

20TH ANNUAL

RONALD E. MCNAIR SCHOLAR

UNDERGRADUATE RESEARCH SYMPOSIUM

THURSDAY, APRIL 25, 2019

PRESENTED BY: CAL POLY POMONA'S
MCNAIR SCHOLARS PROGRAM

"TRUE COURAGE COMES IN ENDURING, PERSEVERING, AND BELIEVING IN ONESELF."
- DR. RONALD E. MCNAIR

A MESSAGE FROM THE DIRECTOR

Dr. Winny Dong

Welcome to the 20th Annual Ronald E. McNair Postbaccalaureate Achievement Program Symposium and Luncheon. I thank you for joining us in celebrating the achievements of our McNair Scholars, and I congratulate all the scholars and mentors for the wonderful presentations this morning.

The McNair Scholars Program has brought great distinction to Cal Poly Pomona, and the program continues to provide student scholars with valuable research experience and encouragement that give them a distinct advantage when they undertake the demands of graduate school. The McNair Scholars Program has been a model for promoting academic success and for ensuring that underrepresented students pursue doctoral studies. Most of our scholars hail from low-income, first-generation college backgrounds, and they have overcome economic, social, and cultural barriers on their academic journey. Few aspects of human endeavor are more stimulating than actions that nurture intellectual creativity among young individuals.

As Director of the program, I have had the privilege of interacting with exceptional students, faculty, staff, and administrators. We are fortunate to have a wonderful staff and I am consistently awed and humbled by their dedication to the scholars.

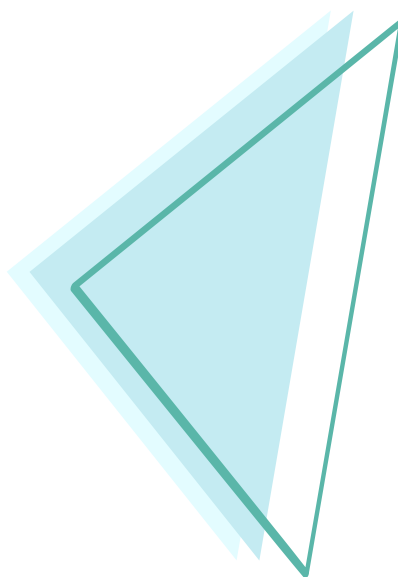
I want to thank current and past McNair Scholars for continuing to demonstrate the power of moral integrity in their academic and personal lives, as they apply the virtues of enthusiasm, loyalty, cooperation, friendship, and industriousness. Since the inception of the program by Dr. Frank Torres in 1999, over 127 students have graduated with either a Master's Degree or Doctorate of Philosophy in programs across the nation.

DR. BRIAN RAMIREZ

Keynote Speaker Ph.D. in Mechanical Engineering

Until joining the McNair Scholars Program during his sophomore year at Cal Poly Pomona, Brian had no plans of pursuing a Ph.D. and had little idea of what research entailed. The program exposed Brian to challenging and rewarding research, as well as the possibility of attending graduate school, something he says “seemed impossible for someone like me—a first-generation Mexican-American student.” During his time as a McNair Scholar, Brian had the opportunity to meet McNair alumni who were in Ph.D. programs at the time. “This experience provided me a source of motivation and encouragement that I too could follow in their footsteps. Most importantly, the mentors that I gained through the McNair program provided me with unwavering support during my Ph.D. and continue to play an important role in my career.” After receiving his BS in Mechanical Engineering, Brian began his Ph.D. program at the University of California, Los Angeles where his research in Solid and Structural Mechanics opened many doors for him. Speaking of this experience,

Brian says: “My research gave me the opportunity to present my work at numerous conferences across the country and co-author several papers in the field of mechanics and materials. It also enabled me to co-author a patent, and earn a National Science Foundation (NSF) grant for commercialization of my research. These experiences allowed me to travel the country, contribute new knowledge in my field, and explore the entrepreneurial side of research.” Upon earning his Ph.D., Brian joined California Institute of Technology as a postdoctoral fellow. Once he completes this appointment, Dr. Ramirez plans to pursue a career in academia. He is excited about “the prospect of teaching and mentoring a diverse group of students and developing innovative and effective courses in the field of mechanical engineering.” As a product of the CSU and UC system, Brian hopes “to continue the legacy of outstanding teaching and groundbreaking research that [he] experienced at both institutions.”



MCNAIR SCHOLARS SYMPOSIUM PROGRAM

THURSDAY, APRIL 25TH, 2019

KELLOGG WEST CONFERENCE CENTER - HILLSIDE

RESEARCH SYMPOSIUM - 3:00-5:00PM

SCHEDULE OF ORAL PRESENTATIONS

Hillside West 1

3:00	Jesus Navarro	Psychology
3:15	Karli Cheng	Psychology
3:30	Viviana Piceno	Psychology
3:45	Montserrat Coria	Psychology
4:00	Kamren Brown	Psychology
4:15	Juan Ramon Sevilla	Psychology
4:30	Julissa Loza Mendez	Psychology

Hillside Central 1

3:00	Ho Lun Chan	Chemical Engineering
3:15	Esteban Escobar	Applied Mathematics
3:30	Tehreem Raza	Mechanical Engineering
3:45	Bryan Arciniega	Computer Engineering
4:00	Emmeline Adu-Beng	Chemical Engineering
4:15	Jenny Martinez	Mechanical Engineering

Hillside West 2

3:00	Annasofia Zuleta	GEMS
3:15	Phuong Pham	Psychology
3:30	Jose Becerra	Anthropology
3:45	Beverly Cotter	Psychology
4:00	Art Hernandez	Psychology
4:15	Amalia Gonzalez	Spanish

Hillside Central 2

3:00	Zijie Zhang	Chemistry
3:15	Cindy Toscano	Biology
3:30	Rosa Ramirez	Marketing Management
3:45	Meghan Jeffus	Biology
4:00	Abbey Ibarra	Urban & Regional Planning
4:15	Ariel Munoz	Economics

SCHOLAR ABSTRACTS AND BIOGRAPHIES

Abbey Ibarra

Mentor: Gwen Urey, Ph.D.

Title: California's High Speed Rail: Who can afford it

Abstract: California's High Speed Rail has proposed to impact the state's economy significantly. This infrastructure has committed to ensure this project creates a sustainable structure in order to provide accessibility and mobility for everyone. California's High Speed Rail has reiterated the importance of employment, eco-friendly environment, and preserving lands. This paper will analysis California's High Speed Rail business plan which includes a travel demand model creating an estimate of ridership and revenue throughout predicted trips. The idea of this plan is to analyze travel performance in order to anticipate population, travel value and transportation systems throughout a predicted a year. The new draft plans of California's High Speed Rail has increase the estimated cost that the system was projected to initially be as well as the cost of fares. This research will be analyzing the cost and benefit report conducted by California's High Speed Rail Authority and related literature reviews to help analysis the impacts. Comparing the costs to alternative modes of transportation will contribute to how affordable California's High Speed Rail will be for the people of this state. The paper explains that the High Speed Rail is remarkably more costly than implementing additional travel modes including auto and air travel. The paper will be looking at the cities that will be affected by the construction of the High Speed Rail through an analysis and interviews.

Biography: Abbey Ibarra is a third year undergraduate at California State Polytechnic University, Pomona who is studying Urban and Regional Planning. Her current research is focused on California's High Speed Rail though a social equity perspective. She will be analyzing the on-going project in order to understand how affordable the project is predicted to be. She plans to continue her education after her bachelor's degree and aspires to receive her Ph.D in the future. Her short term plans include researching on topics related to environmental justice in order to protect communities from any environmental and health hazards. During the fall quarter of 2020, she will be applying to in and out-of-state graduate school programs.

SCHOLAR ABSTRACTS AND BIOGRAPHIES

Emmeline Adu-Beng

Mentor: Jonathan Puthoff , Ph.D.

