Behavioral and Social Sciences I — Ballroom B
Evening Session: 6:00 – 9:10 p.m.

Angelica Rivera, Karina James, Psychology
Sleep Hygiene, Planning/Problem Solving and Task, Performance in a Diverse Sample of College Students
Faculty Mentor: Karen Wilson, Psychology

Sleep plays a vital role to regulatory and cognitive processes including hormone production, metabolism, neurological processing, and memory consolidation. Research shows task learning ability attenuates with sleep deprivation and irregular sleep leads to decreased vigilance and productivity in student, employee, and leadership performance, reducing overall organizational effectiveness. Poor sleep hygiene and poor sleep quality have been associated with low income status. A recent national poll showed despite knowledge of benefits, most American adults do not prioritize sleep over other activities; seen in a different study sleep practices college students. Students, graded on their ability to process information and perform tasks, must also balance new roles and responsibilities, enabling a pattern of irregular sleep, increasing potential for harmful behaviors, reducing overall ability to focus on details and make informed decisions. This can lead to unhealthy habit formation related to chronic health outcomes including insomnia, obesity, substance abuse, illness/disease development, or death. This study examined the relationship between sleep hygiene on task-planning-and-problem-solving performance in a low income population sample. Participants (N = 110) were all undergraduate and graduate students of CSUDH. Eighty percent (N = 88) identified as female and 22% male (N = 22); 68% Hispanic/Mixed, 16% Caucasian, 11% Black, 8% Asian. Demographics were collected in session one, sleep hygiene in each session, and cognition was assessed at the end of session two. All measures were administered via computer. Regression analyses showed poor sleep hygiene predicted lower scores of planning and problem solving. Income and employment also predicted scores of sleep hygiene and task performance. Long hours filled with important tasks is an incongruent statement. The tendency to focus sleep behaviors before bed are important. However this research reveals good sleep hygiene practices include attention to the tasks we engage in during waking hours of the day as well.

Julia-Elise Childs, Social Work
Rooted: A Narrative Reflection on Generational Trauma within the African-American Community
Faculty Mentor: Adriana Aldana, Social Work

This is a narrative research paper focusing on Julia's exploration of generational trauma within her own family system. Through examining the legacy of African-American males in her family, she is able to trace generational issues back to her great-grandfather, who was a freed slave. A narrative reflection taking place during summer 2017 in rural Dewitt, MO at her late father's family farm, Julia unravels the intersecting links between alcoholism, violence, and the after-effects of slavery in her personal life. Using first person accounts from her paternal family, as well as supporting historical information and critical race theories, this paper invites readers to consider the value of exploring personal connections to systemic oppression and reflects on the positive impact this reflection has had on her social work career.

Ramona Kraeutler, Kahlie Venus, Psychology
Emotion Regulation, Sleep Quality, and Stress in Female College Students
Faculty Mentor: Karen Wilson, Psychology

Sleep Quality and sleep deprivation are a growing concern for many college students because of the increased coursework combined with personal obligations such as work or family. The decrease in sleep quality and duration with the increased daily challenges of college life could result in psychosocial and emotion regulation dysfunctions. Recent research examined that emotion regulation, and stress are positively associated with a reduced overall sleep quality. The current study examines the relationship between the functionality of female college students emotion regulation and perceived stress in association with overall sleep quality. It was hypothesized that female students who had higher levels of positive sleep quality would have lower levels of stress and greater ability to regulate emotions. Moreover, it was also hypothesized that greater positive emotion regulation would be associated with lower levels of stress. Participants (N = 74) were recruited from the California State University,

Dominguez Hills; ranging in age from 18-44 years of age. Sleep data was collected in seven days via a sleep tracker and two in-person session interviews. Findings supported the hypothesis that female students who had higher positive sleep quality had greater ability to regulate emotions, b = .344, p = .003, 95% CI [1.110, 5.345] and lower levels of perceived stress, b = .457, p = .000, 95% CI [1.823, 5.022]. However, results did not support the hypothesis that greater positive emotion regulation would be associated with lower levels of perceived stress, b = .085, p = .474, 95% CI [-.867, 1.847]. Limitations of the study include that the population examined consisted of only women and including male participants might affect the results.

Kresimir Reil, Annette Chavez, Javier Murillo, Michelle Ruvalcaba, Venita Polonio, Michele Sneed, Jacob Costa, Daniel Cervantes, Psychology
Manipulating Resilience in an Everyday Setting:
The Effects of Self-Efficacy Priming and Social Support
Faculty Mentor: Steven Frieze, Psychology

More research regarding factors positively influencing psychological resilience is needed. Resilience definitions vary, but most involve positive adaptation to adversity (Fletcher and Sarkar, 2013). For this study, resilience encompasses responses influenced by adverse events and adaptive-protective factors. Plenty studies exist investigating risk, or adverse factors of resilience, such as PTSD (Thompson, et al., 2011), critical illness and death (Gerhart, et al., 2016), or poverty (Frazier, et al., 2014), yet studies focusing on protective resilience factors only recently surfaced, and do not necessarily explore resilient responses to daily stressors.

This study explores possible resilience buffering effects: self-efficacy priming and social support. First, participants (CSU Dominguez Hills students) either completed a self-efficacy handout asking to recall 3 adverse situations overcome in the past, or an innocuous handout regarding breakfast. Next, participants experienced a destabilizing event in which a distressed confederate exited the interviewer office. Thirdly, participants underwent a mock interview in which the interviewer was either verbally affirmative, non-affirmative, or neutral while the participant performed a cognitive task. Finally, participants were assessed with a modified Connor-Davidson Resilience Scale (Connor & Davidson, 2003). The researchers hypothesized self-efficacy priming, and social support would increase psychological resilience. Data collection and analysis are in progress."

Kresimir Reil, Ivett Gabriella, Psychology
The Potential Role of Gratitude in Facilitating Resilient Developmental Trajectories
Faculty Mentor: Giacomo Bono, Psychology

Research has not explicitly examined gratitude's role in resilience development. Gratitude may play a role because it strengthens social ties, self-discipline and purpose (Bono & Sender, 2018). Bernard (2004) suggests a resilience asset model based on autonomy, social competence, and problem-solving skills. The current study examines whether gratitude development is associated with development of characteristics related to Bernard's model to test whether gratitude facilitates resilience in adolescent development.

Data originated from a 4-year longitudinal study investigating youth (n=438), age range 10-14 (at baseline), comprised of 54% girls, 67% white, 11% Asian-American, 10% African-American, 1.4% Hispanic, 9% other. Resilient developmental trajectories were explored by examining characteristics related to autonomy (self-efficacy), social competence (prosocial behavior, empathy) and problem-solving skills (self-regulation and goal striving). "Gratitude-thriving" and "gratitude-deficient" development trajectories were identified, then examined for differences between the groups. Differences included areas such as self-efficacy [$F(1,187) = 14.87$, p = .000], prosocial behavior [$F(1,188) = 25.25$, p = .000], empathy [$F(1,187) = 5.38$, p = .021], self-regulation [$F(1,187) = 6.52$, p = .011] and goal striving [$F(1,187) = 20.69$, p = .000]. This study supports gratitude as potentially enhancing resilience development, and positively influencing more resilient, healthy and integrative youth developmental pathways or trajectories."

Daniel Correa, Andrew Luu, Kimberly Huertas, Jessica Soriano, Psychology
Rate My Professor: Biased or Reasonable? Impact of Confirmation Bias and Professors' Gender on Enrollment Preferences
Faculty Mentor: Heather Butler, Psychology

This study examines the impact of confirmation bias and professors' gender in online professor reviews on enrollment preferences. Prior research does not examine the impact of confirmation bias from vague, overall ratings on enrollment preferences and prior research has found student bias in online professor reviews (Felton, Mitchell, & Stinson, 2004). Data were collected through Amazon Mechanical Turk and from students enrolled in an upper division course at California State University, Dominguez Hills. Participants (n = 195) read an online survey with a vague, overall positive rating or negative rating of either a male professor or female professor and a detailed, individual review with an equal number of positive and negative comments. Then, a distraction task and a questionnaire measuring their enrollment preferences and recall of comments were given. The independent variables were overall rating (positive/negative) and gender of the professor (male/female); the dependent variable was likelihood of enrollment. A significant main effect of overall rating showed that those who received a positive overall rating were more likely to enroll with the professor as compared to those who received a negative overall rating. Those who received a positive overall rating correctly identified more positive comments (M = 1.99, SE= 1.34), t(162) = 2.20, p= .029. Although participants identified more positive comments for both conditions, those exposed to the negative overall rating identified more negative comments, (M= 1.16, SE= 1.53), t(162) = -2.042, p= .043. Higher education institutions should be concerned with the potential influence of these online reviews. Many students use online reviews of professors as a basis for their future decisions. By extension, these bias decisions can impact how students engage with their professors and coursework. Future research should examine confirmation bias and student expectations of professors to mitigate negative learning outcomes.

Jessica Vinegar, Health Science
Perceived Competency in Male Dominated Jobs among Gender Nonconforming Women vs Gender Conforming Women
Faculty Mentor: Archana Sharma, Health Science

Purpose: This student conducted study used a quasi-experimental design to explore the perceptions toward gender nonconforming women in male-dominated workplaces based on Lorber's (1994) theoretical framework of the Social Construction of Gender. Previous literature has addressed the struggles/rejection of women in male dominated jobs, but a gap exists on the intersection of women's gender expression and perceived competency in male dominated jobs. The study sought to answer whether a gender nonconforming (GNC) woman would be perceived as more competent to a gender conforming (GC) woman for a job dominated by males. Methods: A convenience sample of N=53 (Female: 70%, Male: 26%, Transgender Male: 4%), were given an online survey. Participants received a picture with a GNC woman or a GC woman and were presented with a list of traditionally female and male dominated jobs. They were asked to rate how competent they believed the woman in the picture would be at doing each job. Results: Of those who received the GNC picture, 72.23% rated the GNC woman "Extremely Capable" of being CEO of a large company. In comparison, 50% who received the picture of the GC woman, rated her as being "Extremely Capable" of being CEO of a large company. Furthermore, 33.33% of respondents rated the GNC woman as "Extremely Capable" of being an IT Director and none of the respondents who received the picture of the GC woman rated her "Extremely Capable". Conclusion: The data supported the hypothesis that respondents were more likely to rate the GNC woman as more capable of doing the male dominated jobs. Implications for future research should explore the perception of potential employers regarding competency of GNC/GC women of color, and other possible biased hiring practices.

Jenna Knight, Psychology
Performance Validity Testing in Undergraduates
Faculty Mentor: Tara Victor, Psychology

Neuropsychological assessment involves the use of standardized, psychometrically sound tests and measures to characterize neurocognitive functioning (Bognar & Vargo, 2017). Performance validity tests (PVTs) are included in neuropsychological evaluations to ensure accurate interpretation of test results since there are sometimes external incentives or subject-specific conditions that can impact motivation to perform one's best (DeRight & Jorgensen, 2014). Research studies in neuropsychology have often relied on the use of undergraduate samples participating for class participation; however, there is evidence to suggest that these subjects are not always

performing to the best of their abilities (e.g., An et.al., 2012), impacting the extent to which accurate conclusions can be drawn from such research. The purpose of this study was to cross validate previous research on the issue of performance validity in undergraduates. It was predicted that a significant number of undergraduates would fail PVTs, confirming the importance of including PVTs in any research conducted with this population. The data collected consisted of 188 psychologically and neurologically healthy undergraduate participants between the ages of 18 to 38 (M=19.89, SD= 2.5). Mean number of years of education was 12.7 (SD=1.7 years) and mean WTAR estimated IQ was 97.3 (SD=8.4). The battery of tests included both freestanding and embedded PVTs. While failure of one PVT in the normal population is fairly common, failure of two or more is not (Boone, 2007; Victor et. al., 2009). Analysis of the data revealed that 25 of the 188 participants (13%) were found to fail two or more PVTs. Sixty percent of the sample spoke English as a second language; when these individuals were taken out of the sample, the number of participants failing two or more PVTs dropped to 8%. Results are discussed in light of existing research as well as the implications and directions for further research.

