purpose of this study is to describe the physical, emotional and social experiences of individuals with LC and their support people (e.g., spouse, parent, friend, etc.) by exploring the impact on daily life, routines, and relationships. Method: A qualitative narrative approach was used, and a total of five individuals participated in semi-structured interviews. Four participants self-identified as having LC, and one identified as a support person. Participants were asked to bring photographs representing aspects of their LC journey. Researchers captured the individual narratives of participants and examined them using thematic analysis. Results: Data analysis generated six themes: (a) the unique symptoms of LC for each participant, (b) emotional storytelling, (c) changes and adjustments to daily life, (d) navigating the healthcare system alone, (e) not being believed, and (f) the positive influence of social support. Additionally, an interview with a support person revealed their dedication to assist the person with LC on their journey and the minimizing of their role as being just what you do. Conclusion: The findings from this study illustrate the numerous ways in which people have been impacted by LC and have experienced challenges and support. Participants universally expressed feelings of being both misunderstood and undersupported by healthcare providers, calling for professionals to better listen to the unique stories of this population. Additionally, this information can be used to inform the development of guidelines for clinical practices in occupational therapy and other health professions to better serve individuals with LC and their loved ones.

## **Matthew Hoshiko, Elisabeth Kwon, and Aaron Mella**

*"Death By a Thousand Cuts": The Lived Experience of Minoritized Occupational Therapists Navigating Workplace Microaggressions*

Research Mentor: Sheryl Ryan (Occupational Therapy)

Objective: Occupational therapists (OTs) rehabilitate diverse client populations with various conditions that impact their daily activities. There has been increasing awareness of microaggressions in daily life since the onset of COVID-19 and the Black Lives Matter movement. Black, indigenous, or person of color (BIPOC) OTs comprise only 16% of the profession with a gap in research on how microaggressions affect practitioners. The purpose of this study was to understand the lived experience of minoritized occupational therapists as they navigate microaggressions within the workplace. Method: A qualitative approach was used, and data collection methods involved purposeful sampling for semi-structured interviews with participants. Themes were generated using a qualitative thematic analysis method. Results: Data analysis identified five overarching themes: the salience of the OT's ethnicity, rationalization immediately following a microaggression, sense of duty and obligations as an OT, processing microaggressive interactions, and the strength of the OT's BIPOC identity. Implications: The study adds to the gap in literature about the unique lived experiences of OTs of color, and the prevalence of racially charged discrimination in the workplace presented as microaggressions. The findings emphasize the need to re-evaluate workplace cultural sensitivity training and the profession's commitment to diversity, equity, and inclusion. This will give minority OTs and the profession tools on how to navigate racial

microaggressions. Furthermore, it can educate all practitioners on recognizing their implicit and explicit biases when working with clients and colleagues.

## **Eileen Li, Julie Kim, Jane Hong, and Hannah Kleinbart**

*Exploring the Changes in Parenting Occupations for Immigrants*

Research Mentor: Sheryl Ryan (Occupational Therapy)

Background: Occupations change drastically as individuals move into the parental role, but the occupations and experiences of the immigrant parent may be considered even more complex, as they navigate themselves and their children into the new culture of a foreign land. There is research in the literature regarding an immigrant child's perspective but little looking at how immigrant parents' occupations are impacted in response to migrating to California. Objective: To explore the changes in parenting occupations of U.S. immigrants from East Asia and fill the need for cultural sensitivity as pediatric OTs partner with immigrant parents to better serve both parents and their children. Design: This study utilized a qualitative narrative method with a total of 5 participants. Participants: Mothers with children from ages 2-14 years who have immigrated to the U.S. from China, Korea, and Taiwan. Outcomes & Measures: Interviews were conducted up to 10 years after immigration. Responses were transcribed and translated (from Korean or Chinese to English, if applicable) verbatim. Results were analyzed using interpretative coding to identify themes. Results: Data analysis generated six themes: (a) increased meal preparation, (b) stress of language barrier, (c) feelings of relief due to the education system, (d) financial pressure and burden of responsibilities, (e) increased involvement in child's life, and (f) stress due to societal expectations. Conclusion/Relevance: Immigrant mothers found stressors and joys in the changes in parenting occupations. They adapted to new cultural practices while implementing those of their home country. This study recommends effective OT interventions that include advocating for the minority population, providing family resources regarding language barrier, and using coping strategies that help with possible acculturation and financial stress. Pediatric OTs who encounter immigrant mothers in their practices should consider the difference in family structure and the effects it can have on their children.