Title: Testing the Performance of Dye-Sensitized Solar Cells (DSSC) with Carbon Black Ink Anode

Abstract: Since the harnessing of electricity by Thomas Edison to create the light bulb, electricity has spurred the growth of industries as never seen before in human history. As the demand on the resources shared in our ecosystem grows, the need to find sustainable ways in consuming power becomes increasingly pertinent. To meet the mandate, sustainable ways of generating and providing power have been developed such as photovoltaic systems; power systems absorb raw energy from the sun and use it to create usable energy. Though helpful in their mechanisms to help with energy sustainability, not all photovoltaics systems are created equal and newer technologies are always being developed met factors such as improvement in efficiency and reduction in cost. Dye-sensitized solar cells are photovoltaic devices that utilize conventional p-n junction technology but provide a more economically feasible substitute to conventional photovoltaic devices. The experiment tests the efficiency of two methods of fabricating DSSC fabricated with carbon black ink as the anode. These cells will be constructed using two different methods, first by painting the carbon black in onto a Titanium film substrate and second by drawing on the substrate with dry ink. Primarily focusing on the plating methods, the techniques used will be analyzed and discussed with respect to how they contribute to the overall performance of the cell.

Biography: Emmeline Adu-Beng is a student researcher at California State Polytechnic University, Pomona, where she works with Dr. Jonathan Puthoff investigating Dye-sensitized Solar Cell technology and development methods to increase the efficiency of the cells. Before transferring to Cal Poly Pomona, Emmeline studied at San Bernardino Valley College, completing an associate degree in Chemistry. While there, she worked as a tutor to help facilitate better an environment that led to a better understanding of subject matter related to STEM. Emmeline plans to graduate from Cal Poly Pomona in Spring 2019 with a bachelor's degree in Chemical Engineering and a minor in Materials Engineering. After graduating, Emmeline plans to work in the field of Material Engineering, primarily focusing on Metal Analysis and Failure. She plans to receive a Ph.D in Chemical Engineering, primarily focusing on energy storage systems and photovoltaic energy systems.

SCHOLAR ABSTRACTS AND BIOGRAPHIES

Esteban Escobar

Mentor: Jenny Switkes, Ph.D.

Title: Modeling the Effect on Tumor Growth Using Combination of Chemotherapy and Immunotherapy

Abstract: Analyzing a mathematical model from the article Mixed Immunotherapy and Chemotherapy of tumors: Modeling, Application and Biological Interpretations by Dr. de Pillis, Gu, and Radunskaya, we are able to conduct different treatment plans to see the effects on tumor cells. Using a system of ordinary differential equations and human parameters extracted from a patient who was treated for melanoma we can conduct theoretical treatment plans that can help eradicate tumor cells and consider the quality of life. With treatment plan of chemotherapy, immunotherapy, or combination of both it can be shown that the number of tumor cells can be successfully decreased whereas without treatment it will otherwise grow. We will illustrate how the differences in the timing of the drug deliveries plays an important part in the effect on the number of tumor cells in the body. These results can be useful in gaining a broad understanding of combination therapies and the specific system dynamics.

Biography: Esteban Escobar is a 4th year undergraduate at California State Polytechnic University, Pomona who is studying in Applied Mathematics. He transfer from Pasadena City College in fall 2017 where he also studied applied mathematics. He attended an REU during the summer of 2018 at the Mathematical Sciences Research Institute in Berkeley, California researching in data science. He has given numerous presentation about his research in data science at different conference. He has given a presentation at one of the biggest mathematics conference in the world, the Joint Math Meeting, in Baltimore, MD. He also received many award for best presentation at these conferences. His current research involve Mathematical Modeling, conducting multiple simulations of tumor growth involving theoretical treatment plans to study its behaviors. He plans to receive his Ph.D. in Applied Mathematics at UCLA where he wants to research fields in Differential Equation and Numerical Analysis.

SCHOLAR ABSTRACTS AND BIOGRAPHIES

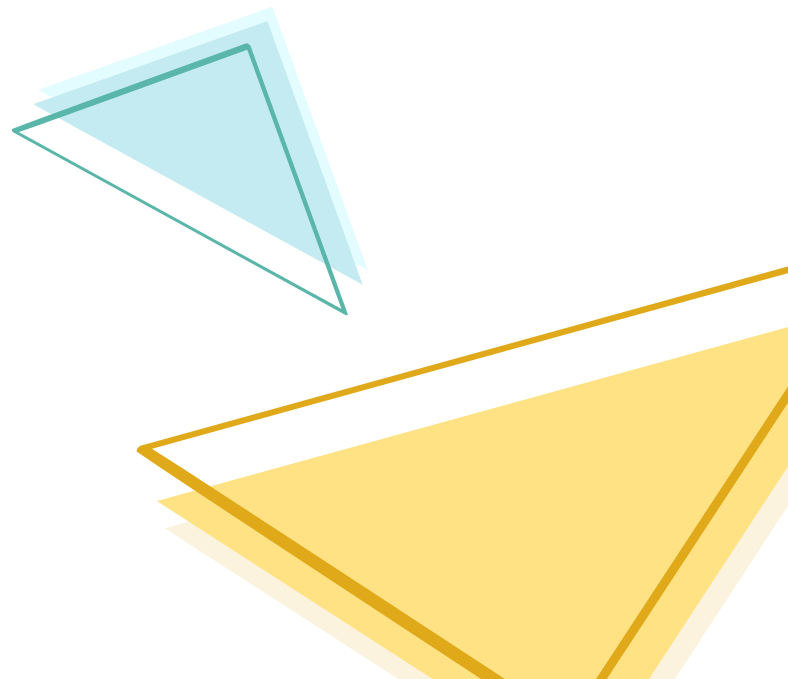
Evan Greco

Mentor: Jeffery Mio, Ph.D.

Title: The Metaphor Extension Hypothesis in the Age of Donald Trump

Abstract: Previous studies using the Metaphor Extension Hypothesis establish the effectiveness of figurative language within political debates. More specifically, the Metaphor Extension Hypothesis found how metaphor extension was a prominent response choice compared to non-related metaphors and literal language. Previous research (Mio 1996, 1997, 2005, 2015) has studied the use of metaphor during the George H.W. Bush, Bill Clinton, George W. Bush, and Barack Obama administrations. This study aims to test the effectiveness of metaphor extension within social debates that arose during the first six months of the Trump Administration. Metaphors within topics of political discourse during these first six months were collected from articles in Time Magazine. For this study, participants are to pretend they are a speaker in a political debate with someone who presents a position using a metaphor. As the respondent, participants are to select a response to the primary speaker choosing between a metaphor extension, competing metaphor, or a literal response. Preliminary data from 20 research participants (14 female, 6 male) found metaphor extensions were preferred over their metaphor non-extension counterparts, 64% to 36% respectively, and metaphor extensions over their literal counterparts, 63% to 37%, respectively. This preliminary data found support for the Metaphor Extension Hypothesis.

Biography: Evan Greco is a fourth-year undergraduate student majoring in Psychology at California State Polytechnic University, Pomona. His interest in research began in his third year when he was invited by professors (one in Social Psychology and one in Educational Sociology) to be a research assistant on their current projects. This introduced him to both quantitative and qualitative data collection procedures, which sparked his interest in pursuing research as a career. His current research involves studying the effects and persuasiveness of figurative language (metaphors) within speech, specifically how follower receptivity can be impacted through choice of language. His future goals include pursuing a masters or doctoral degree in Educational Psychology.



SCHOLAR ABSTRACTS AND BIOGRAPHIES

Ho Lun Chan

Mentor: Vilupanur Ravi, Ph.D.

Title: Corrosion Studies of Open Cell Aluminum Foam in Simulated Marine Environments

Abstract: Aluminum foams are used in aircraft components, e.g. landing gear energy absorbers, breather plugs, etc., because of their high impact absorption capability, low density, and cost-effectiveness. These materials can be subjected to chloride corrosion in marine environments, with the potential to lower the service life of these components. In this project, the microstructure and mechanical strength of aluminum foams pre-and post-corrosion were examined. The corrosion behavior of UNS A96101-T6 aluminum foams was studied as a function of pore density. Corrosion tests were performed by immersing aluminum foams in simulated seawater (ASTM G31) and also by exposing them to salt spray environments (ASTM B117) for periods of time ranging from 1 to 100 hours. The microstructures of the test coupons were subsequently characterized using scanning electron microscopy (SEM). Compression tests (ISO 13314) were conducted on pre-and post-corrosion coupons. The results of these studies will be presented and discussed.

