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## 2016 URSCA Abstracts

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## 2016 URSCA Abstracts

### Brianna Ahn

#### Effect of Organophosphate Pesticide Exposure on Neuronal Viability and Susceptibility to Neurodegeneration

Organophosphates (OPs) are a widely used and readily available class of pesticides and nerve agents that inhibit acetylcholinesterase (AChE), the enzyme responsible for the degradation of the neurotransmitter acetylcholine (ACh). The toxic effect of AChE inhibition includes hyperstimulation at cholinergic synapses, damage of neurons, and predisposition to neurodegenerative disorders. Prenatal or childhood exposure to OPs have also been found to be related to abnormal brain development, cognitive deficiencies, and other functional impairments. This study seeks to understand the acute effects of organophosphate pesticides—chlorpyrifos (CPF), dichlorvos (DDVP), and diazinon (DZN)—on differentiating PC-12 cell viability and susceptibility to oxidative stress. Analysis of cell viability using the MTS assay showed that all three pesticides have a dose-dependent influence on cell survival when PC-12 cells were exposed during their entire differentiation period. CPF concentrations over 25  $\mu\text{M}$  exhibited significant toxic effects ( $p < 0.01$ ). Whereas, significant toxicity levels for DDVP and DZN were determined at concentrations greater than 100  $\mu\text{M}$  ( $p < 0.01$ ). Additionally, stage-specific studies indicate that PC-12 cells are most sensitive to CPF, DDVP, and DZN toxicities at late stages of differentiation during neuronal synaptogenesis. When exposed to sub-lethal concentrations of CPF, DDVP, and DZN over the entire differentiation period, effects on susceptibility to H<sub>2</sub>O<sub>2</sub>-induced oxidative damage was also observed in the PC-12 cells. These results demonstrate that OPs adversely affect PC-12 cell survival and normal differentiation. Exposure to these pesticides also increases neuronal susceptibility to oxidative damage and may predispose individuals to neurodegenerative disease.

## **Hunter Alexander**

Vers une autre vie (Towards another life)

Death. The grand equalizer, yet it is also a part of the circle of life. Ahmadou Kouroma, one of the most influential African writers of the 20th century, discusses this concept of death and life in his work “The Suns of Independence.” This presentation will examine the cycle of life of Fama, the main character and a member of the Malinké tribe, in order to explore the relationship that the Malinké have with death and how they go about celebrating and respecting it. First, we will look at the earthly rites, performed at every Malinké funeral, and their components in order to show the pomp and ceremony that accompany them, as the ceremonies can be quite grand. This includes the so called “griots”, parties, food and animals. From there we will go into how animals are representative of the Malinké beliefs as well as how they relate to Fama so that we can highlight his fall from prince hood into the life of a beggar. Finally, we will examine the belief in reincarnation held by the Malinké, looking into the way that they see death positively, a new beginning. We will examine more closely how Fama embodies this belief to emphasize the journey that he takes. Life is a cycle. We feel both pleasure and pain, but death does not have to mean sadness, instead, it can be a joyful new beginning of life.

## **Julie Alvarez**

The Benefits of Sleep and Exercise on Percent Body Fat

A variety of Americans believe that in order to live a healthy lifestyle they should get the suggested eight hours of rest and exercise at least four hours a week. However, both of these variables may not be fundamental to complete a solid muscle to fat ratio. Americans are not fully aware of what they are ingesting during their meals. During the extent of twenty years, obesity has consumed the bodies of the occupants in America (Weaver

Aaron et al, 2009). To reveal why this is happening, this study will utilize the Bod Pod machine to analyze the relationship between the hours of rest and practice of the muscle to fat ratio. The participants were twenty-four females of different ages, body types, amounts of sleep per night, and hours of exercise per week. All participants fasted for an eight-hour period and wore tighter and less clothing than usual. They were also surveyed on the amounts of hours they slept per night, hours they exercised per week, and their weight. Through experimentation with the Bod Pod, we were able to conclude how the hours of sleep and exercise affected the percent fat mass and percent free fat mass. The final analysis can be utilized to prove the validity to use the Bod Pod to calculate whether or not there exists an epidemic of obesity within the United States, and possibly across the globe.

## **Joseph Anderson and Imelda Castro**

### **The Effects of Stress on Blood Pressure and Heart Rate in Pre- and Post-Stress Environments**

Stress is a known factor for a physiological response such as an increase in blood pressure and heart rate. This study analyzed how blood pressure and heart rate is impacted from a pre-stress to post-stress environment. These responses are regulated by the sympathetic nervous system; the primary function of this system is to initiate the fight or flight response in an effort to maintain homeostasis. These responses can affect homeostasis by altering the heart rate, blood pressure, and the production of adrenalin. Aside from these major changes, there are smaller changes such as the release of stress hormones which regulate homeostasis during smaller, less life-threatening events when these responses are triggered. Public speaking is a common event that can create an increase of stress on the speaker which is also referred to as situational stress. Participant's blood pressure and readings were taken in days prior to their presentation to have a baseline reading for a pre-stress environment. The participants

then delivered an oral presentation where their readings were taken at the conclusion of their presentation and these readings were classified as post stress. We hypothesize that there will be an increase in both blood pressure and heart rate due to being exposed to a stressful environment. Both heart rate and systolic blood pressure increased in the raw data within the majority of those who presented with heart rate increasing on average of 73.5 bpm to 92.4 bpm and systolic blood pressure increasing on average from 128.4 mmHg to 145.6 mmHg. After conducting T-tests, our data suggests that the change in heart rate is not statistically significant however, the change in systolic blood pressure is statistically significant due to the data yielding a confidence ratio higher than 95 percent. This data suggests that the fight or flight response is activated when stress is introduced, but since public speaking does not require increased oxygen demand to the muscles, blood pressure increases due to the stress hormones of adrenaline and cortisol being released within the blood in response to this situational stress.

## **Krissy Arechiga**

### *Divorce and Macroeconomic Instability*

Divorce rates in the United States have fluctuated over the past several decades and variation in divorce rates is common across states in any given time period. Variation in the economy's macroeconomic performance has coincided with the observed variation in divorce rates; thus, the link between divorce and macroeconomic instability has been a topic that has received considerable attention. While there have been many empirical studies on the topic, the methodologies that researchers have employed and the reference periods they have examined have resulted in differing results. The analysis presented here extends the related empirical research by looking at the effects of state unemployment rates, growth in gross state domestic product and inflation rates (measured at the national level) on state divorce rates. The analysis uses panel data

from five points in time (1990, 1995, 2000, 2005, and 2010) to analyze whether macroeconomic instability has any effect on divorce rates. A linear regression model is employed and both state- and time-fixed effects are accounted for. I conclude that there is a significant and robust negative relationship between state unemployment rates and divorce rates. National inflation rates, on the other hand, are robust and positively associated with divorce rates. Gross state domestic product is not found to be a significant determinant of divorce rates. However, the estimated relationships are statistically significant only when state and year fixed effects are controlled for. These results add to the existing literature by analyzing three macroeconomic variables and providing greater insight on the influence that these factors have on divorce rates.

## **David Arellano**

### Contracts: The Effects on Major League Baseball Player Performance

Major League Baseball (MLB) contracts are a cause of concern for owners and organizations involved with the signing of professional baseball players. Unlike other sports leagues, such as the National Football League, MLB contracts are distinct in the fact that the salaries are guaranteed regardless of performance or amount of games played. Although performance bonuses are often included within a player's contract and treated as an incentive to perform above expectations, they are negligible when compared to the guaranteed contractual amount. As a result, effort is questioned when players perform below expectations, and they are frequently criticized of engaging in opportunistic behavior due to the lack of incentives after signing a multi-year contractual agreement. Although this behavior is assumed to be widespread throughout Major League Baseball, it may be a common misperception due to availability bias as the most prolific players are criticized of engaging in opportunistic behavior. However, this behavior may not be representative of MLB players that do not garnish as much media attention or fan following. To thoroughly

analyze opportunistic behavior, most commonly referred to as “shirking,” this study uses panel data for MLB players from the 2005-2009 seasons to determine whether professional athletes engage in opportunistic behavior with regards to the players’ contract status and performance level. This study examines player performance prior to free agency, following free agency, and for players who are under team control, which includes players who are ineligible for free agency and who are signed to a multi-year contract. Opportunistic behavior is derived by the regression of the various performance measures, which includes OPS, OPS+, WAR, and wOBA, as a function of age, age<sup>2</sup>, games, playoff appearance, and controlling for the players’ position and contract status. The results substantiate the perception of opportunistic behavior and provide insights that are useful for application within the labor market.

## **Sansanee Arunpoolsap**

### **Effects of Oregano Oil on Bacteria**

Many bacteria today have become resistant to antibiotics. Oregano oil contains carvacrol [2-methyl-5-(1-methylethyl) phenol] and thymol (2-isopropyl-5-methylphenol), which are shown to have anti-bacterial and anti-fungal properties. This study aims to investigate the effects of oregano oil on gram-positive and gram-negative bacteria. According to previous research, these compounds disrupt bacterial cell membranes causing them to change shape and lose functionality. This experiment used two pathogenic foodborne bacteria as the gram-negative and gram-positive bacterial models, respectively: *Escherichia coli* and *Staphylococcus aureus*. Both types of bacteria were cultured on SOC media agar plates at 37°C. A disk diffusion method was used to determine the zone of inhibition. *E. coli* and *S. aureus* were treated with dilutions of oregano oil and changes to colony numbers were determined. The results show that the number of colonies of both gram-positive and gram-negative bacteria decreased after being exposed to oregano oil. The T-test was performed and the p value

was calculated to be 0.002 which means that the difference was statistically significant. Gram-positive bacteria were statistically more susceptible than gram-negative bacteria ( $p < 0.05$ ). This suggests that oregano oil is effective in killing bacteria and can be used as a natural treatment for infection.

## **Alex Bedolla**

### Neural Regions of Significance in Gestural Communication of Native Deaf Signers: An fMRI Study

The purpose of this study is to investigate the neural regions associated with gestural communication in native deaf signers who use American Sign Language (ASL). Both ASL and pantomimes engage the manual-motor system in the brain, but only the former engages the linguistic system. Utilizing functional Magnetic Resonance Imaging (fMRI) to map the relationship between ASL recognition and production, and pantomime recognition and production. Participants in our study viewed videos of actions (e.g., person using a hole puncher, whisking in a bowl) and signs/ASL representing the actions. Participants either performed a recognition task or a production task. For the recognition task, videos were presented in pairs and participants had to indicate whether or not the pairs of videos matched (i.e., videos were both ASL or gestures, or a combination of ASL and gestures). For the production task, participants either gestured the action or they produced the sign for the action. This study found that recognition and production of gestures produced activations in bilateral middle and superior temporal gyri, inferior frontal gyrus, and left inferior parietal cortex. Additionally, we found overlap of recognition and production of gestures in area Spt in the left hemisphere, a region previously implicated in sensory-motor processes in language. A comparison of recognition of gestures with recognition of ASL yielded greater activation in bilateral superior temporal and middle temporal gyri. Finally, we found greater activation in inferior frontal cortex and the

insula associated with the production of gestures compared to the production of ASL. Our results suggest that manual gestures used non-linguistically recruit neural regions commonly engaged in language processes.

## **Anders Blomso**

### **Inclusion, Exclusion, and Ideological Frameworks**

Where, how, and why, does inclusion occur? On whose terms? Across which borders? Inclusion, and its opposite, exclusion, are definitional exercises that occur within and often remake preexisting ideological frameworks. This panel works from the micro to the macro, examining issues related to inclusion and exclusion, first in the Hindu tantric text, the “Hymn to Kali”. By examining the place of this hymn within preexistent Hindu theological and philosophical frameworks, we will understand that tantric practices integrate many practices and seek to include or unify the individual practitioner in the salvific state or realm of the goddess Kali. Next, research on the experiences of LGBTI individuals in Cape Town, South Africa, illustrates how Christian and Muslim groups have negotiated inclusion and exclusion in their social life, and to what end. This paper contests the notion that religious and queer identities are insoluble by asserting that recent years have seen an uptick in inclusive practices by churches and mosques. A third paper explores how political leaders are affected by ideological frameworks in their decision to try to include in their political agendas different regions in global politics. This final paper asserts that President Richard Nixon’s posture towards South East Asia was heavily influenced by the ideological framework established during the Cold War, by examining primary documents that detail his trips to Thailand, Burma (Myanmar), and Indochina (Laos, Cambodia, and Vietnam), with special attention to his ideas about Communism. Overall, this panel looks at different methodological (textual, ethnographic,

political) and theoretical approaches to ideas and practices of inclusion and exclusion across disparate ideological frameworks.

## **Marcell Blow**

### Community-Law Enforcement Cohesion

The aspect of community policing implementation is a key theory to a way to reduce crime as well as improve the community-law enforcement cohesion. Tensions between law enforcement officers and the communities they police have increased in the recent years. We need policies and programs that bring police and communities together to reduce this tension and fight crime. With my research question being, which crimes do the methods of community policing have the most effect in the fight against crime and building stronger relationships between law enforcement and the society? This study was administered on a police department residing in a suburban city in southern California. Qualitative data consisted of interviews and observations. Statistical data of the criminal offenses in the community was the quantitative analysis. The accumulation of data was used to find correlations to officer opinions of most prominent offenses in their community they police, the amount of action they spend interacting with the community through programs and if there are programs in place to combat the rise of certain criminal offenses. Research suggests that successful programs change the perceptions that police have of youth, from seeing them as targets to appreciating them as community assets. Also, increasing communication and transparency between police and community members enhances cooperation and trust. Most research focuses on community responses to

law enforcement. My research examines how police officers perceive the communities they patrol and which programs or policies they believe would work best to reduce crime and increase police-community cohesion. In agreement with the literature the findings reveal that this department is understaffed, as well as there is a lack of community programs through the department as a result of budget cuts. In addition to the officers feeling the community has a lack of education to what goes into the officers' daily duties. The findings of this study are influential because now we can make strong correlations based off of statistical data compared with what the officers are experiencing. It is apparent that law enforcement needs to invest in educating the community as well as provide proactive programs for the youth of the community.