Christian Harms, Ray Jaquez, Psychology
Building Resilience to Failure: The Design Your Life Approach to Vocational Development
Faculty Mentor: Heather Butler, Psychology

A growing disparity between college graduates and those who are prepared to enter the modern workplace has drawn significant attention from lawmakers. Identifying a disconnect between modern values of workplace readiness and traditional college curriculum, Bill Burnett and Dave Evans develop Design Your Life (DYL) as an innovative way to help students transition from undergraduate studies at Stanford University into their first career. The present study assesses an adaptation of this course targeting the needs of underrepresented students at a large, public, four-year university in southern California. Specifically, its aim is to expose dysfunctional beliefs that influence career decisions and how students choose to prepare for their careers. This 16-week class utilizes a variety of interventions to address, and ultimately reframe dysfunctional beliefs as a metacognitive strategy towards change. The data (n = 299) consists of an assessment administered at the beginning and end of 3 different semesters (spring 2017, fall 2017 spring 2018). The control group was comprised of students from the same university with similar educational levels. Results demonstrated statistically significant growth in career-related confidence, insight, identity, certainty, self-efficacy, and resilience among students who completed the course. Notably, students experienced a significant reduction in career-related dysfunctional beliefs and anxiety. When asked questions regarding self-perceived limitations, students were far less likely to feel constricted by their past and more empowered to pursue their dreams. Overall, they felt significantly more ownership over their future goals and ability to overcome setbacks. Thus, findings suggest that DYL provides useful tools for supporting diverse college students' professional and personal development so that they are prepared for modern workplace challenges. This study supports the conclusion that DYL is a generalizable approach for improving vocational learning.

Biological and Agricultural Sciences — LSU 324-325
Evening Session: 6:00 – 9:00 p.m.

Mariah Rojas, Biology
Characterizing the Role of Nucleoside Metabolism in E. coli Survival in Long-term Stationary Phase
Faculty Mentor: Karin Kram, Biology

In dynamic environments, Escherichia coli can survive for several years in culture without the addition of any nutrients. After long periods of incubation, beneficial mutations that allow the cells to survive into Long-Term Stationary Phase (LTSP) are selected for in the population. We identified a gene, cytR, which frequently encoded beneficial point mutations after long-term growth. CytR regulates the ability of the cell to use nucleosides as a carbon source by acting as a negative regulator of the deoD operon. We hypothesized that the mutations might decrease or eliminate function of CytR, allowing cells to use nucleosides as a carbon source sooner or more efficiently than wild-type cells. We demonstrated that a null strain phenocopies strains with the point mutation, because it can out-compete a wild-type strain in long-term culture. We then asked if the addition of cytidine, an inhibitor of CytR, to competitions would abrogate the effect, because CytR would be inactive in wild-type cells as well as the cytR null strain. Surprisingly, the addition of cytidine was toxic to both wild-type and cytR null strains. cytR null strains recovered in the presence of cytidine, while wild-type cells did not. In order to determine other phenotypic differences between the wild-type, cytR null, and new aged cytR null strains, we incubated them in minimal media with different nucleosides as the only carbon source. We observed that wild-type strains are not able to use this source as quickly as cytR null strains or aged cytR null strains. We have also performed whole-genome re-sequencing of the cytR null strains that recovered in the presence of cytidine, and are currently analyzing those data to identify possible mutations that allow these cells to survive. By analyzing data from these experiments, we will be closer to understanding the role that nutrient sources play in adaptation.

Lizett Gonzalez Carreron, Biology
The Characterization of the SspA Regulon in Escherichia coli in the Long-term Stationary Phase
Faculty Mentor: Karin Kram, Biology

In Long-Term Stationary Phase (LTSP) of the Escherichia colilife cycle, cells experience tremendous amounts of stress caused by low nutrient availability, high levels of waste by-products, and a high-pH environment. Advantageous mutations can appear in cells, which are then selected for because the cells are able to survive these conditions. One gene frequently mutated in long-term cultures is the sspAgene. Stringent Starvation Protein A (encoded by sspA), is expressed in order to help cells adapt to stressful environments by affecting expression of other stress-response genes. We have begun to characterize the SspA regulon, and how that regulon is affected by adaptive mutations in sspA. We used quantitative Polymerase Chain Reaction (qPCR) to monitor three genes previously reported to be regulated by SspA in two genetic backgrounds: wild-type (no mutation) and point mutant (containing a single nucleotide mutation originally identified as advantageous in LTSP). We monitored sspAexpression along with the expression of cynX(cyanate transporter), hdeA(resistance to low pH) andfliC(flagellin, the major structural component of flagella), each potentially regulated by SspA. Comparing the point strain to the wild type strain, hdeAand fliCgenes are upregulated in the point mutant strain, whereas cynXis downregulated in the point mutant strain. We also designed primers for qPCR analysis based on RNA-seq data which compared the wild-type and point mutant strain during 4 (log phase), 8 (late-log phase), and 24 (stationary phase) hours of growth, which identified potential novel targets of SspA. In both wild-type and point mutant cells there was less expression of gadC (antiporter), puuR(transcriptional repressor),yqiH(phosphate acyltransferase), mtr(tryptophan importer),and ariR (regulator for acid resistance) genes at 4 hours compared to 8 hours. FortdcA (transcriptional activator), point mutant cells also had less expression at 4 hours, but in wild-type cells, there was more expression at 4 hours than 8 hours. In both Wild type and point mutant cells, puuR, yqiH, ariRhas more expression at 8 hours compared to 24 hours. In contrast, both wild type and point mutant cells, tdcAand mtrhas less expression at 8 hours compared to 24. hours. While, gadCwild type cells had less expression at 8 hours and the point mutant cells had more expression at 24 hours. Each of these genes, along with additional targets, will be monitored throughout growth into LTSP in order to further investigate the influence of SspA in the bacterial life cycle and adaptation to long-term cultures. Characterizing the role of SspA, along with the genes it regulates, during LTSP will lead to an understanding of how mutations influence adaptation to changing environments.

John Coulston, Biochemistry

Investigating the Zebrafish Gut Microbiome Dynamics at Different Developmental Stages

Faculty Mentor: Fang Wang, Biology

Microbiome studies are becoming increasingly popular due to the recent realization of how much our health depends on our own microbiome. Imbalances in one's microbiome have been connected to multiple conditions such as obesity and diabetes. However, host-microbiome interactions have not been well understood. Since zebrafish live for about three years in a controlled laboratory environment, we can easily study their microbiome over the course of their entire life, and record any deviations in their microbiome distribution. In addition, numerous genetic, molecular, and cellular tools are readily available in zebrafish, enabling us to conduct functional analyses and manipulation. We have collected zebrafish stool from 4 month old mixed sex wildtype zebrafish, 13 month old male wildtype zebrafish, and 13 month old female wildtype zebrafish; isolated their gut microbial DNA; amplified the 16sRNA V4 region of the microbial genome using PCR. This DNA is highly conserved among microorganisms, allowing for classification. The DNA was then sequenced by Illumina MiSeq (a Next-Generation Sequencer). The sequences were then analyzed using software USEARCH. While the male and female zebrafish microbiomes were very similar, the four month old zebrafish contained a noticeably different distribution of its microbiome than the older zebrafish. In the future I plan to investigate the gut microbiome at more ages, as well as investigate the zebrafish skin microbiome. 2018 Summer Norris Grant"

Lenny Jones, Biology

The Effects of Temperature on the Metabolic Rate of Aurelia aurita

Faculty Mentor: John Thomlinson, Biology

Moon Jellies are a widely distributed cnidarian that can live in a variety of climates and their population abundance and distribution is known to be affected by human induced issues like climate change and eutrophication. The purpose of this study was to investigate the effects of temperature on the metabolic rate of Moon Jellies. It was hypothesized that the metabolic rate will be greater at higher temperatures than at the control (14 degrees Celsius). To test the hypothesis, lab cultivated moon jellies (Aurelia aurita) were subjected to different temperatures over a 7 hour period and their oxygen consumption was monitored in a sealed container with a dissolved oxygen meter. The metabolic rate was calculated to determine potential effects of climate change. Data suggest the metabolic rate of moon jellies at warmer temperatures (23 degrees Celsius) is similar to those in the control group (14 degrees Celsius). Experiments of intermediate temperatures (18 and 20 degrees Celsius) will confirm or deny the similar trends seen between the warm and control groups. If there are no significant differences of metabolic demands between these ranges(14 to 23 degrees Celsius), there still might be some adverse effects to how moon jellies allocate energy to other biological processes (such as growth and development). This study could help make predictions to how climate will effect the future populations of Aurelia aurita.

Autumn Henderson, Biology

Higher Expression of Motility Related Genes in Evolved Escherichia coli

Faculty Mentor: Karin Kram, Biology

Understanding how Escherichia coli adapts to its environment helps to understand basic mechanisms of evolution, and may help develop more targeted treatments for infections. Incubating E. coli for long periods of time – days, weeks, even years without the addition of nutrients – allows cells to acquire mutations that are selected for in this stressful environment, ultimately leading to evolved populations that are better adapted to these conditions. What we do not know is exactly which genes or processes have changed in these adapted populations or what role these genes and processes play in the adaptation. We seek to identify genetic changes by determining differences in gene expression between unaged cells and cells aged for 10 days. The unaged and aged E. coli cells were each grown for four hours in LB broth, when growth rate is highest during the life cycle. Gene expression levels of the cells were then measured using RNA-sequencing. The RNA-seq data showed higher expression of genes related to motility (chemotaxis, flagellar, and motility protein genes) in aged cells. We hypothesized that the aged cells would be more motile and/or more chemotactic than the unaged cells. In order to assess whether aged cells are more motile than unaged cells we used motility assays to clearly visualize the movement differences between the unaged cells and aged cells. We found that aged cells were in fact more motile than unaged cells, supporting our hypothesis and confirming that gene expression data translated to an observable phenotype. We are currently performing chemotaxis assays to observe chemotactic sensing differences, and we predict we will see an increase

in these behaviors in aged cells. In order to assess motility changes throughout the 10-day incubation period, we have identified target genes whose expression we can measure with qRT-PCR, and confirmed that these measurements match the RNA-seq data. Further, we are currently analyzing whole genome re-sequencing data in order to identify mutations that lead to the phenotypic changes seen here. Lastly, we are in the process of determining if motility plays a role in survival by competing non-motile strains with wild-type strains in long-term cultures. These data together will provide an overall picture of the role of motility in survival and adaptation.

George Lopez, Biology
Developing a Stem Cell Therapy for Mucopolysaccharidosis type IIIB using CRISPR/Cas-9 Technology
Faculty Mentor: Michelina Iacovino, LA BioMed

This study focuses on developing a stem cell gene therapy (SCGT) for Mucopolysaccharidosis Type 3B (MPS 3B), that specifically targets cross-correction of the CNS. MPS 3B is an autosomal recessive lysosomal storage disorder caused by the deficiency of α-N-acetylglucosaminidase (NAGLU) and results in an accumulation of heparan sulfate. Our envisioned therapy consists of harvesting fibroblast from a patient, reprograming the cells into induced pluripotent stem cells (iPSCs), correcting them using CRISPR Cas-9 technology and differentiating them into neuronal stem cells (NSCs) to be transplanted back into the patient. A similar approach was previously tested in iPSC derived from Naglu -/-mice using a viral vector for genetic modification (Clarke et. al 2018). However, we want to achieve gene correction without the toxicity associated with viral vectors, thus we designed gRNAs to be used in combination with Cas-9 to develop a CRISPR Cas-9 system to insert a functional copy of the human NAGLU gene downstream of the endogenous promotor. Upon selection of successful genetic modification, we showed that a functional copy of NAGLU was correctly inserted into the first exon of Naglu resulting in gene correction and rescue of enzymatic activity. Previous data showed that greater NAGLU secretion and cross correction is achieved with protein upregulation, hence we also targeted the same locus with a strong exogenous promoter followed by NAGLU. Our results show that NAGLU enzymatic activity is increased in cells with the strong promoter compared to cells that rely on the endogenous Naglu promotor in secretion experiments. In addition, previous data showed that recombinant NGALU fused with the IGF-II peptide tag increased cross-correction of neighboring cells, hence we also added the IGF-II tag to the human NAGLU gene. Lastly, we have converted MPS IIIB patient fibroblasts into iPSCs and are currently working on gene correction using CRISPR Cas9.