Biography: Ho Lun Chan is a rising senior at the California State Polytechnic University, Pomona majoring in chemical engineering with a minor in materials engineering. For the past three years, he has been conducting cutting edge research under the mentorship of Dr. Vilupanur Ravi to characterize the corrosion behavior of novel metallic foams for energy storage and aerospace applications. Ho Lun has presented his research and received professional recognitions at a number of conferences, such as the Corrosion 2018, McNair Scholars Symposium, the 99th AAAS – Pacific Division annual meeting and the poster contest of ASM international Los Angeles. In fall 2017, he served as the engineering lead for the Cal Poly Pomona I-Corps project, where he assisted with the commercialization of a bioinformatic invention. Currently, Ho Lun is serving as the president of Material Advantage and a participant in the executive committee of ASM International Los Angeles. During his term, he led the establishment of the first undergraduate research grant competition taken place in fall 2018. His long-term aspiration is to pursue a Ph.D. education in materials engineering, and become an entrepreneur becoming a frontier in corrosion characterization, extraterrestrial mining and functional materials technologies.

SCHOLAR ABSTRACTS AND BIOGRAPHIES

Juan Ramón Sevilla

Mentor: Alejandro Morales, Ph.D.

Title: Fostering Happiness Amongst Latinx Gay College Men

Abstract: Latinx gay men in college often experience an array of stressors due to the constant exposure with discrimination in relation to their sexual orientation, ethnic/racial background and social economic status. Although many studies have examined Latinx college students and their overall happiness, very few studies have examined the gay population of Latinx college students. Studies within the college community often focus on individuals in a deficit model this proposed study aims to intersect these identities in terms of happiness. Studies looking into the strengths of this population have yet to be explored. The purpose of this qualitative study is to address this research gap and explore the processes that promote or foster happiness among Latinx gay college men. By learning how these strengths work under certain environments, we can better understand and try to foster qualities with others who are in similar situations yet don't possess the strengths to overcome negative settings. Participants consist of 10 Latinx gay college men. Data is currently being collected through individual face-to-face interviews with each participant. Interview recordings will be transcribed, and transcripts will be coded. Coding will be done for all transcribed interviews. Codes will then be categorized and compared across interviews using thematic analysis. I will courteously draw on the existing literature related to the phenomenon and the data collected as means to review the viability of each significant pattern or theme. This approach will allow an emergence of abstract data or theoretical categories that describe the latent patterns within the perspectives of participants. Data collection and results should be

ready by time of conference. We know that sexual minorities with multiple and intersecting identities such as Latinx gay college men are resilient, spiritual, college educated, and committed to the advancement of communities that have been historically oppressed. The cultural shift focusing on the human strengths of sexual minorities is recent in Psychology. Creating programs using a strengths-based approach can inform scholars and clinicians working with this underserved community. More research is being conducted in understanding the mechanisms that promote happiness from a strengths-based approach.

Biography: Juan Ramón Sevilla is an undergraduate at Cal Poly Pomona where he is majoring in Psychology. His interest in Psychology began in high school where he spent his time learning about the various health disparities affecting minority communities. Inspired to address this, Ramón plans to pursue a Ph.D. in Counseling Psychology where he will have the opportunity to conduct research on the psychology of sexual minority individuals and communities from diverse backgrounds. His career goal is to provide mental health services to individuals from multiple and intersecting identities. His current research focuses specifically on the factors that facilitate happiness amongst Latinx gay college men. Ramón is an intern for the Michi and Walter Weglyn Endowed Chair of Multicultural studies at Cal Poly Pomona. When he is not busy watching a show off his Netflix queue, he enjoys traveling, trying out new foods, and spending time with his three-year-old niece Adelaide.

SCHOLAR ABSTRACTS AND BIOGRAPHIES

Rosa Ramirez

Mentor: Chantal van Esch, Ph.D.

Title: Faculty With Disabilities: Let's Talk

Abstract: Stigma around the discussion of mental health in academia still clings to the profession (Pettit, 2016). As long as our common image of the professor remains white, male, straight, well-off, and nondisabled, people outside that circle will encounter both structural and direct discrimination (Perry, 2016). Research shows that resulting alienation can exacerbate many mental disorders, leading to a downward spiral of self-censorship, loneliness, despair, and failure (Miller, 2018). As enlightened as academics think they are, Pettit says, mental illness is still highly stigmatized (2016). There is extensive research on students with disabilities but there is a research gap when it comes to faculty with disabilities. The purpose of this study is to identify if faculty are receiving the proper accommodations and accessibility in the workplace. The proposed study will answer the following questions: Have you faced additional difficulties as a faculty member because of your disability? Could you tell me about them? Have you received accommodations on campus for your disability? Do you go to outside sources for any accommodations or social support? Did you believe you have enough support to deal with your disability or if not, what other support do you need that you are not currently getting? Are you able to manage your career with outside responsibilities? This is a qualitative interview based study and interviews will be coded to come up with common themes around the lived experiences of professors with disabilities.

Biography: Rosa Ramirez is a third-year transfer student majoring in Marketing Management at California State Polytechnic University, Pomona. She transferred from Mt. San Antonio College and is continuing to grow her network through her job at the Office of Undergraduate Research. She values the relationships and connections she has made with her mentors and peers. Her current research focuses on understanding the lived experiences of faculty with disabilities as well as creating accessibility for all in a universal design for organizations and campuses. She plans to receive her PhD in Organizational Behavior and to make sure underrepresented students are given a position in higher education to use their voices and be heard.

SCHOLAR ABSTRACTS AND BIOGRAPHIES

Tehreem Raza

Mentor: Mehrdad Haghi, Ph.D.

Title: Constitutive Model of PLG 10-90 for Anterior Cruciate Ligament Reconstruction

Abstract: The purpose for researching PLG 10-90 is to advance the field of innovative Anterior Cruciate Ligaments (ACL) reconstructive procedures for the 100,000 patients who suffer from this injury each year in the US. However, this goal is far beyond the scope of this research project. Our team is focused on developing an experimental method to determine an accurate constitutive model of the PLG 10-90. The constitutive model will provide researchers with experimental and extrapolated quantitative data regarding the viability of PLG 10-90 for ACL reconstructive procedures. In addition, the method may be used for future biomaterials of the similar shape and length scale including PLG 20-80, PLD 94-04, and PLDL 70-30 which are all attractive for such procedures. The method may be executed by future research or senior project teams who wish to collect experimental data, develop a constitutive model, extrapolate responses, and determine viability. These models may be compiled into a materials database/library for distribution to the academic community.

Biography: Tehreem Raza is a rising junior at California State Polytechnic University, Pomona, studying Mechanical Engineering. Before becoming a part of the CPP community, she studied at Santa Monica College where she worked as a Peer Mentor/Tutor and SI Leader for STEM students. Her current research focuses on working with biopolymers that can potentially change the way ACL treatments are carried out. She plans on pursuing graduate school and earning a Ph.D. in mechanical engineering. Her short-term plans include pursuing research internships in mechanical engineering so she can gain more hands-on skills and apply that knowledge to the research project she is working on. Her long-term goal is to do research and become a published laureate. For the next two years, she plans on pursuing her research on campus and applying for in and out-of-state graduate programs.

SCHOLAR ABSTRACTS AND BIOGRAPHIES

Viviana Piceno

Mentor: Alejandro Morales, Ph.D.

Title: The Relationship between Cultural Strengths and Resilience in Latinx College Students

Abstract: Latinx are among one of the fastest growing population in the US (Gallegos & Segrin, 2018). Although a large part of the US is comprised by Latinx, this ethnic minority continues to undergo challenges in higher education. Given the difficulties Latinx may encounter when completing higher education, previous research has studied cultural strengths as predictors of resilience (Consoli & Llamas, 2013). Cultural strengths, defined as “collective traits embraced in shared sociocultural values and traditions of certain sociocultural groups, may become psychosocial resources for group members to draw their strengths” in this study (Ai, Carreta, & Aisenberg, 2017). Additionally, resilience has been addressed as the ability to cope with difficulties and the ability to bounce back after a stressful situation (Windle, Bennet & Noyes, 2008, p.2). It is important to understand how cultural strengths may promote resilience in Latinx students to accomplish their educational goals. The purpose of this study is to examine how familismo, personalismo, and spirituality correlate with resilience. Data collection will begin in a couple of weeks via Qualtrics. In order to participate in this study, participant must self- identify as Latinx college students. The goal is to collect 200 surveys including, a demographic questionnaire and cultural strengths scales. To answer our research question a series of correlations and hierarchical regression analysis will be conducted. The goal of this study is to address a gap in the literature and understand how cultural strengths may be associated with resilience using a diverse sample of Latinx college students.

