



CONFERENCE ABSTRACTS

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Abstracts are listed in alphabetical order by first authors' last name

Study of Different Oxide Concentrated Nickel Oxide Thin Films Using Scanning Probe Microscopy

Shankar Acharya and Mariah Chappell, Physics, Texas State University

Different O₂ concentrated NiO semiconductors for Resistive RAM (ReRAM) is a motivation for our study. Resistive RAM is a two-terminal switching nonvolatile computer memory that works by changing the resistance across the dielectric solid-state media. The conduction of dielectric media can be optimized with applied voltage which in turn could be useful for better switching property of Resistive RAM.

For our research project we looked into the Height, film thickness, conductivity, magnetic force and structural composition of 10% and 20% Oxide concentrated NiO using AIST-NT Omegascope (AFM) and accompanying software and controller. The Thin films were deposited on Silicon substrate using RF-Magnetron sputtering.

Preliminary results:

For 10% O₂ concentrated NiO we get a decent I-V curve while doing conductive AFM on tapping mode. 10% NiO: I-probe (left), Height SEN (right) Tapping-mode C-AFM shows correlation between current profile and height profile of deposited film.

We believe that NiO with different oxide concentration can be promising tools for non-volatile random access memory.

Increasing Student Motivation and Interest in College Calculus

Enes Akbuga, Mathematics Education, Texas State University

Calculus Students often ask "why are we learning this?" Students usually have hard times seeing the value or the connections between course material and their lives (Wulf, 2007; Brophy, 1999). Hence, making math and science courses personally relevant and meaningful may engage students in the learning process (Hulleman & Harackiewicz, 2009). This study investigates motivational aspects such as expectations, utility value and interest in calculus courses. The study follows a quasi-experimental research design. The purpose of the study is to test the impact of an intervention, which is the implementation of the Science and Engineering Integrated Calculus Tasks (SEICT) in calculus courses, on student motivation.

Participants of the study come from 3 introductory calculus courses that include 214 students at a Southwestern University in the United States in Fall 2017. Each of the 3 calculus courses were split into 2 lab sections by design and those lab sections form the treatment and comparison groups. The intervention is the implementation of the SEICT in treatment groups. The SEICT were developed by a team of professors from various departments within the same university. Data only come from a survey called "Calculus Motivation Survey" which was adapted from (Hulleman et al., 2010). The survey will be implemented 4 times throughout the semester. Since this is an ongoing study, the analysis and the results will be revealed by December 2017 which is the end of the semester.

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If the Glove Fits: Hegemonic Narratives of Race in *The People v. O.J. Simpson: American Crime Story*

Austin Allen, Communication Studies, Texas State University

In 2016, America was reintroduced to the “trial of the century” in Fox’s first season of *American Crime Story* entitled *The People v. O. J. Simpson*. The ten-episode miniseries depicts the events leading up to O. J. Simpson’s arrest and his grueling trial, culminating his acquittal. The series was well-received by audiences and critics, lauded for its nuanced, fair, and balanced discussion on the modern politics of race and crime. However, several of the narratives in the miniseries reflect narratives used to silence black voices of protest in the Black Lives Matter era. To further investigate these narratives, a hegemonic analysis was used to question how the series’ use of narratives fuels white hegemony to contribute to the undermining and marginalization of voices of color in the criminal justice system. Hegemony refers to the ways that one group exerts power over another through steps that are repeated and often unchallenged. Building off of Stuart Hall’s work on hegemonic narratives of race in media, this analysis observed several examples of antiquated tropes used to undermine and silence people of color in *the People v. O.J. Simpson*. The analysis leads to a few implications. First, despite what seems like decades of progress, racist narratives continue to stand in as stock scenarios in popular media. Secondly, the “true crime” genre allows racist narratives to go somewhat undetected because of the presumption that these narratives are rooted in fact, allowing for racist hegemony to go unchallenged. Finally, this analysis urges more work to be done in the hegemonic scrutiny of how supporting characters and minor character in fictionalized media are presented in terms of race as several examples of Hall’s hegemonic narratives were observed in these characters. This analysis of *American Crime Story: The People v. O.J. Simpson* contributes to our understanding of how racist hegemony is upheld in popular media and how that hegemony has real-world consequences.

A Linear Programming Approach to Solve the Dynamic Facility Layout Problem and to Reduce Supply Chain Costs Complexity

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Research Problem:

This work researches on the Dynamic Facility Layout Problem (DFLP), an extension to the static or single-period facility layout problem, which is known to be an NP-hard problem. The DFLP arises in strategic planning in manufacturing and service supply chains. In the DFLP there is a set of time periods, n empty locations of equal size and n manufacturing departments or service activities that need to be allocated. The flow of raw material, final products, paperwork or people between departments is known but fluctuates over the time due to variations in final customers' demands. Fluctuations in flows are also due to the introduction of new products and changes in production and marketing patterns in a supply chain. The objective of the DFLP is to find the optimal assignment of departments to locations at each time period so the trade-off between material handling and relocation costs is optimized.

Methodology:

In this work, two solution methodologies are compared. In the first one, the DFLP is modeled as a linear network problem, formulated with arc-node declarations available in the Algebraic Mathematical Programming Language (AMPL) and solved using the network simplex algorithm. In the second one, it is experimented with an available parallel implementation to solve the DFLP. The implementation relies on the Dijkstra's shortest path algorithm as described by Tarjan (1983). A comparison of the accuracy (i.e. cost vs. best known one) and efficiency (i.e. computational time) of the solutions is done through extensive numerical experimentation. This work also provides insights to extend these models and methodologies to solve the case with stochastic and dynamic flows between departments or service activities.

Results:

Experimentation with 25 problems with 6,12,15 and 30 departments shows that the average costs of both methods studied are about the same and that they are less 6-7% costlier than the best-known solutions so far in the problem literature. In problems with more than 6 departments the maximum increase in cost from the linear network solution vs. the Dijkstra implementation is 2.17% and the outstanding finding is that this percentage occurred even if the number of layouts per year in the network was reduced from 85,000 to 2,000. Efficiency of the two implementations is very good; the linear network approach has solution times lower than 77 seconds.

Impact of this research in the field:

This work helps supply chains to cut operational costs such as material handling and relocation cost. It helps to prioritize relocation of departments each year considering demand forecasts, growth of the business, geography or other location issues. The places for applying the proposed methodologies are wide (warehouses, distribution centers, manufacturing plants, telecommunication and healthcare companies, etc.). Future research will extend these models

and methodologies to solve the stochastic and dynamic facility layout problem, a problem where literature is scarce, especially efficient and good quality solution methods.

Non-word Repetition and Vocabulary in Adolescents who are Blind

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Brief introduction to the topic/problem/research question in relation to existing research/theoretical framework:

Previous research suggests that individuals who are blind perform better on assessments of working and phonological memory than their sighted peers. Results regarding vocabulary, however, are mixed. Some have concluded that those who are blind lack complete definitions of words. Others posit that, despite early-childhood vocabulary deficits, individuals with blindness can acquire the same vocabulary as their sighted peers.

Non-word repetition is closely tied to one's ability to build new vocabulary (Gathercole, 2006). Therefore, theoretically, those who are blind and do well on this test could have comparable vocabularies to their sighted peers. However, with much of learning being visual, individuals with blindness may be at a disadvantage and may not demonstrate the same skills.

This study's purpose is to compare working memory, phonological memory, and vocabulary skills by answering:

1. Do middle and high school students with congenital blindness achieve significantly different raw scores on digit span tests that assess working memory than students who are sighted?
2. Do middle and high school students with congenital blindness achieve significantly different raw scores on non-word repetition tests that assess phonological memory than students who are sighted?
3. Do middle and high school students with congenital blindness achieve significantly different raw scores on spoken tests of vocabulary knowledge than students who are sighted?

Methodology or approach:

This study has been approved by the Texas State IRB. Participants will be 16 middle and high schoolers with congenital blindness, currently attend a school for the blind, are 12-19 years old, and are of any gender, racial/ethnic group, and socioeconomic (SES) background. Sixteen sighted peers will be recruited from a convenience sample of middle and high schoolers known to the researchers, matching for age, gender, race/ethnicity, and SES, as measured by the Hollingshead Four-Factor Index (Hollingshead, 1975).

Each student will participate in one audio-recorded 50-minute session, consisting of: an interview; Memory for Digits and Non-Word Repetition from the Comprehensive Test of Phonological Processing-Second Edition (CTOPP-2) (Wagner, Torgesen, Rashotte, & Pearson, 2013) to assess working and phonological memory; and Word Opposites, Word Derivations, and Spoken Analogies from the Test of Adolescent and Adult Language-4th Edition (Hammill, Brown, Larsen, & Wiederholt, 2007) to assess vocabulary.

Results or preliminary results:

As of September 15, 2017, three students with congenital blindness have participated. This table provides their raw scores. Sighted peers and more recruits will be tested in October.

Impact of this research on the field:

This study could lead to improved diagnosis of language impairments by separating deficits due to vision loss from true vocabulary deficits. This would support appropriate, efficient speech and language services for these individuals.

Early Measures to Enhance Female Students Interest in Stem Education: An International Comparative Study

Owusu Boakye, Adult, Professional and Community Education, Laura Rodriguez Amaya, Geography, Texas State University, and Adu Yevoah Boakye, Business Administration, Kings University College, Ghana

In the field of Science, Technology, Engineering, and Mathematics, women are largely under-represented in many countries around the world (Gilbreath, 2015). In the United States, the number of women is lowest in engineering, computer sciences, and physics (National Science Foundation, 2017). Furthermore, women gained marginally more than only one-fourth of the doctorates in mathematics and statistics in this country (National Science Foundation, 2017). This gap in gender representation seems pervasive in other countries as well. In Ghana, girls' enrollment in physics, chemistry and also mathematics has historically been far lower than in biology (Anamuah-Mensah, 1995).