Sydney Martinez, Diana Tafoya, Biology
Floral Visitors of Non-native Milkweed Species within an Urban Environment
Faculty Mentor: Kathryn Theiss, Biology

Urban gardens often present multipurpose opportunities for communities to enjoy. Gardens increase the local biodiversity within urban environments by attracting wildlife. Gardens can be used by the community for personal use (i.e. growing food, clean air filter, recreational activities) and provide niches and resources for various wildlife groups. Urban gardens often have complex community dynamics involving interactions between different species and often include a variety of both native and non-native plant species. This research aims to understand the role non-native plant species play within an urban setting. We focused on a non-native milkweed species, Asclepias curassavica, since milkweeds are often planted to increase the populations of monarch butterflies. Many different insects visit milkweed species, but there have been no studies done on A. curassavica within California, so it is unclear how this species is affecting local insects. We chose to focus our floral visitor observations on this species in an urban garden habitat from September to December, 2018. We recorded the interactions various insects had with the plant such as visit duration, and the number of flowers visited by each insect. The majority of visitations observed were of the common honey bee, Apis mellifera, which is another non-native species. The second most common species, though much less frequent, was the monarch butterfly. We are continuing our observations throughout the year to get a full picture of the diversity of floral visitors. We plan to compare our data to observations on floral visitors to the native milkweeds to better understand the role of this non-native species in the urban environment.

Daileen Cortez, Biology

The Effect of Cultured Autologous Oral Mucosal Epithelial Cell Sheet (CAOMECS) Graft on Corneas with Experimental Limbal Stem Cell Deficiency and Neovascularization
Faculty Mentor: Fawzia Bardag-Gorce, LA BioMed

Limbal stem cell deficiency (LSCD) is an ocular condition which affects millions of patients worldwide, compromising vision and contributing to corneal vascularization. The human cornea, which is renewed by limbal stem cells (LSCs), plays a vital role in the permanence of transparency for the maintenance of healthy vision. LSCD is a pathology with a multifactorial etiology in which stem cell deficiency results in the cornea partially or entirely losing its regenerative ability. Symptoms of LSCD are characterized by corneal epithelium defect, conjunctivalization and neovascularization (NV). We have previously established that CAOMECS (cultured oral mucosal epithelial cell sheet) was engineered to reconstruct the ocular surface of rabbit models with LSCD. CAOMECS significantly decreased NV. However, the mechanistic pathways of CAOMECS in reducing LSCD-induced neovascularization are poorly understood. In this study, we hypothesized that CAOMECS grafting decreases activity of HIF-1a (hypoxia inducible factor-1alpha) which then decreases VEGF (vascular endothelial growth factor) expression. Rabbits underwent surgical limbectomy to induce LSCD, as observed in affected patients. CAOMECS was then grafted onto corneas and VEGF expression was analyzed in LSCD-diseased and CAOMECS-grafted rabbits. Oral mucosal epithelial cells were cultured and treated with proteasome inhibitor to analyze VEGF levels. VEGF expression was increased in diseased corneas with LSCD. VEGF expression was significantly decreased in CAOMECS grafted corneas. CAOMECS grafting reduced corneal vascularization in LSCD-induced rabbits. Our findings provide an explanation in which CAOMECS seeded corneal epithelium containing a functional proteasome, preventing HIF-1alpha signaling and reducing VEGF expression in the cornea.

Raul Gutierrez, Biology

Protein Tagging Applications for Non-Biodegradable Material
Faculty Mentor: Sonal Singhal, Biology

As the world's human population has grown exponentially so has the amount of waste, including non-biodegradable material. While most animals have died attempting to consume plastics, certain insects have excelled in safely digesting plastic products. Tenebrio molitor, or mealworms, are the larvae form of Darkling beetles that have been observed safely digesting Styrofoam. This is due to the production of an enzyme from microorganisms in the mealworm's gut that allow it to degrade plastic products like Styrofoam. By isolating the genes responsible for the production of proteins with the ability to degrade plastics, recombinant DNA technology can be used to introduce those genes into bacteria that will assimilate the genes and express the protein. Bacterial transformation theory is dependent on the ability of a bacterium to express the genes being inserted into its cell. Several bacteria can obtain new genes by taking up extranuclear DNA, including introduced plasmids by a process known as transformation. Bacteria are motivated to integrate free floating genes/ plasmids into their cell as a means for survival. For example, the ability to integrate a gene responsible for antibiotic resistance ensures the survival of continuing generations. The extraction of the genes from these microorganisms that degrade plastic can be assimilated into bacteria, cultured into mass quantities and the protein can be isolated from the bacteria to be measured quantitatively. The purpose of this research is to measure the amount of plastic that can be degraded by the enzyme and its possible applications in reducing non-biodegradable materials.

Computer Science I — Ballroom C
Evening Session: 6:00 – 9:20 p.m.

Jeremy Smith, Computer Science
Website Design through the Decades
Faculty Mentor: Mohsen Beheshti, Computer Science

Today, we are constantly visiting complicated websites, with animation, fancy typography, and bright colors. Designing websites, however, is a recent occupation. The world's first website only appeared on August 6, 1991 when Tim Berners Lee, a British scientist, developed the first web browser, which he called the World Wide Web. The first website was about the World Wide Web. This website was very basic: it only contained plain text and links, underlined in blue, that connected the user to other documents. Over the years, website design has become much more complex. Frames, tables, buttons and images have been added to websites. Besides summarizing the development of website design, I will also create an interactive website which will have quizzes about my three favorite TV shows. This website will have the features of a good website in 2018. It will also have at least one feature of what is expected to be necessary for good website design in 2019.

Vincent Tran, Computer Science
Protecting the Unmanned Aerial Vehicle from Cyberattacks
Faculty Mentor: Ajay Katangur, Computer Science

The increased use in drone technology has made them a popular option for companies to use when preforming certain tasks. Due to this increase in popularity, security analysis has become crucial. In this paper, attacks preformed and observations associated with security vulnerabilities in the AR parrot 2.0, 3DR Solo, and the DJI Phantom 4 Pro drones are presented. The current auto-pilot systems and security protocols are examined for vulnerabilities and cyberattacks that are common in network systems. Currently the AR parrot 2.0 drone communicates through an open Wi-Fi connection making it vulnerable to multiple forms of attacks. The 3DR Solo works through a password protected Wi-Fi signal, however, it is possible to obtain such password with the use of specific tools discussed later in the paper. This poses a potential threat to the system leaving it open to intrusion. Although the DJI has improved security compared to previous models, GPS spoofing still remains a viable form of attack making it a possible vulnerability in the system. Other forms of attacks are also explored to see if there is more beyond tampering with the network communications of the drones that might pose a threat to the system

Lei Cao, Amirhossein Rouhanipoor, Rong Yang, Yu-Ning Yu, Computer Science
The Feasibility Verification Algorithm of Applying Minimal Cost Flow Problem Solver to Directed Sensor Network's Data Redistribution Problem
Faculty Mentor: Bin Tang, Computer Science

Sensor Networks have always faced with data offloading issue. Some sensor nodes generate more data than others, and more data would be generated than their own storage space can take. We call these nodes the Data Generators (DG). The DGs can offload their surplus data on to those sensor nodes with remaining space. We call those nodes the Storage Nodes (SN). Based on Tang et al.'s paper — Energy-Efficient Data Redistribution in Sensor Networks, in which, they used Minimal Cost Flow Problem Solver to redistribute the surplus data within a sensor network with certain assumptions such as the sensor networks are undirected graph, all SNs' capacity are the same, the numbers of all DGs' data items are all the same, and transmission range are the same. We are proposing a scenario where sensor nodes' transmission ranges are different for the nodes, i.e, sensor networks are directed graphs. We first write an emulator to emulate such a directed sensor network and then design an algorithm that will check whether such a sensor network, be it a one-component or multi-component graph, can be solved by a Minimal Cost Flow Problem Solver. We further on comparing the performance between greedy solutions (Depth-first-search and Breadth-first-search) and the Minimal Cost Flow solution.

Nishita Parmar, Computer Science
Profit-based File Replication in Data Intensive Cloud Data Centers
Faculty Mentor: Bin Tang, Computer Science

Profit based File Replication in data intensive cloud data centers
File replication which brings data files closer to the computing virtual machines. The goal is to minimize the total energy consumption of data file access inside data center. Also efficiently locate and access the data for the VMs becomes very important in data centers to reduce energy consumption."

Sagar Sukhadev Chavan, Computer Science
Overview of Speech Recognition Services from Various Cloud Service Providers
Faculty Mentor: Bhrigu Celly, Computer Science

Speech recognition has long history. It is fascinating that machine can understand us. Over the years speech recognition has made remarkable progress. Personal assistance like Apple's Siri, Amazon's Alexa, Microsoft's Cortana respond with accurate answers in a natural sounding human like voice to variety of questions. Because of this smart device like Amazon Echo and Google home has gained lot of popularity now a day. These devices let you speak wishes to it and see them fulfilled. For example, you can turn off the light or play music just by taking to these smart devices.

The statement that I read on internet "By 2020, 50% of all searches will be carried out via voice." caught my eye." Even Ng made another prediction, via Twitter this time, in December 2016 which gives us a clue as to his thinking in this regard. He wrote, "As speech-recognition accuracy goes from 95% to 99%, we'll go from barely using it to using all the time!

The speech recognition is a challenging task and if you are looking to make your application smart with speech recognition you better use existing speech recognition services from different cloud services rather than creating custom speech recognition system.

Most popular cloud provider are AWS, Google and Azure so I will be discussing the speech recognition services offered by these providers."

Nishita Parmar, Computer Science
Tableau Integration with CloudWatch and Kinesis. What Kind of Visualization Can Be Put on CloudWatch
Faculty Metor: Bhrigu Celly, Computer Science

Tableau Integration with CloudWatch and Kinesis. What kind of visualization can be put on CloudWatch

Milind Parikh, Computer Science
Collaborating the Power of Tableau and Python into One
Faculty Mentor: Bhrigu Celly, Computer Science

TabPy is a framework that allows Tableau to remotely execute Python code. It has two components: 1) A server process built on Tornado, which allows for the remote execution of Python code through a set of REST APIs. Code can either be immediately executed or persisted in the server process and exposed as a REST endpoint, to be called later. 2) A client library that enables the deployment of such endpoints, based on Python functions. Tableau can connect to the TabPy server to execute Python code on the fly and display results in Tableau visualizations. Users can control data and parameters being sent to TabPy by interacting with their Tableau worksheets, dashboard or stories.

Harmanjeet Brar, Computer Science
Object Localization
Faculty Metor: Bhrigu Celly, Computer Science

Estimation of the object in an image as well as its boundaries is object localization. Subtle is the major difference between object detection and object localization . In object localization it tries to identify the object, it uses a bounding box to do so.This is known as classification of the localized objects, further it detects and classifies multiple objects in the image.

Same convolution network as that for image classification is used for object localization. It is also known as landmark detection. We want to localize the objects in the image then we change the neural network to have a few more output units that contain a bounding box. Hence sliding window detection is convoluted computationally to identify the image and hence it is needed.The COCO dataset is used and yoloV2 weights are used.The dataset that we have used is the COCO dataset. However other alternative Open Datasets for Deep Learning that can be used for object detection are: Ssd_mobilenet, ImageNet, MNIST, RCNN_Inception_resnet.

Localization basically focus in locating the most visible object in an image while object detection focus in searching out all the objects and their boundaries. AlexNet is first neural net used to perform object localization or detection. If the boundary regressor is ignored, it is typical image classification architecture. Overfeat trains Firstly the image classifier is trained by Overfeat. Then 7the feature layers will be fixed and hence train boundary regressor.

Localization Algorithm:

i) Pass the image through VGGNET-16 to obtain the classification.
ii) After passing the image , Identify the kmax most important neurons via DAM heuristic.
iii) Use "Guided Backpropagation" to map the neuron back into the image.
iv) Scoring the each region corresponding to individual neurons by passing the regions into the CNN
v) Taking the union of mapped regions corresponding to k highest scoring neurons, smoothing the image using classic image processing techniques, and find a bounding box that encompasses the union

The Fast RCNN method receive the region proposals from Selective search (some external system). Then proposals is delivered to a layer (Roi Pooling) that can resize all regions with the data to a fixed size. This step is necessary because the fully connected layer expects that all vectors have same size
Proposals example, boxes=[r, x1, y1, x2, y2]
Still rely on external system to give the region proposals (Selective Search).