## **#26 Health, Nutrition, & Clinical Sciences Grad Oral III**

**February 23 — LSU Ballroom C**

**Evening Session: 5:30 – 7:00 p.m.**

**Maria Fernanda Cervantes Godinez, Karla Carrillo Robles, Ceslee Gonzales, and Socorro Renee Cruz**

*Occupational Therapy Practitioner's Experiences in Pediatric Telehealth During COVID-19*

Research Mentor: Sheryl Ryan (Occupational Therapy)

Background: The COVID-19 pandemic caused an unprecedented shift in service delivery care to clients in pediatric settings. Many occupational therapy practitioners (OTPs) working in pediatric settings pivoted

rapidly to telehealth to continue delivering care. As previous studies have shown, telehealth was proven effective in providing care with evidence of high client satisfaction. However, there is lack of research concerning OTPs' perceptions and well-being while providing telehealth services in pediatric settings during the pandemic. The purpose of this study was to better understand OTPs' overall experiences, job satisfaction, sustainability, and professional performance. Method: This qualitative study was designed as a focus group with OTPs who worked in pediatric telehealth during the pandemic. Nine females and one male OTPs between the ages of 27 and 72 were recruited to participate using convenience sampling. Qualitative thematic analysis was used to analyze the participants' experiences. Results: Data analysis generated four themes: (a) steep learning curves, (b) everchanging service delivery modifications, (c) valuable caregiver support, and (d) improved occupational balance. Conclusion: OTPs primarily described their experience as positive despite the initial unfamiliarity with technology and lack of preparedness. The results emphasized how telehealth increased flexibility in the OTPs' personal and professional lives, improved their communication with caregivers and introduced a new perspective of therapy into the client's home environment. OTPs in pediatrics may consider continuing telehealth as part of their repertoire of services for interdisciplinary team meetings, parent education, and carryover of services at home, especially in circumstances that interfere with access to in-person therapy.

## **Krystal Lopez, Jocelyn Macias, and Ashley Hansack**

*Experiences of 1st Generation Latinx Individuals and Their Occupation of Health Management*

Research Mentor: Sheryl Ryan (Occupational Therapy)

Background: Multiple factors influence how one manages their health, including health insurance, access to services, and general knowledge of healthcare in the U.S.. Minorities, such as first-generation Latinx members in California, face greater challenges in fulfilling such requirements. The literature revealed that despite Latinx individuals being insured in the U.S., they refrain from visiting a doctor. The misconception is that Latinx communities do not visit the doctor because they don't care about their health. This study aims to understand the experiences of 1st generation Latinx individuals while managing their health within the context of these assumptions and systemic challenges. Method: A phenomenological approach was used to understand the experiences of Latinx individuals. A convenience sample consisted of eight 1st generation Latinx individuals. The study consisted of one 30-45 minute semi-structured interview where the participants were asked about their experiences managing their health. Through research triangulation, we developed a coding scheme to complete a qualitative thematic analysis. Results: Analysis of the transcribed interviews revealed six themes: 1) autonomy of one's health 2) Need for more Spanish-speaking healthcare professionals or translators, 3) "What do I get with the insurance? The more expensive, the better" 4) are my feelings wrong? 5) self-care and mindfulness 6) advocacy for increased access. Conclusion: Several reasons contradicted the assumption that Latinx individuals hold off going to the doctor simply because they don't care about their health: individuals expressed having a strong sense of control over their own health, negative associations of treatment experiences in the past, barriers in accessing quality care, and not feeling heard or understood by their providers. Implications of our research emphasized the importance of health professionals listening and understanding Latinx communities in order to respect, support, and advocate for their needs and wants while considering their practices.

## **Catherine Ngo, Austin Shen, Tiffany Tran, and Jizelle Vilela**

*Help me help others: The work experiences of occupational therapists with physical disabilities*

Research Mentor: Sheryl Ryan (Occupational Therapy)

Background: Occupational therapy (OT) practitioners spend their careers working with and advocating for people who have disabilities, but the experiences of OTs with physical disabilities themselves has been scarcely studied. Purpose: The purpose of this study is to describe the work-related experiences and perceptions of OTs and certified occupational therapy assistants (COTAs) with physical disabilities in the workplace. Method: This study utilized a qualitative narrative approach using semi-structured interviews with six OT practitioners with physical disabilities who have worked or are currently working in a clinical setting. The researchers explored the experiences of OT practitioners by analyzing their individual narratives followed by a qualitative thematic analysis to determine themes surrounding their disabilities, work experiences, client/colleague interactions, and organization accommodations. Results: Five themes were identified and written in the form of hypothetical questions that OT practitioners with physical disabilities may find themselves asking: "Do I tell them?"; "Am I enough?"; "Am I supported?"; "What can I do?"; "How can I help others?" Conclusion: OT practitioners with physical disabilities often questioned their clinical competency and did not always feel accommodated by their environments. They constantly practiced self-advocacy and self-accommodation to adapt, which empowered them in practice by relating with clients and finding ways to thrive in the midst of limiting environments. OT and rehabilitation departments should increase awareness and empathy for these practitioners to provide them with additional support and opportunities to highlight their unique perspectives and strengths, thereby embracing occupational therapy's values of equity and inclusivity. Key words: occupational therapy, physical disability, lived experiences, accommodations.