This paper describes the development of a middle school girl STEM club in Ghana and the U.S. that has been integrated as part of the local school system. This initiative is guided by findings from Rodriguez Amaya and Boakye (2015, 2016) that suggests the need for interventions earlier than post-secondary education for girls in STEM education. The purpose of this study is to share how to transform research into action by sharing the model developed for the girls STEM clubs. Conclusion and areas for discussion will be centered on the imperativeness of in school and out-of-school influential activities in enhancing the interest of STEM education for female students in these two countries. These activities can include but are not limited to creating a girls' community of learners, exposure to STEM guest speakers and role models, and year-long STEM activities.

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Does Watching Films of Self-performance in Practices and Games Lead to Becoming a Better Player?

Jalayah Bolden, Interdisciplinary Studies, Texas State University

Introduction:

Through being a student-athlete my whole life and a collegiate student-athlete for the last five years, I am familiar with what it takes to prepare an athlete to play their game; aside from just practicing then playing opponents.

Problem/ Previous Work

Volleyball is a game of errors. Essentially, whichever team successfully makes the least errors will win. One way to try to force the opposing team to make more errors is to understand how they play. All volleyball teams on the collegiate level watch film on their opponents but not many of the athletes watch film over how they perform personally. Previous developments have been made in how to enhance play but the research was based on visualizations not film.

Methodology

Two players from each position will take place in the study. For this study only the starters that are familiar with live play against opponents will be used. The positions will be setters, pin hitters (which will combine outside hitters and right-side hitters), middle blockers, and defensive specialists to gather results from varying positions and different types of players.

A survey asking questions on a scale of 1-10 to see how often the players already watch films of their own performance and how they feel the film may impact their play will be taken. One player in the position will be required to watch a film on their practice performance twice a week and their game performance once a week. The other player in the same position will not watch films at all. A detailed log will be kept by both players in each position.

The study will be measured statistically. Each player's game stats will be compared by position, taking their amount of playing time and number of touches on the ball into account. The players will then rate their performance during the game on a scale of 1-10. Then, a closing survey will be taken to determine their thoughts on the overall experiment as well as if their performance and awareness during play increased or not.

Preliminary Results & Impact:

The preliminary results will show that the players felt that their play improved significantly over the course of the experiment as opposed to the players that did not watch film at all on their own. These results will be proven through the statistical measures of each player.

The impact of these results are significant. Not only will it be important to watch film over opponents, but watching practice and game film will personally show if the players are improving over the course of the season. These results can also be used to determine if the drills done in practice are effective on how the player develops.

An Exploratory Framework to Assess Urban Wildfire Mitigation Policy in Austin, Texas
Reginald Brooks, Public Administration, Texas State University

Introduction:

Many American cities, such as Austin, have embraced the concept of urban wilderness parks. These urban wilderness parks add to the quality of life and provide citizens with close-to-nature experiences. These wilderness parks also bring the threat of wildfires, which have the potential to affect homes and businesses. It is important to that local municipalities develop policies and plans to mitigate urban wilderness fires.

Methodology:

This study develops a model to evaluate a city's urban wilderness fire mitigation policies using insight from scholarly literature. Using the model, the study then uses case study methodology (document analysis and direct observation) to assess Austin's urban wilderness fire mitigation policy. The model has three components. First, the model identifies key components of urban wildfire mitigation policy. Second, it uses these components to assess wildfire mitigation policy and documents in the City of Austin. Third, the results of the study will make recommendations to improve wildfire safety in Austin.

Preliminary Results:

Documents analyzed include the Austin/Travis County Community Wildfire Protection Plan (2014), and the city municipal code (Code NEXT). There are over three hundred parks in Austin and fifteen nature preserves. Five of these parks will be visited to see if the mitigation policies described in the documents can be observed.

Impact of this Research on the Field:

This study has two key outcomes. One, an Urban Wilderness fire mitigation model is developed, which can be used to other cities. Second, recommendations to improve the safety of citizens of Austin.

School Daze: Depictions of High School Education Methods in Film

Courtney I. Brown, Sociology, Texas State University

Since education is an essential part of our socialization, it is an experience with which most people can identify. However, even though education is valued in Western culture, studies conclude that each experience is different. Media as one of the most influential sources has the ability to portray experiences from different arenas to allow exposure to different cultures to people who do not have access or are not directly associated with a particular group. Film involving educational experiences can help portray the realities of students from various backgrounds. Acknowledging how social issues, race, gender, and socioeconomic status influence students' attainment and teaching approaches is imperative to understanding our education systems because it reflects cultural values, normative behavior and potentially surface inequities.

This research focuses on educational experiences by analyzing how films depicts high school education through interactions, time and strategy. Content analyses expose how the media influences social relationships; in addition to helping better understand how "fictional narratives about education" influence perception of real teachers and students (Gregory 2007:7). Examining how high school education is depicted in films gives insight on how society views certain groups educational attainment. If stereotypes dominate films, the perception of different groups may mislead, confuse, and impoverish evaluations and expectations about education (Vandermeersche, Soetaert, and Rutten 2013). Adhering to sociological frameworks, the following study provides explanations for queries surrounding teacher-student interaction and teaching methods based on racial and gendered expectations as well as portrayal of stereotypical behavior in mainstream films.

References:

- Gregory, Marshall. 2007. "Real Teaching and Real Learning vs. Narrative Myths About Education." *Arts and Humanities in Higher Education* 6(1):7-27.
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Ecosystem services and damage costs of federal lands: Case study of the Arctic National Wildlife Refuge of Alaska

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Brief introduction to the topic/problem/research question in relation to existing research/theoretical framework:

The Arctic National Wildlife Refuge (ANWR) in Alaska is one of the most untouched places on the planet. It is home to only two very small rural villages, but is not lacking habitat for a variety of wildlife. The ANWR also possesses what is suspected to be the largest untapped oil reserve in the U.S. As our earth has begun to accumulate greenhouse gases, the arctic ice and permafrost near and around the ANWR has begun to melt, putting the livelihood of its inhabitants in danger. Current quantitative and qualitative figures exist which allow for the evaluation and ecosystem service analysis of the biodiversity, natural energy resources, and climate regulation provided by the ANWR.

Methodology or approach:

To aid discussion and necessitate the protection of this land, an evaluation of the ecosystem services and damage costs of the federal lands of the ANWR is conducted. This evaluation is a tool commonly used in and associated with the field of geography. Ecosystem services of ANWR are examined at an international as well as local scale.

Results or preliminary results:

Allowing the sea ice around the ANWR and other arctic regions to melt has catastrophic regional, as well as global, consequences. Resulting data includes:

- Qualitative and quantitative values for loss of biodiversity, natural energy resources, and climate regulation provided by the ANWR.
- Detailed summary of ecosystem service value estimation for ANWR: pricing methods, indicators and valuation details.
- Ecosystem service valuation: Economic services, valued indicators and range estimates of ecosystem service values for ANWR. Figures in US dollars.
- Potential Trade-offs and Damage Costs: reductions in ecosystem services of ANWR for a degradation scenario due to the effects of climate change on the ANWR. Estimates are predicted for the year 2046, or 3 decades from 2016. Low and high estimates for damage costs (low – High) are given in US dollars.

Impact of this research on the field:

This culminated research has been prepared to be used towards providing a general or academic audience with a better understanding of the resources within the ANWR, and the economic and biological consequences of utilizing the largest untapped oil reserve in the U.S. This paper promotes utilizing and building on current policy along with engaging in further research on the impacts of sea ice melt, along with stimulation of community engagement concerning threats posed at the ANWR.

The Depiction of the Relationship Between Transgender Individuals and Family in Film

Jordan Chaffin, Sociology, Texas State University

Introduction:

My research looks at the relationship between transgender individuals and their family members in film in order to get a sense of how these relationships are portrayed in the media, and how this portrayal lines up with previous ethnographic research. I aim to answer the following questions: Are transgender individuals generally portrayed as accepted or unaccepted by their family members?; How, if at all, does the presence of a transgender individual affect the family's perceived level of stress?; and finally, What effect does the family's support or lack thereof have on the transgender individual's self-esteem?

Methodology:

The research is drawn from four films that depict interactions between family members and transgender, or in one case, gender non-conforming individuals. I have identified family as immediately related persons, such as mothers, fathers, siblings, and grandparents. I have also taken the GLAAD definition of transgender as someone who's gender differs from the sex on their birth certificate. Each of these films was viewed a total of three times, and notes were taken on scene descriptions, dialogue, gestures, and character descriptions to identify common themes. Once the research was complete, I viewed each film a final time to ensure the accuracy of my findings.

Results:

I identified paradigms that family members use in order to accept their transgender family member, such as medical and cultural models. I also identified how social and internal pressures affect the stress of these families. Finally, I identified how being accepted or not by family members affects the self-esteem of transgender individuals.

Impact of the Research:

While there is research that focuses on the relation between transgender individuals and families, it has been done through studies with real-world subjects. My research looks at a media portrayal of some of the very real issues that these families face.

Sexualization of Queer Women in Science Fiction and Fantasy Television

Jamilah Christiansen, Sociology, Texas State University

Introduction

Queer women are often reduced to their sexualities in popular media and are used as plot devices, or as passing entertainment for the benefit of heterosexual men. This study sought to explore the ways in which queer women and their relationships are portrayed within the science fiction (“sci-fi”) and fantasy genres, two media types that famously cater to young heterosexual males. The main research questions were:

1. How are queer women portrayed in sci-fi and fantasy television shows?
2. Are queer relationships portrayed differently than heterosexual relationships?
3. Are queer women sexualized in sci-fi and fantasy television shows?