## **Amanda Cabanilla**

### Form, Function, and Structure: Online Dating While Fat

Fat acceptance movements within the US have become more visible in recent years, coinciding with increasing use of the Internet, which has become a crucial mediator of our social and romantic lives. The Internet has provided a new platform for the formation of romantic relationships, with as many as 23% of Americans aged 25-34 entering into marriages and long-term relationships through online dating (Pew Research Center). How do online dating sites both commodify and fetishize fat women's bodies while simultaneously creating a space for their liberation and recognition as legitimate objects of desire? To what extent can online users achieve social and sexual liberation within the parameters made available to them on niche dating websites? Similar to ongoing debates about pornography, feminists question whether fat women can challenge normative beauty ideals by intentionally sexualizing their bodies within a society plagued by unequal gender power dynamics and the sexual exploitation of women. Anonymous profiles were created for two mainstream and two niche dating websites/applications and 15 male and

15 female profiles that met predetermined criteria were sampled from each dating platform. An analysis of the form/structures of niche online dating websites for individuals seeking “big beautiful women” suggests the replication of social biases against fat women embedded within the websites in the form of questions indicative of the popular depictions of fat women as undesirable. Furthermore, mobile dating applications also impose additional structural limitations on the formation of users’ online identities not found in web-based dating sites. A content analysis of the free-form response sections within user profiles suggests site users are failing to challenge the structural impositions placed upon them, instead seeming to conform without significant resistance. Niche dating websites perpetuate fat stereotypes through the overt sexual fetishization of female subscribers, suggesting deliberate efforts to maintain popular images of the paradoxically hyper-sexualized undesirable fat woman waiting to fulfill male fantasies. Authentic self-expression online is significantly curtailed by the rigidity of digitized hegemonic gender norms and power relations.

## **Valeria Cabral**

### **The Battle Between being a Soldier or being a Woman**

Before the 1940s when women were attending schools for the first time and being involved in sports, society questioned their competence and demonstrated concerns regarding how these involvements would affect their reproductive system and take away from their female duties.

Similarly enough, when women began enlisting in the military in the 1940s their intention to join the military was questioned. When joining the military, women were believed to join with the intention to look for a husband, find multiple sex partners, or simply try to be male. However how often do we see men being questioned on their reasons to join the military? Men are often getting praised and celebrated for wanting to join because they will be defending their country and the values of justice, equality, and freedom. Interestingly enough, women who wish to do the

same are denied the freedom to do so and the equal treatment they deserve for also being soldiers fighting for our nation. Melissa Herbert, Assistant professor of Sociology at Hamline University in Minnesota, wrote the book titled, *Camouflage Isn't Only for Combat* in which she explains how women who enter male-dominated areas are often confronted by societal expectations concerning what makes a “real woman”. Often, the idea of this “real woman” does not involve her carrying a weapon, sleeping in foxholes, and not showering. In this paper, I will demonstrate how despite the advancements women have made in society, and in gaining access to military positions, women still face gender discrimination and have to prove their competence as soldiers, while also maintaining their femininity as women. Considering the growing number of women still entering the military to this day, it is important to ask the following, can women be both women and soldiers at the same time, if the military holds justice, equality, and freedom as its core values, then why is it that women join with the fear of inequality and unjust treatment?

## **Emily Cadena**

### **LatiNO Student Left Behind? Why Latino Males Are Not Graduating from College**

Based on the 2010 Census, Latinos are the fastest growing ethnic group in the United States, and the group is projected to be driving the American work force in just a few short years. However, a concerning anomaly has recently been discovered: Latinos are struggling the most with educational attainment, making them the least likely demographic (especially males) to attend and graduate from college. This paper presents research from 10 interviews with Latino men to examine factors that impeded their capability to attend and/or persist in college. Specific factors examined were family support, financial responsibilities and concern, and encouragement from peers and educators. Unlike previous research, this

paper will thoroughly explore father-son relationships, and how various dynamics of such may so heavily influence a Latino male's decision to attend college or not. Data were analyzed using accordant qualitative research. Findings suggest that of all factors explored, the lack of parental support, in terms of having no knowledge about financial aid, the application process, or the American college system itself contributes the most to Latino males not attending or graduating from college. Suggestions for further research are provided.

## **Scarlett Cazares**

### **The Function of Social Networks in the Daily Lives of People Experiencing Homelessness**

At the start of 2014, The United States had an estimated 578,424 people experiencing homelessness. In 2015, there were 44,359 people experiencing homelessness in Los Angeles County alone. This study seeks to understand the function of social networks in the daily lives of people experiencing homelessness. Research was conducted in a suburban city just outside of Los Angeles. It uses primarily ethnographic methods, including field observations and interviews to understand the ways social capital and recovery capital work in the lives of people experiencing homelessness; as well as what kinds of relationships they have with each other and with “support networks”, which are crucial to transitioning out of homelessness, as well as coping with day-to-day life. It is important to note that much of the research focus thus far has been on youths and substance abusers who are already in shelters. With the focus on demographically similar groups, these studies lack the understanding of the interactions between members of these groups. Additionally, research

has predominantly been conducted in urban areas, excluding the experience of suburban homelessness. Matching the literature, findings include the cultivation of resourceful relationships which have resulted in access to services, as well as the utilization of social networks to enhance self-esteem. My research also draws attention to a concept I call “trust networks” which are comprised of people with whom the safety of self and possessions are presumed. Ultimately this study provides an understanding of the social lives of those that experience homelessness in our communities; and the ways in which social networks can aid the alleviation of homelessness as a social problem.

## **Allison Cox**

Lights, Camera, Female Action: Exploring the Media’s Depiction of Women’s Activism in the Arab Spring in Egypt

This paper will examine the roles women played in the “Arab Spring,” revolutionary uprisings that occurred across northern Africa with specific emphasis in regards to female activism in Egypt. As many of the North African societies were changing, through similar means of protest and civil unrest to achieve governmental and societal advancement, the uprisings in Egypt in particular used media as a means of achieving social and political change. This paper will analyze how women were portrayed within the media as icons and symbols of their gender. Through the use of viral videos, social media, and news media, women were able to expand outside of their homogenous representation and claim a sense of agency within this historical movement. However, the roles that they held within the revolution proved to be significantly different from their societal roles post-uprising.

## **Nicholas Creason**

## Novorossiya, Crimea and Russian Irredentism

This paper will investigate Russian irredentism with a focus on the region called Novorossiya as well as Crimea. These regions, which lay outside of Russian Federation but were once part of the Russian Empire and its successor the Soviet Union. They seem to hold a special significance in the minds of some ethnic Russians both outside and inside Russia as being an integral part of Russia. I will draw on newspaper accounts as well as on literature to examine the views and goals of the ethnic Russians who wish for these territories to be part of the Russian Federation, as well as the policy goals of the Russian government. My paper will draw conclusions about the reasons for not just the conflict in the Ukraine but also similar conflicts that exist in other former Soviet Republics such as Transnistria in Moldalva.

## **Samantha Cruz**

*A Turn Around the Garden: Julia Margaret Cameron's Critique of Garden Imagery in Tennyson's "Maud" and "The Gardener's Daughter"*

I analyze three photographs posed and taken by the 19th-century photographer Julia Margaret Cameron in 1867-1868 which are titled after lines from Alfred, Lord Tennyson's poems "The Gardener's Daughter" and "Maud." Both poems by Tennyson use garden imagery in order to create an idyllic space where the woman is sequestered and safe from the increasingly industrialized world beyond the gate. Cameron challenges these Victorian gender conventions by reclaiming the image of the garden. In Victorian society, women were expected to straddle the line between childlike innocence and matronly decorum. Julia Margaret Cameron, being aware of the contradictory expectations of women, sets out to show a progression through her own understanding of the garden, moving from praise to criticism. In "The Rosebud Garden of Girls" (1868), Cameron utilizes the physical closeness of her models as well as her characteristic blurred focus to create an idyllic and ethereal landscape in

which the girls enjoy each other's company. This dreamlike quality celebrates the garden as a female space allowing for female friendship apart from male influence, a parallel to the closeness of the female flowers inside Maud's garden described in Tennyson's poem, "Maud." However, in "The Gardener's Daughter" (1867) titled after the Tennyson poem of the same name, Cameron moves towards questioning the garden, suggesting the space is inherently unsafe because it allows the male to gaze in and idealize the female, just as the narrator does to the gardener's daughter in Tennyson's poem. Cameron does so by again blurring the landscape that lies beyond garden gate in the photograph, creating a feeling of unease in the viewer as the negative space looms threateningly behind the maiden within. Cameron's criticism of the garden culminates in her *The Passion Flower at the Gate* (1868), in which her subject is much more dynamic, showing an anxious expression and gripping the garden gate in desperation. Cameron makes use of sharp angles and lines in order to portray the garden as suffocating and menacing because it confines the woman, an image in direct opposition to Tennyson's idyllic descriptions in "Maud." By critiquing the garden, Cameron establishes herself as a worthy female artist who ultimately rejects Tennyson's male representation since it perpetuates harmful ideas of what a woman should be.

## **Russell De La Rosa**

### Hitler's Consorts: A Study of German Women in Nazi Germany

This study will investigate the interactions, treatments, and involvements of German women within The Third Reich during World War II. With the general, under-representation of women within the social structure, this study seeks to illuminate the harsh, patriarchal ideologies of the Nazi regime that was forced upon the German women during the pre-war and war periods. I will also offer the argument that German women were stigmatized within a strong patriarchal society, promoting the idea that Nazi nationalism was really heterosexism during World War II. Generally,

German women were limited in their involvement in the Nazi regime and were expected to stay home with the children while the soldiers were away from home. On the other hand, there were also German women who were very active within the Nazi regime that promoted the party's ideologies, as well as promoted the visual of the "ideal German woman" in the eyes of the Nazi regime. As recent studies show, with the increasing conflict and the heat of war, women took a more active role in the Nazi regime during war-time that included work as secretaries, nurses, and even guards. Although the women were able to take more of an active role to somewhat "level the playing field" with the male soldiers, they were still restricted to what Adolf Hitler allowed them to do. Lastly, we will also explore the war crimes German women faced from enemy soldiers during wartime, as well as the acts of female genital mutilation that occurred upon German women that were deemed unfit to further the progression of the Aryan race according to Hitler's Third Reich.

## **Tana Duong**

College Admission Rates: Examining Correlation Between Externalities and Household Influences to Higher Education Admittance Outcomes in the State of Washington, 2000- 2010

The pursuit of higher education is often associated with overall success in pursuing a career professionally as well as building the foundation for a promising livelihood. Yet the process of attending college has grown in prestige and with that, the pursuit of higher education now consists of greater barriers and commitment through standardized testing and centralized scoring systems. This suggests the conditioning of each individual student, as well as that of members in the student's household, and additional factors such as upbringing and accessibility to resources may largely influence whether one attends college. Therefore, utilizing survey data collected by the University of Washington, this work examines the relationship between the likelihood that a student applies to

college and the corresponding likelihood that s/he is accepted to college. Several surveys were conducted between the years 2000 and 2006. In total, data are available for more than 10,000 subjects who reside in all regions of the State of Washington. Thus, this paper utilizes state-level data to isolate the determinants of the pursuit of higher education by high school seniors. The analysis identifies strong correlations between participant's gender, extracurricular activity, and upbringing when determining the outcome of college admission acceptance. Understanding the influence of factors that contribute to either the decision of applying to college as well as the rate of acceptance allows for greater encouragement and efficacy in the pursuit of higher education in future generations.

## **Samantha Ettinger**

### **The Effect of El Nino on Greenhouse Gas Concentrations in the Los Angeles Basin**

Greenhouse gases are naturally occurring gases in the atmosphere. However, the combustion of fossil fuels and agricultural practices have resulted in an increased concentration of greenhouse gases in the atmosphere. A surplus of greenhouse gases is a global concern due to the imminence of climate change and the overall warming of the planet which affects populations throughout the globe. On the other hand, the El Nino Southern Oscillation (ENSO) is the result of changing wind circulations that creates more precipitation in the Americas and less precipitation in the Western Pacific. The Los Angeles Air Basin traps pollutants such as greenhouse gases due to the inversion layers that often occur such as the Marine Inversion Layer and the Regional Subsidence Inversion. In this study, I collected Nitric Oxide (NO<sub>x</sub>) and tropospheric ozone concentration data (for the period 1997-2016) -specific to the Los

Angeles Basin from the California Air Quality Resources Board. These concentrations were taken from a spectrometer in the Los Angeles Basin that recorded the highest concentration of specific greenhouse gas (nitric oxide or ozone) for that day. I also collected precipitation data from the California Air Quality Resources Board. Precipitation was measured hourly from the Los Angeles International Airport (33.9333 degrees N, 118.4 degrees W) and daily maximum concentrations were recorded by the spectrometer in millimeters. The data for both greenhouse gas concentrations and precipitation was grouped into wet months (October-April) and dry months (May-September) for comparison. Overall, decreased greenhouse gas concentrations both monthly and annually corresponded to higher amounts of precipitation in comparison to drier months and years (El Nino and Non-El Nino years). There was not a direct correlation between greenhouse gas concentrations and rainfall in the Los Angeles Basin, however, there was a decreasing trend. This suggests that pollutants that are normally trapped in the basin are uplifted due to the low-pressure system that is created with rainfall and are pushed eastward, as the general circulation of storms moves from west to east.