The major problem with RCNN is that it is too slow. Step to train the RCNN are:

i) Firstly take the pre-trained Alexnet.
ii) Again train the fully connected layer with the objects required to be detected plus "no object" class.
iii) Collect all the proposals (=~2000p/image) and then resize them to match CNN input, save to disk.
iv) Train SVM to differentiate between object and background (1 binary SVM for each class)
v) BB regression : Train the linear regression classifier that can output some correction factor.
YOLO (commonly used) is a fast, accurate object detector, making it ideal for computer vision applications. Connecting YOLO to the webcam and verifying will maintain the quick real-time performance to grab pictures from the camera and will display detection's.
The ensuring system is interactive and interested. While YOLO processes images separately once hooked up to the webcam , it functions sort of tracking system, detecting objects as they move around and change in appearance.

YOLO running on sample design and natural figures from the net. It is most accurate although it think one person is an airplane
Limitation of YOLO:

Since YOLO model predict the bounded box from data, hence it face some problem to clarify the objects in new configurations. It uses coarse attributes to predicting bounded area since the architecture contains the multiple downsampling layer to the input image.

So when we train in the loss function that can detect performance, the loss function should treat the same errors in large bounded box as well as small bounded box. The incorrect localizations are the main source of error.

Anchors specialization

B bound box regressions are detected by Yolo V1 and V2. At every positive position the training is possible for one of B regressor, the one closer to the truth box that can detect the box. Therefore reinforcement and specialization are feasible.

However in Yolo V2, specialization can be assisted with anchors like in Faster-RCNN. The predefined anchors can be chosen as the representative as possible of the ground truth boxes

Multi-scale training

This training contains augmentation of datasets for objects to be at different scales. Neural network depicts pixels,then resize the pictures in multiple sizes that can enable to imitate objects of multiple scales.

But some implementation of neural network resize all pictures to a given size, for example 786 x 786 , as first layer in the neural network.

First of all , the automatic resizing step cancels the multi-scale training in the dataset.

Secondly, in this case there can be a problem regarding ratio as the network can only learn to deal with images which are square. Either part of the input the ratio is not protected or an cropped image, which is minimum in both cases.

The best solution to tackle with multiple size image is by not disturbing the convolution as convolution with itself add more cells with the width and height dimensions that can deal with different ratios and sizes pictures.But one thing we should keep in mind that neural network only work with pixels,that means that each grid output value is the pixel function inside the receptive fields means resolution of object function, not the function of width/height of image

Global image impact the no. of cell contained in grid vertically and horizontally.Each stack of max-pooling layers composing the net uses the pixel patch in receptive field to computer the pridictions and ignore the total no. of cells and image width/height
To allow the multi-scale training, anchors sizes can never be relative to the image height,as objective of multi-scale training is to modify the ratio between the input dimensions and anchor sizes.
Allotment of sizes with the respect to size of grid is accomplished in Yolo implementations by (the network stride, ie 32 pixels)

Application of Object Localization:

i) Recognition and Localization of food used in Cooking Videos:Addressing in making of cooking narratives by first predicting and then locating ingredients and instruments, and also by recognizing actions involving the transformations of ingredients like dicing tomatoes, and implement the conversion to segment in video stream to visual events.
ii) Object Localization for Determining Customer's Behavior:Analyzing the methods of movement and behaviours of shoppers in the area of store and have greatest automation possible with more accurate process of quality

Recent developments in object classification
Before using deep convents
        Selective research detection pipeline.
        EdgeBoxes

Using deep convents
        R-CNN: Region proposals + CNN features

Fast R-CNN

Faster R-CNN

Next trends

New datasets: MSCOCO

Fully Convolutional detection networks

Networks with context

Changes in past year:

In past years , many platforms have started using the AI platforms, some recent developments are software system developed by Facebook, Detectron. AI implements a variant of R-CNN, Masked R-CNN. In the past, machine learning models were used to assist brands and retailers to check which brands appear on product packages,help the companies in making in decisions about how to organize their store shelves. The resulting system is interactive and engaging. On webcam connection YOLO processes images separately and behaves as tracking system, detecting objects as they move around and change in appearance

Construction of model is straightforward and can be trained directly on full images. Unlike classifier-based approaches, there is a loss function corresponding to detection performance on which YOLO is trained and the entire model is trained jointly.

The literature has fastest general-purpose object detector i.e. Fast YOLO. It pushes the state-of-the-art in real-time object detection , and generalizes well to new domains therefore making it ideal for applications dependent on fast, robust object detection.

Venkata Krishna Jonnalagadda, Computer Science

Sparse, Stacked and Variational Autoencoder

*F*aculty Mentor: Bhrigu Celly, Computer Science

An Autoencoder is a neural network which is an unsupervised learning algorithm which uses back propagation to generate output value which is almost close to the input value. Let the known now how an autoencoder actually works in detail. It takes input such as image or vector anything with a very high dimensionality and run through the neural network and tries to compress the data into a smaller representation with two principal components. The first one is the encoder which is simply a bunch of layers that are full connected layers or convolutional layers which are going to take the input and compress it to a smaller representation which has less dimensions then the input which is known as bottleneck. Now from this bottleneck it tries to reconstruct the input using full connected layers or convolutional layers.

Jenny Fernandez, Computer Science

IoT Data Pipeline

Faculty Mentor: Bhrigu Celly, Computer Science

IoT Data Pipeline. Basically, a data pipeline is when certain actions are performed to extract data from various sources, to perform some analysis and store it in the same format. So IoT data pipeline helps us to easily collect data if for example, we want to collect temperature data from various sensors. So, using AWS or Google Cloud we can easily set up a data pipeline.

Education — LSU 327
Evening Session: 6:00 – 9:20 p.m.

Candace Teran, Education
Boys Can't Wear Makeup and Girls Aren't Astronauts: Censorship, Libraries, and a Qualitative Analysis of Children's Literature
Faculty Mentor: Edward Curammeng, Education

Against growing demand for classrooms to be more inclusive it is common practice that educators and curriculum developers include multiple narratives. In spite of these changes there is a lack of information and narratives of women and minoritized perspectives. Regarding gender, inclusion efforts have primarily focused on the experiences of white women and excludes women of color, transgender, and gender fluid peoples. Los Angeles Unified School District serves 694,096 students; 50.15 percent are women-identified students and overwhelmingly 89.9 percent of students of color. In an initial keyword search of: queer, lesbian, gay, gender issues, and race, less than 13 percent of the books available for purchase are "approved" LAUSD books. What do such censored limitations of children's literature suggest to young people?

Drawing from an intersectional feminist lens (Combahee River Collective), this action research project analyzed children's literature in an elementary school through interviews, an impressionistic record, surveys, and a critical curricular intervention . The study aims to challenge common and normative misconceptions about issues, jobs, stereotypes, and ideas surrounding gender. Findings reveal literature that is available to the students whether it be in the classroom or the school library does not reflect the movement towards social justice or inclusivity. The literature that is available for school libraries to purchase excludes in depth topics such as: gender issues, gay, lesbian, queer, feminist/ism, gender politics, and ethnicity. This study also found that by second grade students are familiarized and uphold common gender stereotypes, heteronormative ideology, and idealize "whiteness" over people of color. More importantly, this study suggests the necessary need for critical understandings of gender, as young people deserve to learn and read about their nuanced possibilities ahead of them and their futures.

Cynthia Lozano, Education
Examining and Disrupting the U.S. Educational System: Ethnic Studies Curriculum in Elementary Classrooms
Faculty Mentor: Edward Curammeng, Education

This study addresses the lack of culturally relevant curriculum (Ladson-Billings, 1995) in elementary classrooms, with a focus on students of color. Education scholar Gloria Ladson-Billings (2006) challenges prominent discourse surrounding measures disparities within education performance to move from notions of "achievement gaps" to education debts. Such a reframing situates educational debts to consider the structural ways schooling has impacted students of color. One way to address this gap is through Ethnic Studies curriculum. Research has shown Ethnic Studies has a positive impact on the academic and social outcomes for all students. Most studies have focused on the positive impact in high school students, but few studies have focused on the impact of Ethnic Studies in elementary schools. This action research study aims to demonstrate the possibilities and potential of Ethnic Studies curriculum. To consider, In what ways does Ethnic Studies curriculum shape the educational experiences of fifth grade students. Through a critical curriculum analysis, lesson plan, and student focal work, this project offers students the opportunity to explore their cultural identities, learn how to critically analyze historical text, and engage in critical reflection on historical events. Three themes that emerged from the data were intellectual curiosity, sense of self-worth, and expressed emotions. These findings suggest that Ethnic Studies curriculum can encourage dialogue and promote critical consciousness in potential to address the educational debts.

Timothy Chih Shuang Chang, Education

Equity, Access, Sink or Swim? Supporting Students with Diverse Abilities in AP Chemistry

Faculty Mentor: Edward Curammeng, Education

While culturally relevant pedagogy and decolonizing practices have been gaining momentum among critical educators across the curriculum, the College Board Advanced Placement (AP) programs have been largely left out from this movement. Prior to the push for equity and access in AP programs by the College Board, most students participating in AP programs are identified as white with more affluent socioeconomic backgrounds. Upon the recommendation to lower entrance barrier to AP classes, schools across the United States experienced a surge in student participation in AP courses across ethnic and socioeconomic backgrounds. While the program now has higher diversity in student population, the performance and ability levels among students are still largely segregated. The goal of this study is to provide a novel approach to teaching AP Chemistry that will support all students with diverse abilities. Drawing from theories of culturally relevant pedagogy, decolonizing pedagogy, and constructivism, this study will examine the barriers and hurdles that prevents students of color from succeeding in highly technical AP subjects. By incorporating paid proprietary online courses, recorded lecture videos, and free Discord VoIP (Voice over IP) application, this study will attempt to address the barriers by delocalizing, decentralizing, and democratizing AP Chemistry content delivery and learning in an inner city high school in Los Angeles. From the results of the intervention, the study will present possible implications and limitations for other critically conscious AP educators who wish to create a more inclusive and equitable AP classroom that supports all students.

7:00–7:20 p.m. Luis Flores-Valdovinos, Education

CANCELLED

Applying the Scientific Method through Positive and Negative Words
Faculty Mentor: Kathyrn Theiss, Biology

Kaitlin Amorde, Teacher Education

Quizlet as a Tool for Science Vocabulary Education for Students with Learning Disabilities

This study aimed to determine the impact of Quizlet as a study tool for science vocabulary. The participants included five 8th grade students with a special education eligibility of SLD. Participants were taught how to use Quizlet and instructed to study with it for one class period per chapter. Baseline data from past chapter tests was compared to chapter test scores collected during the treatment, and a survey was given to measure attitudes toward Quizlet. The average of all participants' scores increased through treatment. Results suggest that participants who perceived Quizlet as effective and easy to use benefited from studying with Quizlet. Future research should use larger sample sizes and longer treatments to increase possible effect.

Ariana Munoz, Education

Healing, Learning, and Beloved Communities: Applying a Trauma-informed Framework in Elementary Classrooms
Faculty Mentor: Edward Curammeng, Education

Schools are beginning to understand how trauma affects students' socioemotional well-being. Much of the research, however, focuses on better supporting high school students. While trauma informed pedagogy research has increased in the past decade, there is a need to shift to understand this within an elementary school context. Research has shown that "children's capacity to integrate new knowledge and experiences is compromised by their brains' response to traumatic events in the past" (Craig, 2016, p. 26). This study focuses on the elementary context and works to examine the utility of trauma informed pedagogies (McInerney & McClindon, 2014, Duncan-Andrade, 2009) to explore how elementary teachers embed trauma informed practices in their classroom. Through analysis of research, literature, and interviews, this study provides a pedagogical framework that centers healing (Ginwright, 2016) and outlines components elementary teachers can use in their teaching practices. Study participants included three diverse yet interrelated perspectives on trauma informed pedagogy: a third-grade elementary teacher, a high school restorative justice coordinator, and an elementary teaching coach. Findings suggest that self-understanding and self-healing for teachers is critical before implementing trauma informed practices in the classroom and curriculum. Such an intervention suggests self-reflection, self-understanding, self-healing, as well as creating a classroom community with socioemotional learning to focus developing what hooks and King refer to as "beloved communities."