Current research states that queer women within popular media are typically only used to reinforce heterosexual standards, as subordinate to heterosexual characters, or as overly masculine and predatory.

Methodology

This study consisted of a content analysis of two seasons of *Buffy the Vampire Slayer* and three seasons of *The 100*. Each show contains at least one queer woman in a main role and depicts them in a long-term relationship with another woman. Each series aired about 20 years apart on the same network that targets the same young adult audience. I wrote summaries of each episode as I watched and noted both the verbal and body language of the focus characters, as well as any camerawork or editing choices during scenes that focused on them. After completing both series, I utilized an open coding approach and allowed the final themes to develop naturally.

Findings

The main findings of the study uncovered patterns of sexual exploration, sexual corruption, and identity erasure. Queer women were shown as merely experimenting with their identities to strengthen their heterosexuality rather than as actually being queer, as immoral and forcing young heterosexual women to behave in ways that they wouldn’t otherwise, or were forced into a sexual dichotomy as either “straight” or “gay.”

Impact

The specific genres of sci-fi and fantasy tend to be overlooked by researchers in favor of dramas, despite the main goal of these types of media being to portray an idealized future. By being able to analyze two series that aired nearly 20 years apart, we can compare the ways that popular media reinforces compulsory heterosexuality or even resurrects far more traditional values that continue to make a large impact on queer women.

Battle of the Sexes: Evil Women in Modern Drama

Carly Conklin, Theatre, Texas State University

Brief introduction to the topic/problem/research question in relation to existing research/theoretical framework:

Conflict is the central core of storytelling, no matter the medium. Any story worth telling contains a protagonist (or person whom the audience should root for) and an antagonist. The protagonist must want something desperately, and be willing to go to great lengths to obtain it, while the antagonist's desires must be at odds with those of the protagonist. Once these desires are squared up, conflict arises. The villain is a device that an author uses as a stand-in for an evil force that sweeps through the protagonist's life, breaking stasis and setting wheels in motion for plot development. Although the simplified hero vs. villain trope was challenged with the rise of Realism and Naturalism, playwrights continued to implement a scapegoat into their plays to wreak havoc on the lives of the characters within the story. This, paired with the teachings of Freud, led to the continued fascination of the "femme fatale" archetype, or a woman who has power over men to disrupt the pursuit of their goals. Men were not the only ones writing these "Evil Women"; the female antagonist also shows up again and again in the plays written by women during this time period. In light of the most recent waves of structured Feminism, it is worthwhile to critically examine the trope of the Evil Woman, and, by extension, the differing manifestations of internalized misogyny.

Methodology or approach:

This essay seeks to compare and contrast the treatment of "Evil Women" in Modern Drama by both male and female playwrights, both in the way they are portrayed, and analyzing the root of their evil actions. Comparisons include the root of the evil actions, whether or not the Evil Women were punished for their transgressions, and what punishment entailed. Works compared include Wilde's *Salome*, Strindberg's *The Father*, and Treadwell's *Machinal*, among other Modernist titles.

Results or preliminary results:

In the examples of Evil Women written by male playwrights, the root of the evil transgression is either that the woman has impersonated a man, withheld or performed her sexuality to punish or control a man, or possessed equal agency over her sexuality as her male counterpart. In all cases, the aforementioned actions provoke fear that the authority or masculinity of the man will be diminished or threatened. In the examples written by women, the motivations for evil include self-protection, self-discovery, boredom, and hysterical desperation. Interestingly, the punishment-to-crime ratio remains the same across the spectrum.

Impact of this research on the field:

As feminist theory and critique continues to find a voice in the theatre, it is imperative to use what we have learned to our advantage. By applying feminist theory to the work of the past, we can learn more about our history, and in so doing, empower future generations to critique the oppressive systems in our society.

Social Media and Mass Media Effects on Post-Disaster Relief Efforts Following Hurricanes Harvey and Irma

Jordan Cooper, Megan Gray, Ila Mar, and Vincent Verduzco, Mass Communication, Texas State University

Problem or research question:

As superstorms and massive hurricanes become more prevalent in the United States, it is important to continue to study how post-disaster relief efforts are effectively being communicated to the people whether it be through television or social media. Considering what motivates someone to donate time or money is key when trying to see what the effects of mass media are on post-disaster relief efforts. As noted in a study by Cheng, Mitomo, Otsuka, and Jeon (2015) it is known that television is a continued driving force in relaying post-disaster information whereas social media is a contender for those directly affected. With regards to someone's own involvement, a telephone survey by Cheung and Chen (2000) posed a series of questions related to someone's intention to donate to an International Relief Organization which promoted the ideas of trust in the organization, self-efficacy, outcome efficacy, need for donation, and moral obligation. Two different theories come into play within each study. Cultivational theory shows the effects of television and social media that still drive how the information is consumed (Cheng et al., 2015) and social cognitive theory which influences the actions of someone's involvement after media consumption (Cheung & Chen, 2000). The problem still exists, what are the effects of social media and mass media on post-disaster relief efforts and how does this motivate one's involvement?

Methodology or approach:

A focus group consisting of 8 students from Texas State University was conducted on September 26th to explore what social media platforms and television channels college students, ages 18-24 turned to most for information about the storm, as well as which forms of social media and mass media motivate a college-aged person to donate to post-disaster relief efforts. Current research on mass media in regard to post-disaster relief efforts show that social media links those who were directly affected, whereas television portrays more post-disaster relief information. Hurricanes Harvey and Irma took place in a day and age where social media is where college-aged students find their information, so it is important to find out what types of both social media and mass media motivates them to participate in post-disaster relief efforts.

Results or preliminary results and their impact on the field:

This study will provide insight on what types of media influences college-age students to participate in post-disaster relief efforts. Results of this study could impact how social media and mass media delivers information on post-disaster relief in the future.

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The Impact of Relationships on Learning for Adult Students on a Short-term International Field Study

Brittany Davis and Joellen Coryell, Adult, Professional and Community Education, Texas State University

Brief Introduction and Research Questions:

This study will provide insight into the impact relationships developed abroad has on the learning process for adult students. Current research indicates that relationships between adults is important to the learning process. Not only can relationships enhance views of diversity and intercultural sensitivity, but they can also increase self-confidence and initiate self-discovery. As students collaborate throughout their journey abroad, they develop a sense of trust among one-another which further enhances their learning throughout the study abroad.

Nine graduate students who participated in a short-term international field student in summer 2016 were interviewed to determine what role relationships developed abroad had in their learning. The research questions guiding this study are: When does relational learning occur while abroad? What effect do relationships have on the adult learning process in short-term study abroad programs?

With an interest in interaction and relationship, this research is framed by situated learning, and communities of practice (Lave & Wenger, 1991). The foundation of this framework posits that learning occurs through social interactions, influence of relationships with others and acquisition of certain skills, standards, and norms of the community. Therefore, framing our research with this theory will allow us to analyze learning characteristics through interaction within the community.

Methodology:

Taking a qualitative approach for this study, semi structured interviews with graduate students who recently participated in short-term study abroad programs were conducted. Using current literature, open-ended interview questions were developed and interviews were transcribed then analyzed using a coding method to uncover themes.

Findings:

The sense of trust, comradery, and support experienced by all students enabled them to feel comfortable in sharing their perspectives and opinions about the experience without negative repercussions. A common thread throughout the interviews was the value placed on listening to the different perspectives and different ways in which students were taking in the experience. Sharing perspectives and experiences, especially as students dispersed into different groups during free time, allowed for more learning to occur throughout the short time abroad. The ability to share and value such different perspectives is such a rich source of learning both in and outside the classroom, but perhaps more so abroad. Students appreciated and respected each other's views and accepted them as learning opportunities and chances to reflect more deeply on what they had just experienced.

Impact on the Field:

This research is meaningful to adult study abroad as it displays the powerful role relationships can have in learning while abroad as well as creating meaningful learning settings while outside the classroom. The ability to connect deeply with the other classmates opened the

opportunity for more candid conversations regarding the learning which was occurring. Without such strong connections and trust among group members, it is likely that students would not have been as receptive to different perspectives or opinions about the experience.

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Barriers to Effective Instruction in the Prison Classroom: A Review of the Literature

Brittany Davis, Adult, Professional and Community Education, Texas State University

Brief Introduction:

Teaching in a correctional setting provides many challenges to adult educators and many experience a period of culture shock as they begin teaching in this setting (Wright, 2004). Teachers must acclimate to a highly structured, secure environment which is often stressful for instructors. Correctional educators must learn to accommodate a student population whose life experiences and living situation is unique. Instructors in a correctional setting carry the burden of teaching students who often have a resistance to learning and tend to exhibit low cognitive and moral development.

Nonetheless, prison educators play an important role in our society. If instructors can incite a transformational experience for one prisoner student, then that student is able to carry their experience forward having an impact on their family, community members, and other members of society (Keen & Woods, 2016). Instructors in prisons have an opportunity to make an impact on society through education.

Research Questions:

The research questions guiding this study include: what barriers exist which prohibit adult students in a prison classroom to learn effectively and what can adult educators in prison do to effectively teach their students?

Methodology:

This study was conducted as a systematic review with the existing literature serving as the study's population. Using the university library database, EBSCO, ERIC, and ProQuest searches, academic journals, theses, dissertations, and books published in the past 15 years were reviewed to conduct a search of relevant literature. Literature revealing a direct correlation between learning and teaching in a prison setting were analyzed for the review.