## **Victoria Patten, Keegan Shepherd, Yvonne Querido, and Heather Nguyen**

*Impact of Type 1 Diabetes on Family Dynamics*

Research Mentor: Sheryl Ryan (Occupational Therapy)

Background/Purpose: The prevalence of children under the age of 18 living with Type 1 diabetes (T1D) is approximately 200,000 and climbing. Without a functioning pancreas, people living with this condition are at increased risk for various complications. Parenting is, additionally, nuanced and complex without the difficulties that come with managing highly variable T1D symptoms in a child. However, the effect of the child's T1D symptoms on parental careers, family relationships, and self-perceptions was not known. The purpose of this study was to describe the habits, roles, routines, and shared activities of parenting children under the age of 18 with T1D in order to identify suggestions for potential occupational therapy interventions and future research. Methods: The qualitative research design used was phenomenology, using photo-elicitation with parents of children with T1D. Semi-structured interviews were implemented with four participants consisting of parents over 18 years old and whose children were between the ages of zero to ten years old at the time of their T1D diagnosis, and currently attending school. Results: The results generated four themes: a) navigating everyday logistics, b) secondary caregiver knowledge and training, c) accessing resources that support meaningful shared activities, and d) social-emotional strain of primary caregivers of children with T1D. Conclusion: The results emphasized the impact of T1D on family dynamics via a substantial disruption in habits, routines, and roles. Additionally, our findings showed that secondary caregivers, specifically school personnel, are underprepared to manage T1D which created an additional burden of time and resources the parents had to dedicate to secondary

caregivers. Therefore, occupational therapy practitioners on a multidisciplinary T1D healthcare team can contribute by providing family support for lifestyle redesign, as well as providing education and literature to families about T1D support resources for school.

## **Amanda Martelli, Amy Lumley, John Jonson, Rachel Morgan**

*Adult Reflections of Adolescent Experiences with Type 1 Diabetes*

Research Mentors: Sheryl Ryan (Occupational Therapy)

**Background & Purpose:** Type 1 diabetes (T1D) or juvenile-onset diabetes is an autoimmune condition in which the body produces no or very little insulin, a key hormone for blood glucose control. People with T1D need to monitor their blood glucose levels throughout the day and depend on manufactured insulin in order to keep their body in a healthy homeostatic state. Poor management of T1D can have life-threatening consequences within days. This burden is overwhelming for children learning to manage their own care with decreasing parental guidance amid the turbulence of adolescence. The purpose of this narrative analysis was to describe how individuals with T1D became independent and effective in managing their condition in the transition from adolescence to adulthood. **Methods:** This study was a qualitative, narrative study that utilized semi-structured interviews to obtain reflections from five adults (18-50 years old) with T1D. We conducted thematic analysis as well as individual narrative analysis. **Results:** Data analysis generated five main themes: Receiving support from a trusted healthcare provider, reducing burden through diabetes technology, relying on community and peer support, coming to terms with T1D, and experiencing burnout. **Implications:** The themes generated indicate areas in which occupational therapy (OT) can provide unique support for adolescents with T1D, including caregiver education, developmentally targeted interventions, and occupational balance. Based on our finding that interactions with at least one uninformed healthcare professional was a common occurrence, it is imperative that OT practitioners possess baseline knowledge of T1D to facilitate, rather than hinder, the adolescent's transition to independent management.

## **#27 Behavioral Sciences, Arts, and Business**

### **Undergrad Oral**

**February 23 — LSU 326**

**Evening Session: 5:30 – 7:00 p.m.**

**Ricardo Lopez Jr.**

*Weapon-Based Masculinity: Militarized Machismo in Roma, El Secreto De Sus Ojos, and El Norte*

Research Mentors: Roderick Hernandez (English) and Andrea Johnson (History)

The Dirty Wars of Latin America during the 1960s-1980s left a cultural scar on the countries involved. One of these scars is how the identities of young men were shaped by their exposure to the military, either through recruitment or through violence. The method in which young Latin American men were exposed to nationalist ideology, humiliations in training, and oppression from military violence created a hypermasculine machismo

described by Anzaldua in her seminal work *Borderlands: the New Mestiza = La Frontera*. Alfonso Cuaron's *Roma* (2018), Juan Jose Campanella's *El Secreto de sus Ojos* (2009), and Gregory Nava's *El Norte* (1984) exemplify in cinema how young men who were a part of military groups or experienced military oppression used different kind of weapons to represent their hypermasculine identities. Ultimately, investigating how young men use weaponry as an extension of their identity reveals the high level of violence that was leveled against the women of Latin America, especially indigenous women. The trauma that shaped the identity of these young men is persisting into our contemporary culture as it becomes an intergenerational experience. This research intends to find other ways that machismo identity formation has persisted into the present day.