Jodi Aguilar, Liberal Studies

Barrio Maestras - Introducing the Praxis of Queer Educadoras / Content / Theoria in K-5
Escuelas
Faculty Mentor: P. Zitlali Morales (University of Illinois at Chicago)

Abstract purpose of this research is to center the marginalized and often silenced experiences of Lesbian, Gay, Bisexual, Transgender, Queer, Intersex, Asexual, 2 Spirited, Plus Identified students in k-5 education. This extensive literature review examines written works that have been published by scholars who seek to Queer k-5 education by claiming space for and by LGBTQIA2+ students through research. In today's social climate, where various communities of color are under attack, the need for schools to implement queerly responsive pedagogy is necessary for survival(Martino & Cumming-Potvin,2016). This is essential for students' academic growth as well as the way in which their expressive identity is informed. By combining learning theories such as culturally relevant pedagogy (Ladson-Billings,1995) , community cultural wealth (Yosso, 2005) , and queer pedagogy (Britzman, 1995). this provides students the necessary tools to better navigate their true identities, gender expression, and narratives while dually challenging and dismantling generations of heteronormative/heterosexist curriculum and instruction. Additionally, this extensive literature review offers insight to innovative pedagogical approaches to gender and sexuality informing queer visibility in the classroom. Findings describe how educators can be more inclusive of LGBTQIA2+ students and is comprised of five categories: Queer Positionality in Education, Queerly Responsive Health & Wellness Pedagogy, Queer Literatura y Literacy, Queer Pedagogy Amongst Pre- and In-Service Educators, Queerness and Community. Future research ideas are inclusive of the need of trans maestrx/educadorx testimonio collection, case studies on student's thoughts and insights having been immersed in queer pedagogy, as well as indigenous queer pedagogy."

Michelle Holloway, College of Education

Increasing Reading Comprehension to Improve Standardized SBAC Math Scores
Faculty Mentor: Caron Mellblom-Nishioka, Education

Although proficient secondary reading levels are inconsistent in high school students identified with a disability, a proficient or advanced score on standardized math tests is an expected outcome for all students. This study examined a text-to-speech intervention used to improve reading comprehension levels in helping to increase Smarter Balanced Assessment Consortium (SBAC) math test scores. A convenience and purposive sample included 13 eleventh-grade students enrolled in a Mild/Moderate Special Education program. Participants charted the titles and number of articles read and time spent using an online text-to-speech (TTS) program. This pre-experimental design analyzed participants' standardized SBAC math scores pre- and post- TTS. Findings of the study found that SBAC math scores were not affected by the use of TTS. This data will serve as a reference in implementing a TTS program, as an instructional strategy, to improve reading comprehension levels over time, thereby increasing standardized SBAC math scores.

Jannette Alonso, Child Development

Content Analysis of Picture Books: Potential Origin of Cultural Differences in Attention
Faculty Mentor: Megumi Kuwabara, Child Development

The previous studies have shown that there are cultural differences in attention and perception. Individuals from Western societies (e.g., the U.S.) perceive more analytically – attend more to focal objects, independent of the contexts whereas individuals from East Asian societies (e.g., Japan) perceive more holistically – attend relationship between the focal objects and contextual information (e.g., Nisbett & Miyamoto, 2005). These differences have been shown in children as young as three years old (Kuwabara & Smith, 2016). However, there have been very limited studies investigating the origins of these differences – where these differences come from. The purpose of this study is to investigate a possible origin of holistic and analytical perception. One hypothesized origin is cultural differences in the visual environment. For example, a previous study found that the street scenes in the U.S. are less crowded than the street scenes in Japan, which might facilitate different attentional patterns seen in different societies (Miyamoto et al., 2006). This paper investigates one of the visual environments that is common among young children - picture books to see whether there are visual differences in how picture books are structured. Based on past research, I hypothesized that there would be more objects in Japanese picture books than the U.S. picture books. The picture books that are most recommended by librarians for preschoolers in Japan and in the U.S. were selected for this study. I counted the number of objects in each book. I found that Japanese books contained more objects on average per page compared to the U.S. picture books, supporting my hypothesis. This

study contributes to the potential origin of cultural differences in attention.

Paola Lopez Cebreros, Child Development
Student Employment as a High Impact Practice
Faculty Mentor: Maruth Figueroa, Toro Learning and Testing Center

In higher education, high-impact practices have been demonstrated to positively affect student retention and success because they allow students to make the most of their educational experiences. Presently, student employment is not considered a high-impact practice. Through my research, however, I intend to demonstrate that when executed with intentionality, campus employment can very well satisfy the common elements of high-impact practices. Through my experience at the Toro Learning and Testing Center, I feel that I am expanding my educational experiences at the best of my ability due to the work environment the center has established. I propose to use the Toro Learning and Testing Center (TLTC) as my platform to conduct this research. I plan to explore the ways in which the TLTC model aligns with high-impact practices through exploring the experiences of their student employees. I expect to find that the TLTC model allows for experiences that involve high expectations, time and effort investment, substantial interactions with faculty and peers, encounters with diverse individuals, reflection opportunities, and demonstration of competence; each of these constitute the eight key elements of high-impact practices (McClellan, G.S., Creager, K. Savoca, M., 2018). At the completion of my research project, I will use my findings to make recommendations to other campus student employers in an effort to create purposeful job opportunities and educational experiences for our students.

Health, Nutrition, and Clinical Sciences I — LSU 326
Evening Session: 6:00 – 9:00 p.m.

Alexandra McNay, Lizette Manrique, Occupational Therapy
Impact of Adolescent Mental Health in High School Personnel Culture
Faculty Mentor: Terry Peralta-Catipon, Occupational Therapy

According to the The National Alliance on Mental Illness (NAMI), 20 percent of adolescents live with a mental health condition. Further, schools have been identified as a critical access point for mental health services for these adolescents (Cahill & Egan, 2017). Studies show that students are 21 times more likely to reach out to a school-based provider than a professional in the community (Juszczak, Melinkovich, & Kaplan, 2003). Even though the California State Budget Act of 2006 (AB 1802, Chapter 79) require schools to employ psychologists and other education professionals, such as teachers, may be trained to address the mental health needs of students (Weir, 2012), there is a scarcity in literature that could elucidate whether there is a clearly established systematic approach in addressing the issue (Stormont et al, 2011). Using a single case design, this study explored how a particular school, Alliance Collins Family College-Ready High School, addressed their students' mental health needs. Semi-structured interviews were conducted with 7 Alliance Collins school staff, including 4 teachers, 2 in-house substitute teachers, and 1 counselor. School materials, such as fliers or pamphlets, were also collected. In analyzing how the school staff explicitly describe their processes as well as implicitly perceive their strengths and weaknesses, we aimed to define the school's shared understanding and beliefs about adolescent mental health. The study outcomes could exemplify how a deeper understanding of each school's subcultural patterns may be a step towards a potentially more informed and systematic implementation approach to the growing adolescent mental health issue."

Christopher Chuateco, Ricky Chavez, Briana Davidson, Cherlene Chung, Occupational Therapy
Perceptions of Stroke Patients Regarding Game-based Virtual Reality Rehabilitation
Faculty Mentor: Terry Peralta-Catipon, Occupational Therapy

The aim of this qualitative study was to explore the experiences and perceptions of stroke survivors related to their use of game-based virtual reality (GBVR) as a treatment intervention. Studies show that GBVR can be as effective as traditional treatment in increasing functional capacity in stroke rehabilitation (Askin, Tosun, Altar, & Koçyiğit, 2018). Studies further suggest the added benefits of enhanced patient motivation and psychological well-being (Lloréns, Noé, Colomer, & Alcañiz, 2015; Shin, Bog-Park, & Ho-Jang, 2015). Using a multiple case study design, we analyzed the narratives of four stroke survivors who have used GBVR as a rehabilitation treatment intervention. A better understanding of the multi-faceted contexts presented by the four different cases provided insight into the nuances of their use of GBVR that could potentially be crucial elements to optimize its implementation. Focus was placed on specific factors that influenced their lifestyle, its effects on their motivation, changes in functional capacity, and perceived short-term and long-term benefits. Results generated themes that identified potential motivational factors such as compatibility to preferred interests, accessibility of use and instruction, feelings of increased independence, and specific barriers that limit its use. These study outcomes serve the overall purpose of the study, which is to inform rehabilitation professionals, such as occupational therapists, on optimal ways to utilize GBVR to potentially increase compliance and promote long-term use, which could equate to enhanced effectiveness in improving function among post-stroke clients. Since study participants only utilized GBVR within the last three years, future research may focus on tracking long-term use and evaluate its effects, which may include aspects of well-being that literature has alluded to.

Nicole Astorian, Theodora Chan, Vivian Huynh, Occupational Therapy
Exploring the Experiences of Occupational Therapists in Facilitating Animal-assisted Therapy
Faculty Mentor: Terry Peralta-Catipon, Occupational Therapy

This qualitative study explored the utilization of animal assisted therapy (AAT) in occupational therapy (OT) practice. AAT is characterized incorporating animals in interventions by various disciplines (Winkle, Crowe, & Hendrix, 2011). Studies show that AAT is effective in social participation, executive functioning, and emotional regulation (Cipriani, J., Cooper, M., DiGiovanni, N. M., Litchkofski, A., Nichols, A. L., & Ramsey, A., 2013). Because of the various therapeutic benefits of AAT, OT has also adopted this modality (Cipriani et al., 2013). However,

because of the scarcity of literature, including efficacy studies, the extent by which it is used in OT practice and its level of effectiveness is unclear. The purpose of this study was to determine possible deterrents to using AAT as well as barriers to evaluation processes. Using a phenomenological approach, we conducted in-depth interviews with six occupational therapists who have been implementing AAT in their respective practice areas for at least two years. Common among all the participants is the positive perception of how dogs are strong client motivators. Participants perceived facilitating AAT as complex and discouraging due to the high commitment demand, which posed as a barrier. Because there is no training or educational requirements nor is there certification or regulation that may define practitioner responsibilities, AAT lacks the status and credibility afforded to modalities with more standardized procedures and terminologies. Further, participants identified difficulties in conducting efficacy studies due to the subjective nature of how AAT is facilitated, since there are nuances inherent to complex interactions between the animal, client, and therapist. This study may provide OT practitioners an insight on whether this is a viable area to pursue and whether the profession may need to develop better practice standards to guide AAT implementation in OT. Future research may focus on client perspectives, especially on its potential benefits.

Aaron Halva, Teresa Cao, Beverly Dovan, Occupational Therapy
The Effects of Mindfulness on Occupational Engagement: A Narrative Analysis
Faculty Mentor: Heather Kitching, Occupational Therapy

Mindfulness meditation (MM) has been defined as "intentionally attending in an open, caring, and discerning way" (Shapiro, 2009). As chronic diseases continue to be the leading cause of death and disability in the United States (Centers for Disease Control and Prevention, 2018), MM practice emerges as an alluring intervention. Evidence of its ability to redirect habit patterns often associated with managing and preventing chronic diseases is abundant (Khusid & Vythilingam, 2016; Mason et al., 2016; Verplanken & Tangelder, 2011; Warren, Smith, & Ashwell, 2017). However, this qualitative study addresses the lack of research pertaining to MM outside the context of the medical model. By gaining an understanding of the individual perspective, this narrative study illuminates the profound impact MM can have on everyday activities and well-being. Eight participants ages 20 years and older were interviewed regarding their past experiences before mindfulness practice, present experiences with MM, and desires for future application. These interviews were transcribed verbatim, coded, and independently analyzed by the researchers. Triangulation of their results then revealed themes regarding the past (dissatisfaction with the self or one's circumstances, emotional reactivity), present (habit of responding with compassion to self and others, freedom after awareness, resilience through everyday hardships), and future (quality of relationship to the self and others). The results of this study indicate that MM provides the capacity to respond with thoughtfulness rather than impulsivity. This response positively influences well-being by mitigating stress. By attending to the present moment, participants were able to demonstrate resilience in their daily routines. While implementation of mindfulness in practice settings requires advanced instruction, occupational therapists can be trained to synthesize knowledge about purposeful activities, habits, and mindfulness for client-centered interventions. Direction for future research lies in examining how commitment level to various types of mindfulness practice influences wellness and quality of life.