Biography: Viviana Piceno is a fourth-year undergraduate at California Polytechnic University, Pomona who is majoring in Psychology and minoring in Spanish. She transferred from Mt. San Antonio College, where she obtained her Associates of Arts in Psychology. Throughout her academic journey at Cal Poly, she became involved in Psi Chi. Being a member of Psi Chi provided her with many great opportunities like, becoming a member of Dr. Alejandro Morales’ the Psychology of Immigration Lab, Just Us 4 Youth, The McNair Scholars Program and Learn Through Discovery. As a mentor at a non-profit organization, she learned the lack of mental health resources among underrepresented minority groups, so her long-term goal is to be a therapist at a community mental health facility. She aspires to also continue conducting research in cultural strengths and resilience among Latinx, thus she hopes to become a professor at a land grant university. In preparation of her career goals, she will be applying to graduate school Fall of 2019, to pursue a PhD in Counseling Psychology.

SCHOLAR ABSTRACTS AND BIOGRAPHIES

Kamren Brown

Mentor: Viviane Seyranian, Ph.D.

Title: Attitudes on Sports and Groups

Abstract: Past researchers have examined why by the mere difference of allegiance to another group is enough for in group bias (e.g., Martinez, 2011; Hackel, 2016), and how individuals with multiple social identities can either be strategically included or excluded by members of the in group when BIRGing and CORFing practices are in play (Stelzl, 2008). Basking in reflected glory (BIRGing) is a self-serving cognition whereby an individual associates himself or herself with known successful others such that the winner's success becomes the individual's own accomplishment. Cutting Off Reflected Failure (Corfing) is the phenomena where people tend to disassociate themselves from lower-status individuals because they do not want their reputations affected by associating with the people who are considered failures. Our objective was to further examine the relationship BIRGing and CORFING its influence on prejudice views and immigration attitudes. This study will asks CPP Psychology subject pool participants who identified as an American to watch either a win (BIRGing) or loss (CORFing) video of the U.S. Olympic Women's Gymnastics team. Next, participants will complete measures of prejudice and immigration attitudes. Research results are expected to shed light on the extent to which BIRGing and CORFING influences attitudes about minority group. Implications of our results will be discussed.

Biography: Kamren Brown is a third year undergraduate at California State Polytechnic University, Pomona who is studying Psychology. He has given back to his community by serving as an AVID tutor at his high school. His current research focuses on the cognitive processes that contribute to creating in group and out group mentalities within sports and the implications these mentalities have on racial biases. He also serves as a research assistant on campus as a data coder. He plans to receive his Ph.D. in Psychology where he can gain the expertise needed to benefit athletes through research and service. His short term goals include interning at a Division 1 college/university to provide his method of conducting sports psychology. His long term goals align with the promotion and advancement of athletes' mental performance. During the fall semester of 2019, he will be applying to in and out-of-state graduate school programs.

SCHOLAR ABSTRACTS AND BIOGRAPHIES

Amalia Gonzalez

Mentor: Amalia Llombart, Ph.D.

Title: Leaning Together: The Effect of -Mother to Child- Reading Practices at Home on Limited English Proficiency Latino Mothers

Abstract: A large body of research has been done about the importance of family literacy and reading to young children to increase literacy, gain vocabulary, build background knowledge, develop language and listening skills, and stimulate their imagination. However, less attention has been given to how family literacy--such as reading to young children--impacts the mother's second language development. This case study investigates the English development of four Low English Proficiency (LEP) Latino mothers who read in English to their children at home in comparison to four mothers who do not read in English to their children. Data has been obtained from an analysis of participant interviews, the participants' self-evaluation, and the results of a pre-and post- English proficiency and vocabulary test. Through the exploration of the effect of mother to child reading activities, this study aims to provide an additional method that would help LEP mothers to improve their English skills while spending meaningful time with their children.

Biography: Amalia Gonzalez is a second year undergraduate at California State University, Pomona who is studying Spanish. She is particularly interested in linguistics and second language acquisition. Amalia plans to pursue her Master's Degree in Education because she is passionate about teaching. As vice-president of the Spanish Language Association in Cal Poly, she helps to promote the use of the Spanish language on campus by organizing cultural events such as "Noche de Cultura". Likewise, Amalia is editor of Harvest International journal where she writes articles in Spanish about the Latino Community in order to promote empathy and recognition towards Latinos/as/x. She enjoys working with students, and her main goal is to inspire and help future generations to achieve their career aspirations.

SCHOLAR ABSTRACTS AND BIOGRAPHIES

Meghan Jeffus

Mentor: Jayson Smith, Ph.D.

Title: Anthropogenic Disturbance of Rocky Intertidal Communities from Visitors Turning over Intertidal Rocks

Abstract: Humans visit rocky intertidal ecosystems for a number of different recreational, educational, or subsistence harvesting purposes and engage in a number of detrimental activities while ‘tidepooling’ such as collecting, trampling, and rock-turning. While many studies have focused on the resulting negative impact of visitors trampling and collecting on intertidal flora and fauna, the effects of rock-turning have been largely understudied. When a visitor turns over a rock during exploration or hunting, they can damage species by: (1) crushing them during the process of rock turn over; and/or (2) by not replacing the rock back into its original location, and thus exposing organisms to new, unlivable abiotic conditions. To examine the short-term and long-term effects of rock-turning on community composition, we propose to manually turn over tagged rocks of similar sizes in a Newport Beach rocky intertidal habitat. Species composition of the topside and underside of replicate rocks, as well as the substrate underneath the rocks initially will be quantified. After initial sampling, this rock will either be returned to its original location and orientation, or be left overturned. Subsamples of both treatment types will then be resampled after differing time-lapses over weeks/months, in order to examine length of time for community recovery. The results of this study will help elucidate the impact and recovery rate of the rock-associated community composition from these disturbances. This information can then be utilized in the creation or alteration of new management strategies to further protect the diversity of the coastline from visitor damage.

Biography: Meghan Jeffus is a fourth-year undergraduate at California State Polytechnic University, Pomona, and she is currently studying General Biology. Her current research explores the effect of human rockturning and other visitation impacts on rocky intertidal community health and composition. Meghan has worked in the past as a biology learning assistant, tutoring incoming college students in introductory biology courses, and currently works as a research mentor, where she provides information and advising for freshman and transfer STEM students. She plans to receive her Ph.D. in Ecology where she can continue her passions of teaching, mentoring, and research through work as a professor. During the Fall semester of 2019, she plans to apply to in-state graduate school programs to continue her academic promotion in ecological science so that she can obtain her long-term goal of teaching at the college level.

SCHOLAR ABSTRACTS AND BIOGRAPHIES

Karli Cheng

Mentor: Alejandro Morales, Ph.D.

Title: Psychocultural Determinants of Academic Achievement and Well-being in Children of Immigrants

Abstract: Children of immigrant families are constantly navigating between worlds. They acculturate at a faster rate than their immigrant parents, and are expected to remain connected with their cultural heritage. Studies with this population have identified changes in interactions such as switch of authority between parent and child, the search for the adolescent's own autonomy and identity, or changes in friend circles leading to poor academic achievement. Hence, the purpose of this study was to investigate the psychocultural determinants of academic achievement and wellbeing in immigrant children and adolescents. This study will answer how self-esteem, family cohesion, familism, and acculturation predict academic achievement and well-being in children of immigrants. To answer this question, we will utilize the national dataset from the Children of Immigrants Longitudinal Study (CILS). The CILS is designed to observe the adaptation of seventh to tenth grade immigrant students or first generation student to United States through three surveys throughout eleven years, with the initial survey at 1992. The purpose of these surveys look at the academic attainment, employment and occupational status, income, ethnic identities, attitudes towards American values, plans for the future, and overall adaptation from adolescent to adulthood. We are currently selecting the variables of interest for analysis. We will run a series of hierarchical regressions to understand how the variable of interest predict academic achievement and well-being. We will also provide ideas for future research and theory development.