## Monique Mangum

*Gaddang: Grammaticalization & Rule Ordering*

Research Mentor: Iara Mantenido (English)

This study focuses on Gaddang (ISO: gad), an understudied language spoken in the Philippines that has shown effects of change occurring overtime. By comparing my own data and past works by Calimag (1965) and Troyer (1959), I present evidence of grammaticalization and change in phonological rule ordering. In order to show evidence of grammaticalization, I focus on the development of a verb that is produced from a noun by adding a prefix /ma/ as shown in (1)-(2). (1) diyut 'bath' Calimag (1965: 46) (2) maddiyut 'bathe(s), will bathe' Calimag (1965: 46) In present progressive aspects, a part of the verb should be reduplicated before the prefix is added, as in (3). However, sometimes the prefix is added before reduplication occurs, and thus it is reduplicated together with a part of the verb stem as shown in (4). (3) a. malakad b. malaklakad 'walk' 'is walking' (4) a. matagab b. matmatagab 'burns' 'is burning' (5) /lakad/ Input laklakad Reduplication rule malaklakad Prefixation rule [malaklakad] Output (6) /tagab/ Input matagab Prefixation rule matmatagab Reduplication rule [matmatagab] Output The derivations reported in (5) and (6) show a prefixation and reduplication rule applied to a verb to help one understand how words are conjugated in Gaddang and demonstrate the idea of rule orders competing with one another. These competing rules that were absent in previous reports by Calimag (1965) and Troyer (1959) may exist because overtime native speakers may have forgotten that matagab was actually tagab. In the presentation, I focus on whether or not the prefixation rules are competing with the reduplication rules in Gaddang progressive, I also explore additional phonological rules present in the language. I conclude by showing how this effects the linguistic community and how my research may be beneficial to native speakers of Gaddang.

## Tiffany Amacker

*Customer Conflict Management: Identifying and Negotiating Resolutions*

Research Mentor: Nancy Erbe (Negotiation)

After collecting data and analyzing different customer challenges in the workforce. I have a full understanding of the various scenarios that can occur in different environments. Addressing how customer service agents may handle situations that may be stressful mentally and emotionally. During my action research, I used a book titled "Living Inspiration" by Nancy Erbe. This offered me a better understanding on how to communicate while knowing the major reasons why an individual can veer off course or pick a specific course of action in each circumstance. I've gotten a lot of insight into people's communication patterns and a greater understanding of their goals. I've learned easier ways to deal with concerns, how to speak properly with consumers, and how to cope with difficult situations along the way.

I've learnt how to deal with upset customers and proper practices for educating oneself to respond properly to them. While discovering that if I project calmness, listen and be respectful in difficult situations, the customer will be less aggravated. The customer's wrath will often subside if you manage the situation properly. I discovered how crucial it is to maintain objectivity when dealing with aggressive customers during this study. The problem won't improve at all if you respond negatively, and it will probably get much worse. Therefore, informing the client that you are there to support them and that you will make good use of your resources to discover a solution. This simple comment frequently helps to defuse tense situations. Throughout my research, I've discovered that we must keep in mind that the customers do not know you and are simply expressing their discontentment with you as a product of the organization. By thoroughly discussing the situation and the plan for addressing it. Everyone has rough moments occasionally, and we've all been there.

## **Michelle Avila**

*Cerro Sechán: The Iconographic Mystery*

Research Mentor: Jerry Moore (Anthropology)

Cerro Sechán is known for its detailed engraved stela and monumental architecture. The stone slabs depict the iconography of war, beheadings, and even mythological animals. Such a diverse set of imagery can influence the questions of Cerro Sechán's purpose and function. This project evaluates and theorizes the hypotheses of Julio C. Tello, Sheila and Thomas Pozorski, and Francisco Seoane to understand the new question of Cerro Sechán iconographic purpose. Tello's hypothesis implies that the iconography of war and mutilation serves as an emblem of power and control from the elite to protect themselves from unwanted visitors. Sheila and Thomas Pozorski's hypothesis revolves around studying the iconography of Cerro Sechán to determine a chronological placement that coincides with a time of decline based on the war depicted. Francisco Seoane's hypothesis states that the archaeoastronomical, mythological, and ethnographical representation of Cerro Sechán's iconography is shown in the imagery of a polychrome fish. The hypotheses stated by Julio C. Tello, Sheila and Thomas Pozorski, and Francisco Seoane present their thoughts about Cerro Sechán's diverse and mysterious use of iconography. My project will serve as a way to spread information about the possible functions of iconography in Cerro Sechán. To ultimately construct a new hypothesis regarding the discovery of the iconography in the clay friezes and murals during diverse construction phases to accurately date Cerro Sechán.