## **Alissa Fa**

### Environmental Policy on Invasive Species in Hawaii

In this paper, I address the specifics of when and why certain environmental policies in Hawaii were enacted in regards to invasive species. I will emphasize the importance of these policies and how they have affected and will continue to affect the environment in question. The purpose of this research is to examine Hawaii's environmental policies in relation to the threat that invasive species, both plant and animal, pose to the fragile and unique ecosystem of the state. The topic of invasive species is growing increasingly important in Hawaii and more broadly, "invasive species" does not refer just to animals, but plant life and vegetation as well, which can affect economic, environmental, and societal health. To

support this research, I will examine and draw from various case studies of invasive species, as well as analyze how the state has utilized rules and regulations to contain and eradicate these problems. Drawing from legislative and state/government councils I will identify the policies and the reasons that they were enacted. I will support my research and findings using literature from State and Government resources. Due to previous cases of invasive species and the negative impacts they had on the state it was clear that a council be enacted for rules and regulation, as seen in recent years the action set forth for threats of invasive species have proven to be effective.

## **Gabriel Forbes**

Un Handicap Transformateur: Grigris (2013) de Mahamat Saleh Haroun

The Chadian Director Mahamat Saleh Haroun deals with the topic of being handicapped in his 5th film, Grigris (2013). The purpose of this paper is to analyze how the main character is transformed by his handicap and from this, transforms others. It is a common belief that those who are handicapped also inherit a form of depression which is present within them for extended amounts of time. However, Grigris presents a different perspective which was that the handicap was not necessarily a hindrance. The movie presents a wide-ranging model for the physical and emotional characteristics of those handicapped. However, although he has a paralyzed leg, Grigris has a status in the community, a romantic relationship, and the glory of being a hero all because he is handicapped. First, we will consider how Grigris has a status in the community and how the handicap allows him to perform dance moves that others cannot. Next, we will consider his romantic relationship and link it to his handicap. Finally, we will consider his sense of community altruism and attribute it to his handicap. I will be conducting this presentation in French with a Power Point presentation.

## **Krystal Frith and Maria Lara**

### Assembling and Improving upon a Prosthetic Hand using a 3D Printer

Through the Artemis program, we had the opportunity to print a prosthetic hand using a 3D printer. 3D printed prosthetic hands are less expensive and could achieve the same functions as a traditional prosthetic hand, but 3D printed hands have a difficult time at turning doorknobs and grasping smooth surfaced objects. There is not enough friction between the 3D printed hand and a smooth surfaced object because of the lack of palm lines, and the creases on both the palm and fingers. This led to our main goal which was to mirror the grip of the 3D printed hand to the grip of a real hand by determining the coefficient of static friction with different materials such as sandpaper, tire liner, grip liner, and sticky pads. The results would allow us to find the best suited material in order to enhance the grip of the 3D printed hand to allow it to lift and move objects easily. We found that the grip liner had the highest coefficient of static friction by laying a block on a smooth table surface, and in between the table and the block we tested each of the three materials using a pulley at the end of the table. Weights were hung on the end of the string to test the friction of the material by measuring the weights until the block started moving. After doing this, we used the formula  $\mu_s = m_h / m_b$ ,  $m_b$  being the weight of the block and  $m_h$  being the weight of the hanging mass, to determine the coefficient of static friction,  $\mu_s$ . After printing the hand, we assembled the prosthetic hand and applied grip liner to the fingers and palm while improvising because the hand did not print adequately. Once the hand was assembled it was clear that the hand would be more functional than before the material was applied because it was able to lift objects because of the friction created from the grip liners.

## **Lauren Galantai**

## The Importance of Physical Activity and Nutrition Education during after School Care

In today's society, the obesity rate continues to increase among the youth population. Although the government has mandated healthy school lunch programs, there are still many times students are not eating nutrient dense items. In order to improve children's lifestyle choices, holistic interventions encompassing physical activity and nutrition education need to be implemented during after school care, and they must connect to the child's homelife. Once a week, for six weeks, I visited a local Whittier YMCA to facilitate the existing healthy eating and physical activity program. Through the implementation of the healthy lifestyle curriculum, the positive impacts of a nutrition program were seen through qualitative observations and interviews. Through student engagement in healthy lifestyle activities and parent engagement in maintaining a healthy household, improvements in both the student's and the family's attitudes and choices towards a healthy lifestyle were seen by all the staff members. Staff observed parents packing their children healthier lunches and snacks, the children began taking daily walks around the block, and by the end of the summer the YMCA took the children on a hike. To extend the knowledge of the importance of nutrition and exercise to more youth in the area, I have reached out to other organizations with the goal of implementing similar lifestyle intervention curriculum, constructed and implemented an experiment with a group of high school students regarding the importance of nutrition and exercise, and contacted local Whittier governmental agencies regarding this project and to share the results, so they may encourage other after school organizations to participate in this endeavor of healthy lifestyle education.

## **Azaria Garcia and Maryam Hami**

Correlation between *Acacia Mearnsii* growth, *Prionium Serratum*, and stream speed in the Western Cape of South Africa

Scientists have previously struggled with determining exactly what makes the invasive species *Acacia mearnsii* successful. We sought to discover if there is a relationship between the invasion of *Acacia mearnsii*, *Prionium serratum* cover, and stream flow. We predicted that the density of *Acacia mearnsii* along the Holsloot River in South Africa have an inverse relationship with stream power and the *Prionium serratum* cover. Riparian habitats in South Africa have been negatively impacted by the invasion of *Acacia mearnsii*. The increasing density of *Acacia mearnsii* along the Holsloot River, may reduce light availability for native species. Since flooding leads to the removal of native species along the riparian zone, we asked if this will cause an increase in the density of *Acacia mearnsii*. To answer this question, 3 transects along the riverbed in 3 different areas along the Holsloot River were used to first measure the ratio of the density of *Acacia mearnsii* and *Prionium serratum*. The transects went inland and were 3 meters long. The stream speed was measured directly adjacent to the transects on land using the tennis ball method. In these same areas light measurements were taken using a Decagon septometer. All the results indicate that there is a positive relationship between *Acacia mearnsii*, *Prionium serratum*, and stream power along the Holsloot River. So, where *Prionium serratum* stabilizes the streambank we see increased density of *Acacia mearnsii*.

## **Megan Garcia**

Standard Cardiopulmonary Resuscitation Efficiency Comparative to Active Compression Decompression Mechanical Devices for Cardiac Arrest Patients: A Meta-Analytic Review

We compared active compression decompression (ACD) mechanical devices and standard (STD) cardiopulmonary resuscitation (CPR) in cardiac arrest (CA) patients. Although active compression decompression is a popular treatment in medicine, there is controversy of the effect of ACD- CPR in comparison to standard CPR. This meta-analysis was to

study the effectiveness and safety of active compression decompression devices versus standard CPR when treating cardiac arrest patients. An electronic search for articles through various data bases, PubMed, EMBASE, Web of Science, Cochrane (papers of meta-analysis), etc. was conducted for studies reporting cardiac arrest patients who were treated with CPR. These random trials, published from January 1950 to August 2016, were searched using the phrase “standard cardiopulmonary resuscitation and active compression decompression cardiopulmonary resuscitation”. Primary outcomes considered were the restoration of spontaneous circulation (ROSC) rate, survival rate pre- and post-hospital admission, and survival after 24 hours. Complications of CPR were considered to be secondary outcomes. The effects discovered in the included studies were calculated in accordance to the fixed-effects model and random-effects model. The  $I^2$  method was used to determine the statistical heterogeneity that is assumed in the random-effects model. Data was extracted from the 10 studies that met the criteria for this meta-analysis. The studies included 378 adult CA patients treated with the ACD-CPR and 373 patients with standard CPR. Out of the patients reviewed, 218 were out of hospitals and the other 317 were in hospitals. Three articles were identified as high-quality where the other seven articles had poor methodology. The ROSC rate, survival rate after 24 hours, and survival rate at hospital discharge determined that ACD-CPR is preferable to standard CPR, with a relative risk (RR) values of 1.32 (95% CI 0.92-1.90), 1.87 (95% CI 1.38-2.52) and 2.72 (95% CI 1.52-5.17). The survival rate to hospital admission and hospital discharge showed no significant difference between the two treatments, ACD-CPR and standard CPR, with values of 1.02 (95% CI 0.72-1.56) and 0.96 (95% CI 0.69- 1.34). The ROSC rate and the survival rate after 24 hours showed that ACD-CPR is more admirable to standard CPR. To hospital admission or discharge, there was no significant difference between ACD-CPR and standard CPR in terms of survival rate.

**Tyler Garfield**

## PTSD as a Social Disorder

PTSD can be a serious stress disorder caused from the aftermath of a catastrophic event such as war. The focus of this research is to look at PTSD from a social aspect. Is PTSD a social disorder just as much as it is a psychological disorder? A great deal of research has been done in the past about how PTSD affects an individual's brain activity. But what has not been looked at specifically is how PTSD affects social interaction. People diagnosed with PTSD still have to go about their everyday lives, and this research targets how their social lives have been affected by the disorder. This is important because with the information gathered, it may pave the way to a better understanding of the disorder and how to better treat people with PTSD. In collecting information for this proposal, I interviewed several participants who have been diagnosed or suffered forms of PTSD and asked questions about their social and personal life. Most people who were interviewed were war veterans along with a few who have been through traumatic experiences in their life. The results were compelling: each person who I interviewed had struggled just as much socially as they did mentally and emotionally. These results were very consistent and support the logic that PTSD is in fact a social disorder.

## **Julia Giffin**

### Propaganda and the Women of the Soviet Military

This paper will examine the differences in the portrayal of female combatants in propaganda and reality, specifically focusing on women in the Soviet Military during World War II. While women made up a much smaller portion of the military than men, as the war progressed the number of women in the military increased, with some receiving the highest honor in the Soviet Military, Hero of the Soviet Union. Women faced many difficulties during their time in the Soviet Military that their

male counterparts did not, but it did not stop them from having major successes on the battlefield. This paper will compare and contrast the depiction of women in the Soviet Military in propaganda and the reality these women faced, and what impact this difference made for these women, as well as societies view of them.

## **Terianne Hamada and Leslie Lien**

### **Synthesis and Photophysical Studies of Lophine Derivatives with Polycyclic Aromatic Hydrocarbon Moieties and Electron-Donating Groups**

Lophines (2,4,5-triphenylimidazoles) are of interest due to their luminescent properties, which can be utilized in fields such as bioimaging and optical data storage. 9-anthracenecarboxaldehyde and 1-pyrenecarboxaldehyde were used to prepare lophine derivatives with the polycyclic aromatic hydrocarbon moieties in the 2-position, in good yield. 9-anthracenecarboxaldehyde and 4,4'-dimethoxybenzil were used to prepare a lophine derivative with anthracene as the substituent at the 2-position and electron-donating groups on the aryl rings at the 4- and 5-positions. 10-chloro-9-anthracenecarboxaldehyde was used to prepare a derivative with the chloro-anthracenyl substituent in the 2-position. Photophysical properties of these lophine derivatives were examined in acetonitrile solution at room temperature. The absorption spectrum of the anthracene lophine had maxima at 254, 196, 346, 366 and 385 nm (values for  $\epsilon$  were  $1.02 \times 10^5$ ,  $1.08 \times 10^4$ ,  $4.90 \times 10^3$ ,  $8.16 \times 10^3$ , and  $1.10 \times 10^4$   $\text{cm}^{-1}\text{M}^{-1}$ , respectively), while the emission spectrum had a maximum 496 nm. The absorption spectrum of the pyrene lophine had maxima at 239, 280 and 374 nm (values for  $\epsilon$  were  $5.29 \times 10^4$ ,  $2.21 \times 10^4$ , and  $2.78 \times 10^4$   $\text{cm}^{-1}\text{M}^{-1}$ , respectively), and the emission spectrum had a maximum at 366 nm. The absorption spectrum of the anthracene-dimethoxybenzil lophine had absorption maxima at 250, 257, 308, 355, 375, and 395nm (values for  $\epsilon$  were  $1.29 \times 10^5$ ,  $1.16 \times 10^4$ ,  $4.40 \times 10^3$ ,  $7.40 \times 10^3$ , and  $9.20 \times 10^4$   $\text{cm}^{-1}\text{M}^{-1}$ , respectively), and the emission spectrum had maxima at 540nm. The

absorption spectrum of the chloro-anthracene derivative had absorption maxima at 250, 257, 308, 355, 375, and 395nm (values for  $\epsilon$  were  $7.84 \times 10^4$ ,  $8.51 \times 10^4$ ,  $6.80 \times 10^3$ ,  $3.70 \times 10^3$ ,  $7.40 \times 10^3$ , and  $9.00 \times 10^3$   $\text{cm}^{-1}\text{M}^{-1}$ , respectively), and the emission spectrum had maxima at 381 and 527nm. Excited state lifetimes and fluorescence quantum yields at room temperature were determined for all compounds.