Biography: Karli Cheng is a third year undergraduate at California State Polytechnic University, Pomona studying Psychology. She was a Peer Mentor for the Department of Psychology and Sociology and currently a Teaching Assistant for Introduction to Psychology and Health Psychology. When Cheng is not doing research, she is a freelance photographer, practices hand lettering, and occasionally plays music. Her research interests include the psychological well-being of children and adolescents, parenting, and family functions of diverse backgrounds. Her current and past research participation includes Psychology of Immigration with Dr. Alejandro Morales and Brain Networks Lab with Dr. Robert S. Blumenfeld at Cal Poly Pomona and the Bearden Lab with Dr. Carrie Bearden at UCLA. Cheng aims to attain a PhD in Clinical or Counseling Psychology and become a scientist-practitioner at a land grant university to mentor and guide students in research and collaborate with and serve underrepresented communities. She hopes to make a difference in the field of psychology through theory-driven and evidence-based findings.

SCHOLAR ABSTRACTS AND BIOGRAPHIES

Cindy Toscano

Mentor: Steve Alas, Ph.D.

Title: Immune Response by Inflammatory Cells to Experimental Metal Alloys Used For Prosthetics

Abstract: In the past three decades there has been an increase in the number of joint replacement surgeries among the US population. People in need of these surgeries include individuals of all ages for various physiological reasons. This has led to a large demand for prosthetics and better prosthetic materials. A prosthetic is a device that substitutes a missing or defective part of the body. The overall goal of a prosthetic is to sustain and improve the health and vitality of an individual. However, due to the limitations of implant durability, many implants must be replaced at one point during the recipient's life. Prosthetic loosening is one of the major reasons associated with implant replacement surgery, known as revision surgeries. The most common finding with failed prosthetic implants is aseptic loosening associated with periprosthetic osteolysis, the degradation of bone surrounding the implant. Aseptic loosening can be caused by the body's own immune response by a series of interactions with multiple cell types within the body. The cell types of interest to this study include macrophages, osteoclasts, fibroblasts, and osteoblasts. As metal particles are released from the prosthetic, macrophages clear the debris through phagocytosis. When macrophages become active due to the metal particles they also begin to increase their secretion of bone resorbing cytokines. The bone surrounding the prosthetic will be degraded making revision surgeries more difficult as there will be less bone to anchor the prosthetic. Furthermore, it is also important to study fibroblasts as they play a critical role in the recovery process after surgery. Therefore, we will examine whether fibroblasts have a circumstan-

tial migratory response on the surface of different types of alloys that comprise human prosthetics. Additionally, macrophages will be differentiated from HL-60 cell line and tested against the different alloys. The experimental metal alloys will include commercially pure titanium (CpTi), titanium-based alloys Ti-6V-Al (Ti64), and stainless steel (SS316L). The goal of this experiment is to examine the human inflammatory response in vitro against new metal alloys. We aspire to find a metal that will increase the longevity of prosthetics.

Biography: Cindy Toscano is a graduating senior at California State Polytechnic University, Pomona in the Biological Sciences department. She has been involved in several programs throughout her undergraduate career which include: LSAMP, SEES, and McNair. Within the SEES program she participates as a mentor for freshman and as a statistics facilitator. She also holds a position in the McNair club E-board. She began undergraduate research the summer after her first year at Cal Poly Pomona and is now participating in her second research project. She is currently researching the body's immune response to metal alloys used for prosthetics. She plans to continue doing research in the biomedical field and obtain a PhD. Her long term plan is to work in translational medicine where she can see her research findings being implemented as treatments for patients.

SCHOLAR ABSTRACTS AND BIOGRAPHIES

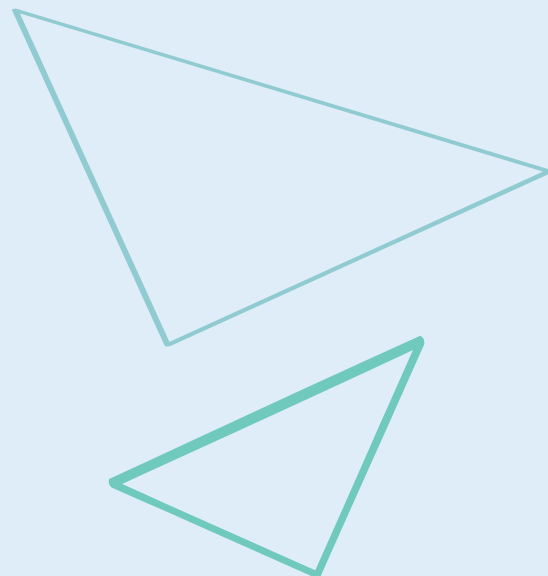
Edwin “Art” Hernandez

Mentor: James Sturges, Ph.D. & Hannah Lucas, Ph.D. cand.

Title: Does Using Cannabis Predict the Legalization of all Drugs in America?

Abstract: Since cannabis’ legality in California on January 1, 2018, many people feared its ramifications in American society and politics. The hypothesis is that California College students who used cannabis since it became legal in California would vote in favor for the legalization of all drugs in America. A survey was conducted where students were given a series of questions using a 6-point Likert scale. Measuring their agreement with the variable of the legalization of all drugs in the United States. Cannabis use since January 1, 2018 was measured on a ratio variable of either yes or no. The mean ratio information was then compared to the Likert scale. There was a measurement of participants (N=102) cannabis use since January 1, 2018 (M=.39, SD=.49) and their political views to legalize all drugs in the United States (M=1.49, SD =10.16). This study showed no correlation between a person’s cannabis use and their political view of full drug legalization in the United States (N=102, $t=-1.32$, $p < .05$). Our data supports that a person who uses cannabis will not necessarily vote for the legalization of all drugs in the United States; therefore, the chain of events of cannabis legalization leading to full drug legalization is false based on our data.

Biography: Edwin “Art” Hernandez is a transfer student who transferred from Mt. San Antonio College in the Fall of 2018. He is a Psychology major but his first degree was an associates in drugs and alcohol counseling. Having to complete that degree he picked introduction to psychology as an elective and grew a strong passion in psychology. More importantly, he was required to take a research methods class at community college. This was the first time he had ever done research of any kind; however, his professor there helped plant a seed that would lead him towards a new path in life where all three fields would connect. He plans on pursuing his PhD and apply to graduate school by late 2020, so that he may study psychology and continue to learn about drug addiction by conducting his own research studies.



SCHOLAR ABSTRACTS AND BIOGRAPHIES

Bryan Arciniega

Mentor: Adam Summerville, Ph.D.

Title: Man Vs Machine: A quantitative comparison between machine learned and analyst predictions on equity prices

Abstract: The object of this paper is to compare the results of stock prediction of a machine learning algorithm and the price targets of buy-side Wall Street analyst. The paper is titled Man Vs Machine: Can a stock prediction algorithm be more accurate in the prediction of future stock price than stock analyst's. There is a debate on whether stock analysts can be biased on their prediction for stock prices. A machine learning algorithm would not have any incentive to report predictions outside of what the data evaluated will prove and it could leader to better investment decisions. We begin by gathering price history and analyst price targets for stocks that meet these criteria: \$200bln and above market cap, over \$1mln average volume, in the technology sector, and on any exchange in the US. We implemented Facebook's Prophet forecasting package to build a model to predict future stock prices based on the price history gathered. This machine learning algorithm is an additive regression model that uses autoregressive integrated moving average (ARIMA) and exponential smoothing. Then we investigated Wall Street Firms research methodologies to establish the evaluation parameters. We then evaluated the results of the stock prediction algorithm to the price target of stock analyst.

Biography: Bryan Arciniega is a third year undergraduate at California State Polytechnic University, Pomona who is studying computer engineering and finance. He currently works as an IT technician for Cal Poly's Student Health Services where he helps to secure and scale the technology infrastructure of the firm. He is also a part of the Student Managed Investment Fund where he uses his quantitative skills to invest Cal Poly Pomona's assets. His current research investigates machine learning techniques and how it can be implemented to build financial models. He plans to receive his Master's in Financial Engineering where he can learn to leverage, finance, mathematics, and computer programming to make portfolio management decisions. During the fall semester of 2020, he will be applying to in and out-of-state graduate school programs.

SCHOLAR ABSTRACTS AND BIOGRAPHIES

Monserrat Coria

Mentor: Alejandro Morales, Ph.D.