## **Daniella J. Enriquez**

*Economic Impacts of Prohibition*

Research Mentors: Andrea Johnson and Kate Fawver (History)

The 18th amendment to the United States Constitution stated that the manufacture, sale, or transportation of intoxicating liquors was prohibited. This ratification occurred after years of pressure from both temperance and religious groups advocating against the evils of the liquor industry. Political and financial considerations by the U.S. government who ultimately believed this would positively impact the country. The first impact which the law had was the closure of the saloon establishments, the social clubs were forced to close. The saloons had been attacked throughout the prior decades casted as evil establishments by religious and temperance movements. The government was not prepared for the illegal smuggling nor for establishment of the bootlegging industry. The closure of saloons led to the



illegal development and opening of underground hidden speakeasies. Even though the Federal Bureau of Investigation was formed more than a decade prior to Prohibition, the bureau became noteworthy during the 1920s. The Bureau, founded to aid the Department of Justice, in the beginning worked under their umbrella of power and jurisdiction. Border Patrol was developed to apprehend and deport unauthorized immigrants, unlawful entry became a crime. Immigrants were especially targeted for their excessive drinking habits which according to native citizens influenced others to drink heavily. The United States Federal Bureau of Investigation and the United States Border Patrol made immigrant lives difficult and focused on incarcerating or deporting them. Three big immigrant groups which struggled in the United States throughout Prohibition were the Germans, the Italians, and the Irish.

## **Alicia Moore**

*Deciding Factors of Hormones That Can Predict a Parent's Ability to Successfully Nurture Young*

Research Mentor: Thomas Norman (Management)

Determining what a "great" parent entails is entirely subjective; however there may be a link between the hormones exhibited while caring for young and the parents ability to adequately bond with them. Such a link suggests that oxytocin is responsible for this bond but is not the only factor that contributes to a parent's ability to develop what is known as the maternal instincts. The study I will be conducting would be telling of exactly what amount of oxytocin is necessary to successfully bond and if so, can less adequate fathers and mothers be prescribed with certain hormones to compensate.

# FRIDAY, FEBRUARY 24

## #31 Behavioral and Social Sciences Grad Oral

February 24 — LSU 324

Morning Session: 9:00 – 10:30 a.m.

### Brianne O'Donoghue

*Equitable Grantmaking in the Time of COVID-19: A Case Study*

Research Mentors: Adriana Aldana and Andridia Mapson (Social Work)

In recent years, foundations have moved to adopt equitable funding strategies that drive the inclusion of nonprofits of color. This paradigm shift has resulted in the operationalization of equity towards the development of best practices, including various articles, reports, and even an equitable grantmaking continuum, for foundations to measure their progress towards this aim (Annie E. Casey Foundation, 2022; Nishimura, 2021). While myriad strategies for equitable grantmaking exist, few if any examples from the scholarship consider equitable grantmaking within public health and human services agencies. Using a case study design, this project will provide an in-depth analysis of one local government agency's (i.e., City of Long Beach Health & Human Services Department) implementation of a more equitable grantmaking process from start to finish. Multiple sources of data (i.e., secondary data, public archives, interviews) will serve to examine how the implementation of an equity-focused grantmaking model contributed to a more inclusive application and selection process for local nonprofit organizations serving diverse racial-ethnic populations. The research will utilize a snowball sampling method to recruit participants from various stages of the grantmaking process, and will draw on *pláticas* (i.e., unstructured interviews) and semi-structured interviews to collect primary data. Critical Race Theory will be used as an analytical lens to contextualize the data and the larger equitable grantmaking movement. This research will identify a set of best practices that can be shared with other institutions that are interested in equity-focused grantmaking. I expect to collect primary data from late January until early February and will begin analyzing both primary and secondary data to present preliminary findings.

### Ana Arvizu

*Abortion Attitudes Since Roe v Wades Legislation and Today*

Research Mentor: Katy Pinto (Sociology)

Targeted restrictions on abortion providers (TRAP) laws have limited abortion access for women. This study uses data from 1973 and 2021 General Social Survey (GSS) to examine the relationship between abortion attitudes and key demographics (e.g., age, race/ethnicity, education, marital status), political and religious affiliation, region, social class, and sexual orientation (only 2021). I used a 3-way-chi-square test to compare differences in abortion attitudes. The GSS asked respondents a series of question around supporting abortion based on different scenarios for example, a serious defect in the baby, woman's health is seriously in danger, and cannot afford any more children. I find that there is a significant difference in abortion attitudes between men and women in 1973, with men being more supportive of abortion. In 2021, I found no significant

difference in abortion attitudes between men and women. Another finding from 2021 was that there were higher approval rates from men when it came to answer choices like, strong chance of serious defect, woman's health is in danger, and rape. These findings suggest that men today have more supportive attitudes towards abortion and can be used as allies in the pro-choice movement.