## **Brittany Hedderson Moses**

### Preventative Measures and Coping Techniques for Athlete Burnout

Athlete burnout is a phenomenon that has been studied for decades and several different theories have been used to explain its origins. Although, this review will present different approaches to burnout, each theory understands burnout as a manifestation of specific responses to stress. Athlete burnout is generally and most often defined as withdrawal from a formerly enjoyable activity and characterized by physical and emotional exhaustion, reduced sense of accomplishment and sport devaluation (Raedeke & Smith, 2001; 2009). Burnout is found among competitive athletes of all ages, sports and cultures and can be experienced as varying levels or as a complete withdrawal from a sport (Coakley, 1992; Smith, 1986). Although research on the prevalence of athlete burnout has not been extensive, the need for a review is imperative because of the troubling effects burnout has on an athlete's well-being (DeFreese & Smith, 2014; Lundquist & Sandin, 2014). Recent literature has presented conflicting results concerning identity as a potential risk factor and protective measure against burnout (Brewer, Van Raalte, & Linder, 1993). Considering these discrepancies, a literature review is necessary to critically analyze the current research and examine the reasons for varying results. This review will also update the knowledge base on the importance of mental skills as coping techniques to prevent and mitigate the effects of stress related to athletic performance (Khodayari, Saiiari &

Dehghani, 2011). Conclusions and future directions are identified as well as implications for professionals to protect the mental health of athletes.

## **Eric Hinwood**

The Encaged Partridge and it's Flight: Madame Brouette (2002) by Moussa Sene Absa

Madame Brouette (2002), directed by Moussa Sene Absa, is a feminist film that has a unique look at the Senegalese culture regarding the abuse of women by focusing on a woman entrepreneur who is trying to empower herself and her friends to overcome the three main ways in which they experience oppression: physically, mentally and legally. The purpose of this essay is to discuss the Senegalese cultural issues that the film uses to further the plot and to demonstrate how the protagonist attempts to overcome some of the aforementioned issues, as well to highlight the relationship between our protagonist and a caged partridge. The main character, Mati "Mrs. Wheelbarrow", commits many actions, both objectively good and evil depending on the perspective of the observer, to fight the physical oppression of her country's culture, especially regarding Ndaxte, and interaction between Naago and herself. First, we will focus on physical oppression, using the interaction between Biraan and Ndaxte, and between Mati and Naago, while also touching on cheating, drugs, and money in order to bring these problems to light. All physical wrongs and physical oppression are discussed in this section, along with what Mati has done to combat them and ensure her freedom. Next, we will discuss all the mental oppression and wrongdoings and how Mati tries to change the minds of others through her own actions and ideas. This section focuses on problems with how men look at women, the pressure to have children, and problems with social classes. Finally, we will debate the ways that Senegal has created legal problems for women, because in the film it is made extremely clear that it is very difficult, nigh impossible, for a woman to open a business, to have security in life, and to earn money to use for

her own needs and desires without a man. The partridge, similar in various ways to Mati, begins this film in a cage. Their similarities will be revealed in each part of this essay. This presentation will be in French.

## **Hailey Holmgren**

### **Behavior and Social Development of Maltreated Children in Foster Care**

Many studies have looked at how maltreatment relates to behavioral development and school performance as well as foster care and behavioral development and school performance, but not much research has been done on children in foster care who have experienced maltreatment. Since many children who are in foster care have experienced maltreatment, this literature review focuses on how both of these adversities affect behavior and school performance specifically during early childhood and middle childhood, and slightly into early adolescence. This literature review questions if children facing these adversities are more likely to have lower school performance and higher risk behavior compared to their peers not in the foster system and non-maltreated. It is examined if interventions can increase school performance and decrease risk behavior. This research found that children who are in foster care and are maltreated show more externalizing and internalizing behavior problems as well as difficulty in school. Interventions have helped these children when they are implemented during transitional periods of their lives. If more knowledge is available about this vulnerable group of children, they may be less likely to show risk behaviors and have higher school performance.

## **Emily Iniguez and Maria Rea**

### **Wrong Integration Done Right**

Dr. Bill Kronholm, in his article, “Integration By the Wrong Parts”, gives detailed explanation of how to solve a calculus integration problem by using the “wrong parts”. The term of “using the wrong parts” refers to the

manner by which integrating by the incorrect parts allows for a simple function to be expanded into a longer and more intricate equation, resulting in a more condensed product utilizing the Taylor Series. This theory was tested with different integral equations and the results were astounding. Kronholm's theory is proven in this experiment by showing that the mathematically correct manner of evaluating a mathematical statement is not always the only way of solving for its product; in fact, the use of the incorrect parts could produce more accurate results.

Interestingly enough, although the integral that was evaluated turned into a long and complicated equation, it was able to be condensed much more easily than by attempting to evaluate it utilizing the correct procedure. If the correct procedure was used, this would have never produced a simplified anti-derivative that was being solved for. This experiment proved that solving an equation incorrectly may actually yield a much ``nicer" looking product.

## **Alyse James**

### **Minority Groups in the Punk Scene: Before there was Punk, there was a Band Called Death**

My research is centered on minorities in the Punk Rock Scene. The punk rock scene was in response to normative mainstream culture, but even in the Punk Scene, minorities (racial minorities, women, non-gender binary identifying etc.) were underrepresented. My objective was to showcase these underrepresented bands, as well as to showcase the white, male, cis gender, and heterosexual privilege that still remains, even in the punk scene. This was a final project for my Sociology of Punk Rock Class. I watched a documentary called Afro Punk at Garret house and James Spooner the director of the film, after the screening said that Maurice Mitchell who was featured as the lead singer in the band Cipher, was now one of the leaders in the Black Lives Matter Movement. That sparked my interest, because I think there is a strong correlation between Punk Rock

and Social Movements. The Riot Grrrl movement was formed out of the Punk Rock Scene. I was able to get in contact with Maurice, and asked him a number of questions about his experience in the Punk Rock Scene, and his views on the lack of minority representation in the scene itself. From the research I conducted I found that in order to change the dynamics of Punk Scene to make it less oppressive to marginalized groups, you'd have to restart the scene all together. My research poses the question, "Is Punk even punk?" If the punk scene is supposed to be a safe space for those who don't fit in the main stream culture, then why are marginalized groups still fighting for representation in the punk scene?

## **Alexandra Jimenez and Laura Smith**

### **The Impact of S-Nitrosocysteamine on F508Del CFTR Protein Expression, Maturation, and Function to the Cell Surface**

Cystic fibrosis can be a devastating disease having the ability to shorten the lifespan of a patient. There are 30,000 people in the United States that suffer from cystic fibrosis today. F508del is the most common Cystic Fibrosis Transmembrane Regulator (CFTR) defect. Though there have been advances in discovering pharmaceutical targets for Cystic Fibrosis, there are no ideal treatments for correcting the F508Del CFTR protein to the cell surface. The existing drugs and methods used to treat F508Del CFTR still leave patients at risk of advancing to severe lung disease and death. S-Nitrosoglutathione (GSNO) is currently being tested for its potential to treat F508Del CFTR in patients. S-nitrosocysteamine (CA-SNO), S-nitroso-Coenzyme A (CoA-SNO), and S-nitroso-L-cysteine (L-CSNO) have also been found to be F508Del correctors in a previous study. These s-nitrosothiol signaling molecules increase the expression, maturation, and function of the F508Del CFTR. The goal of the current study is to get a better understanding of the mechanism of action that the molecules use to correct F508Del CFTR. Specifically, western blot was used to observe the effect of different concentrations of CA-SNO and

Vertex 809 on the CFTR maturation of Wild Type CFBE-410 CF cells and CFBE-410DeltaF Cells. Overall, the western blots for CFBE-410 CF WT cells and CFBE-410 DeltaF Cells showed the possibility that CA-SNO works with Vertex 809 to enhance their effects on delF508 CFTR expression at the ER. Biochemistry, pharmacology, catabolism, transport, and synthesis of CA-SNO, COA-SNO, L-CSNO, and GSNO in the airway epithelium need to be further investigated.

## **Mathew Johnson and Brian Doyle**

### Engineering Stilbene and Azobenzene-Based Metal Organic Frameworks for Tailored Light Emission

Metal organic frameworks offer a degree of predictability in the topology of the resulting structures. The primary MOF geometry (i.e., the shape of the secondary building unit (SBU) from which the MOF is constructed) can be influenced by both the linker shape and the metal coordination geometry. The ultimate structure observed in the solid-state can therefore be predicted in ideal cases by considering typical metal ion and/or ligand coordination preferences. This can lead to the generation of homologous series, such as O. Yaghi's isorecticular IRMOF materials), and can allow materials properties that are influenced by the solid-state structure to be tuned in a rational manner. For example, we report here two distinct Zn-stilbene MOF structures that exhibit different solid-state emission profiles, resulting from important differences in stilbene-stilbene distances in the two different geometries. Varying the reaction conditions between stilbene dicarboxylic acid and zinc nitrate affords both 2D and 3D geometries, with the difference between materials (and, hence, in structure) clearly evident upon observing the luminescence color. Similarly, we reported changing the metal ion to give a series of isostructural 2D structures with the generic formula  $M_3L_3(\text{DMF})_2$ . Here, the observed luminescence is solely a function of the stilbene-stilbene geometry, not the metal. The emission spectra are similar, only varying in

intensity due to the presence of a quenching paramagnetic metal (Mn). Here we report on a novel phenomenon whereby we are able to modulate the secondary structure of a MOF (i.e., generate structures with the same SBU geometries but with different arrangements of these SBUs with respect to each other) through subtle variations of the ligand electronic structure by incorporating the linker azobenzene dicarboxylic acid. Theoretical and experimental results will be presented.

## **Julio Juarez**

### **Indigenous Women's Encounter with “Feminism”**

This comparative work examines indigenous women’s range of involvement in indigenous movements, particularly those protesting neoliberal policies in Canada and Southern Mexico. Ranging from women’s involvement in the front lines of the Zapatista movement, their involvement in the creation of the Nisga’a common bowl, or women’s involvement in the Zapotec’s struggle for autonomy. Exploring how place, colonial and postcolonial history, and identity shape indigenous feminism, while also exploring the distinctions, if any, between nationalism and women’s agency in these movements and their relevance in the movement. All while taking note of the perceived gender roles that they face as women and as indigenous women. This work hopes to shed some light on feminist perspectives that separate themselves from traditional western feminist thought, but also looking for the similarities and how these ideas are implemented into the movements and to what extent that they have on women's participation and the effect it has had on the movements.

## **Hyesoo Kim and Stephanie Zamora**

**Antibacterial Properties of Selected Herbs on *Bacillus Megaterium*, *Enterobacter Aerogenes* and *Enterococcus Faecalis***

Bacteria have developed antibiotic resistance creating the need for natural alternatives. Herbs, a class of natural products, have been shown to inhibit bacterial growth in various studies. In this study, antibacterial properties of seven herbs were tested on *Bacillus megaterium*, *Enterobacter aerogenes* and *Enterococcus faecalis*. The herbs in the study were extracted with methanol, filtered, roto-evaporated and dissolved in dimethyl sulfoxide (DMSO). Bacteria were grown in tryptic soy broth and incubated overnight. The samples were then diluted to match a 0.5 McFarland standard to ensure a fixed bacteria density. Samples were composed of 1500 $\mu$ L of diluted bacteria with 20 $\mu$ L of herb samples and incubated/shaken at 37°C for 45 minutes. The percent transmittance of each sample was measured at a wavelength of 625nm hourly until the control decreased to less than 50%. Percent inhibition was determined by normalizing the percentage transmittance of the sample at 50% of the normalized control. *Bacillus megaterium* exhibited the greatest inhibition with the herbs (41-67%). In contrast, *Enterobacter aerogenes* had an inhibition of 33-58%, and *Enterococcus faecalis* had an inhibition of 11-27%. The minimum inhibition concentration (MIC) for catnip on *Bacillus megaterium* was 0.014g/mL. In the future, additional MIC values will be determined, and additional bacteria will be tested. This study has demonstrated the potential for herbs to be effective antibacterial agents.

## **Daria Kosmynina**

### **Biomarker Research for Behcet's Disease**

Behcet's Disease (BD) is an autoimmune disease that originated along the Silk Road and is prevalent in Asian and Mediterranean countries. However, BD is a rare disease in western countries such as the U.S. and Spain. It develops from genetic and environmental factors and as a result, the immune system attacks self, causing symptoms such as oral and genital ulcers, skin and eye lesions, and joint disorders. Currently, BD does not have specific biomarkers that could guide doctors determine the disease in

patients. This summer, only serum from healthy patients was obtained and purified with Affinity Chromatography, and samples were tested with a Western Blot to identify impurities. The Magnetic Bead purifying technique was performed to isolate peptides from HLA that is bound to a mouse biotinylated antibody, to the constant region of the sHLA. Streptavidin is bound to magnetic beads, which bounds the biotin molecule, on the antibody; the peptides are then removed from this complex by elution with 0.1% FA. After a Western Blot was done, the bands were accurate except for the purified sHLA and purified antibody samples, which should have shown one band instead of two. This indicates that there was excess of antibody and sHLA that the Magnetic Beads did not capture. Once this method is optimized, the purified peptide samples will be sent to City of Hope for a Mass Spectroscopy analysis.