Title: Romantic Relationships Without Borders: Understanding the Experiences of Undocumented College Students

Abstract: The citizenship status of a romantic partner plays a significant role in a romantic relationship. Laura E. Enriquez (2017) conducted a study in which she explored how citizenship status influences experiences in romantic relationships among undocumented Latina/o immigrants. The results of the study showed that undocumented immigrants faced risks associated with fear of deportation, legal employment, driving, and travel. In addition, the study's results demonstrated that due to the financial limitations associated with citizenship status, heterosexual men stop dating or delay marriage because they fear not meeting the traditional role of being the family's primary financial provider. Previous research has not focused on the community of undocumented college students. Further research on the experiences of undocumented college students will bring more awareness to the challenges that they face on a day-to-day basis. The purpose of this qualitative study is to explore the experiences of undocumented college students in romantic relationships. The questions that will be examined through this study are: how do undocumented college students navigate through romantic relationships? what kinds of challenges do they experience? and how do they cope with these challenges? In this study, I anticipate to recruit ten (N=10) undocumented (DACA or AB-540 student), undergraduate students who identify as Latina/o and are in a romantic relationship. Participants will be recruited through the university's Dreamer's Center. They will take part in a one-on-one semi-structured interview. The interview questions will pertain to the participants' experiences in romantic relationships. Interviews will be audio-re-

corded, transcribed, and analyzed. One expected finding for this study is that men's decision-making in romantic relationships will be more significantly influenced by their citizenship status in comparison to women. In addition, I expect to find that participants will share similar experiences associated with the limitations they face in romantic relationships. This study's findings will give an insight into how undocumented college students behave and feel in their current or past romantic relationship(s) given their citizenship status. Also, the study's findings will allow members of this community to further identify with and support one another.

Biography: Monserrat Coria is a fourth year undergraduate at California State Polytechnic University, Pomona. She is majoring in Psychology and minoring in Spanish. She studied at and transferred from Mount San Antonio Community College. Monserrat is a member of Dr. Morales's research lab. Her research focuses on the experiences of undocumented college students in romantic relationships, and the influence of positive psychology exercises on continuation-school students. She is aspiring to attend graduate school and obtain her Ph.D. in Counseling Psychology. Her career plans include securing a tenure-track faculty position and becoming a private practitioner to provide counseling to members of the Latinx community. Her goal is to continue to conduct research focused on the Latinx community to bring awareness to social issues related to immigration status. During the fall of 2019, she will be applying to graduate programs.

SCHOLAR ABSTRACTS AND BIOGRAPHIES

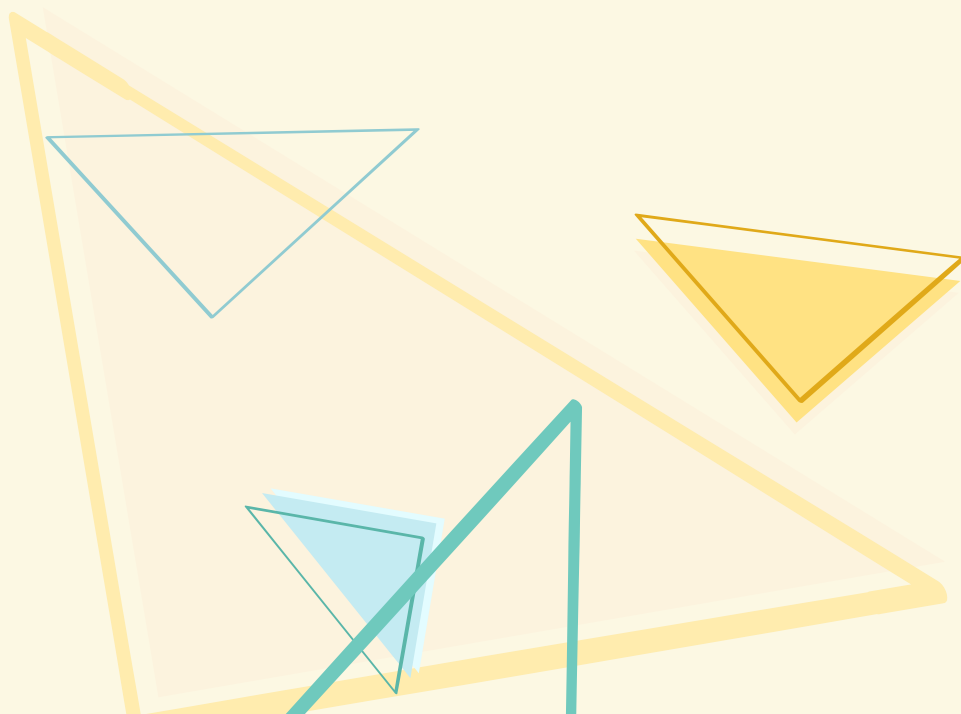
Annasofia Zuleta

Mentor: Jose Aguilar-Hernandez, Ph.D.

Title: Dreams Bigger Than Walls

Abstract: This project examines the well-being of undocumented, DACA students at California State Polytechnic University, Pomona. More specifically, this project will explore how the wellbeing of undocumented, DACA students was affected by the attempt to rescind DACA in September of 2017. To highlight the complexity of the undocumented and DACA identity and demonstrate student resiliency, 50 students took an online survey and 2 students were interviewed. The authors aim to demonstrate the importance of considering undocumented, DACA students' well-being when developing campus policies. Lastly, the authors showcase the different factors that affect the wellbeing of undocumented, DACA students besides the fear of deportation.

Biography: Annasofia Zuleta is an undergraduate student at Cal Poly Pomona and a McNair Scholar. Currently, she works with the Bronco Dreamer Resource Center (BDRC) as the Lead for Assessment and Research. In her role, she oversees the disbursement of the grants offered by the BDRC to help alleviate some of the financial stress that undocumented students experience. In addition, Annasofia also works at the Office of the Vice President for Student Affairs and is an intern with Survivor Advocacy Services where she is developing an emergency response protocol for survivors which will be institutionalized across Cal Poly Pomona. Annasofia is interested in pursuing a master's degree in Student Affairs and a Ph.D. in Education to one day create and implement equitable resources for historically marginalized students



SCHOLAR ABSTRACTS AND BIOGRAPHIES

Jennette Ramirez

Mentor: Anita Jain, Ph.D.

Title: Drag Activism: The Evolution of the Gender Deviant Performer in California

Abstract: Within the last decade gender deviant performance, particularly competitive Drag contests, has emerged in mainstream media as late-night entertainment. Yet, Drag culture and the ways in which Drag performers transform society has remained largely under-examined. While Drag performers operate in liminal spaces of gender and sexuality, they seemingly push back and reshape these spaces through the power they gain by challenging traditional gender norms. Driven to piece together this specific aspect of Drag history, I have compiled a historical timeline of influential gender deviant performers in California leading up to present day Drag Activists. In this project, I have conducted archival research, participant observations, and oral interviews to better understand the power of Drag and the influence it has on society. Currently, Drag activists are reshaping spaces outside the traditional Drag performance venue, producing programs such as Drag Story Time serving children's libraries as well as campaigns to encourage people to vote. Drag has evolved to be more than just a form of entertainment; it is a performative tool that produces real, tangible change in the communities in which they operate.

Biography: Jennette Ramirez is a McNair Scholar conducting undergraduate research at California State Polytechnic University, Pomona. She is a first-generation Queer veteran of color. Her current research explores Queer History, Social Activism, and Monster Theory. Jennette is driven to expand Queer visibility in academia and is pursuing graduate programs in American Culture. Currently, Jennette serves as a Social Justice Leader at the Cal Poly Pomona Pride Center.

SCHOLAR ABSTRACTS AND BIOGRAPHIES

Ariel Munoz

Mentor: Gregrey Hunter, Ph.D.

Title: Analyzing the California cap-and-trade program

Abstract: This study is meant to analyze the economic impact of the California cap-and-trade program. A cap-and-trade program is a market-based regulation designed to reduce greenhouse gas emissions from several sources at once. The ultimate purpose of such a program is to reduce the amount of pollutants in the air and therefore increase air quality. The California program does this by creating an incentive for factories to pollute less. This incentive comes in the form of emission allowances given to each polluter. These allowances allow a factory to pollute up to the amount that the allowance states. Releasing more pollutants than allowed means the factory must buy more allowances. However, there is a set amount of allowances in the market. Also, factories that release less than their given allowance can sell off the non-used allowance amount. This market incentivizes firms to reduce pollutants. Using a classic difference-in-difference analysis, this study attempts to measure how much of an affect this program has on the glass-plate production industry in California.