## **Eli Sarceno**

*Evangelical Latino immigrants building 'community' in South [Central] L.A.*

Research Mentors: Joanna Perez, Claudia Diera, and Kelin Li (Sociology)

This study focuses on the ways that the Evangelical Church fosters a sense of belongingness among Latino immigrants in South Los Angeles. Through a mixed-methods approach, this study draws from ethnographic data, including in-depth interviews and fieldwork (participant observation), as well as quantitative secondary data. Accounting for intricacies involved with space, community building, and neighborhood dynamics, this study analyzes the role of the church in the lives of Latino immigrants who self-identify as evangelical believers and live in South Los Angeles. The data reveals how the church functions, its role in congregants' lives, and the meaning that is attached to their church involvement. Overall, this study expands the literature focused on immigration, religion, and urban communities. Religious belief is seen as a quest for meaning (McIntosh, 2007). One way that people exercise their religious belief is by attending a church. Durkheim (1893) argues that a large organization functions by dividing it into smaller sections or groups. When considering the function, purpose, and impact of churches, familiarizing with the usage of space is critical, which can be done by accounting for the structure, rules, and beliefs of the religious institution. Given the limited spaces that welcome, validate, and support Latino immigrants, the church not only represents a place of worship, but also a space where finding a sense of belonging is facilitated by accessing resources, networks, purpose, inclusivity, and hope/faith (Mora, 2012; Myers, 2020). This aligns with the literature given that beyond providing the space that affirms their religious beliefs, in many ways, the church also becomes a community where "shared feelings...bond these people together" (Hoey, 2007:399). Congregating at a church provides Latino immigrants with the opportunity to become part of a community with shared beliefs, values, and norms and in the process, join forces to thrive.

## **Denise Y. Aguiluz and Belen V. Guillen**

*Effects of Intimate Partner Violence and Discrimination During Pregnancy on Black Women's Mental Health*

Research Mentor: Irene Tung (Psychology)

Intimate partner violence (IPV) during pregnancy is associated with anxiety and post-traumatic stress disorder (PTSD). Anxiety and PTSD symptoms in the perinatal and postpartum period have important implications for mothers and their infants. These perinatal experiences disproportionately affect Black women, whose experiences of IPV are compounded by racial discrimination. Limited studies focus on the outcomes of IPV and discrimination during pregnancy for Black women, which is important for informing perinatal interventions and reducing racial disparities in maternal health. The study has three aims: First, in a prospective longitudinal sample of pregnant Black women who were assessed since preconception, we aim to examine changes in IPV from before to after pregnancy. Next, we aim to determine if IPV during pregnancy relates to postpartum mental health symptoms. Finally, we will test whether experiences of discrimination during pregnancy magnify the effects of prenatal IPV on mental health. We will use data from a subsample of the population-based longitudinal Pittsburgh Girls Study. Data collection is complete: N=288 have data at all time points, including

self-reports of IPV before and during pregnancy, discrimination experiences during pregnancy, and preconception and postpartum anxiety and PTSD. We will conduct a repeated measures ANOVA to examine changes in IPV before, during, and after pregnancy. We will use linear regressions to analyze the associations between prenatal IPV and postpartum mental health, controlling for preconception mental health symptoms. Finally, we will examine if discrimination experienced during pregnancy moderates the effect of IPV on postpartum mental health by adding the interaction between IPV x Discrimination into the regressions. We hypothesize that IPV will decrease after pregnancy, and discrimination experienced during pregnancy will magnify the effect of IPV on mental health symptoms. We will discuss the implications of developing culturally-tailored prenatal interventions and highlight directions for future research.

## **Ryan Vane**

*Critical review of studies investigating the relationship between mTBI & long-term neurocognitive outcome*

Research Mentor: Tara Victor (Psychology)

Mild traumatic brain injury (mTBI), often used synonymously with the term concussion, is a type of brain injury that is defined by particular characteristics that distinguish it from mild complicated, moderate or severe forms of TBI. While there are acute symptoms, these resolve within weeks to months post-injury, and six meta-analyses have concluded that single instance mTBI yields no long-term neurocognitive consequences. Individual studies published more recently have challenged these results with claims of obsolescence (i.e., the most recent meta-analysis was over 10 years ago); however, as several authors have pointed out, these studies are problematic methodologically for a variety of reasons. This paper provides a critical review of this literature including 27 articles from the last 10 years. A literature review was conducted via PsychINFO and related research databases. Summaries for each article are provided. Thirty-four factors were included in the analysis and illuminate the myriad of methodological concerns present within the current literature. Discussion of the implications and directions for future research highlight the minimum requirement of three criteria in studies examining neurocognitive outcomes following mTBI. That is, studies must include performance validity indicators with up-to-date cut-offs, they must exclude individuals with high levels of somatization due to symptom overreport, and finally, studies exclude individuals with psychiatric conditions in order to eliminate the often-present confounding variables. In other words, the data obtained must be demonstrably reliable and there cannot be more likely causes of neurocognitive inefficiency present in order to conclude that a concussion caused such inefficiency. The results of this analysis have far-reaching application for neuropsychological evaluation in the medical-legal context.