Findings:

Prisoners enter the classroom with regret, self-preservation (Bhatti, 2010), distrust towards others (Muth & Kiser), a history of educational failure (Williamson, 1992), a lack of sensitivity to others (Ross & Rabiano, 1985), a sense of absence in regards to self-love, self-image, and self-esteem (Duguid, 1992) and psychological and development problems (Kellam, 2007; Steurer, Smith, & Tracey, 2001). Responding to such characteristics is a challenge for many prison educators, however, a deeper understanding into their developmental levels can assist meeting the needs of prisoner learners.

Prison educators must recognize the environment in which they are teaching and how that effects learning. Common adult learning theories such as andragogy, transformational learning, and moral and cognitive development are essential for instructors to understand in order to provide the most effective instruction to their students.

Impact on the Field:

Discovering effective teaching strategies for prisoner students can have a broader impact on society. If prisoners can earn an education, this could provide substantial employment, or at least expand employment opportunities, upon release, along with other positive benefits.

Furthermore, research indicates that prisoners who receive education while incarcerated, are less likely to contribute to the extremely high recidivism rate currently experienced in the United States. Adult educators in prisons have the unique opportunity to have a societal impact through education. The key is understanding how to effectively instruct the prison population.

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Inhibition of Power-banded EEG Brain Activity in Chronic Pain Sufferers During an Approach-avoidance Decision-making Task

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Introduction

Chronic pain can significantly alter brain activity and decision-making tasks, including complex decisions that require attention to simultaneous positive and negative outcomes known as approach-avoidance conflicts. For example, if someone has lower back pain, simple tasks such as getting up and going to work can be a tough and painful chore. Preclinical research has revealed that the lowest-frequency brain activity underlies pain (Bozer et al., 2016), but we have very little information about the brain activity that underlies approach-avoidance decision-making in chronic pain sufferers.

Hypothesis

We hypothesized that participants with chronic pain would demonstrate more low frequency brain activity during an approach-avoidance decision making task than those without chronic pain.

Methodology

Electroencephalogram (EEG) activity was recorded during an approach-avoidance computer task that required participants to indicate whether they would hypothetically approach or avoid a situation that involved a low, medium, or high amount of money simultaneously with a low, medium, or high amount of pain.

Results

Power spectrum analyses using fast fourier transform will be used to obtain data in each frequency band (theta 3-7Hz, alpha 8-13 Hz, beta 13-29 Hz). ANOVAs for each of the 3 frequency bands will be run to compare the average power band activity across pain and no pain groups. In contrast with the hypothesis, preliminary data from 33 participants indicated that participants with chronic pain demonstrated significantly less activity in each of the low frequency bands of the EEG spectrum compared to participants without chronic pain, $p < .05$.

Discussion

The lack of support for the hypothesis may be explained because the previous finding by Harris Bozer et al. (2016) included an acute pain condition, and our study focuses on chronic pain participants. The preliminary finding that chronic pain patients have less lower-frequency brain activity could be explained by an inhibition of cellular activity mechanism caused by prolonged pain. These data are part of an ongoing large-scale study that was created to elucidate the behavior and brain processing related to approach-avoidance decisions that chronic pain suffers must face.

Exploring Parental Attitudes toward Science and Involvement of Latino Parents with Family Science Nights

Izzy De Leon and Julie Westerlund, Biology, Texas State University

Diversity within teams and organizations guards against groupthink and overconfidence and improves the ability to problem solve and make predictions. These benefits transfer into the Science, Technology, Engineering, and Mathematics (STEM) career fields as well. Even though there are various efforts in K-12 public schools to increase diversity within the STEM fields, minorities are still largely underrepresented in the workforce. This study focuses on the Hispanic/Latino population to help close this gap in representation within the STEM fields. Most programs focus on directly influencing Hispanic/Latino students to pursue STEM careers, while there are many indirect factors that can influence these students as well. One of these factors is parent perceptions of science and involvement in science. The most common reasons parents are not as involved in their children's science learning is a negative view of science and a lack of knowledge of resources to support their children. To find out more about parent attitudes toward science and parent involvement in their children's science learning, we organized a series of Family Science Nights at the San Marcos Public Library in San Marcos, Texas during Wednesday evenings from 6pm-8pm. The activities and experiments performed during the Family Science Nights used materials that are found around the home or can be purchased cheaply. Our study is still in the pilot stage, but preliminary results suggest that parents who attend our Family Science Nights are already interested in science, but still don't know where to find resources to support their children's science learning.

Crimean-Congo Hemorrhagic Fever (CCHF) Geographic and Environmental Risk Assessment in the Balkan and Anatolian Peninsulas

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Introduction:

Crimean-Congo Hemorrhagic Fever (CCHF) is a severe, life-threatening viral zoonotic pathogen transmitted to humans primarily by ticks of the genus *Hyalomma*. The virus is geographically diverse and found throughout a number of countries in Central and Southwest Asia, Africa, and Eastern Europe. Throughout the Balkan and Anatolian Peninsulas, sporadic outbreak events have been reported since the 1950s. Human infection is found in high-risk occupations ranging from agricultural and livestock workers to healthcare practitioners and veterinarians. The virus is highly pathogenic and recognized as the most medically important tick-borne disease impacting people. This study incorporated both maximum entropy modeling (Maxent) and spatial scan statistics (SaTScan) to map potential disease transmission risk, and to further explore the spatiotemporal distribution of confirmed human cases from 1954 – 2013. These findings provide evidence of the preferred environmental geography of CCHF and highlight the importance of integrating dynamic disease surveillance systems with geospatial technologies.

Methodology:

Maximum entropy algorithm (Maxent), spatial scan statistics (SaTScan) (local indicator of spatial association), geographic information systems (GIS).

Results:

This study indicates that 72.4 percent of human cases were in highly suitable environments which in turn totaled 6.2 percent of the total land area (100,813 sq. km). Livestock densities represented the largest niche regionally and encompassed 42% of the total land area, followed by land cover (11%), and climate (9.25%).

Research Impact:

The geospatial approach in this study utilizing maximum entropy modeling and spatial scan statistics should be an invaluable tool for national health programs looking to maximize the efficiency and effectiveness of CCHF surveillance programs in the Balkan and Anatolia Peninsulas.

Becoming ‘the Other’: International Experience to Foster Cultural Competence in Communication Disorders

Celeste Domsch, Lori Stiritz, and Pamela Emekekwe, Communication Disorders, Texas State University

Introduction:

While cultural competence in communication disorders is widely believed to be important, it is difficult to measure on an individual level. If cultural competence is challenging to measure at any one point, measuring changes in it over time is also problematic. The current study attempted to measure cultural competence in students in communication disorders, using both standardized and non-standardized instruments, and to examine whether/how that competence changed as a result of international travel and education.

Methodology:

This study employed five standardized instruments, measuring varying aspects of cultural competence. One was the Revised Ethnocentrism Scale (Neuliep, 2002). The second was the Miville-Guzman Universality-Diversity Scale-Short Form (Fuentes, Miville, Mohr, Sedlacek, & Gretchen, 2000). This scale has three subscales, which are Diversity of Contact, Relativistic Appreciation, and Comfort with Differences. The third assessment was the Openness to Diversity and Challenge Scale (Pascarella et al., 2007). The fourth instrument was the Multicultural Personality Questionnaire-Modified (Wang & DeLaFlor, 2014), which has subscales for Cultural Empathy, Open-Mindedness, and Flexibility. Each of these four instruments is a Likert-scale questionnaire. The fifth instrument was the General Self-Efficacy Scale (GSE; Schwarzer & Matthias Jerusalem, 1995), which assesses one’s belief in his/her ability to complete unfamiliar and challenging tasks, and to cope with difficulty.

One disadvantage to all of these measures is social desirability bias (Kratzke & Bertolo, 2013), where students give what they perceive as the socially desirable answer, which may or may not be a genuine answer. Thus, it is important to supplement standardized measures with non-standardized ones.

Ethnography, as described by Stone-Goldman and Olswang (2003), is a technique drawn from anthropological research, where the student becomes deliberately aware of him- or herself as a participant-observer, and takes into account various cultural factors that may be influencing his/her own behavior. Given that this awareness can be difficult to capture in the moment, the student uses a self-reflection journal at a later time. A self-reflection journal is not standardized like a questionnaire, and has less social desirability bias; thus, its individuality may indicate actual changes in cultural sensitivity over time.

Results:

One well-known technique for enhancing cultural sensitivity is travel, which for students can be as part of a Study Abroad. Participation in Study Abroad has been shown to improve cultural awareness and openness to diversity in both medical and nursing students (Abedini et al., 2012; Edmonds, 2010), even when the trips are of relatively short duration. Immersion in another culture forces the student into the role of participant-observer that is central to ethnography.

The current study examined the cultural competence of 18 students in Communication Disorders, who participated in a short-term Study Abroad in London and Newcastle in summer 2016. Students completed all five standardized instruments described above, both pre- and post-trip. All instruments were anonymous. Analysis of the questionnaires revealed that the students demonstrated relatively high levels of cultural sensitivity and self-efficacy pre-trip, and no statistically significant changes post-trip.

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Sentence Combining Treatment for At-risk 4th Graders: Effects on Productivity and Syntactic Complexity

Celeste Domsch, Linda Rodriguez, and Laura Titzman, Communication Disorders, Texas State University

Introduction:

Previous research has indicated that sentence-combining treatment can improve writing skills in school-age students when it has included multiple target structures, such as embedding adjectives and/or adverbs (e.g., Saddler & Graham, 2005), adding prepositional phrases (e.g., Saddler, Behforooz, & Asaro, 2008), as well as the use of the conjunctions “and, but” and “because.” The current study used sentence-combining instruction with specifically targeted conjunctions. This poster reports on the effects of treatment on students’ linguistic productivity (i.e., the total number of words written).