Biography: Ariel Munoz is a third-year undergraduate at California State Polytechnic University, Pomona. He plans to graduate in Spring 2020 with an Economics major and Mathematics minor. Throughout Ariel's college career, he has worked as an economics tutor, orientation leader, and founded a dance company on campus. He has enjoyed keeping his work and hobbies on campus as it has fostered a deep connection with his college. Ariel's current research deals with analyzing the California cap-and-trade program. Environmental economics have been Ariel's primarily interest within the field. He plans to obtain a PhD in Economics so he can contribute to the economic policies that would benefit the welfare of society. After his education, Ariel would like to work for a government agency that deals with environmental policies such as the Environmental Protection Agency. Ariel will be applying to graduate schools in Fall 2019.

SCHOLAR ABSTRACTS AND BIOGRAPHIES

Beverly Cotter

Mentor: Eleonora Rossi, Ph.D.

Title: Clitic Pronoun Processing in Heritage Spanish Speakers

Abstract: Heritage speakers of Spanish are individuals who were raised exposed to and speaking Spanish in their home but may have not received formal language training in an academic setting. Previous literature has shown that native speakers of Spanish are sensitive to specific violations of grammatical structures, such as gender and number marking on pronouns (Rossi, Kroll, & Dussias 2014). Their results revealed that native Spanish speakers showed the 'P600 effect', a positive ongoing wave that occurs 400-900 ms after having been exposed to a grammatical violation, (Rossi, Kroll, & Dussias 2014). This study will investigate the neurophysiological processing that heritage speakers of Spanish experience when exposed to specific grammatical anomalies, such as errors in clitic pronouns. It is hypothesized that if heritage Spanish speakers are sensitive to pronominal features in Spanish, once those grammatical features are violated they should also show a P600. The participants recruited will be right-handed and between the ages of 18 and 35, and consider themselves to be native, heritage speakers of Spanish. Data analysis will be completed on each participant, both behavioral and electrophysiological data, and the EEG data will be analyzed at the group level to investigate what specific sensitivities participants have to grammatical processing. Preliminary results have shown that participants are in fact, more sensitive to clitic pronouns, but more analysis has to be done to make further conclusions.

Biography: Beverly Cotter is a third year undergraduate student at California State Polytechnic University, Pomona majoring in Psychology. Currently, she is conducting research with her faculty mentor, Dr. Eleonora Rossi, focusing on the language processing of heritage speakers of Spanish and English using the neuroimaging technique of electroencephalography (EEG). Beverly is also a Research Assistant for the Asian American Transnational Research Initiative "iGen" team, conducting research on the Millennial and iGen population. In the Fall, Beverly is planning on applying to Cognitive Psychology Ph.D programs to further her research on language and its cognitive processes, but she hopes to find a way to connect both of her research passions: psycholinguistics and sociological research on Spanish-English bilinguals and minority groups. Beverly's long term goals include becoming a faculty member at a university mentoring students in research, academia, and their personal goals, just as she has been mentored by such great faculty members. Without those mentors, she would have never believed she could be capable of pursuing a Ph.D.

SCHOLAR ABSTRACTS AND BIOGRAPHIES

Jose Becerra

Mentor: Amy Dao, Ph.D.

Title: Environmental Health Risk Perception

Abstract: The focus of this study is to better understand how local communities perceive the health risks of air pollution in San Bernardino County, CA. Globalization is affecting local communities through processes of distribution in the United States. More specifically distribution centers are creating high health risks due to air pollution affecting the surrounding communities. It has led to air quality in areas of San Bernardino County being unhealthy on a daily basis: the local communities show high rates of asthma, cardiovascular disease, and cancer. The research aims to address the local perception of air pollution and investigate agency and structure. I employ participant observation, informal semi-structured interviews, and life histories to gather data from residents in close proximity to high pollution areas, environmental justice groups, and publics outside of major risk zones.

Biography: Jose R. Becerra is a fourth-year anthropology student at California State Polytechnic University, Pomona. Through the guidance of faculty in the Anthropology department, Jose developed an interest in the overlap of environment and health. His earlier interest looked at consumer culture by investigating the entrance of exported goods through Long Beach ports, and their movement east towards distribution centers in the Inland Empire. This led to his current research on air pollution as a result of those processes, and the health impacts on local communities. He plans on beginning a graduate program fall 2019, where he will pursue an M.S. and Ph.D. In particular, Jose wants to do research in Central America with small-scale coffee farmers in order to help amplify the voices of underrepresented communities, advocate for policy, and raise international awareness of globally connected issues.

SCHOLAR ABSTRACTS AND BIOGRAPHIES

Jenny Martinez

Mentor: Yong X. Gan, Ph.D.

Title: Measuring work function of Gold, Silver, Indium and alloys using Kelvin Force Microscopy.

Abstract: A molybdenum disulfide (MoS₂) Field Effect Transistor (FET) is an atomically thin multilayer device vertically stacked. For the past ten years, two dimensional dichalcogenides have been the subject of intensive research. MoS₂ has been the most studied due to its charge carrier mobility similar to silicon and superior thermodynamic limit, and band gap semi conductivity, not present in graphene. MoS₂ seems to be the most promising next generation substrate able to bring future development in electrical, physics, chemistry, and biomedical applications. One of the aspects which optimizes MoS₂ performance have been proven to be the interphase and the specific materials used for contact in the FET. The main purpose of this project is to measure, quantify, compare, and identify the minimum amount of energy required to remove an electron from a solid's surface to infinity, the work function (WF), of the ideal metal and alloy. In this study, we synthesize between two and ten layers of metals and alloys through Electron Beam Evaporation. We quantify and compare the WF of Gold, Indium, Silver, Indium/Platinum, and Indium/Gold alloy using Kelvin Force Microscopy (KPFM). In order to identify the ideal pure metal or alloy which work function matches the work function of molybdenum disulfide.

Biography: Jenny Martinez is a Mechanical Engineering major at California State Polytechnic University, Pomona (CPP). She is a member of Pi Tau Sigma the International Honor Society for Mechanical Engineers and a 2018 Ronald E. McNair Post-Baccalaureate Achievement Program scholar. Jenny is also a researcher under the supervision of Dr. Yong X. Gan and his team developing a piezoelectric device from carbonized nanofibers which harvests electrical energy from mechanical forces. Jenny conducted research at the Advanced Materials and Nanotechnology department at Rutgers University, New Jersey. Under the mentoring expertise of Dr. Yan Wang and Dr. Manish Chhowalla, she was able to measure the minimum energy required to remove an electron from a metal or alloy surface to infinity, the work function (WF) using Kelvin Force Microscopy (KPFM). The identification of the ideal WF in few layers of metal which matches the WF of MoS₂ allows an increase of the efficiency of Field Effect Transistors. In April 2019 the manuscript in which Jenny is a co-author was published in the highly prestigious journal Nature. Jenny was accepted at a research program at Caltech University in Pasadena for summer 2019 and will be conducting research under the mentorship of Dr. Chiara Daraio. After graduation from CPP, Jenny plans to pursue a Ph.D. in Material Science and Applied Physics.

SCHOLAR ABSTRACTS AND BIOGRAPHIES

Jesus Navarro

Mentor: Alejandro Morales, Ph.D.

Title: Ethnic Identity, Acculturation, and Body Image among Latinx Male College Students

Abstract: Body image dissatisfaction is an issue facing men and women in the US. Feelings about body image often lead to negative mental health outcomes, such as depression and low self-esteem. For many years body image dissatisfaction was considered a White Female problem. Much of the literature mentions that one of the main influences of body image satisfaction/dissatisfaction is America's Anglo-Saxon mainstream idealization with thinness as the perfect body type. Research surfacing within the last decade has shown that men and women of color also struggle with this concern. However, studies focusing on Latinx communities and body image is scarce. Some of this research highlights that Latinx men and women showed higher body satisfaction than their White counterparts. Interestingly, researchers continue emphasizing how cultural determinants impact the body image perceptions of Latinx men. For example, a strong ethnic identity has been linked to positive mental health, thus, ethnic identity may account for positive body image perceptions among Latinx men and possibly more so if they are less acculturated to mainstream society. The purpose of this study is to test the cultural determinants of body image perceptions among Latinx college males. Thus, our proposed study will answer the following research questions: (1) how does ethnic identity influences body image perceptions in Latinx college students? (2) What is the role of acculturation to the mainstream Anglo-Saxon American society with influences body image perceptions in Latinx college students?