## **Nathan Landau**

### **Can a GINI Stimulate Growth? Examining Effects of Income Inequality on GDP Growth Rates**

Income inequality is a topic that has been heatedly discussed both within economies and on a global scale. While perhaps intuitively negative, with respect to the overall health of an economy, theories do exist that point to a positive relationship between income inequality and Gross Domestic Product (GDP) growth, though the majority of the existing literature on the topic concludes that high amounts of income inequality negatively affect economic growth. Economies realize GDP growth through increases in factor endowments (i.e., land, labor and capital), by qualitative improvements in existing factors, and by general technological advancement. For example, greater investment can lead to capital formation and job creation. Using a linear regression model and data for 106 countries that span the period from 1980-2014, this project examines the relationship between income inequality, as measured by GINI Coefficients, GDP growth rates, while controlling for other determinants

of economic growth. The relationship is examined generally and for country cohorts that correspond to World Bank income classifications. The relationship between inequality and growth is important, especially for developing countries, as their continued growth can be maximized by identifying the optimal, level of income inequality. The empirical analysis reveals a consistent negative relationship between income inequality and GDP growth rates over the time period examined. Thus, government policies should be geared towards reducing income inequality to realize higher rates of GDP growth.

## **Jimmy Lopez and Charisma Johnson**

### **The Effect of Exercise on Blood Oxygen Saturation, Heart Rate, and Blood Pressure in Athletes Compared to Non-athletes**

There are notable benefits of exercise as it pertains to the overall fitness of the heart and the individual. Our research set out to understand the advantage and difference in the effect of strenuous exercise between athletes (AT) and non-athletes (NA) through a collection and comparative analysis of the blood pressure (systolic blood pressure/diastolic blood pressure mmHg), heart rate (HR beats/min), and blood oxygen saturation (SpO<sub>2</sub> %) from 14 young adult individuals. We hypothesized based on previous trends and research that athletes (AT) will have a lower heart rate and blood pressure post exercise compared to non-athletes (NA) due to their increased level of fitness, accompanied by a decrease in blood oxygen saturation (SpO<sub>2</sub> %) overall for both AT and NA. However, heart rate values recorded post-exercise significantly differed between the two groups as NA had a value of 84.38 beats per minute that surpasses the AT value of 78.66 beats per minute ( $P < 0.05$ ). As far as blood pressure, there was no significant difference of systolic pressures among both groups ( $P > 0.05$ ). On the other hand, diastolic pressure recorded after exercise showed a significant difference as the NA value of 98 mm Hg was considerably higher than AT at 79 mm Hg ( $P < 0.05$ ). In terms of SpO<sub>2</sub>

there was a decrease among AT of 2%, yet an increase in NA of 1% following physical activity. Nonetheless, these changes were not significantly different ( $P>0.05$ ). We were able to conclude based on the results that regimental physical activity has an impact on the overall level of fitness of the individual. Overall findings suggest that due to the effects of exercise regardless of being an athlete or non-athlete, the heart rate and blood pressure will increase while the blood oxygen saturation level slowly decreases, depending on fitness of the individual.

## **Joshua Lopez**

### **Lung Cancer Screening in Survivors of Previous Cancers**

Lung cancer-screening with low-dose CT (LDCT) has been shown to decrease mortality in high-risk patients. The United States Preventive Services Task Force recommends LDCT for patients age 55-80 with at least a 30 pack-year history of smoking. Lung cancer screening in patients with a previous history of malignancy raises a complex set of issues. Patients with a previous history of malignancy may be at higher-risk for developing lung cancer. Those with a history of solid tumors are at risk of cancer recurrence or metastatic disease to the lung. It is unclear whether the same management strategies can be used in assessing nodules among these patients. We analyzed data from a database of lung cancer screening performed at a National Comprehensive Cancer Network designated comprehensive cancer center and identified all patients enrolled in the lung cancer-screening program who had a previous history of cancer. Patients were enrolled in the lung cancer-screening program if they met NCCN guidelines for screening and if their treating oncologist estimated their median survival to be greater than 5 years. Patients were excluded if they were already undergoing chest CTs as part of surveillance for their previous cancer. After a discussion of the risks and benefits of lung cancer-screening, patients underwent LDCT. Patients with negative scans underwent repeat annual LDCT. Management of all positive scans was

determined in a multidisciplinary lung cancer-screening board. From 2012-2015, 142 patients with a previous history of cancer were enrolled in our lung cancer-screening program. The mean age of patients was  $65 \pm 9$  years. 58 (40%) were current smokers and the mean smoking history was 44 pack years. Breast cancer was the most common previous cancer diagnosis (51/142,30%) and prostate cancer was second (40/142,23%). 20 patients (12%) had a previous, remote history of lung cancer, but were not undergoing active surveillance. Of the initial scans, 89 (62%) were positive, with a mean nodule size of 8 mm. Among the positive scans, the vast majority 52 (58%) were Lung-RADS category 2. A total of 7 cancers were detected (5%)—6 new primary lung cancers and 1 metastatic melanoma. Patients with a significant smoking history who also have a previous history of malignancy may be at increased risk for development of lung cancer. Nodule assessment in these patients is more complicated due to the possibility of metastatic disease. In our experience, the diagnosis of a new primary lung cancer was much more common than the identification of metastatic disease.

## **Lindsey Macdonald**

### Assortative Mating and its Effect on Modern Household Income Inequality in the United States

Household income inequality has been rising in the United States since 1970. Only a portion of this inequality is explained by the underlying wage inequalities. A variety of other factors account for the remainder of the trend. Specifically, empirical evidence suggests that assortative mating has contributed to the rise in household income inequality; however, the impact of this phenomenon is debated and, thus, remains an open empirical question. Assortative mating is a mating pattern and a form of sexual selection in which similar individuals mate with one another more frequently than would be expected under a random mating pattern. With respect to household inequality, this pattern may have implications

through individuals with similar education levels being more likely to marry or cohabitate. To explore this potential relationship, we perform an empirical analysis using data from the American Community Survey for the years 2010-2014 that includes regression of husband's education level to that of their wife's. We then construct two contingency tables, one for the distribution of pairs by education level and another for the distribution of pairs by random matching. The distributions are then employed to create corresponding Lorenz Curves and the calculation of associated Gini Coefficients. This permits determination of the degree of household income inequality that can be attributed to this sorting of spouses.

## **Jessica Martineau**

### **Tantra and Unification: A Study of the Hymn to Kali**

This paper focuses on “left-hand” tantric ritual practices that are situated within a Hindu theological and philosophical framework. Tantra (lit. weave) as a body of texts and practices foregrounds the importance of sadhana (ritual visualizations and initiations). “Left-hand” refers to a specific type of Tantra that incorporates often forbidden activities (e.g., sexual visualization) into sadhana. The paper explores concepts regarding the cosmos that are intrinsic to understanding tantric practices and texts. Concepts include but are not limited to the three gunas or qualities that are present in all things; Siva (efficient cause of the universe) and Sakti (animating female energy) as dualistic, omnipresent, and paradoxically unified; and, the balance between Purusa or consciousness and Prakrti or nature/matter. The ultimate goal is to analyze the connections between these concepts of the cosmos in relation to devotional practices and imagery of the Goddess as presented in the “Hymn to Kali” and a commentary on it; I will show how the structure and content of the text focuses on unification between (in terms of the panel abstract as a whole, “inclusion” of) a devotee and (in) the Goddess, in the process of visualizing

a transition from destruction to compassion, based on particular understandings of the gunas, etc. Evidence from field research is not a component of this paper, but I will suggest avenues for further research in that regard.

## **Justine Mata**

### The Phylogenetic Relationships of *Bursatella leachii* Subspecies and Their Sister Group *Stylocheilus*

Aplysiidae or sea hares have an important value in the field of biology. For example, neurobiologists examine their large neuronal system to better understand memory and learning, and ecologists examine their defense mechanisms through the toxins they secrete. These toxins have the potential to be used in the medical field, for example, some chemicals from sea hares have been important in cancer research. Sea hares contain around 80 species; however, their relationships between one another are not entirely clear. *Bursatella leachii* has a circumtropical distribution and is hypothesized to have around seven subspecies. However, this has not been tested yet. Additionally, the relationship of *B. leachii* to other sea hares has not been resolved. Here, a phylogeny of *B. leachii* was reconstructed to test the *B. leachii* subspecies hypothesis and to understand how *B. leachii* is related to other sea hares. Genes from *B. leachii* specimens were amplified using polymerase chain reaction. The genetic information was then used to reconstruct the phylogenetic relationship of *B. leachii* and other sea hares. The preliminary results show that *B. leachii* is a monophyletic group that is sister to *Stylocheilus* sea hares. Within *B. leachii* there is some evidence that subspecies exist, but population genetic methods may be required to determine them. *B. leachii* is an important species to study as a purple fluid secreted by the species has been shown to contain a protein with anti-HIV properties. Understanding the phylogenetic relationships of *B. leachii* is of medical

importance as it potentially provides alternative sources for anti-HIV proteins and expanding HIV research.

## **Collin McDowell**

### Understanding the Context and Ramifications of Hong Kong's Umbrella Revolution

This paper describes the short-term effects of the 2014 Umbrella Revolution on the political and social atmosphere of Hong Kong. Additionally, the paper offers insights into the future of Hong Kong's government, activist groups, and relationship with mainland China. The protests, which were led by activist groups consisting primarily of high school and college level students, had the effect of politicizing the youth and revitalizing the notion of political participation in Hong Kong. However, the use of force by the police during the Umbrella Revolution, especially when considered in light of the more recent Mong Kok Fishball Riots, strikes a worrisome note about the future of political discourse in Hong Kong. The paper is based primarily upon research and personal interviews compiled one year after the event of the Umbrella Revolution, including opinions from a number of sources involved with the protests, such as professors, businessmen, and protesters.

## **Alyssa Mendez**

### Teacher Perceptions of Inclusive Education

As public schools within the United States are facing pressure to alter the general education classroom setting into a more accommodating learning environment for students of all abilities, teachers are hesitant to undergo such a transition. Many advocates for inclusive education insist that the integration of students with special needs and typically performing students can be a mutually beneficial learning experience. Current literature concerning inclusive education of children with disabilities

makes two dominant arguments: teachers' differing attitudes towards the efficacy of inclusive education within in a general education classroom setting, and the overrepresentation of racial/ethnic minority students, who are often referred into segregated (non-inclusive) special education programs. However, we do not know how the race/ethnicity of special education students impacts how teachers perceive the efficacy of including these students in a general education classroom setting. This study utilizes a combination of quantitative and qualitative methodology, comprising surveying and interviewing a sample of twenty-seven special education and non-special education (general education/multiple subject) public school teachers. The survey questions concerned teachers' experiences and views involving classroom inclusion as a feasible and beneficial option for both special needs and typically performing peers. In addition to the surveys, teachers were invited to partake in an interview to supplement their survey responses in more depth. After reviewing the responses, it was evident that an overall lack of time, academic training, experience with students with special needs largely contributed to teachers' confidence (and lack thereof) with inclusive education. Teachers of color were also more likely to acknowledge the abundance of minority students within special education. Almost every teacher indicated that all students deserve a right to a quality education despite any disabilities. However, as the responses suggest, a quality education is not feasible for all students, particularly when the teacher does not feel confident in his/her training. This study revealed that this particular sample of general education teachers do not feel as though they can successfully accommodate the academic needs of students in special education due to this lack of training and experience. The benefits of inclusive education continue to be obscured behind teachers' self-proclaimed lack of confidence and inability to provide a proper education for all students. An effort to properly educate and train these teachers may reduce this lack of confidence.

## **Alyssa Mendez**

### *Art and Madness in Victorian Photography*

I examined two sets of photographs; one set by art photographer Julia Margaret Cameron, and one set by doctors Hugh Welch Diamond and James Crichton-Browne. As photography became a distinguished medium in the Victorian era, the camera became celebrated for its ability to represent truth, a means to capture the literal exterior of a scene or individual. However, Julia Margaret Cameron, a renown British photographer, admitted to utilizing her camera to faithfully record what she interpreted as one's "inner being", or soul. Cameron stated that through photography, she was able to simultaneously record the features of the outer-being as well as the greatness of the inner-being. But how can a camera concurrently record the greatness of the inner, as well as the outer? This notion seems both contradictory and difficult to understand, as an individual's internality is not visible through a single, stagnant image. Interestingly, early psychiatric professionals of the Victorian period also assumed that the camera could authentically capture the inner being, in particular, the mental instability of madness. Through their photographs, Dr. Hugh Welch Diamond and Dr. James Crichton-Browne explored the physiognomy of their patients quite faithfully, in an attempt to make a connection between the individual's physical appearance (the exterior) and their mental health (the interior). These photographs of patients were taken in order to create medical documentation as well as diagnostic purposes. My paper displays how Julia Margaret Cameron and two doctors, Dr. Diamond and Dr. Crichton-Browne utilize the camera to "record" both the interiority and exteriority of their subjects. However, I conclude that in pursuit of capturing the inner being, these photographs veer away from "truth" as the photographers focus their attention on items of clothing and manipulation of their subjects' appearance. I ultimately question the legitimacy of the doctors' intentions behind these photographs and argue that the so-called inner-being that the doctors are

capturing is nothing more than notions that are in the heads of the photographers that they purposefully attribute to their subjects.

## **Sarah Meuwissen**

### **Evaluation of Long-Term Effects of Chlorpyrifos Oxon and Diazinon Oxon on Differentiating PC-12 Cells**

Organophosphate (OP) pesticides are a widely used and readily available class of pesticides used for protecting crops and livestock. OP pesticides gain their toxicity by inhibiting acetylcholinesterase (AChE), which leads to hyperstimulation at the cholinergic synapse. Hyperstimulation affects neuronal development, function, and survival. Toxicity of Chlorpyrifos oxon (CPO) and Diazinon oxon (DZO) were determined by exposing rat pheochromocytoma (PC-12) cells to a range of concentrations (10  $\mu$ M, 5  $\mu$ M, 1  $\mu$ M, .1  $\mu$ M, and .01  $\mu$ M). MTS assays were conducted to determine the cell viability and effect of these toxins. Once EC50 levels were determined, stage specific toxicity for DZO and CPO were conducted with sub-lethal concentrations at 0, 24, 48, and 72 hours. Data revealed that DZO (100  $\mu$ M) demonstrated no impact on the longevity of PC12 cells at any stage of differentiation. CPO (100  $\mu$ M) reduced cell survival at later stages of cell development. By understanding the toxicity of CPO and DZO, we can better understand the neurotoxicity of these contaminants and their possible implication on neurodegenerative diseases.