Method:

A multiple-baseline across participants design was used to provide sentence combining treatment to 6 4th graders identified as at-risk. The Sentence Combining and Story Composition subtests of the TOWL-4 (Hammill & Larsen, 2009) was used as pre- and post-test measures and narrative samples were collected during all three phases of the study: baseline, treatment, and follow-up. Under the intended study design, students were scheduled to complete a minimum of 6 and a maximum of 10 treatment sessions. However, due to absences, two students completed only 5 treatment sessions. A picture prompt was provided with instruction to write for 10 minutes for all narrative samples. The samples were analyzed for the presence of complex syntax, defined as a sentence including coordinate, complement, subordinate, adverbial, or relative clauses (Berninger, Nagy, & Beers, 2011).

Results:

Results on the TOWL-4 indicated that 3 out of 6 of the participants demonstrated gains on the Sentence Combining subtest post-treatment while 3 participants remained stable. Results of the written narratives indicated that 5 of 6 students made gains in productivity, as measured by the total number of words written in 10 minutes. The change in complex syntax use in writing was measured using Nonoverlap of All Pairs (NAP; Parker & Vannest, 2008), where each baseline data point for the number of complex structures used was compared to all treatment and post-treatment data points. In this study, 2 children demonstrated reduced performance in the treatment and post-treatment phases relative to baseline. Three children had weak effects of treatment and one child had a large effect of treatment.

Impact:

This study indicates that sentence-combining treatment is a feasible and potentially effective way of increasing the use of complex syntax in written narratives by at-risk students. However, it appears that responses to intervention are variable across participants.

Research Pilot Study Title: Development of Normal Database for Instrumented Cognitive Assessment in Virtual Reality Environment

Sarah Edmiston, Benjamin Salinas, and Denise Gobert, Physical Therapy, Texas State University

Background:

Gaming technology has received much attention as a practical and effective method to augment rehabilitation strategies for motor retraining especially for patients with neurological deficits. However, limited studies have explored the use of gaming interactions to retrain motor cognitive responses in the rehabilitative setting.

Purpose:

This investigation is a pilot study with the intent of developing a reference database to assess patient motor-cognitive function in a physical therapy outpatient clinical setting.

Design:

Exploratory research design with a sample of convenience

Methods:

Following informed consent, 100 healthy male/female participants will be recruited (≥ 18 years old) who are able to follow two-step instructions. Exclusion criteria include binocular vision, history of epilepsy, falls or mental retardation. Participants complete an intake form assessing demographic data and health related activities and wear a heart monitor so that baseline and activity pulse rates can be assessed throughout the session. Study subjects undergo a simple physical activity screening including general active range of motion, neural function, and a timed, four-square stepping task to assess mobility. The Montreal Cognitive Assessment is used to measure memory and cognitive processing speed. In addition, each participant performs five computerized, Intendu, Ltd. gaming activities while standing in front of a 72-square inch television monitor and Kinect sensor. The computerized, virtual environment games tests their motor-cognitive abilities. While the participant interacts with the virtual environment of each of the five games, a computer Kinect sensor records their standing balance and movements. Each game last from three to five minutes with a rest break given in between games as needed.

Preliminary results:

Movement and decision-making responses tracked on the Intendu system are Task Duration, Reaction Time, and Total Cognitive Score. Preliminary results of two participants, analyzed with descriptive statistics, provided the following mean values: reaction delay of 2.47 seconds per task, task duration of 18.94 seconds, and a cognitive score of 28.87. The mean heart rate over the course of five Intendu games was 77.2 bpm and the mean perceived level of exertion (RPE) was one on a scale of 0-10. The change in heart rate from resting to post-testing was a mean of 10.7 bpm.

Clinical Relevance:

To develop a reference database and identify clinical parameters which can be used for assessment of normal cognitive behavior using whole body interaction with a computerized gaming in the rehabilitative setting for patients with a wide range of medical conditions.

Impact of e-WOM on Consumer Behavior: A Comparative Analysis Across Ethnic Groups

Nivia K. Escobar-Salazar, Communication Studies, Florida State University

Hispanics/Latinos are the fastest growing demographic group in the USA. They are diverse in nature, and they come from a list of over 20 countries; yet they share a common background. There are three motivations for this paper: First one, this will be crucial for marketers to know where they can be targeting the different ethnic groups. Impact of e-WOM on Consumer Behavior. Second, Hispanics spend the most time in online-entertainment and this should be useful for marketers. Third, how e-WOM and social media could benefit any brand/product/company. The purpose is to compare e-WOM and social media consumption between among ethnic groups. Also, for Hispanics and Asians and their level of acculturation towards e-WOM and Social Media Consumption. The objectives for the research are; first, find out more about how e-WOM and social media affects the different ethnic groups, and the last one is to help marketers to target better on internet and social media by different ethnic groups, among others.

The sample was collected via National Consumer Panel - 'ResearchNow.' The total sample size was about 3,000 people, and it was segmented into four different multiracial groups. There were 438 respondents who identify themselves as Hispanic/Latino, 367 respondents who identify themselves as Afro-American/Black American, 1285 respondents who identify themselves as being of Asian or Pacific Islander and do not fit into any other ethnic category, and 406 Non-Hispanic Whites who indicated being White/Caucasian and do not fit into any other ethnic category, 67 answered other and 59 preferred not to answer.

For the first hypothesis, 'Social Media consumption differs across ethnic groups,' the results showed that Hispanics are more likely to use Social Media than other ethnic groups. For the second hypothesis, 'e-WOM differs across ethnic groups,' the outcome after running the data described that Caucasian/whites are less likely to use e-WOM compared to Hispanics, Afro-Americans, and Asians.

Hispanics and Asians were the only ones who participated by acculturation measurement. Therefore, for the third and four hypotheses the data was filtrated. The acculturation by Asians and Hispanics were measured by questions related to language, age, years living in the USA, and lifestyle. The levels of acculturation determined by this study were: Less acculturated with a total of 159 participants, Bicultural with a total of 460 participants, and High acculturated with a total of 232 participants. The third hypothesis was supported, 'e-WOM differs acculturation level.' Hypothesis 4 was rejected, 'Social Media consumption differs across acculturation levels.'

After the results found it in the research. I believe, it is important to do future researches towards Asians and Hispanics who do not speak English or speak a little English (the ones that are not acculturated) Hispanic/Asian. Marketers should also reach more Afro-Americans and Hispanics through Impact of e-WOM on Consumer Behavior: A Comparative Analysis Across Ethnic Groups 22 Social Media. Based on the sample size (by age) marketers will have a better idea about what millennials like or dislike

Consumer Insights Report of Ethnic Specific Advertisements SNCL Agency Group

Nivia K. Escobar-Salazar, Shaakira White, and Peiheng Li, Communication Studies, Florida State University

According to the U.S. Census (2016), Hispanics (17.8%) and African-Americans (13.3%) are two of the largest ethnic groups other than White Americans in the USA. The buying power of these two ethnic groups has been through a massive growth. For example, according to UGA report (2017), the estimated number of African-Americans was 1.2 trillion dollars in 2016, and it was 1.5 trillion in 2012. Hispanic buying power, on the other hand, overtook 10% of the U.S. \

Purposes of this study are to see if African-American and Hispanic consumers will react differently toward the advertisements that portray their own ethnic groups. We also want to find out if group loyalty will affect African-American and Hispanic consumers' attitude and purchase intention. Last but not least, correlations between attitude toward the ad, attitude toward the brand, and purchase intention will be discovered.

After having the hypotheses ready to test. There was an important step that was needed to be done before testing the hypotheses. Therefore, because there was not a question to measure the reliability of the test; then it was necessary to run a Cronbach alpha for the attitude towards the ad, attitude towards the brand and intention to purchase.

Hypothesis 1 Consumers respond positively to ads when the individuals in the ads share their same ethnicity, was supported. Hypothesis 2 African-American and Hispanic consumers with high group loyalty tend to have a more positive attitude toward the brand and its ad, and a higher purchase intention, was partially supported. Hypothesis 3 Consumers' attitude toward the ads will affect attitude toward the brand, in turn, will affect purchase intention, and was supported.

Based on one of our additional findings, the diverse ethnic printed ad has the most impactful result among both African-American and Hispanic consumers. In other words, these two ethnic groups all have a positive. Attitude toward the diverse ethnic ad. Age is a significant item in demographic, it determines what target audience marketers want to focus. Due to the wide range of age group, our study again confirms the importance of age.

Hispanics have lower levels of attitude toward the ad, attitude based, and purchase intention in terms of ethnic specific ads. For African-American ad, the African-American has a higher level of attitude toward the ad, attitude base and intention to purchase in terms of ethnic specific ads. African-Americans responded positively to the ad that featured African-Americans in the ad. Their least favorite ad was the ad that contained members that shared their members from own ethnicity. Marketers in the clothing industry must pay close attention to how media can affect purchasing intentions, and attitudes towards the brand and attitudes towards advertisements to be successful in the industry. Paying close attention to the models in ads, how they are positioned, what story they are telling and/or the perception they may convey to a consumer has a great deal to do with the success.

Student Veteran and Faculty Relationships

Peggy Everett and Sierra Sullivan, Adult Professional and Community Education, Texas State University

As nontraditional students, student service members and veterans (SSM/V) have specialized needs both in and out of the classroom (Patillo, 2011; Daly & Fox Garrity, 2012; Wise, 2011). Some SSM/V face barriers in pursuing their academic journeys (Norman, Rosen, Himmerich, Myers, Davis, Browne, & Piland, 2015). The authors conducted a pilot study with three SSM/V and three faculty members at a large, public institution of higher education in Central Texas to explore their perceptions of the relationships they have with each other. They used qualitative methods (Patton, 2015), namely narrative analysis (Creswell, 2007). The research questions behind this pilot study are: 1. What are the experiences of both SSM/V and faculty inside the classroom? 2. What are some of the barriers that SSM/V face in the classroom? 3. Have faculty received educational training concerning supporting SSM/V in their classes? 4. What methods of support do faculty offer to their SSM/V, and what methods of support do SSM/V prefer from their professors? Their findings discuss the students' and faculties perceptions and are reported as a poster presentation.