## **#32 Arts and Humanities Undergrad Oral**

**February 24 — LSU 326**

**Morning Session: 9:00 – 10:30 a.m.**

### **Caitlin McClister**

*"Missteps and Misfires: Perceptions of the Japanese Attack on Pearl Harbor*

Research Mentor: Andrea Johnson (History)

The 1941 Japanese attack on Pearl Harbor is perhaps one of the most recognizable events in United States and foreign relations history. Extensive research on this topic has been conducted, covering a wide variety of interpretations of the events leading up to the attack, the attack itself and the lasting effects it left on the United States. A debate has emerged over whether the surprise bombing of Pearl Harbor was a surprise, and if the attack itself was as shocking as it seemed. This paper will investigate the level of U.S. surprise towards the Japanese offensive, as well as the extent of the damage created by the bombing. Evidence such as various telegrams, correspondence, speeches, etc. suggest a more ample amount of prior knowledge of the possibility of an attack on the part of the U.S., as well as a deliberate lack of initiative taken to prevent such an event. Additionally, it is known that the goal of the Japanese was to severely damage the U.S. Pacific fleet as a way to keep the U.S. from becoming another opponent of the Axis powers. While the attack on Pearl Harbor was thoroughly premeditated, it was unsuccessful in achieving its main purpose and instead became a platform of resilience employed by the U.S. government as motivation to win World War II.

### **Michelle Avila**

*The Sacred Mystic: St. Catherine of Siena's Piety, Stigmata, and Holy Anorexia In Baroque Art*

Research Mentor: Kirstin Ellsworth (Art History)

Saint Catherine of Siena was canonized in 1461 by Pope Pius II; although she was a medieval saint, her impact became highly prominent in Baroque art. As a child of 25 children, Catherine became interested in faith as a mode of escape from traditional female gender roles such as marriage. As a religious woman, Catherine was a very feminist figure in medieval Europe, but this not presumably did not reflect in Baroque art. By analyzing Carlo Dolci's *St. Catherine of Siena* (c.1665-70), Clemente de Torres's *Mystic Marriage of Saint Catherine of Siena* (c. 1700), and lastly, Pompeo Batoni's *The Ecstasy of St Catherine of Siena* (c. 1743), this paper will identify three ways in which *St. Catherine of Siena's* depictions, reinstate religious gender roles. They portray Catherine in forms that ignore her *anorexia mirabilis* (Holy Anorexia), stigmata, and feminist personality. When translating biblical figures into art, the gaze or perspective of an artist can have much influence on the interpretation of a religious painting. Artists should accurately demonstrate female lives, such as Saint Catherine of Siena's, as she was a doctor of the church, activist, and writer. This presentation aims to guide a discourse of female censorship in the hands of the patriarchy, Christianity, and art as other female saints, such as Saint Teresa of Ávila, who also is a mystic, pertain to similar censorship to *St. Catherine of Siena*. Saint Catherine of Siena led a life full of piety and loyalty to her faith; it is only fair that she receives positive and accurate attention concerning her life as a famed art subject.

## Edmund Arevalo

*Family Ties*

Research Mentor: Devon Tsuno (Art & Design)

I am a first-generation Filipino American mixed media artist who lives and works in Los Angeles, Ca. I produce paintings, sculptures, and video installations focusing on the Filipino diaspora and its cause and effects. Colonization in the Archipelago known as the Philippines began with the Spanish colonial period from around 1565-1898 which then after the Spanish sold the Philippines for \$20 million to the United States, and took control of the islands from around 1899-1941. The causes and effects of this experience affected Filipinos' self identity and caused a lot of confusion and frustration for Filipinos trying to assimilate culturally, resulting in the loss of indigenous practices, family history and visual documentation lost during colonization. My art is a research and creative activity that reconstructs the representation of Filipino migration to America, exploring the intersection between both countries and challenging the stigmas of cultural assimilation. I utilize these various methods and mediums through the process of collage and painting. Identifying who I am through my work, I attempt to piece together a puzzle of forgotten and erased history, by constructing paintings, sculptures, video installations, and prints that particularly focus on the Filipinx American experience and what it looks like through the lens of my eyes. Through this process my outcome of the research and creative activity are my paintings, sculptures, and video installations. The paintings are a reconnection of my family history as well as the forgotten history of Filipino Americans in America, functioning as archival material, and are exhibited in cultural institutions like galleries and museums. They bring together Filipino Americans in creative spaces like the art collective Tambayan, and leverage art as an archive.