## **Reneé Miller**

### **The Changing Faces of Death in America: Shifting Trends in American Funerals**

Scholars have long noted the changing culture of funeral practices in North America and our cemeteries serve as a historic record of death and mortuary practices in America. Advances in technology and cultural diffusion have changed the landscape of the American funeral industry

and the progression and choices of mortuary practices and beliefs have evolved tremendously. The American culture surrounding death practices is in constant evolution and most Americans are unaware of the multitude of choices for the disposal of our body postmortem. Cremation has become a popular choice in recent decades after the Roman Catholic Church lifted its ban on cremation in 1963. According to a 2011 poll in the publication *U. S. Catholic*, 48% of 151 Catholics surveyed said they preferred cremation over traditional burial despite their belief that the body is needed for their eventual resurrection from the grave. Have changes in American death practices shifted due to the diffusion of practices from our diversity of cultures? Or have our practices changed due to other social factors such as economics or environmental concerns? This paper explores these questions while analyzing the technical advances made in the funeral industry, researching surveys and data on burial patterns and mortuary trends, and my field notes from several Southern California memorial parks. It is important to understand the issues and choices involved in our funerary practices as we all will complete this cycle of life at some point. American funerals have become a multi-billion-dollar industry and according to the Public Broadcasting System's 2013 statistics, Americans spend 20.7 billion dollars a year on over 2.4 million funerals and their associated practices. My first assertion and hypothesis was that our economic downturns and recessions were the reason why more Americans are going with cremation due to cremation being half the cost of traditional burials. However, research and survey findings lend evidence to support that those individuals who choose cremation over burial are generally well-educated, from the upper class, and environmentally aware (Laderman 2003: 200). It is true that over the past few decades Americans have had to consider the ecology of death in a crowded country as well as its effects on the environment and my research indicates a growing trend in American death practices for "green" burials and "eco-friendly" burials.

## **Jasen Missailidis**

### Living Up the Aging Process

Current research shows that having meaning in the later stages in life leads to living longer, happier, and healthier lives. When elderly people have things that bring meaning into their lives, a specific kind of importance is latched to them. Having meaningful characteristics among the later stages in life provides elderly people with a desire to continue performing those characteristics which leads to living longer, happier and healthier lives. Therefore, it is the purpose of this study to provide an answer as to which aspect of meaning predominantly gives elderly people the determination needed to keep living. Finding this conclusion is important because it will help the overall well-being of elderly citizens by providing them an answer as to which aspect of meaning they should strive to achieve. The steps taken in this study which helped to come up with a conclusion included; asking a sample of elderly citizens to rank the top four aspects of meaning that currently provide their lives with the determination needed to stay alive, as well as a rationale for their answers, then all answers were combined and ranked to find the top three most predominant answers throughout the participants. My findings concluded that family, friends and faith were the top three characteristics of meaning among participants. I found that family was the most important aspect among participants because it was the reason for their existence. Friends were found to be the second most popular answer because they are what keeps them socialized and as a result is their way of feeling like a part of society. My findings concluded that faith was the third most answer because it provided them with routine beliefs and practices to follow among their daily lives. Results throughout the study remained consistent and it is clear that we must hold onto things that are important to us. This study shows that in the end all that matters is the simple aspects of life because they provide a positive well-being and overall reassurance.

## **Cynthia Montoya**

### **The Sexual Socialization of Millennials: Are We Talking About Sex?**

Current research on sex-related information available to millennials has focused primarily on the impact of socializing institutions and relationship dynamics on adolescent and adult sex practices, and the gender-biases embedded within the sexual socialization of adolescents. However, little research has been done on the various individuals, both within and outside of the nuclear family unit, and social and technological mediums through which millennials share and receive sex-related information. In the age of technological innovation, does the Internet provide millennials with an alternative means with which to access sex-related information that has otherwise been limited due to factors such as race/ethnicity, religion, socioeconomic status, and gender-bias? “Millennials” is loosely defined as a person born after 1980 and approaching adulthood during a time of rapid technological change and the rise of mass media. This study consists of a 25-question short-answer survey distributed to 100 college students, 64 females and 36 males, ages 18-24. While recent literature emphasizes the importance of influences from parents, siblings, peers, and cultural factors, this study compiles all of the aforementioned variables to create a preliminary order of sexual socialization, which reflects how millennials rank various influencing factors on their sexual educational and practices. Consistent with the literature, millennials appear to perceive parental influence to be a significant influencing factor on their sexual behaviors. However, millennials more commonly seek peer communication through personal or online interactions, and the overwhelming majority of millennials appear to value these peer discussions more than any other source of sexual socialization. Despite the fact that the majority of sex-related information in mass media remains gender-biased, most individuals insist that they received unbiased information. Future research should focus on peer-influenced sexual socialization and the dynamics of these relationships that may supplement

the limited and biased sources of sex-related information available to today's adolescents.

## **Katya Murillo**

### Refugee Camps in Jordan: A Gendered Look at the Lives of Palestinian Refugees

Socially constructed gender roles generally vary from culture to culture. While many gender norms do transcend borders, the particular roles a man or a woman is accustomed to having at home might shift as he or she is forced to flee his or her home and community. Though a substantial number of families and communities who encounter forced migration seek refuge in their own country—becoming labeled internally displaced persons—a number of them may find themselves in refugee camps outside of their native land. Currently, there are an estimated five million refugees living and “looked after” in about sixty camps in the Middle East; of those five million refugees, Jordan hosts 664,000 refugees, many fleeing the Israel-Palestine conflict. In this paper, I will focus on and analyze the struggles faced by Palestinian refugees in Jordan through a gender-based lens as they transition from their homes to refugee camps. I will also examine whether the roles Palestinian women in the camps have now differ from those they had prior to residing in Jordan.

## **Yvett Navarro**

### Role of Mutated Cardiac Ion Channels and Serotonin in SIDS and the Correlation between Ethnicities: A Meta-Analysis

Sudden infant death syndrome, SIDS, is defined as an unexpected death of a newborn younger than one year often due to random or inexplicable causes. Certain risk factors have been known to be associated with SIDS such as loose bedding, sleeping on the stomach and sharing a bed with an infant. Approximately six published research articles were researched that

focused on the specific biological reasons for SIDS. These papers were selected based off certain criteria such as proof of data, relevance of data, time period of research, location of information studied, factors influencing results, and the overall relevance to the SIDS victims. Other criteria include causes such as mutation in the gated ion channel and abnormalities of serotonin which helps regulate sleep. Studies concluded that 20.2% of SIDS victims displayed a mutation in any of the eighteen cardiac ion channel genes. Other studies looked at the levels of serotonin, (5-hydroxytryptamine [5-HT]) and determined that lower levels were found in the case of SIDS victims. Compilation of studies also showed that black and American Indians are at a higher risk for SIDS than non-Hispanic whites, Asians and Pacific Islanders. Meta-analysis of the six articles conclude that both serotonin and ion gated channels play a role in SIDS.

## **Phoebe Neuburger**

### **Immigrating to The U.S. for A Better Future**

In this paper, the question I ask is, “Why immigrants are leaving their home country to come to the U.S, and what they are hoping to find when they arrive here?” Immigration is currently a hot topic right now and I want to know the reasons why many immigrants are leaving. I will first give background information on immigration that includes both the definition of an immigrant and refugee. An immigrant differs from a refugee because an immigrant chooses to resettle to another country, while a refugee is forced to and has no other choice but to leave his or her country. I will focus on two specific cases: Mexico and El Salvador. Both have similar issues and problems, e.g. drug violence, gangs that forced many people to leave. By comparing these two countries, I will better understand what was going on from 1970 to the present. I will then focus on my personal story, as well as conversations I had with two adults from the Whittier Adults School; one was from Mexico and the other was from

El Salvador. Literature shows that many immigrants come to the U.S. to become a citizen, and to be able to send money home to their families. Others come in the hope of better job opportunities and the U.S. offers many families a better life than in their native land. Living in the U.S. offers a better education for children, and a stable government. To support my research, I will be starting off with the general information about the history of immigration, I will then focus on specific individual stories such as my own reason for immigrating to the U.S. and conversations with two adults from Mexico and El Salvador to support my thesis. I will be using online articles and books to support my project. My preliminary findings are that many immigrants left El Salvador due to economic hardship and political instability, repression, and violence due to the Civil War. Immigrants from Mexico fled to the U.S. due to the labor demands in the U.S. and political unrest in Mexico. I also found that after the Great Recession hit the U.S. many Mexicans are now leaving and coming back to Mexico.

## **Marissa Ochoa**

### **A Comparison of Southern California's Arroyo and Red Willows to South Africa's Cape Silver Willow Under Drought Conditions**

In both the Northern and Southern hemisphere, Mediterranean climates are equally affected by intense drought conditions. Drought sensitivity is one of many major factors that regulate distribution of willow species in riparian communities. The purpose of this study was to determine the effect of severe drought on dominant willows in riparian communities in the Angeles National Forest of Southern California and Dwarsberg Trout Haven of South Africa. The species studied were Arroyo Willow and Red Willow, in Southern California, and Cape Silver Willow, in South Africa. Vulnerability curves were used to estimate P50 values and pre-dawn and midday xylem water potentials were measured at both sites. Curves are indicators of drought sensitivity and water potentials measure water-stress

conditions. P50 values for Arroyo and Red willows averaged -3.0 and -3.5 MPa while Cape Willows averaged -3.7 MPa. Midday water potentials in the Southern California ranged from -2.4 – -2.7 MPa, while South African willows ranged from -1.5 – -2.3 MPa. Preliminary data on stomatal conductance, which measures rates of gas exchange, and leaf weights have been taken in South Africa while additional analysis is underway in Southern California.

## **Anthony Osherow**

### **The Gendered Life of Women in the Soviet Union during World War II**

Unlike most Western societies during World War II, the women of the U.S.S.R. played very active roles as combatants, after initially playing stereotypical roles as women. This paper will not only analyze the active roles they played as combatants, but the author will also look at their critical roles in societal development as women who kept the war machine going at home by looking at the pre-war and post-war contexts, as well as the contexts of the war itself. State propaganda drew women into the war, initially to keep Soviet society going and then eventually to defend their country as more soldiers were needed due to heavy losses against Nazi Germany. By drawing on various literature reviews, including academic journals and historical books, the author will reveal the gendered aspects of the war as a continuum in both Soviet society and in combat, despite Soviet policies that allow for non-discrimination and equal treatment of women. By analyzing and critiquing the historical contexts of women in Soviet Union during World War II, the author will address how women were always gendered in both Soviet life and in combat, even when they were needed and were necessary for the survival of the U.S.S.R.

## **Andrea Perez**

## The Mothers of East Los Angeles and Latina Activism: A History of Maternal, Spiritual, and Community Organizing

The Mothers of East Los Angeles (MELA), is a grassroots organization founded in May of 1985 and led by local Latina mothers. The birth of MELA was a response to former republican Governor George Deukmejian's political efforts to construct a new prison in East Los Angeles. From 1985 through 1992, the Mothers of East Los Angeles endured a seven-year fight against the state of California's proposal to build a sixth prison in their community. Roughly twenty years after the Chicano Movement, las madres embraced traditional roles as Latina mothers to liberate their community, rather than themselves, from state oppression. Through organizing tactics learned from other movements that embrace maternal, spiritual, and community activism, MELA challenged state politics and won. In order to understand the concepts of maternal, spiritual, and community activism, literature from various disciplines written by historians, sociologists, cultural theorists, and feminist scholars are necessary. Other texts pertaining to the history of the feminist movement, labor movement, Chicano movement and religious organizations, provide background to the organizing strategies that MELA utilized during their seven-year fight. By synthesizing these texts, I am able to understand MELA's organizing strategies in a historical context. The purpose of this essay is to construct a historical narrative of MELA based on their actions and organizing tactics, their experience against the proposed state prison, and the complexities of identity, culture and history; and contextualize them into a larger history of the Mexican-American experience, the East Los Angeles community, and most importantly, Latina activism. The Mothers of East Los Angeles embraced the power of their maternal identities to advocate for their community. Through maternal, spiritual, and community organizing, they successfully halted the creation of a proposed prison in East Los Angeles, and thus liberated their community from institutional oppression. As a result, las madres became politically visible to their community, local politics, and

other movements. After its successful campaign in discontinuing the construction of a sixth prison in East Los Angeles, MELA proves the significance of Latina activism in communities like East Los Angeles. Today, modern Latina grassroots organizations and movements embark on their activist journeys by learning from those before them and building on a history that now no one will forget.