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Homeless Needs in Abilene, Texas

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Background:

In August 2015, the Abilene Texas Police Department (APD) was asked to consider enforcement actions against aggressive panhandling in the downtown business district. After meeting with the Downtown Business Association and the City Administration, a working committee was formed, comprised of City staff, non-profit agencies, and local churches to identify, coordinate, and develop programs to address the needs of the homeless. It was from this *ad hoc* committee that the current homeless project evolved.

Methods:

Data for this project were obtained through targeted community focus groups, the Texas Homeless Network (THN), Abilene Independent School District (AISD), APD and triangulation research methodology. To provide for some level of reasonable comparison, the year 2016 was chosen. This allowed the use of a complete calendar year of APD and THN point-in-time survey data that was comparable to the 2015-2016 academic year for AISD.

Each of the databases presented with some form of limitation. THN's information did not reflect the total number of adult homeless nor adequately report the incidence of homeless school-age children. Although AISD files were the most complete, the data was limited as to what each service provided truly entailed and how many times each service was utilized. APD's files were also restricted on the amount of information that could be received and to only those above the age of 18. The triangulation process was equally restricted by ACU's IRB in the amount of homeless profile information that could be obtained. Each of these limitations and how they were dealt with is explained in the following report, and resulted in the accumulation of the following information.

Results:

It is believed that there are at least 329 homeless in Abilene (n=217 unaccompanied school-age children; 112 adults). The adults are primarily from Abilene and are sporadically homeless primarily for financial reasons, though a large percentage of those are complicated by mental illness, substance abuse, family violence, or medical problems. The children are unaccompanied by a parent or legal guardian and rely on extended-family, friends, or require emergency shelter for housing options.

Implications and Recommendations:

When considered from a needs perspective, the priorities that were identified fall within three areas that have the greatest potential to influence homelessness. Inherent in this information is the underlying suggestion that the perception being held about Abilene's homeless is of marginal relevance to the actual needs that exist. The majority of homeless in our city are 'home grown' and their situation did not occur because of a conscious choice to be homeless. Their homelessness exists, in part, by having marginal job skills in a very cyclical economy that is often complicated by the presence of substance abuse, mental illness, family violence, or medical complications. A full review of findings and proposed community priorities will be presented.

Emotion Dysregulation and Interpersonal Schemas

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Emotion dysregulation is an important underlying mechanism of various psychological problems, such as eating disorders, posttraumatic stress disorder, generalized anxiety disorder, borderline personality disorder, and non-suicidal self-injury. Linehan (1993) presumes that biological (temperament) and environmental factors can lead to emotional vulnerability and emotion dysregulation. An environment that invalidates internal experiences and emotions, punishes emotional expression, especially the expression of negative emotions, and expects a person to resolve the problems independently without frustration or losses in motivation increases the risk of emotional vulnerability. On the other hand, some authors, like Safran, (2010) emphasizes the importance of relational aspects of psychopathology and therapy. Interpersonal schemas consist of generalized representations of self-other interactions, which are developed through experiences with caregivers' influence thoughts, feelings and behaviors in the relational domain. Since emotions are important to our survival, interpersonal schemas have emotional components which are encoded in preverbal and expressive motor forms in implicit memory structures. Therefore, based on Linehan's conceptualization of an invalidating environment and Safran's interpersonal schemas, it can be hypothesized that emotion dysregulation is related to dysfunctional interpersonal schemas because one learns how to deal with emotions through interactions with caregivers or significant others (Safran, 2010). However, to our knowledge, this hypothesis has not been studied until now. Examining this hypothesis could further our knowledge about the correlates of emotion dysregulation. Since the relational dimension of emotion dysregulation has been understudied in the treatment of emotion dysregulation, the findings of the present study would be helpful in this regard. Due to a lack of previous studies related to the hypothesis, the present study aims to investigate how different components of interpersonal schemas and emotion dysregulation are related to each other. Participants included 122 (female= 91, male= 31) undergraduate students from Psychology courses in Texas State University. Participant's ages ranged from 18 to 30 ($M= 19.60$, $SD= 2.40$). 36.1 % of the participants were white, 10.5 % were African American, 39.1 % were Hispanic, 1.5% were Asian and 4.5 % were biracial or multiracial. Participants completed demographics, Difficulties with Emotion Regulation Scale and Interpersonal Schema Questionnaire. Linear simple and multiple regression were performed to examine relationships between emotion dysregulation and interpersonal schema subscales and indices. Gender was entered into the model as a covariate.

Associations between control, affiliation and desirability with emotion dysregulation were examined by multiple regression analysis, when gender was controlled. The effect of gender was not significant ($F(1, 69)= 0.005$, $p= 0.94$). The overall regression model was not significant ($F(3, 66)= 1.99$, $p= 0.12$). None of the indices were significantly associated with emotion dysregulation

When the subscales of ISQ (dominant, friendly, submissive and hostile) were entered into a regression model while controlling for gender, the results indicated a significant negative association between the friendly subscale and emotion dysregulation ($\beta= -0.26$, $p= 0.03$). Other subscales were not associated with emotion dysregulation. Gender did not interact with scores on ISQ subscales ($f(1, 80)= 0.07$, $p= 0.78$). The overall regression model was not significant ($F(1, 80) = 1.64$, $p= 0.16$). Figure 1 depicts the relationship between the friendly subscale and emotion dysregulation based on the gender. The results of the simple regression analysis did not indicate

a significant relationship between complementariness and emotion dysregulation ($\beta = -0.02$, $p = 0.88$) when gender was controlled. Gender did not interact with complementariness ($F(1, 77) = 0.07$, $p = 0.78$). Furthermore, the overall regression model was not significant ($F(2, 76) = 0.05$, $p = 0.95$).

Our study provided preliminary data for a gap in the literature regarding emotion regulation and representation of self-other interactions. Dialectical behavior therapy (Linehan, 1993) and interpersonal schema theory (Safran, 2010) emphasize the critical role of environment, especially interaction with caregivers, in adaptive emotion regulation. This study indicated how the expectation of friendly responses from others, especially parents, is important in emotion dysregulation. When individuals expect that others behave friendly, they are less likely to have problems with emotion regulation. This finding is consistent with Yurkowski, Martin, Levesque, Bureau, Lofontaine, and Cloutier (2015) who investigated the relationship between emotion dysregulation and difficulties in relationships with parents and peers. Emotion dysregulation was predicted by feeling alienated by and poor communication with parents. Nevertheless, further research is needed to explore how interpersonal schemas affect and interact with emotion dysregulation.

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The Effect of Language Proficiency on Word Choice in Storybook Translation

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Research Question:

When translating a children’s storybook, does language proficiency affect word choice in the translation of low frequency words?

Methodology:

Six bilingual individuals orally translated the children’s written storybook “Corduroy” from English into Spanish. Ten vocabulary words of low frequency in English were selected as the target words to be analyzed. The translation of these words was transcribed, and word choice was compared between participants. We then examined the relationship between language proficiency and word choice. The group of participants included two speakers of low Spanish proficiency, two speakers of moderate Spanish proficiency, and two speakers of high Spanish proficiency. The Language Use Questionnaire was used to measure levels of Spanish proficiency. All speakers were of high English proficiency.

Results:

We anticipate that speakers of similar language proficiency will translate the target words similarly.

Impact:

It is expected that the results of this study will have implications for the clinical practice of translating storybooks to children receiving speech and language services. Word choice when translating stories into Spanish is highly variable, and often inaccurate, which can (negatively?) impact language input and the overall message of the story. We hope that the results of this study will highlight the need to make more storybooks available in Spanish for the pediatric population.

Hispanic Motivation to Consume American Football

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Abstract:

Recent studies suggest that the Hispanic population will rise exponentially over the next few years and will continue to do so at a steady pace. The NFL has identified the Hispanic population's potential as consumers of American Football seeing the viewership for the sport rise over the past years not only at a national level but an international level as well. However, there is still room to grow when understanding this cultural segment in order to create an effective marketing strategy. By conducting online surveys this research looks to identify what motivates Hispanic fans of American Football residing in the US to consume this sport.

Introduction:

Reaching almost 18% of the population, 57 million Hispanics live in the U.S. and this is a trend that is not going to change. According to Nielsen, Hispanics in the U.S. will reach 24% of the population by 2040 and 29% by 2060. Hispanics are still projected to continue driving the nation's population growth as shown by the Census statistics, Hispanics will represent 65% of the population's growth over the next 45 years. "Meanwhile, the compound effect of Hispanic growth and the decline of the non-Hispanic white population due to aging and lower birth rates will result in non-Hispanic whites declining from 62% of the total population in 2015 to 44% by 2060; their contribution to total growth will decline by 17% from 2015 to 2060". (Nielsen, 2016). In terms of buying power, Hispanics in the U.S. are projected to reach 1.7 Trillion by 2020. These numbers with the combination of increasing household income makes Hispanics a very desirable market for any industry.

Methodology:

This research used online surveys as our main method of data collection. Previous studies used surveys applied to a wide variety of demographics and sports (Wann, Grieve, Zapalac & Peace, 2008). We used a convenience sample as our type of sampling as well as mall intercept. A questionnaire with a total of twenty-four questions was designed based on the MSSC scale model (Kim & Trail, 2001). Our questionnaire is designed purposefully to gauge several factors that motivate Hispanic or US Hispanic to consume American Football. The questions designed for the questionnaire evolve from simple questions such as demographic questions to difficult questions focused on motivational patterns. The questionnaire also asked whether the participant consumed American Football games live, through cable or online streaming. To analyze our data, we used the software SPSS.