## Florencia Bravo

*"Time is on my side": Examining the Exploitation of Feminine Bodies through the Masculine Need for Immortality in Mexican Gothic and Other Novels*

Research Mentors: Helen Oesterheld and Roderick Hernandez (English)

Immortality and the search for eternal youth is a recurring theme among many classic and modern gothic novels. Whether it's vampirism, a cursed portrait, or magical mushrooms, the human, and most often masculine, need to live forever is repeatedly achieved through the use and abuse of feminine bodies. As seen with novels like Bram Stoker's *Dracula* (1897), the infamous vampire continuously targets women such as Lucy Westenra and Mina Murray, along with the three brides that he uses to do his bidding. Similarly, John Polidori's *The Vampyre* (1819) revolves around the vampire, Lord Ruthven who feeds off Miss Aubrey and Ianthe, a Greek girl who is notably racially othered like *Dracula* himself. While *Dracula* is villainized for his vampirism and racial identity, Ianthe is idealized into an innocent, romantic figure. This fear and fetishization of the racial other is most notably depicted in Silvia Moreno-Garcia's *Mexican Gothic* (2020). Moreno-Garcia's novel follows two Mestiza women who are tricked by the white European Doyle family and its patriarch, Howard, who uses women to continue his reign of terror in an isolated Mexican countryside. The heroine, Noemí and her cousin, Catalina were chosen by Howard and his son, Virgil to strengthen their family line that is dying off due to many generations of incest. Howard's objectification of women to gain his immortality begins with his first wife, Agnes, and her body which is used as a supernatural host for the mushrooms that give Howard all his power and longevity. In choosing Noemí and Catalina as wives and future mothers of the Doyle line, Howard's manipulation of them closely mirrors the European colonization on Mexican soil.

Ultimately, Moreno-Garcia shows how Noemí and Catalina are discriminated against and yet fetishized by Howard and Virgil, who seek to regain the former glory their family has lost.

## Jackeline Granados

*Full Metal Gothic: An Examination of Social Changes and Anxiety*

Research Mentor: Helen Oesterheld (English)

I intend to explore anxiety and social change in the gothic genre that Mary Shelley's 1818 *Frankenstein* has influenced Hiromu Arakawa's 2009 Japanese anime titled, *FullMetal Alchemist:Brotherhood*. Utilizing gothic conventions in its most wide scale universe, *FullMetal Alchemist:Brotherhood* examines the post-industrial revolution and the science that was conceptualized during this time. Shelley's views on social change are expressed through an isolated view that the main character shares with its readers, whereas Arakawa approaches this concept using a societal lens. The social changes of this era are amplified with an unending war, acts of genocide and the lack of ethics in science; each of these horrors expresses gothic anxieties. Similarly, Shelley's *Frankenstein* intersects these topics of anxiety in response to what the science of man may create during the 1800s. Arakawa's story is set during the 1900s and while it reflects a more modern tone and constructs a wider approach, it engages with the gothic conventions of *Frankenstein* by echoing into society's reality. Based on my research so far, I have uncovered that since *Frankenstein*'s original publication, it has been used as a critical framework to examine issues of race, gender, technology expansion and class consciousness up to Arakawa's modern interpretation. Through *Frankenstein*'s impact, the scientific community acknowledges the effects of how technology plays a critical role in the expounding the effects of an anxious society. As a consensus, Arakawa's work magnifies the gothic influence of Mary Shelley's world and re-imagines society's undertaking of war, science and cultural change. Arakawa's work has been found to encompass a tragically familiar symptom of the gothic genre, where anxiety is not just a solitary experience, but one that modern society has undergone with critically important implications.

## Ricardo Lopez Jr.

*Conventional Transgressors: A Contemporary Contradiction in the Gothic Heroines of Fledgling and Mexican Gothic*

Research Mentor: Helen Oesterheld (English)

Gothic, since its inception, is a genre that challenges its reader to consider the current state of their society. Starting in the eighteenth century, women would express their fears, anxieties, and desires related to their society by utilizing the concept of the Gothic Heroine. The Gothic Heroine exists in a unique space where she is often the character who is subject to the most oppressive aspects of the world around her, acting as a lens for readers to see the intricate ways society operates. Scholars have extensively analyzed these Gothic Heroines and developed nuanced understandings of how they should be interpreted, including the victim/sexuality binary. On the victim side of the binary, the Gothic Heroine is seen to sustain an identity of powerlessness to gain power through a relationship with a man. On the other side, Gothic Heroines are also capable of using their sexuality to attain power despite the system that oppresses her. This binary understanding is helpful, but it is insufficient in analyzing contemporary examples of the Gothic Heroine. Contemporary Gothic novelists subvert the tradition of Gothic Heroines being white women and instead center women of color as their protagonists. Shori in Octavia Butler's *Fledgling* and Noemí of Silvia Moreno-Garcia's *Mexican Gothic* are women of color who must fight against

the systems of power that actively oppress them. Analyzing these characters require an intersectional approach because their identities as women of color play an important role in how they must maneuver through their respective novels. In seeing how these characters act, we can understand them to be "conventional transgressors" as they engage in behavior that is understood as conventional but also allows them to transgress against their oppressive societies.