## **Lillian Petruzzi**

### **Proposition 30 & Tax Arbitrage: The Effects on Prices and Yields of Tax-Exempt Bonds**

On November 6, 2012, California's voters passed Proposition 30 which increased income taxes, for a seven-year period, of individuals earning more than \$250,000 per year (or couples earning over \$500,000 per year), effective with the 2012 tax year. Fama (1977) and Skelton (1983) find that nearly all tax-arbitrage in tax-exempt bonds is undertaken by financial institutions and, consequently, the tax rates of those institutions are the tax rates which determine the prices of those tax-exempt bonds relative to the prices of taxable bonds. Because Proposition 30 only changed individual income tax rates, this theory of arbitrage pricing implies that the change in individual tax rates would have no effect on bond yields in California relative to the yields on tax exempt bonds in other states. Quarterly returns of the Vanguard California Intermediate-Term Tax-Exempt Fund Investor Shares, Vanguard Intermediate-Term Tax Exempt Fund Investor Shares, and Vanguard Intermediate-Term Treasury Fund Investor Shares from 2006-2015 are examined to test the alternative theory that California Proposition 30 resulted in higher prices on tax-exempt bonds issued by California entities and, thus, all else constant, lowered their rates of return. That would indicate that arbitrage undertaken by individuals determined the returns of tax-exempt bonds from California relative to the returns of tax-exempt bonds issued in other states. To account for changes in interest rates, two variables are created.

The first shows the returns on Vanguard's California tax exempt intermediate term bond minus the returns on Vanguard's US Treasury intermediate Term bond fund, and the second represents Vanguard's general tax-exempt intermediate term bond fund less the return on the US Treasury intermediate Term bond fund. A dummy variable is also created to identify the period prior to the quarter in which Proposition 30 was passed. The coefficient of this dummy variable identifies the validity of my hypothesis.

## **Mirka Pojoy**

### **Family Factors and Immigrant Students' Academic Performance: A Comparative Study of Asian and Hispanic Students**

There has been rapid growth in immigration to the United States during the past three decades. Accompanying this increase has been the rise in the number of children from immigrant families that attend schools in the United States. This uses data from the Children of Immigrants Longitudinal Study and regression analysis to examine the relative impact of family related-factors on the academic achievement of Hispanic and Asian immigrant students. Second generation students reported on their own academic attitudes and behaviors. Parents also reported on their own attitudes and behavior. In addition, course grades were collected from school records. Family cohesion, parent-child conflict, parents' educational aspirations, students' educational aspirations, and present living standards were the primary factors explored in relation to grade point average (GPA). Findings show that family income levels and parent-child conflicts are important predictors of immigrant students' grade point average (GPA). When the empirical models were estimated separately for Asian and Hispanic student cohorts, different patterns emerged. The results indicate that different family emotional factors affect these two groups' GPA. These psychological factors are important in understanding

the variation in academic performance among the second-generation immigrant students.

## **Aimme Real Arrayga**

### **Taking a Stand: Women's Influence on Immigration Policy**

Immigration is a source of hot debate globally and within the United States. As nations attempt to address the issue of immigration within their respective country, we not only see different approaches to immigration policy being taken, but we also see organizations and activist groups take up different approaches to advocate for their issues. This paper will be looking specifically at women and how they are influencing immigration policy. Women are often discounted when discussing immigration policy and yet, not only are they often the most affected, but they are also very much involved in advocacy work. I will be focusing on the various ways in which women are going about influencing policy, how their goals and approaches might differ, and whether these might clash/ hinder each other. As scholarly migration work and policy makers have significantly overlooked women's experience & response to immigration, the ultimate goal of this paper is to highlight the work women have done and the role they play in influencing immigration policy.

## **Caley Rittman**

### **Community-Based Organizations and the School-to-Prison Pipeline**

Students coming from low-income, underserved communities need more support than the public-school system can provide. The school-to-prison pipeline has resulted in inequitable discipline and special needs placements due to zero-tolerance policies. Implemented throughout the public-school system, regardless of the circumstances, force predetermined punishments, which have become increasingly harsh,

especially towards students of color and students with disabilities. Due to inadequate resources allocated toward public education, the No Child Left Behind Act has acted as a race to the top, by schools receiving funding based on successful test scores. This has created the increased pushout of students based on low-performing test scores, thus the environment of schools transforming into the grounds for incarceration. This funneling of students from schoolhouse to jailhouse has been called the school-to-prison pipeline. Since the public educational system is failing students, families and further future generations, community-based organizations are stepping into save the system's shortcomings. Through interviewing representatives of eight community-based organizations in California, and collecting seven surveys, this article examines the effectiveness of their work based on suggestions from previous scholarly research. This article attempts to answer how community-based organizations, as a grassroots-social-movement is assisting with end of the school-to-prison pipeline. Findings indicate a focus on graduation, as well as holistic support from the surrounding community, family, and school systems. Although there is a severe lack of funding and support from within the public education system, community-based organizations thrive on philanthropic donations, and share similar goals, which aim towards working with student's individual goals, supporting them with direction to gaining a college degree, and promoting family and community support. The execution of the goals from the community-based organizations is essential to providing equal educational opportunities to transform the public education system, into less-centralized spheres of power by serving all children regardless of social and cultural capital accumulated in their youth to further expand upon their life choices to allow for better future opportunities beyond prison bars.

## **Susan Rosett**

Poverty and Food Security: How Income Affects Access to Food

This study investigates the relations between income, food security, and hunger. Despite the general high standard of living in the United States, surveys show that access to sufficient amounts of food continues to be an issue for low income families. This study adds to our understanding by examining data from the 2010 Current Population Survey (CPS) and its Food Security Supplement, which provides both measures of food security and several other important variables that have been identified by prior studies to be drivers of food security. The 2010 reference period is important as it immediately follows the financial crisis of 2007-08 and the corresponding recession of 2007-09, significant economic events that likely exacerbated food security issues. Utilizing the Ordinary Least Squares (OLS) regression technique, the relation between food security and income is estimated while controlling for several key explanatory variables provided (e.g., education, race, family structure, and participation in Federal food programs). The results illustrate that income affects food security. More specifically, the analysis reveals that income has a significant positive correlation to food security, while income squared has a significant negative correlation with food security. This non-linear relationship suggests that as income increases so too does food security until a certain income level is achieved, beyond which food security is no longer affected by additional increases in income. Using both OLS and logit specifications, additional results reveal similar relations between the income and the likelihood of going hungry during the year.

## **Magnolia Salinas**

### **Investigation of Soil Bacteria with Antibiotic Properties Against Known Resistant Bacteria**

Antibacterial resistance is a growing issue that has affected countless health care facilities and bares a huge problem for future antibiotic treatments. As pathogens continue to evolve and grow at a faster rate than new antibiotics can be produced, existing antibiotic treatments will soon

have little to no potency against them. Interestingly, a few studies have demonstrated potential sources of stronger, naturally produced antibiotics, which are derived from bacteria strains found in the natural soil environment. Therefore, this study focuses on finding bacteria species that may produce antibiotics against known antibiotic-resistant bacteria, *Staphylococcus aureus*. Additionally, we focus on the expression of genes HIF-1a, RecA, and LexA, which are known to affect the pathway of the Fenton reaction that induces cell death, using PCR. Briefly, bacteria samples were collected from soil in a local garden, grown on LB agar plates overnight, and formed colonies were inoculated in various nutrient broths over 11 days for enrichment. Enriched bacteria samples were then spotted on a lawn of *Staphylococcus aureus* and assessed for the development of a zone of inhibition, indicating antibiotic activity. Lawns of *Escherichia coli* were used as the positive control, as this bacterium is known to have low antibacterial resistance. Our preliminary findings, demonstrate the ability of soil bacteria to produce antimicrobial products against *S. aureus*, as demonstrated through the formation of zones of inhibition. Future PCR tests will determine if genes responsible for antibiotic properties are present in the soil bacteria.

## **Sayal Shahi**

### *Aang San Suu Kyi – Her fight for Democracy*

This research paper will examine the involvement of Ang San Suu Kyi, a social democratic stateswoman, politician, human rights activist, president of Myanmar's National league for Democracy party and a noble prize winner in her fight for the democratization of Myanmar. It will argue that regardless of Suu Kyi being under house arrest for decades, her presence and peaceful resistance to military ruled Burma (now Myanmar) influenced the Burmese people to lead a movement for a democratic country. It will briefly look into Myanmar's political history and the country's struggle for democracy while focusing on Suu Kyi's major role in

advocating for human rights and freedom. It will look into Suu Kyi's journey from the very beginning of her struggle until the first openly held election in 2015 at Myanmar. It will briefly illustrate her personal life including her childhood, her father and her marriage, while focusing on her decision to comeback to Myanmar and her leading the non-violent movement for democracy. It will also look into her influence by other non-violent activists such as American Civil right movement leader Martin Luther King Jr. and the India's freedom fighter Mahatma Gandhi.

## **Nathan Silva**

### **Cultural and Gender Specific Aggression in Childhood**

This literature review examines the relationship between a child's culture and their level of aggression in childhood. Other areas of interest include gender specific aggressive actions focusing on key terms like physical aggression and relational aggression. Past research suggests that children from Europe, Asia, and North America all express their emotions through aggression differently, with much of their behavior stemming from mimicking their parent's actions. Children in China respond positively in school to punishment, hazing, and aggression from their parents at home. Conversely, in Europe and North America aggressive actions from parents to children results in negative school performance. This literature review also analyzes the many systems in a child's life (primarily focusing on home, school, family, and friends) and the effects they have on a child's aggressive behavior. Bronfenbrenner's Ecological systems theory outlines the effects of systems on a child's development, emphasizing the role of environment. I apply Bronfenbrenner's systems theory to the topic of aggression while also combining and comparing multiple scholar's perspectives including Vygotsky on cultural and gender specific aggression. The overall question this paper intends to shine light on is how children express aggressive behavior and why they do. Are the reasons biological, environmental, cultural, or a combination of all? Strengths of

this this topic include new research and conclusions constantly being published, and also the credibility of the researchers who are producing the work. Limitations include small sample sizes in many studies and not knowing the degree of randomness in the selection of participants. Results show males being more physically aggressive while females use predominantly relational aggression. If a child is brought up in a culture or environment where they observe or experience aggression towards them, they will act out with aggressive actions in one or many of the systems in their life.

## **Christine Spellman**

### **Examining the Role of Parenting in Childhood Anxiety**

Childhood anxiety disorders, characterized by excessive symptoms of fear, worry, and negative mood states, are the most common psychological disorder of school-aged children. Persisting symptoms of anxiety may lead to academic difficulties, low self-esteem, peer conflicts, and depression among children, often carrying over into adulthood. As childhood anxiety is associated with negative effects, discovering risk factors that contribute to anxiety may play a role in prevention and treatment processes. Multiple studies conducted suggest a direct correlation between parenting styles and behaviors and the onset of childhood anxiety. The current literature review seeks to examine several parental factors linked to childhood anxiety such as parental control, warmth, and modeling anxious behaviors. As discussed in several studies, parental control may be a lead factor in the persistence of anxiety in children, as controlling parenting is associated with lack of independence and the inability to cope effectively during times of heightened stress. Reduced warmth is another factor found to be in connection with anxiety, suggesting that the less warm and responsive parents are to their child, the less likely the child is to communicate their feelings regarding their symptoms. Numerous studies also suggested a linkage between parents who model anxious behaviors

and childhood anxiety, as constantly voicing caution or discussing outcomes as unresolvable or catastrophic may lead the child to believe they have no way of developing coping strategies during situations that may arise. The findings suggest that parental involvement in treatment for childhood anxiety disorder made overall impacts on symptom reduction. Further examining the role of parenting on symptoms of childhood anxiety may increase the effectiveness of treatments and provide additional insight on prevention strategies.

## **James Suri**

### Challenging Socially Constructed Gender Norms: Nelson and Winnie Mandela

Women have an undeniable role in war and conflict. However socially constructed gender stereotypes take this role away from women and instead turn the differences between men and women into something binary. I plan on comparing Nelson Mandela to Winnie Mandela during the conflict in South Africa. The fundamental question I will be examining is why did Winnie resort to violence while Nelson took the peaceful route? In order to answer this question, I will rely on biographies of both their lives and scholarly articles written on them. Of course, by using secondary sources we can only examine what scholars believe about these two figures. This project will be normative as opposed to empirical, as I will be using my research to help deduct why Nelson and Winnie acted in the ways that they did. In order to analyze this data, I will find the key phases in their lives that led them to shift either towards violence or towards peace. I think that it will be interesting to use Nelson and Winnie Mandela as they were both part of the same conflict in the same historic period, they were husband and wife, they both challenged gender norms, and both switched positions on how to reach peace.

## **Shirley Thao**

## Hmong Literature in Diaspora: Narrative Strategies, Cultural Preservation, and Reconciling with Trauma

The mass migration of the Hmong to the United States was catalyzed by the communist occupation of Laos, the United States' withdrawal from South East Asia, and the Hmong's involvement as "collaborators" with the Americans during the Vietnam War. The Hmong, an ethnic minority living in the mountains of Laos, were quickly caught in the crossfires of war as conflict in nearby Vietnam escalated. After Laos's fall to communism, thousands of Hmong, many of whom were former guerilla fighters alongside the Americans, began the migration from Laos into the refugee camps out of genocidal fear. It has been 41 years since the first of the Hmong began arriving in the United States; in that time a generation of Hmong Americans has come into their own and are beginning to claim a space in literature. This new generation, growing up in America, has access to education, to a writing system, and the freedom to tell their stories without communist and colonial persecution. My research looks at the rising area of Hmong Literature and how its emerging writers are utilizing narrative to reconcile with the trauma of diaspora as autoethnography. Specifically, my work examines the narrative strategies of contemporary Hmong writing and its juxtaposition with the oral traditions of the generations that came before. I look at the formation of Hmong Literature through a survey of writings across genres that are from the perspective of 1.5 generation and 2nd generation Hmong Americans. Through this research I will frame Hmong American Literature as one that begins in a historical moment and attempts to reconcile with the trauma of refugeeism through the act of storytelling.