Managerial Implications:

Taking into consideration the data analyzed and the subsequent findings this research reveals four marketing implications related to what motivates Hispanic sports fans to consume American Football:

Top Motivators:

Marketers should be aware of the top Motivators for Hispanics when creating content to promote American Football. What is the relevance of each motivator for this cultural segment?

For example, the Social or Family motivation rank higher for Hispanic consumers when compared to previous studies and non-Hispanic White consumers.

Racial/Ethnic Differences in Occupational and Psychosocial Factors Among Public School Teachers

Melissa Garza, Elia Bueno, Liliana Espinoza, Angela Johnson, and Krista Howard,
Interdisciplinary Studies, Texas State University

Objective:

Occupational factors among teachers have been previously studied to understand how these factors influence job satisfaction. However, there is limited research on racial/ethnic differences in public school teachers in regards to both occupational and psychosocial factors. This study examined occupational and psychosocial differences between Caucasian, African-American, and Hispanic public school teachers in a K-12 teacher population.

Methods:

A total of 2,988 teachers from 46 Texas districts responded to a comprehensive online occupational health survey. Univariate analyses were conducted between teachers to identify specific relationships with demographic variables, occupational variables, perceived stress, Axis I psychopathology, and physical health.

Results:

Analyses showed that African American teachers have lower job satisfaction, job control, job involvement, and teacher attitude than their counterparts. Compared to Caucasian and African American teachers, Hispanic teachers are significantly more likely to develop a somatization disorder, panic disorder, and major depression ($p>0.005$). Moreover, higher levels of occupational and psychosocial factors can be seen in African American and Hispanic public school teachers compared to Caucasian teachers.

Conclusion:

Racial/ethnic differences are present among these groups as African American and Hispanic public school teachers have lower job satisfaction and are more prevalent to developing a somatization disorder and major depression compared to Caucasian public school teachers.

Impact:

Although previous research has focused on teachers' job satisfaction and mental health, few studies have studied both psychopathological and occupational factors simultaneously. Additionally, there are very few studies that assess cultural differences in teachers in the United States. The current study is a comprehensive occupational health evaluation of public school teachers in Texas, focused on assessing differences in racial/ethnic groups related to both occupational and psychosocial factors.

Construction Demand Forecasting for a Manufacturer Construction Equipment Based on Traditional and Supervised Machine Learning Methods

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Introduction:

Aerial board platform has many applications in construction projects. Manufacturer of construction equipment, as one of the leader of the market, aerial board platform not only in the US but also in other places of the world such as Middle East and Europe. This Corporation is an Original Equipment Manufacturer (OEM) that sells its products to the end users and rental companies.

Problem statement:

The current forecasting models use simple methods and also they included a limited set of demand indicators. Therefore, this has resulted in reduced accuracy. As a result, more sophisticated methods and demand indicators should be used. The objective of this research is to develop an accurate and robust demand forecasting method, based on advanced forecasting techniques, that addresses the following requirements:

- 1- The model takes into account multiple demand indicators
- 2- The accuracy range of 75- 99 % for short term forecasting (3-9 months)
- 3- The accuracy range of 70- 99 % for long term forecasting (1-3 years)

Research Questions:

The questions that motivates this research are as follow:

1. What is the behavior of the demand (trends, cycles, random variations)?
2. What is the most accurate conventional forecasting technique for the given forecasting problem?
3. What is the most suitable machine learning technique for the given problem based on different performance measures?
4. What are the main indicators of demand? How to select the best indicators?
5. What is the best metric for measuring the forecast accuracy (MSE, MAE, MAPE, etc)?

Research Methodology:

The problem is regression and nonlinear problem and three supervised machine learning methods named artificial neural network (ANN), support vector machine (SVM) and random forest (RF) could applied for analysis.

Some traditional methods that also applied were linear regression and moving average.

The data gathered from the company and also third party that was gathering the data. The step after that was data preparation mostly by R. After that finding indicators based on their importance in modeling considered and ICA method used to select the indicators as well. After these steps, modeling by R got considered.

Results:

SVM outperformed the other two machine learning methods in precision, recall and F-measure as well both in short term and long term (94 %). Running up was random forest and third was ANN.

The accuracy of traditional methods named linear regression and moving average were not comparable to the accuracy of supervised learning therefore traditional methods were not good enough to use for modeling.

Impact of the research on the field:

This research is an indicator of how accurate model can save more money and increase more profits due to balancing time and materials regarding building the equipment for the future demands. With this in mind, the mentioned manufacturer company can use the prediction results for better balancing and make itself more efficient for the future as well.

Young Millennials' Affinity Towards a Corporation and its Social Responsibility

Paloma Gray, Bianca Gandaria, Jessica Knight, Jené Shepherd, and Stephanie Robinson, Texas State University

Introduction:

Prior research indicates that corporate social responsibility (CSR) influences an individual's perception of a corporation and their purchasing choices (Pantani et al., 2016). The purchasing habits of the millennial generation, those ages 18-34, illustrate this (Chong, 2017). Research indicates that millennials value companies that are transparent in their business practices and are committed to having a positive social impact on the community (Cone Communications, 2015). Furthermore, studies show that a corporation's active social media presence can illustrate transparency in its business operations and raise consumer awareness of its CSR initiatives (Alton, 2015). Both of these actions are looked upon favorably by millennials. However, it is important to note that millennials are not a homogenous generation and can be better understood when divided into two separate groups: older millennials, ages 26-34, and younger millennials, ages 18-25 (Pew Research Center, 2015)

Research Questions:

This study aims to determine (RQ1) if young millennials are more likely to show affinity to brands that have a socially responsible image and (RQ2) what new media marketing strategies should corporations utilize to promote their socially responsible actions to younger millennials.

Methodology:

To answer the above mentioned research questions, a focus group discussion was conducted with eight Texas State University undergraduate students, all of whom are in the School of Journalism and Mass Communications. Participants were asked ten questions about their interaction with and views on socially responsible corporations.

Preliminary Results:

The results of this focus group are expected to show that young millennials have an affinity towards brands that complete CSR actions and that they learn about these actions via the corporations' social media platforms.

Impact of this Research on the Field:

The impact of this research is to better define the role that social media advertising of corporate social responsibility plays in influencing and harnessing the purchasing power of young millennials.

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Interprofessional Simulation (IPS) as an Educational Tool to Address Underserved Representation and Cultural Competence Among Future Rural Health Professionals

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Introduction:

Allport (1954) hypothesized that prejudice or stereotyping within groups would interfere with their optimum functioning (as cited in Gierman-Riblon & Salloway, 2013). It has been widely suggested that his intergroup contact theory was an appropriate mechanism to reduce barriers and then evaluate the effectiveness of interprofessional (IP) identity and learning. What has not been as widely explored is the impact of those same exercises and their potential influence on gender, ethnic, cultural, religious, or intra-personal professional perceptions. Prior findings from one multi-professional acute illness interprofessional simulation (IPS) exercise at a major southwestern US university suggested it had potential in the development of cultural competence training (Bargainer, et al., 2016).

The barriers to equal healthcare access and cultural inclusion of underserved populations necessitates that one must consider both their access to, as well as, the lack of staff diversity, and inadequate cultural understanding among healthcare professionals. Social work practice requires knowledge and the ability to apply it with increasingly diverse populations. This can be especially challenging for students who have not been exposed to or experienced other cultures apart from their own. In an attempt to better prepare future healthcare professionals to work with underserved populations, they have been exposed to an IPS program to help them to function more effectively within a culturally diverse healthcare setting.

Methodology:

The current work will report on a day-long chronic illness simulation exercise for sample of 97 students from two universities (n=97). The two universities were represented by students from five departments, which included: social work, pharmacy, nursing, respiratory therapy, and occupational therapy. After IRB approval a simulation health center was transformed into a typical day in a federally qualified health center (FQHC) and medical/surgical unit. Twenty-two evidence-based scenarios were created and adapted to address chronic medical conditions, as well as gender, ethnic, religious, and cultural competence issues. The cases were presented by standardized patients, and after randomization students worked collaboratively with other professions to assess and treat the patients.

Results:

According to the Learner's Self-Confidence Scale a paired samples t-test found that the exercise resulted in significant improvement in ($p < 0.01$) their knowledge, skills, behaviors, and attitudes. A Wilcoxon Signed Ranks Test comparison of the specific skills developed found a significant improvement ($p < 0.01$) in their ability to work effectively, contribute valuable insight, facilitate communication, coordinate tasks, resolve conflicts, and integrate information in their work with complex patients. Participants were primarily Caucasian females (66%, 87%, respectively). Most had no prior medical experience (53%), nor had they had any prior medical practicums (55%).

Implications:

The findings suggest the use of IPS exercises in the training of students may help to strengthen them for the diversity issues they will encounter in future clinical practice. The findings also suggest these types of educational exercises better prepare students for future career practice, as well as teach critical skills specific to interprofessional collaboration and culturally competent service. Implications of the study include further research on the topic and implementation of IPS educational opportunities for student future health care professionals.

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Major Depressive Disorder in College Students

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Objective:

Major depressive disorder is a mood disorder characterized by severe negative changes in, appetite, sleep, mood and other aspects of an individual's daily life. The academic work load combined with job demands and other personal factors can prove to be a stressful environment leaving students at risk for developing major depressive disorder. This study examined major depressive disorder in a college student population.

Methods:

A total of 425 students from a Texas university responded to a comprehensive online school, work, and life survey. Univariate analyses were conducted between students with and without major depressive disorder to identify specific relationships with demographic variables, occupational variables, academic variables, psychosocial variables, and Axis I psychopathology. Univariate analysis was conducted to identify the variables associated with the presence of major depressive disorder in a student population.