Carina So, Lauren Schlanger, Noelle Sims, Sylvia Wong, Occupational Therapy
The Transitional Impact of Caregiving on Partner Relationship between Caregivers and Loved Ones Living with Parkinson's Disease Therapy
Faculty Mentor: Terry Peralta-Catipon, Occupational Therapy

According to the National Alliance for Caring (2015), about 39.8 million people in the United States have assumed a caregiver role, providing unpaid assistance to family members or friends who have physical, physiological, or developmental needs which has greatly impacted life stress, independence, satisfaction, cognition, and health, among other things (Castellano-Tejedor & Lusilla-Palacios, 2017; Kim, 2017). Caregivers of those living with Parkinson's are part of the many individuals who are affected by their loved one's disease, especially those who are intimate partners. For these partners, there is a shift in roles as the new role of caregiving is introduced into their lives. Therefore, research addressing the impact on these caregivers and their relationship with their loved ones is imperative.

This study used qualitative research methods. Through a multiple case study design, we aimed at gaining a deeper understanding of the experiences of intimate partners caring for their spouses diagnosed with Parkinson's disease. Special focus was placed on the transitional process that occurred before and after the onset of the disease and

how it has affected their relationships. Through narrative analysis, we explored the stories of four females who act as caregivers to their spouses with Parkinson's disease.

Results generated themes related to the challenges and barriers associated with living and caring for an individual with Parkinson's disease, changes to intimacy, and the adaptations and sacrifices from caregiver spouses to support their partners' everyday needs. The outcomes could inform caregiver support programs and disciplines, such as occupational therapy, who work with the Parkinson's patient population. Stemming from the results, much needed support and resources as well as areas that require advocacy efforts will be identified. Suggestion for future research will also be presented, especially on the implications of long-term care needed due to the progressive nature of their partners' disease.

Danielle Ballard, Lindsey Coberly, Isabelle Guevarra, Occupational Therapy *Through the Eyes of the Elderly LGBT Community: A Photovoice Study* Faculty Mentor: Terry Peralta-Catipon, Occupational Therapy

The aging lesbian, gay, bisexual, transgender (LGBT) community has been identified as an underserved population and specifically at-risk for not having access to their needed housing, aging services, and other support resources (Swiatek & Jewell, 2018). An estimated 2.7 million Americans over the age of 65 identify as LGBT and that number is projected to nearly double by 2060 (Fredriksen-Goldsen, Kim, Shiu, Goldsen, & Emlet, 2015). Through the use of a photovoice approach with focus group discussions, this is a participatory action qualitative research study that aimed to explore the experiences of four older adults, three males and one female, living within the nation's first low-income housing complex for LGBT seniors. The participants presented photographs and discussed their experiences related to enablers and barriers for having access to housing and healthcare. Issues related to starting the process for end of life care as well as finding a sense of belonging were themes that also emerged from the study. The overall purpose of this study was to determine whether there are inequalities related to access to housing, healthcare, and other resources for LGBT older adults, as alluded to in literature. If so, we hope to define and describe the contexts by which these injustices occur. In doing so, the study outcomes may inform practitioners, such as occupational therapists, that serve the needs of their population, and increase awareness and social participation needed in supporting advocacy efforts against unfair and discriminatory policies and practices.

Laura Yamaguchi, Nicole Villaescusa, Kendira Villalobos, Occupational Therapy *Exploring Through Case Study: The Occupational Engagement of Transgender Individuals* Faculty Mentor: Heather Kitching, Occupational Therapy

Introduction: Transgender individuals are more likely to encounter barriers to physical and mental health and well-being. Research has revealed that transgender individuals in the U.S. are more likely to experience exclusion and mistreatment in government policies and practices, housing, employment, healthcare practices, education and law enforcement. Furthermore, one third of transgender people in the U.S. were denied or had negative experiences with health care providers and nearly one quarter did not seek out healthcare services due to fear of being mistreated (James et al., 2016). Healthcare institutions' and practitioners' failure to understand transgender populations, their identities, and lived experience creates a fundamental barrier to transgender health equity. Purpose: To collaboratively explore factors that influence occupational engagement in two self-identified transgender individuals living out their true gender identity. Methodology: Two self-identified transgender individuals were separately interviewed using a semi-structured format in a qualitative, multiple case study design. Participants discussed their journey of self-discovery and reflected on factors that influence their engagement in meaningful occupations. Interviews were recorded, transcribed verbatim and analyzed by researchers to uncover themes. A within case analysis and cross case analysis was utilized to understand similarities and differences between the two cases. Discussion of Results: Findings suggest that a greater understanding of the needs of transgender persons require open communication over existing assumptions regarding the binary identity system healthcare has relied upon for decades. Conclusion and Future Directions: This study can inform the existing training requirements for employees in all types of healthcare settings, to expand awareness of difference, and to respectfully include gender identity in all aspects of service provision

Elysia Aguero, Madison Ciulla, Occupational Therapy

Phenomenology of Outdoor Learning: Parent Perspectives of a Preschool Environment

Faculty Mentor: Heather Kitching, Occupational Therapy

Issue: Outdoor play has been associated with beneficial outcomes for children's development and quality of play. Despite the established benefits of outdoor spaces and play within them, there are barriers that prevent children from accessing these benefits. One such barrier are parents, who are in control of the play experiences of young children. While there is literature that details parents perceiving outdoor play as having risks, there is limited information about parents' positive perceptions of outdoor experiences. We sought to better understand the perspectives of parents who provide their children with continuous opportunity for outdoor play. Specifically, we explored parent perceptions surrounding outdoor play-based learning within outdoor learning environments. An outdoor learning environment was defined as an outdoor environment with natural materials in which adult-supervised, child-led learning occurs through play. Purpose: The purpose of this study was to explore the experience of parents who enroll their preschool-aged children in an outdoor learning environment. Methods: A qualitative phenomenological approach was used to explore the phenomenon of outdoor play-based learning through a parent perspective. Semi-structured interviews were conducted with seven participants recruited through convenience and criterion sampling methods. The interviews were transcribed verbatim and data was analyzed to develop code descriptions and identify significant phrases. Meaning was formulated by clustering together the descriptive codes into themes across all participant interviews. The themes were used to describe the meaning and essence of the phenomena. Findings: Themes that emerged included: learning through experience, authentic experiences with nature, and development of skills. Conclusion: The research suggests that parents perceive the phenomena of outdoor learning and their children's experiences with it in a positive light. The research also reveals that parent decision making regarding their children's outdoor play experiences include practical aspects such as cost and proximity of location

Carmen Parker, Occupational Therapy

Black Healthcare

Faculty Mentor: Yanet Suarez, Kinesiology & Recreation

According to the U.S. Census Bureau Income and Poverty in the United States: 2016, Blacks have the lowest household income. Poverty within the black community is not only a detriment to living conditions but their health as well. Even when compared to the poorest white communities, blacks health are much worse. The purpose of this research is to shed light on the health disparities and inequalities within the black community. By definition Health Care is " the maintenance and improvement of physical and mental health, especially through the provision of medical services." Health professionals tend to forget that good health not only should be taken care of within their offices but outside as well. Health within the black community is affected by their environment and social interactions.

Humanities and Letters I — LSU 323
Evening Session: 6:00 – 9:00 pm

Kelsey Reichmann, Communications
Voices of the Past: How Cultural Heritage Communities Use Digital Platforms to Articulate Collective Memory
Faculty Mentor: Brant Burkey, Communications

Society often considers libraries, archives, and historical societies memory institutions because of their ability to shape the way we interpret our cultural heritage. In this way, these institutions have become an authoritative voice in how society learns and remembers our collective history.

However, the changing digital landscape has shifted how these institutions share their information and thus how the public interprets and interacts with it. Increased public participation has also changed whose narrative society is receiving, thus affecting how we remember our cultural heritage.

There is a gap in the media-memory research regarding how and why cultural heritage professionals and the public use these digital platforms and how this will in turn affect how society remembers the past.

Supported by a Faculty RSCA grant, this qualitative study attempts to fill this gap in the literature by conducting in-depth interviews and participant observations with several Southern California cultural heritage communities from the Huntington Library, Museum of Latin American Art, Irvine Art Center, 1888 Center and Los Angeles County Museum of Art. While each has its own distinct focus and mission, in both scope and intent, these heritage institutions all offer digital platforms and initiatives that provide new participatory models of production, distribution, repurposing, and interpretation with their collections.

A thematic analysis of the data collected during the Fall 2018 semester reveals findings that clarify how these institutions use digital platforms and initiatives for collective remembering. The primary contribution of this research is that these cultural heritage institutions through the use of social media, multimodal platforms, and digital initiatives are providing new ways to observe, interpret, and research collective memory.

Italie Torres, History
The Intersectionality of Race in Gender: The Plight of the Mulatto in Revolutionary
Faculty Mentor: Laura Talamante, History

The present text, "The Intersectionality of Race in Gender in Revolutionary Haiti," seeks to answer how the role of Mulattos differed from that of Blacks and Whites, both free and or not. Furthermore, if there were notable differences between the experiences of Mulatto men versus that of women. Through proclamations, reports, census, letters, and novels, the reflection of women's experience in Revolutionary Haiti and forms of their resistance to an oppressive society comes to life.

A high number of free Mulatto women potentially reveals that they did, in fact, have advantages regardless of how awful their plight. I argue that Mulattoes, primarily women, navigated a very thin line of a tragic life and turmoil while having a unique advantage in slave society due to their mixed race. Taking a deeper look at the Mulatto reveals how complicated a role race took in Revolutionary Haiti and that race more than gender allowed for women to gain social mobility but also aided in bringing about a unique dark cloud surrounding the lives of Mulattoes. People of a mixed background were often left out of rhetoric, leaving them to build their own unique situation. Because of their distinct situation between the experience of being solely White or Black, Mulatto women were able to advance themselves through sexual means or otherwise. Race and gender did not stand alone. Because of the "mixing of races," Mulatto women were able to advance themselves through sexual means or otherwise. Mulatto men, however, struggled with identity at times and made their life harder in various ways.

Jaedyn Baker, English

Unchecked Curiosity and "Masculine" Science: Foes of a Domestic Eden in Mary Shelley's Frankenstein (1831)

Faculty Mentor: Debra Best, English

As a piece of speculative science fiction, Mary Shelley's Frankenstein (1831) serves as a gothic exploration into the ethical conflicts presented by human experimentation with the processes of creation and destruction. Victor Frankenstein attempts to harness the creative power of birth, and in embarking on this progenous act, he simultaneously undermines the power of the female and overrides perhaps some of the most primordial laws of biology. Although Shelley herself may not have necessarily been opposed to such scientific experimentation and the progress it promises, her characterization of Victor suggests her perspective on the transgressiveness of certain autonomous acts against nature- particularly when those acts are carried out by idle men who indulge in epistemological excess. Through Victor, Shelley (not unlike her mother in Rights of Woman) warns that exercising freedom of thought and will in the absence of full ethical and intellectual maturation could result in chaos and the eventual collapse of a healthy familial structure. Victor's failure to consider the socio-cultural ramifications of his work echoes the fears and anxieties that existed in the literary and artistic communities regarding the potential dangers of the new scientific worlds of exploration discovered during the Enlightenment period- specifically, the rise of secular humanism and a science informed by materialism. It is both Victor's unmitigated, hubristic exploration of science and his recurring rejection of the obligations that exist in the domestic sphere that results in his tragic fall. Ultimately, Shelley's novel serves to cast doubt on humanity's ability (and moral authority) to control what it subverts and modifies.

Matthias Sieber, Negotiation, Conflict Resolution & Peacebuilding

Who is Responsible for the Peace in Post-2001 Macedonia?