Biography: Jesus Navarro is a fourth-year undergraduate student at California State Polytechnic University, Pomona majoring in Psychology with a minor in Spanish. Jesus has been doing research with Psychology Professor Dr. Alejandro Morales since his second year and working on his own project under Dr. Morales' guidance. Jesus' current project investigates the relationship between ethnic identity, acculturation, and body image perceptions on Latinx male college students. He plans to make the most of this project and to publish it in the Psi Chi Journal once the project is complete. Jesus plans to pursue his PhD in Clinical or Counseling Psychology and become a bilingual therapist and researcher to help his community. Jesus will be graduating in Fall 2020 and hopes to dive directly into a PhD program at a university of his choice.

SCHOLAR ABSTRACTS AND BIOGRAPHIES

Maylen Lim

Mentor: Jeffery Mio, Ph.D.

Title: Metaphor Extension

Abstract: In previous research studies, the Metaphor Extension Hypothesis was used to examine the effectiveness of figurative language within political discourse. As a result, the Metaphor Extension Hypothesis demonstrated that participants preferred to use a response that extended their hypothetical opponent's metaphor as opposed to creating their own metaphor or a literal response. This study aims to test the effectiveness of the Metaphor Extension Hypothesis by utilizing metaphors that arose political debates during the first six months of the Trump Administration collected from articles in Time Magazine. For this study, participants are to imagine they are a speaker who must counter their opponents position in a political debate. As the respondent, participants are to choose one of the following responses: a metaphor extension, a competing metaphor, or a literal response. Preliminary data from 20 research participants (14 female, 6 male) found that metaphor extensions were their preferred response over their metaphor non-extension counterparts, 64% to 36% respectively, and metaphor extensions over their literal counterparts, 63% to 37%, respectively. This preliminary data supports the Metaphor Extension Hypothesis.

Biography: Maylen Lim is a fourth-year undergraduate student at California State Polytechnic University, Pomona who is studying Psychology. In her previous years, she worked as a customer service representative while participating in on-campus organizations such as Psi Chi and being a preschool assistant teacher. She currently works at a mental health facility for foster and probation youth. Her current research delves into how metaphors can be used as a persuasive device in political debates. She plans to receive her Ph.D. in Clinical Psychology or her masters in Counseling Psychology where she can gain the tools needed to academically and socially benefit her community. Her short term plans are to continue her work as a child counselor and continue her research on metaphors and politics. Her long term plans adhere to the promotion and advancement of higher education. During the Fall Semester of 2019, she will be applying to in-state graduate school programs.

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Tom Zasadzinski

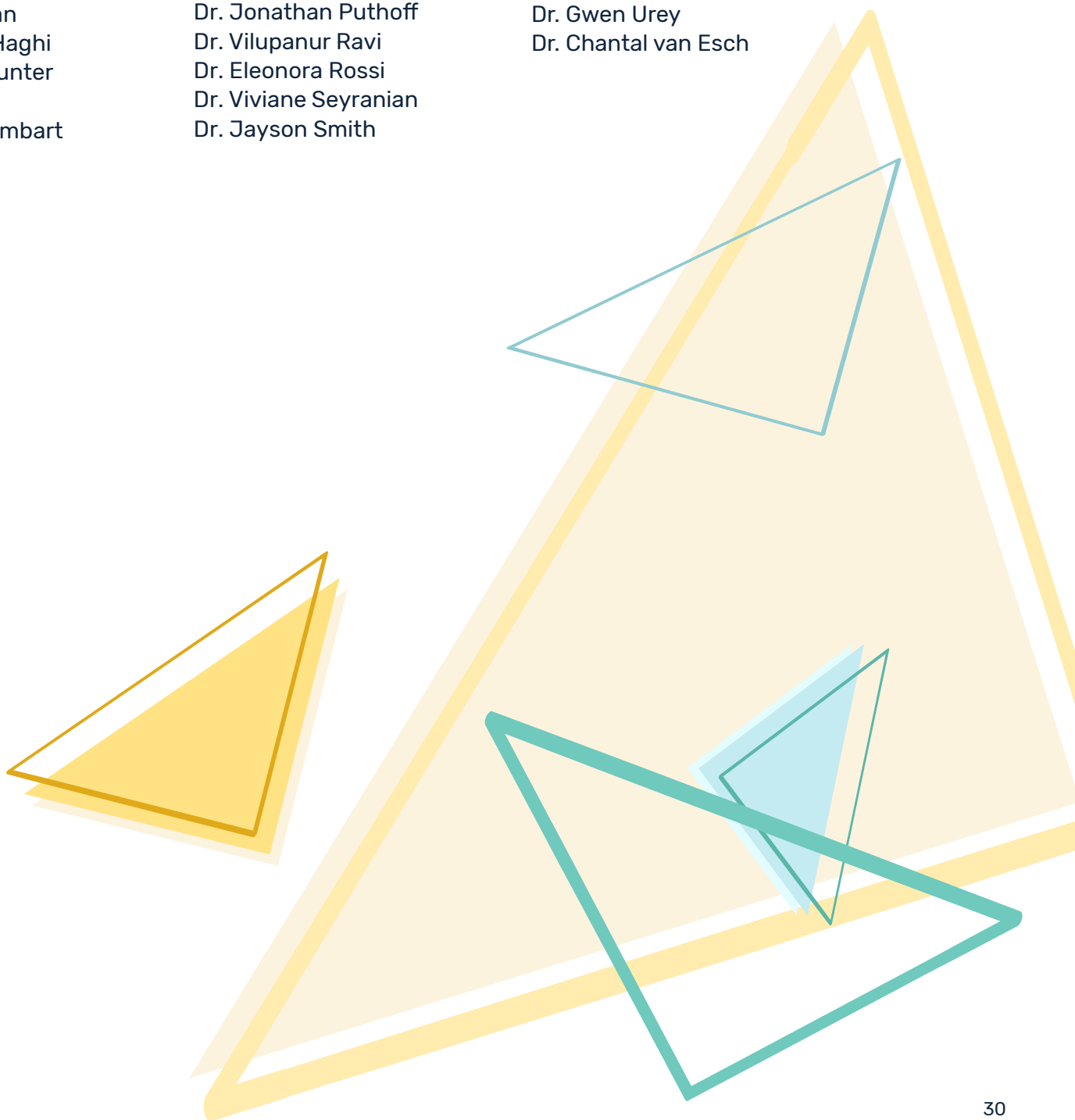
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Dr. Yong X. Gan
Dr. Mehrdad Haghi
Dr. Gregrey Hunter
Dr. Anita Jain
Dr. Amalia Llombart

Professor Hannah Lucas
Dr. Jeffery Mio
Dr. Alejandro Morales
Dr. Jonathan Puthoff
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Dr. Eleonora Rossi
Dr. Viviane Seyranian
Dr. Jayson Smith

Dr. James Sturges
Dr. Adam Summerville
Dr. Jenny Switkes
Dr. Gwen Urey
Dr. Chantal van Esch



ABOUT TRIO AND THE MCNAIR SCHOLARS PROGRAM

The Federal Trio Programs (TRIO) are Federal outreach and student services programs designed to identify and provide services for individuals from disadvantaged backgrounds. TRIO includes eight programs targeted to serve and assist low-income individuals, first-generation college students, and individuals with disabilities to progress through the academic pipeline from middle school to postbaccalaureate programs.

Designed to assist first-generation, low-income students and those who are underrepresented at the graduate and doctoral level, the program at Cal Poly Pomona was first funded in 1999. The Ronald E. McNair Postbaccalaureate Achievement Program is named for Dr. Ronald E. McNair, one of those who perished aboard the space shuttle Challenger January 1986.

The McNair Scholars Program at Cal Poly Pomona is a one- or two-year program designed to improve students' research skills and prepare them for entering graduate schools and advanced study. This education grant provides an internship opportunity for students to learn how to do research, present their findings at a summer symposium at the national conferences, and successfully apply for and enter graduate school. Through the efforts of the students themselves, the faculty mentors, and the program staff, these students can achieve their goals.

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