## **Nicoletta Torre**

### The Bosnian War's Impact on Women

Women play a huge role in war and peace because they have agency just like men. The line between the private and public sphere has become

blurred and women are becoming more involved rather than taking on traditional roles. Women in war, especially during the Bosnian War, have been subjected to many war crimes such as rape and even the struggle to be represented or participate in negotiations for peace. Women involved in the Bosnian War were taken advantage of by men through measures such as rape, assault, or other forms of violence. Raping and sexually violating a woman, has been used as a weapon of war, creating serious trauma and issues for the women involved. In addition, these war crimes have made women's political involvement incredibly difficult, but the women in the Bosnian War are motivated to be seen and heard. Women have played many different roles in the Bosnian War, but each role was impactful to the conflict. Whether women did nothing, became politically active, participated in the conflict or fled from the scene, their role was extremely significant. This paper will demonstrate the struggles and impact of the women involved in the Bosnian War. A woman being subjected to rape is a huge factor for the Bosnian War and this paper will show how women were affected from these war crimes plus other types of violence. In addition, it will show women's decision to participate or flee from the scene. This paper will exemplify how significant and traumatic the Bosnian War was for women and how they coped with the difficulties of the war.

## **Christopher Torres**

### **Hedonic Pricing Model of Used Cars, 2011-2012**

With a more recent concern on the impact of CO<sub>2</sub> emissions on global warming and the environment, there has been a relatively strong focus on reducing reliance on fossil fueled transportation. The National Program for greenhouse gas emissions and fuel economy standards was developed by the EPA to improve the national mpg average to 54.5 mpg by 2025 and is projected to cut 6 billion metric tons of greenhouse gas emissions over the lifetimes of vehicles sold in model years 2012- 2015. This program

applies to light duty cars and trucks in two phases: 2012- 2016 (first phase) and 2017- 2025 (second phase). Light-duty vehicles are currently responsible for nearly 60% of greenhouse gas emissions. In the US, the National Highway Traffic Safety Administration (NHTSA) has set standards to increase Corporate Average Fuel Economy (CAFE) levels, which will improve fuel and energy efficiency. In this paper, fuel consumption is used a measure of energy efficiency and will be the focus variable. The data set used in this paper was created using official MSRP of each vehicle observation of the top five selling vehicles according to Edmunds.com. The data will be used to estimate the model and to determine the extent to which fuel efficiency impacts the vehicle's MSRP. By running a semi-log regression model, the percent increase in MSRP for more energy efficient vehicles can be determined. The variables in the regression are as follows: MSRP, fuel consumption, miles on odometer, engine size, horsepower, gross weight, fuel capacity, and six dummy variables. The dummy variables are commercial segment (car classification used for purposes such as description, categorization, and regulation), vehicle brand for the top five selling models of the years 2011 and 2012 (Ford, Toyota, Chevrolet, Honda, and Nissan), number of seats, extra equipment (air condition, navigation system, and Electronic Stability Control), drive system, and the number of gears in the gearbox.

## **Christopher Turcios and Edwin Bennett**

Development of Quantitative Assay for Measurement of Fibrolase Activity of Fibrinolytic Enzyme Extracted from Agkistrodon Piscivorus Conanti Venom

In the past, many fibrinolytic enzymes have been extracted from various snake venoms and have had implications as serving as potential treatment for myocardial infarction and cerebrovascular insults. However, there must be a means of quantifying the fibrolase activity so as to report data beyond observation. We have approached this issue by aiming to develop

a quantitative assay for the fibrinolytic enzyme found in Florida Cottonmouth (*Agkistrodon piscivorus conanti*) venom. Thus far, we have partially purified the snake venom. During our purification process we have employed hydrophobic interaction chromatography utilizing 0.1 M HIC and HIC B buffers at pH 6.8 as well as hydroxyapatite chromatography utilizing .5 M HAP A and HAP B buffers first at pH 6.8 and then as a pH gradient of 5.7 and 8.0, respectively. Using Bradford assays we were able to collect 32 fractions (peaks 1), and finally we divided the fractions into 3 samples (Samples 0, 1, 2) based off peaks 1, 2 and 3. The Fibrin Plate Assays supported that the fractions collected contained activity as the fibrolase enzyme digested the synthetic fibrin polymer leaving a hole in the once solid matrix. Our gel electrophoresis results showed thick band density of the major band around 23,000 daltons which corresponded to the molar mass of related fibrolase enzymes signifying a generous amount of protein. Over time, the amount of miscellaneous, minor bands showing up decreased therefore supporting that our purification was increasingly successful. After the first chromatography step we determined that we specifically obtained 0.83 mg/mL of protein whereas thereafter we had on average 0.32 mg/mL for the 3 divided samples. This decrease in protein concentration leads us to believe that the purification has been successful, however, this will be ultimately determined in the subsequent development of the quantitative assay.

## **Olivia Valdes**

### **The Effects of Social and Mass Media on the Psychological Development of Adolescents**

The media's effect on the psychological development of adolescents is a new topic that has been studied and yielded multiple results. This literature review is focused on how the media influences adolescents, or children in the second decade of life, because of how impressionable

humans are at this stage in life. As the physical effects of adolescence are occurring earlier in life for children in industrialized countries, the media is affecting psychosocial development earlier and is becoming increasingly important as technology expands. The media is one piece of the bigger puzzle of psychological development. Although the media does not typically lead to the development of eating disorders, it does influence poor body image, disordered eating habits, and competition between peers during adolescence. Differences between genders have been studied and it is suggested that males and females are both affected by the media's influence in regard to body image and life satisfaction. Culturally, Caucasian females seem to be influenced the most by the media in regard to body image, but other races and ethnicities have been affected as well. Different types of media and their effects are described as well as intervention and media literacy programs. According to interviews, adolescents know the media depicts unrealistic body ideals, but many still aspire to be "perfect" and will participate in risky behavior to do so. The psychological wellbeing of adolescents is incredibly important and media outlets should be aware of the power they hold.

## **Andres Vega**

### Identity of Women in Contemporary Japan

This paper will focus on several aspects that are related to Japanese women in present day Japan while looking at different areas that aid in promoting their identity to be equal to their male counterparts. Over the past 140 years, the Japanese nation has undergone drastic measures uplifting the status of women, which we can now see in contemporary

society. Women have dedicated their lives to uphold the current status quo in almost every sector of society, presenting a competitive environment for all genders. For example, Japanese women's identity in the education sector has significantly been transformed by allowing them to participate actively in several areas such as politics. The position of women in the education sector had previously been undermined by the Japanese culture that emphasized women participating primarily in household- related activities, what we think of as the "private" sphere. However, with the introduction of laws to the country, such as the right to access and acquire education in any institution across the nation, women in Japan have significantly been empowered by this. They are competing with their male counterparts in different positions. The different roles imposed on the Japanese women in the contemporary society in various areas of activism and politics thus offering an interesting paradox. The most recent data shows that majority of women in Japan have engaged in politics thus occupying different positions in the ruling government. Lastly, women have had an upper hand in the economic sector of Japan by getting involved in various activities such as large scale and small-scale businesses. This is observed in the commercial sector in Japan where the labor provision by women became the key to the nation's economic success.

## **Lisardy Velasco**

What About Us? A Student Perspective on the Accessibility of Community College Transfer Resources

The purpose of this research project is to analyze the perception students have towards the accessibility of transfer resources at three community

colleges located in greater Los Angeles. It is understood that community colleges serve underrepresented students attempting to transfer to traditional four-year institutions. However, the majority of students who are attempting to do so are not successful. The combined transfer rate from the community colleges participants attended to the CSU and UC systems is 3.34% (The California State University & University of California, 2016). Due to the current statistics, this research project attempts to provide an answer as to why community college students are not transferring at greater rates. I hypothesize that current students perceive transfer resources, such as advisors, as tools that are not easily accessible. This topic needs to be given attention because it is currently impacting historically disenfranchised communities such as Latinos, African Americans, and Asian Americans which make up the ethnically diverse population of Los Angeles. A survey was administered adjacent to the community college participants attended. Participants were randomly selected individuals who identified as current college students. The data collected contradicts my original hypothesis, which was that there was a lack of accessibility to transfer resources. Data shows transfer resources are accessible; however, students are not meeting with transfer advisors because they lack the proper knowledge of the differing roles of these institutional agents. This research project contributes to the awareness of the challenges community college students continue to face as they attempt to transfer to traditional four-year institutions. Additionally, this research highlights current transitional programs of community colleges that are working to increase transfer rates so that students can further their education at a traditional four-year institution.

## **Julia Vergara**

Purity in the Special Period Era of Cuban Tourism as depicted in '7 días en la Habana'

Cuban Studies scholars like Alejandro de la Fuente and Megan Daigle have published work critiquing the legitimacy of Fidel Castro's claim of achieving gender and racial equality through the Cuban Revolution of 1959. As economic conditions worsened under the Special Period, the Cuban government was forced to adopt some market orientated measures, including the legalization of the dollar, quickly appealing to more international tourism. Afro-Cubans are in the margins of this economy because of the continuant construction of blackness as backwards, and women become subject to the foreigners' pleasure and consumption. My research discusses how Afro-Cubans inability to participate in a gendered and racialized tourist industry has led to the use of black market activities related to tourism, and how this functions as a form of resistance to their exclusion from the island's main source of economy. My research explores how these contradictions and resistances play out in contemporary Cuban literature, film, and other types of cultural productions. For the purpose of this presentation, I will be focusing on a scene directed by Julio Medem in the 2012 film "7 días en la Habana." This scene follows the story of Cecilia, a young mulatta woman and her relationship with a Spanish man who promises to help her leave Cuba to pursue a professional singing career. I will be discussing how notions of cleanliness and purity relate to Cecilia and the narrative of the mulatta in the Special Period.

**Mihailo Vuja**

## Political Tendencies Stimulated by Educational Attainment: Examining the Relationship between Political Views and Education Levels in the United States

Two increasingly important questions in political circles are “Who are the voters?” and “What relationships exist between individual characteristics and political activities and preferences?” A considerable number of prior studies have examined the close relationship between education and political participation. Interestingly, these research projects can be categorized into two cohorts based on their findings: some researchers have established that higher levels of education are correlated with more frequent political participation and particular voting preferences while others have not found these relationships to be significant. As such, there remain open empirical questions that this paper addresses. More specifically, this work focuses on a potentially causal relationship between educational attainment and whether an individual holds more liberal or more conservative political views. The posited relationship is examined using survey data for the United States that was collected by the Pew Research Center’s 2014 Global Attitudes Project. Through the rigorous use of regression analysis – specifically, the estimation of a series of linear probability models, binomial Logit and Probit models, and Ordered Logit models – this research identifies significant variation in the relationship between education levels and individual political preferences.

## **Charity Watson**

### A Woman's Work: The Presence of Women in the Algerian War of Independence from France

In the Algerian struggle for independence from France during the 1950s and 1960s, women were mobilized by both countries to play important roles during that time. The mobilization happened on different scales and through various means for both countries. The primary goal of this research is to examine the role of the Muslim Algerian women involved in

the fight for independence in comparison to the roles of the French women fighting on the side of France. In doing so, I will explore the influence of religion in both nations followed by an exploration into the conditions and treatment of Algerian women and French women, while also examining the roles they played during conflict. Next, I will identify the conditions that caused Algerian women to be used more frequently and given larger responsibilities than their French counterparts. Finally, I will conclude with a look into the effects of war on the French and Algerian women and their roles after independence was gained.

## **Sasha Weller**

### Genetic Modification of *E. coli*

The purpose of this research is to find mechanisms for gene expression under various environmental conditions. The presence of genes *cheA*, *cheB*, *H858* and *uvrC1* in *E. coli* are suspected contributors to its resistance to high concentrations of alcohol and bleach. The phenotypes these genes express in the structure of the flagella, pili, fimbriae and cell wall are hypothesized to enable it to survive in these harsh conditions. We hypothesize that once expressed, these selected genes will enable *E. coli* to survive harsh conditions of high concentrations of bleach and ethanol. In addition, *E. coli* was grown in two separate environmental conditions; *E. coli* was grown at 37°C in an incubator and 37°C in a shaker to test for motility gene expression. Our results shown via PCR indicated the expression of the *cheA* and the suppression of *cheB*, *H858*, and *uvrC1* in *E. coli* grown in the incubator. These results demonstrate that this artificial selection could accurately represent what occurs in nature.

## **Diana Yoon**

## Ecotourism as a Tool for Sustainable Development in the Third World

As a fast-growing industry, ecotourism can play a fundamental role in the sustainable development of certain countries by creating more jobs, attributing sustainable value to ecosystems, and providing an educational tool for the community. Although the term “ecotourism” evokes positive attitudes from the general public, there are many debates behind the actual meaning of the term versus how that translates into practice. Some have pointed to the disadvantages associated with the practice of ecotourism, such as the negative impact of human interactions on the local animals and environmental exploitation. In this study, I draw a comprehensive definition of ‘Ecotourism’ based on the literature of scholarly articles, research papers, as well as non-governmental organizations. A prime case study explores ecotourism as a leading factor for promoting further development in the Osa Peninsula located in the developing country of Costa Rica. Within this case study, there are fundamental points explaining the positive impacts that the increasing popular practice of ecotourism has made beneficial changes to both the economy as well as sustainable development for Costa Rica, such as increases in job opportunities, normalized wages and salaries, as well as environmental friendly implementations to promote sustainability. Drawing from this example of Costa Rica, in which ecotourism has been applied with positive environmental impacts, I explore the potential for ecotourism in other developing countries. Such practice if ethically conducted could provide social, ecological, and economical benefit in an effort to foster not just development, but sustainable development.