Faculty Mentor: Nancy Erbe, Negotiation, Conflict Resolution & Peacebuilding

With the fall of the USSR and the subsequent split of the Yugoslav Federation in 1991 ethnic wars broke out in the Balkan states. The Former Yugoslav Republic of Macedonia managed to secede non-violently and gained its independence for the first time in about 2300 years. In March of 2001, fighting broke out in FYROM between ethnic Albanian and Macedonian security forces. After three months of failed attempts to solve the conflict, President Trajkovski requested NATO's help in implementing a plan directed at restoring peace and stability in the country.

This research draws from existing literature, analyzing conflicting theories for the reasons of the violent outbreak of the conflict. Furthermore, it particularly tries to evaluate the role of OSCE and the effects of the Ohrid Framework, the NATO operations Essential Harvest and Amber Fox, and ongoing local bottom-up community peacebuilding efforts.

As a soldier for the German army, the author voluntarily served as a peacekeeper in the Task Force Fox in 2001/2002.

Chanel Kidd, Humanities

The Harlem Renaissance: Redefining Black Identity

Faculty Mentor: Kirsten Ellsworth, Art History

From Manet's Olympia to Picasso's Les Demoiselles d' Avignon and more recent Pickaninny drawings of the 1950s, African American people have not been shown in the greatest light. For a long time, African Americans not only were a mystery to Europe and European artists, but they were painted in America as classless, not educated and primitive. The Harlem Renaissance changed the way African Americans were represented in art and produced some phenomenal African American artists. There finally was an opportunity to redefine the black culture. This era also brought on the arts. Musician, Artists and writers migrated to Harlem to make a name themselves because this outlet was not available in the South. This introduced artist like: James Van Der Zee, Jacob Lawrence, Augusta savage, Archibald Motley, Aaron Douglas, Lois Mallou Jones, Romare Bearden, Palmer Hayden, Horace Pippin and Selma Burke only to name a few. Artists who have created what we know now as the Harlem renaissance.

Salvador Aguilar, History

¡Revolución! Magonistas, Mexican Immigrants, and Mexican-Americans in Los Angeles, 1900-1930

Faculty Mentor: Doris Namala, History

The 1900s to the 1930s, the Anglo power structure in Los Angles silenced all groups who challenged their rule. Ricardo Flores Magón, who was the intellectual writer for the Mexican Revolution in the early 20th century, resisted the Mexican dictator Porfirio Diaz and the Anglo rule in Los Angles. As a result, the Anglo power system imprisoned Magonistas, followers of Ricardo Flores Magón, Mexican immigrant workers, and Mexican-Americans during the Mexican Revolution to prevent an uprising in Los Angeles and to maintain close economic ties with Porfirio Diaz. To prove my thesis, I utilized the Archivo Digital de Ricardo Flores Magón. This online archive contains Ricardo Flores Magón's newspapers Regeneración and Revolucion. In the two newspapers, Magón denounced Porfirio Diaz and the Anglo rule in Los Angles. I also utilized the Los Angeles Times Historic. This online archive contains all newspaper published by the Los Angeles Times. The Los Angeles Times during the Mexican Revolution denounced Ricardo Flores Magón and supported the dictatorship of Porfirio Diaz. The last online archive I used as the Strachwitz Frontera Collection which contains music written by Mexican and Mexican-Americas. The songs in the collection demonstrate that ordinary Mexicans and Mexican-Americans supported the Mexican revolution

Thaithao Nguyen, History

The Vietnamese Women of Little Saigon

Faculty Mentor: Judy Wu, Asian American Studies, University of California, Irvine

The Little Saigon community that remains today is rooted in world history, as the first wave of refugees to arrive were those who had just escaped Viet Nam in the days immediately following the fall of Saigon to the Vietnamese Communist in late April 1975. In the literature, the economic rise and fall of the Little Saigon community in Westminster, information specific to Vietnamese migrant women is scant. In fact, formal acknowledgement of their impact throughout 1975 to 1990 is virtually nonexistent compared to the achievements of prominent Vietnamese immigrant men that are recounted in city newspapers, websites, and archives. My research seeks to shed light on the contributions of Vietnamese women to the community of Little Saigon, thereby securing their rightful historic place in this important ethnic enclave and their contributions illuminating the Vietnamese diaspora. Vietnamese women, depending on their time of migration, experienced and reacted differently to war and resettlement. For the initial refugees, privilege and prior capital strengthened their positions as elite women and allowed them access to a wider breadth of resources. For later waves of refugee women, work and family intermingled as a means of survival, creating new economic and familial strategies as a byproduct of resettlement. My research aims to understand the roles of Vietnamese women in the development and sustainment of the Little Saigon community and includes the following sources: three personal interviews, an oral history collection, archival material, and visual media depictions of Vietnamese women.

Cesar Amparo, History

History Through Corridos: The Mexican Experience in Los Angeles in the Early 20th century

Faculty Mentor: Doris Namala, History

A corrido is a Mexican folk song ballad that usually tells a story or expresses a sentiment. Corrido scholarship typically focuses on Mexico or the U.S as a whole and not usually on specific cities making the dialogue on corridos in specific cities such as Los Angeles obscure. Corridos are often neglected as sources, yet they are excellent primary sources for documenting the direct perspectives of Mexicans and Mexican Americans living in Los Angeles. This paper aims to add a more historically based context to the corrido scholarship with a focus on the 1920s – 1940s. Through the use of The Strachwitz Frontera Collection of Mexican and Mexican American Recordings digital archive, which houses thousands of Mexican songs and information about this music and its artists, I will be examining corridos that discuss Mexican and Mexican-American lives. In doing that, this paper will focus on the struggles of Mexican immigrants, Mexican and Mexican-American identity, and women in the community. Because the focus of this paper is specifically on Los Angeles, it reveals new stories that may not have been told before and further findings of the Mexican experience in Los Angeles from the early to mid-20th century. By examining songs and the artists found in the Frontera Collection, this paper aims to tell stories that add to the overall narrative of the Mexican experience in Los Angeles in the early 20th century.

Dante Garcia, History
The Outcomes of Integration at the Pasadena Unified School District
Faculty Mentor: Andrea Johnson, History

Mendez v. Westminster and Brown v. Board of Education were two landmark court decisions that ruled against segregation based on race was unconstitutional. Civil Rights activists considered this ruling by the courts to be a victory for people of color, but the problem of segregation persisted. In 1970 district court judge Manuel Real ordered the Pasadena School District to create a plan to integrate its schools racially. This order by judge Real forced the Pasadena Unified School District to create the Pasadena Plan which consisted of forced busing that took students across town to racially balance the schools. This essay will concern itself with this concept of segregation and Pasadena's attempt to integrate its students and the community's response to the forced busing. Questions that this essay will consider are, what was the community's response to forced busing? What were the arguments for and against busing? What were the outcomes in Pasadena's community due to forced busing? Therefore, using pamphlets, letters, and flyers from the Treft Pasadena School Board Collection, this essay will demonstrate that because of Pasadena's attempts at integration, the suburban town became an arena for a political battle causing the creation of four different viewpoints on forced busing.

Physical and Mathematical Sciences — LSU 328
Evening Session: 6:00 – 7:40 p.m.

Scarlett Zamora, Earth Science
Waste Audits at CSUDH
Faculty Mentor: Cheyenne Cummings, Earth Science and Geography

Zero waste is a growing approach where the goal is to divert waste from reaching landfills through source reduction and recycling. Before a zero waste program can be implemented, it must be determined what is being discarded to understand patterns of organics and mix recyclables going into the landfill. In order to do this, a waste audit must be performed. A waste audit is a method where waste is sorted into categories and measured by volume and weight. Waste audits were performed at California State University Dominguez Hills with targeted dumpsters located by the Loker Student Union, behind LaCourt Hall, NSM, and behind the theater. These areas were chosen due to the large volume of foot traffic. Audits were performed at the beginning, middle, and end of the Fall 2018 semester to determine a base waste audit. For all buildings combined, an average 87.88% of the waste was divertable; recyclables in the form of compost, plastics, and paper could have been diverted away from the landfill. Individual buildings resulted in, 85.7% of divertable waste from the theater, 88.31% from LSU, 88.86% from NSM, and 88.66% from LCH. This extra waste is completely avoidable and speaks volumes about the lack of support for waste management education on campus. Furthermore, it is believed that lack of proper equipment and education is leading to the disparity within the data and that program development might lead to a decrease in waste management costs to the university.

Felizelle Catipon, Clinical Science
The Hydroxyapatite Crystal Morphology in the Presence of Antifreeze Protein
Faculty Mentor: Sen Wang, Chemistry

Drugs for osteoporosis include bisphosphonates, estrogens, and selective estrogen modulators. Recently, concerns have been raised about the serious side effects from the long term use of these drugs. We will explore the effect on the hydroxyapatite crystal (Hap, the model of bone) morphology in the presence of fish antifreeze protein (AFP), as well as the study of the effects from the different concentration AFPs have. We will identify AFPs which can decrease spaces in the honeycomb for osteophorosis as potential drugs. Our results will provide valuable insights into the mechanism of the key additives for biominerals and bring new osteophorosis drugs with the least side effects."

Elvis Carrillo, Earth Science and Geography
Assessing Social-Economic Impacts of Earthquakes in Southern California
Faculty Mentor: Brendan McNulty, Earth Science and Geography

The well-studied San Andreas Fault (SAF) extending through California accommodates movement between the North American and Pacific tectonic plates. This plate boundary is comprised of a complex system of fault branches known as the San Andreas Fault System (SAFS). Although Southern California lies within this plate boundary zone, the region has been "tectonically quiet" for approximately 300 years and is currently overdue for a large earthquake event. There has been great interest in Southern California in regard to when "the big one" will occur, and the SAF is also not the only fault of concern. Although predicting earthquakes is not yet feasible, simulating earthquakes is possible. Our objective is to assess the risks and hazards associated with the San Jacinto Fault, Newport-Inglewood Fault, and the southern section of the San Andreas Fault located within the San Andreas Fault System during a simulated M7.0(+) earthquake event. The impacts will be assessed by quantifying building damage, business disruption, and casualty counts. Tools utilized to create the geographic maps include: (1) earthquake scenarios and ShakeMaps created by the US Geological Society, (2) fault modeling software (SCEC-VDO) to display fault geometry, (3) FEMA's hazard analysis software (Hazus), which utilizes 2010 Census Tract data, and (4) ArcMap to visualize our spatial analysis. Providing interactive geographic maps will help the public understand the risks of living in "Earthquake Country", and also hopefully improve mitigation efforts, ultimately increasing our resilience to large earthquakes. In addition, studying selected faults will help increase public awareness of specific earthquake hazards in their local communities.

Noraim Nunez, Physics

Nuclear Physics with Short-lived Beams

Faculty Mentor: John Price, Physics

In Nuclear physics, processes involving beams of short-lived particles are difficult to study. By using a well-understood process, such as the photo production of the short lived particle, we can resolve this problem. The major difficulty lies in determining the luminosity of our measurement. The traditional method of calculating a cross section requires knowledge of the numbers of both the beam and target particles. We cannot count our beam particles directly, but we can use previous cross section measurements to estimate our beam flux. Using relativistic kinematics, we can express the cross section in terms of our short lived particle's energy and lab angle. The target length, typically used in these calculations, is only valid if the beam particle is traveling along the target axis. The effective number of target particles can be determined by comparing the kinematics of our short-lived beam with the geometrical properties of the target. By multiplying the numbers of beam and target particles thus obtained to get the luminosity, we can normalize the cross section. This talk will describe the development of this new technique and discuss several applications for which it is currently being employed.

Stephanie Gaston, Mathematics

Application of Differential Algebra to Linear Independence of Arithmetic Functions

Faculty Mentor: Wai Yan Pong, Mathematics

In this research project, we investigate the linear dependence of arithmetic functions. An arithmetic function is a function defined on the positive integers with values in the complex numbers. Functions $f1, f2, \ldots, fn$ for some $n \geq 2$ are said to be linearly dependent if one of the functions can be written as a linear combination of the others. After investigating the general case, we focus on multiplicative functions. An arithmetic function $M:N \rightarrow C$ is multiplicative if $M(ab)=M(a)M(b)$ for all a,b in N such that $gcd(a,b)=1$. Through these there is a nice interplay between linear algebra and the ring structure of arithmetic functions.

Many existing results about linear dependence of arithmetic functions are proved by induction. That, unfortunately, does not provide any insights on the validity of these statements. We successfully reformulate these results in a natural way and are able to provide conceptual proofs of them. We achieve this by first generalizing a fundamental process in linear algebra, the Gauss-Jordan Elimination, to row-finite infinite matrices. The next goal of the project is to push this further to give another proof of a result of Ostrowski on linear dependence of analytic functions of several variables phrased in terms of vanishing of generalized Wronskians. That involves essentially expressing arithmetic relations via partial differential operators in the ring of arithmetic functions.

Roundtable I — LSU 320
Evening Session: 6:00 – 8:15 p.m.

6:00–6:15 p.m. **Kristin Arriaga, Sociology**
Millennials and the New Age Gentrification
Faculty Mentor: Katy Pinto, Sociology

6:15–6:30 p.m. **Raul Gutierrez, Biology**
Protein Tagging Applications for Non-Biodegradable Material
Faculty Mentor: Sonal Singhal, Biology

6:30–6:45 p.m. **Daileen Cortez, Biology**
The Effect of Cultured Autologous Oral Mucosal Epithelial Cell Sheet (CAOMECS) Graft on Corneas with Experimental Limbal Stem Cell Deficiency and Neovascularization
Faculty Mentor: Fawzia Bardag-Gorce, LA BioMed

6:45–7:00 p.m. **Carmen Parker, Child Development**
Black Healthcare
Faculty Mentor: Yanet Surez, Kinesiology & Recreation

7:00–7:15 p.m. **Dante Garcia, History**
The Outcomes of Integration at the Pasadena Unified School District
Faculty Mentor: Andrea Johnson, History

7:15–7:30 p.m. **Venkata Krishna Jonnalagadda, Computer Science**
Sparse, Stacked and Variational Autoencoder
Faculty Mentor: Bhrigu Celly, Computer Science

7:30–7:45 p.m. **Padmaja Kanthi Rekha Inampudi, Computer Science**
Jenkins Deployment in Kubernetes in All Cloud Services
Faculty Mentor: Bhrigu Celly, Computer Science

7:45–8:00 p.m. **Padmaja Kanthi Rekha Inampudi, Computer Science**
Big Query and EMR Use Case with Machine Learning
Faculty Mentor: Bhrigu Celly, Computer Science

8:00–8:15 p.m. **Jenny Fernandez, Computer Science**
IoT Data Pipeline
Faculty Mentor: Bhrigu Celly, Computer Science

Poster Session I — Ballroom A
Evening Session: 6:30 – 8:30 p.m.

Behavioral and Social Sciences

1 **Nathan Castro, Communications**
*Financial Literacy After-School Programs:
A Survey and Exploratory Study*
Faculty Mentor: Jennifer Brodmann,
Economics

2 **Saray Valenzuela Jaime, Kevin Muniz,
Margott Dela Cruz, Christian Rivero,
Casey Cage, Heidy Lozada, Psychology**
*Is Identity Associated with Addiction?
An Examination of Alcohol Use and
Gambling Behavior*
Faculty Mentor: Kevin Montes, Psychology

3 **Kathryn Lidgard, Social Work** **CANCELLED**
Attitudes About the Causes of Poverty
Faculty Mentor: Susan Einbinder, Social Work

4 **Jazmin Ramirez, Psychology (Save poster
spot)**
*Children with Autism Spectrum Disorder
(ASD): Exploration of Parents' Perspective of
Effective Support Systems*
Faculty Mentor: Phu Phan, Human Services

5 **Erika Robles, Sociology**
*Does a Women Working Full-time Affect
Marriage Happiness?*
Faculty Mentor: Kelin Li, Sociology

6 **Jenna Neugebauer, Orthotics and Prosthetics**
*How Students Select Orthotic and
Prosthetic Residency*
Faculty Mentor: Julie Werner,
Occupational Therapy

7 **Haiden Nelson, Orthotics and Prosthetics**
*Semantic Priming of Fast and Slow
Walking Speeds* **CANCELLED**
Faculty Mentor: Julie Werner,
Occupational Therapy

8 **Kimberly Tomczak, Psychology**
*The Effects of Adoption Characteristics on
Attachment Styles*
Faculty Mentor: Tatiana Basanez, Psychology

9 **Deisi Gomez, Child Development**
*Relationship between Cool EF
(Cognitive Inhibition) & Mood*
Faculty Mentor: Megumi Kuwabara,
Child Development

10 **Paraash Kamdar, Computer Science**
*Machine Learning platforms on Amazon Web
Service, Azure and Google cloud*
Faculty Mentor: Bhrigu Celly,
Computer Science

Computer Science

11 **Zeyi Liu, Yu-Ning Yu, Shanglin Hsu,
Computer Science**
*Combing Convolution and Self-Attention for
Reading Comprehension*
Faculty Mentor: Bhrigu Celly,
Computer Science

12 **Lei Cao, Chia-Han Chang, Rong Yang,
Yimin Wang, Computer Department**
*Real-time Object Detection on
Different Models*
Faculty Mentor: Bhrigu Celly,
Computer Science

13 **Milind Parikh, Hetsi shah Ashish Patel,
Arpitha Nagavara Ananthamurthy,
Computer Science**
Object Detection Using Tensorflow
Faculty Mentor: Bhrigu Celly,
Computer Science

14 **Venkata Krishna Jonnalagadda,
Computer Science**
*Unsupervised Text Summarization using
Deep Learning*
Faculty Mentor: Bhrigu Celly,
Computer Science

15 **Krishna Sai Hanish Tummalapalli, Venkata
Krishna Jonnalagadda, Computer Science**
*Unsupervised Text Summarization using
Deep Learning*
Faculty Mentor: Bhrigu Celly,
Computer Science

16 Padmaja Kanthi Rekha Inampudi, Paraash Kamdar Sagar Chavan, Nikhil Derore, Computer Science
Alexa skill to automate deployments
Faculty Mentor: Bhrigu Celly,
Computer Science

17 Ali Kabiri Renani, Computer Science
Porting Machine Learning to Mobile Application
Faculty Mentor: Bhrigu Celly,
Computer Science

18 Paraash Kamdar, Computer Science
Ansible and Chef deployment with Kubernetes in various cloud services
Faculty Mentor: Bhrigu Celly,
Computer Science

19 Mohammed Althubyani, Computer Science
Emotion Detection System
Faculty Mentor: Bhrigu Celly,
Computer Science

20 Eugene Cox II, Psychology
Me, Myself, and Normal: Creating Data Visualizations for Older Adults
Faculty Mentor: Thomas Norman,
Management

Physical and Mathematical Sciences

21 **Jasmine Chavarria, Mathematics**
Stiff Systems of Ordinary Differential Equations in Epidemics
Faculty Mentor: Michael Durand, Physics

22 **Elvis Carrillo, Earth Science and Geography**
Assessing Social-Economic Impact of Earthquakes in Southern California
Faculty Mentor: Parveen Chhetri,
Earth Science and Geography

23 Samantha Tsumaki, Chemistry
Synthesis and Host-Guest Properties of 1,1' disubstituted Ferrocene derivatives with Cucurbit[n]urils
Faculty Mentor: Arumugam Thangavel,
Chemistry

00 Andrew Luu, Business Administration
Will Robots Take Our Jobs? Understanding Trends in the Future of Work and Skills for a Digital Workforce.
Faculty Mentor: Nancy Deng, Business Administration

24 Nichole Romanoff, Earth Science and Geography
How Topography Influences Shrub Cover Distribution in the Nepal Himalayas
Faculty Mentor: Parveen Chhetri,
Earth Science and Geography

25 Daniel Cole-Apt, Earth Science and Geography
Solar Powered Golf Carts
Faculty Mentor: Cheyenne Cummings,
Earth Science and Geography

26 Jose Garfias, Chemistry and Biochemistry
Theoretical Study of 3FC-TZN and its Host-Guest interaction in the Determination of Stable Electroactive Materials
Faculty Mentor: Kenneth Rodriguez,
Chemistry and Biochemistry

Health, Nutrition, and Clinical Sciences

27 Hunter Amundson, Orthotics and Prosthetics
The Relationship in Amputation Level and Blood Pressure
Faculty Mentor: Julie Werner,
Occupational Therapy

28 James Holt, Orthotics and Prosthetics
Unilateral Training Resulting in Cross-education of the Contralateral Limb
Faculty Mentor: Julie Werner,
Occupational Therapy

29 Eva Levingston, Health Science
Internet Use and Severe Psychological Distress Among Adults in California
Faculty Mentor: Archana Sharma,
Health Science

30 Wesley Fong, Health Sciences Orthotics & Prosthetics
Comparison of Stride Lengths Between Healthy Participants When Wearing a +B41:H41 and Not Wearing a Post-op Knee Orthosis
Faculty Mentor: Julie Werner,
Occupational Therapy

31 Jared Jackson, Occupational Therapy
Beats Per Minute and its Influence on Average Walking Speed
Faculty Mentor: Julie Werner,
Occupational Therapy

32 **Jessica Bissontz, Orthotics and Prosthetics**
A Study About Interactions with Persons with Amputations
Faculty Mentor: Julie Werner,
Occupational Therapy

33 **Brandon Hong, Orthotics and Prosthetics**
Cell Phone App to Measure Shoe Sizes Comparing to Brannock Device
Faculty Mentor: Julie Werner,
Occupational Therapy

34 **Jasmine Ayala, Orthotics and Prosthetics**
Can a Low Back Support Reduce Back Pain when Sitting for Too Long?
Faculty Mentor: Julie Werner,
Occupational Therapy

Biological and Agricultural Sciences

35 **Albert Barrios, Biology**
Mechanistic Role of MYC in Regulation of miR-29 in Pancreatic Cancer
Faculty Mentor: Janaiah Kota
(Indiana University)

36

Sasha Escamilla, Biology
Thermal Tolerance of Ectatomma Ruidum
Faculty Mentor: Terry McGlynn, Biology

37 **Claire Ladan, Chemistry and Biochemistr**
Hacking Electrochemistry: Building a Low-Cost Potentiostat for the Undergraduate Chemistry Lab
Faculty Mentor: Barbara Belmont,
Chemistry and Biochemistry

38 **John Wrath, Biology**
"Living on the Edge: Testing the Central-Marginal Hypothesis"
Faculty Mentor: Sonal Singhal, Biology

39 **Francisco Juarez, Biology**
Growth Effects of lsrR and cspB on Escherichia coli during LTSP
Faculty Mentor: Karin Kram, Biology

40 **Joshua Devera, Biology**
The Evolution of PRDM9 Gene in Lizard and Snake Species
Faculty Mentor: Sonal Singhal, Biology

Health, Nutrition, and Clinical Sciences

41 **Andrew Clinkscales,** CANCELLED
Orthotics and Prosthetics
Mobility and Quality of Life: RAND SF-36 and Self Reported K-Level
Faculty Mentor: Julie Werner,
Occupational Therapy

42 **Kelsey Phillimeano, Orthotics and Prosthetics**
CAM Walker Boot Soles and Walking Efficiency
Faculty Mentor: Julie Werner,
Occupational Therapy

43 **Michael Bradley, Orthotics and Prosthetics**
How Much Time is Enough
Faculty Mentor: Julie Werner,
Occupational Therapy

44 **Courtney Tolentino, Orthotics & Prosthetics**
Incompletion Rates in Self-Reporting Rehabilitation Outcome Measures: Paper versus Web
Faculty Mentor: Julie Werner,
Occupational Therapy

45 **Leslie Cass, Health Sciences**
Relationship between Obesity and the Condition of the Contralateral Limb in Individuals with Unilateral Lower Limb Amputations
Faculty Mentor: Julie Werner,
Occupational Therapy

46

Johnston Wang, Orthotics and Prosthetics
The Relationship Between Physical Activity Volume and Subjective Ranking of Shoe Characteristics
Faculty Mentor: Julie Werner,
Occupational Therapy

47 **Stefanie Gorski, Nursing**
Malnutrition Screening and Patient Outcomes
Faculty Mentor: Terri Ares, Nursing

00 **Andreh Khachaturians, Public Administration**
American Attitudes on Immigrants Impact on the Economy
Faculty Mentor: Elena Kulikov, Public Administration