Results:

Analyses showed that students with major depressive disorder reported higher levels of job stress, presenteeism, and mindfulness as well as lower levels of academic major satisfaction, school stress and procrastination. Moreover, lower satisfaction with life, somatization disorder, anxiety disorder, and neuroticism were associated with major depressive disorder ($p < .05$).

Conclusion:

Higher levels of job stress, presenteeism and poor mental health are among the psychosocial and occupational factors associated with major depressive disorder in college students.

When Purpose Calls: A Ground Study on the Lifewide Learning Experiences of High Potential Adults

Joslyn Johnson, Adult Professional and Community Education, Texas State University

This study looked at the lifewide learning experiences of *high-potential*¹ individuals that were able to reach career success and have a sense of fulfillment in early adulthood (23-39). Fourteen participants were enlisted in the study, seven of which were women and seven men. The make-up of the participants included racially/ethnically diverse individuals from different social-economic backgrounds, differing regions across the US, and various career fields. This qualitative study aligned with an interpretivist epistemological standpoint and a constructivist approach to grounded theory. The primary mode of data collection included intensive interviewing and utilized theoretical sampling and methods of coding congruent with grounded theory analysis. The primary research question framing the study was:

1. What lifewide learning experiences thus far have helped *high-potential* (gifted) adults reach success and a sense of meaning in their careers during early adulthood?

The following additional questions helped to look at different angles of the primary question:

- A. What forms of learning (formal, informal or non-formal) have had an impact on helping *high-potential* adults develop their talent?
- B. What beliefs, motivations, and factors have spurred productivity in *high-potential* adults?
- C. What are *high-potential* adults' ideas of success and what causes them to have a sense of fulfillment?

Based on the findings, there were two distinctive categories that emerged from the data; one that focused on lifewide learning and the second solely focused on purpose. The findings of the study that covered the lifewide learning experiences of the participants revealed how their formal, informal, and non-formal experiences overlapped heavily. However, formal learning was most notable for helping participants see from a different perspective, non-formal learning for providing a space for the participants to explore their purpose, and informal learning was identified as facilitating the development of talent and providing “aha” moments. Key concepts that underpinned the participants' lifewide learning experiences included: *connected learning*, *relational learning*, and *identity capital*. The findings of the study centered on purpose explored the idea of an innate purpose, factors that helped to shape their purpose, and perspectives surrounding success. The fuel that helped to shape their purpose was their people centric nature, as well as spirituality (believing in something greater than oneself). The participants identified contentment, positively impacting others, and achieving goals as causing them to have a sense of fulfillment. Ultimately the participants leveraged their lifewide learning experiences to step into career opportunities that aligned with their purpose.

Through grounded theory the results of this study were used to create a substantive purpose development theory that can be used in crafting a coaching program to help high potential individuals reach success as young adults. Furthermore, the results of the study have implications that can be adopted by higher education and adult education professionals, talent managers, and practitioners working within the field of coaching.

¹ High-Potential-Traits of exceptional drive, ability, and desire to achieve at high levels.

Comparing Judicial, Jury, and Litigant Perceptions of the Trial Process

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Purpose:

Classic studies on judge-juror agreement have converged on the finding that judges and jurors agree on the outcomes in most cases (71-75%; Eisenberg et al., 2005; Kalven & Zeisel, 1966). The current study extends these findings by comparing trial process evaluations of judges, jurors, and litigants in actual civil trials. We also explored how different perspectives of the trial process predicted litigants' satisfaction with the outcome.

Design/Methodology:

Using data originally collected by Hans, Hannaford-Agor, & Munsterman (1999), the study looks at responses to surveys given by judges, jurors, and litigants regarding quality of decision-making during the conduction of civil trials in Arizona. Data is analyzed by running biserial and partial correlations, among other statistical tests.

Findings:

The results suggest that judges and juries largely overlapped in their perceptions of trial process measures (e.g., case complexity). However, judicial and jury perceptions often differed from litigants' perceptions. Also, litigant, but not judicial or jury perceptions of the trial process, predicted litigant outcome satisfaction.

Research Implications:

These results support past research concerning judge-juror agreement (Eisenberg et al., 2005), but suggest there is less agreement between objective (i.e., judges and jurors) and subjective (i.e., litigants) perspectives of the trial process. The research also emphasizes the importance of ensuring that procedures and all the processes that litigants go through during civil trials be conducted correctly so that they feel that they got a fair and just trial.

A New Classification of The Dihedral Group of Order Eight

Nathan A. Jones, Thomas M. Keller, Mathematics, Texas State University

Problem or Research Question:

Algebra is a unifying theme in almost all of mathematics. The most basic structure in abstract algebra is the finite group. The group makes appearances in a variety of areas in mathematics such as the integers under addition, or the solution to polynomial equations. A key method of studying groups abstractly is through a method of group actions, where a group acts on a set. Notable features of group actions include orbits and their sizes. In 2016 the paper *Abelian Quotients and Orbit Sizes of Solvable Linear Groups* by Drs. Thomas M. Keller and Yong Yang proposed the following conjecture:

“Let G be a finite nonabelian group and V a finite faithful irreducible G -module. Suppose that $M = |G/G'|$ is the largest orbit of size M on V , and assume that there are exactly two orbits of size M of G on V . Then G is dihedral of order 8, and $|V| = 9$.”

The research question is to verify this conjecture with a proof or to find a counterexample and classify all such groups with the above property.

Methodology or approach:

Using methods from the Keller and Yang paper mentioned above we will break down the problem into a series of cases. With more specific cases we will have more specific properties to work with. In the cases where the class of Groups being worked with do not contain the dihedral group of eight elements we hope to arrive at a contradiction. In the case where our dihedral group is contained we will verify that in fact it does satisfy the given conditions. The cases will be compiled to give a complete picture of all groups under the stated conditions and form a proof stating all such groups which satisfy these conditions.

Results or preliminary results and their impact on the field:

Our results have shown conclusively with a proof that indeed the dihedral group of order eight is the only group that satisfies the above conditions. We have also shown the exact action explicitly giving a second proof that it satisfies these conditions. These results are useful in establishing results in character theory of finite groups and conjugacy classes of finite groups. Both areas are used heavily in computer science and physics. More directly it establishes the next step for generalizing results on orbit sizes. The original paper by Keller and Yang discussed what happened if exactly one orbit was of size $|G|/|G'|$ and we have established what happens if exactly two orbits fit this condition. Methods in this new paper could help to generalize this question to groups that have ‘ n ’ orbits of size $|G|/|G'|$.

Evaluating the Detection of the Houston toad (*Bufo* [=*Anaxyrus*] *houstonensis*) Using Environmental DNA

William W. Keitt, Dittmar Hahn, David Rodriguez, and Michael R.J. Forstner, Biology, Texas State University

Environmental DNA (eDNA) is a rapidly growing molecular survey technique that is being increasingly implemented across a wide breadth of taxa. Despite increasing instances of its use, relatively few studies have evaluated this method for seasonally present pond-breeding amphibians. This study seeks to provide an evaluation of the efficacy of eDNA surveys for the detection of one such species, the Houston toad (*Bufo* [=*Anaxyrus*] *houstonensis*). The Griffith League Ranch (GLR), a primary recovery site in Bastrop County Texas, was sampled weekly during the breeding season from February to June of 2016 and sporadically in the spring of 2017. Nine perennial ponds on the GLR were surveyed and 557 water samples were collected for eDNA analysis, with 217 representing known positive controls collected from buckets with each life stage of this amphibian. Samples were collected following a USGS approved protocol (Goldberg et al. 2011). Both PCR and nested PCR assays were used to assess Houston toad detection/non-detection based on positive amplification of a diagnostic fragment of mitochondrial DNA. PCR assays successfully showed amplification of Houston toad eDNA in 82% of known positive controls, while only 1.1% of the sampled ponds, and 0.0% of known positive ponds showed amplification. Nested PCR assays proved more efficient, detecting Houston toad eDNA in 86% of all known positive controls, 7.4% of all sampled ponds, and 14% of the sampled known positive ponds. Our results suggest that conventional detection methodologies for eDNA incur false negative detections, and therefore, are likely less reliable than current survey approaches. The inability of eDNA surveys to accurately detect species presence may be impacted by a variety of factors ranging from environmental inhibitors to lack of assay sensitivity. With many critical considerations for the implementation of this rapidly growing molecular survey technique, it may prove ineffective for the detection of elusive, seasonally present, pond-breeding amphibians.

Revoking BP's Corporate Charter for Environmental Infractions

James Kemp, Legal Studies, Texas State University

Introduction:

Brief history of charter revocation in the United States. This section will also discuss how charter revocation is rarely used in order to stop corporations from committing crimes. BP has continually committed crimes which have harmed the American people more than it has helped them. This article will discuss how one would revoke BP's corporate charter and discuss an alternative to the Delaware charter revocation statutes in order to give the residents of the state of Delaware and the country as a whole more control of corporate activities. (Cite: Thomas Linzey, *Awakening A Sleeping Giant: Creating A Quasi-Private Cause of Action for Revoking Corporate Charters in Response to Environmental Violations*, 13 Pace Env'tl. L. Rev. 219, 228 (1995).; Gregory M. Gilchrist, *The Expressive Cost of Corporate Immunity*, 64 Hastings L.J. 1, 3 (2012). (article argues that only deterrence and expressivism together can justify imposing criminal liability on corporations.); Steven L. Humphreys, *An Enemy of the People: Prosecuting the Corporate Polluter As A Common Law Criminal*, 39 Am. U. L. Rev. 311, 313 (1990). (comment examines the implications of common law criminal prosecutions for environmental offenses on the development of environmental law.); *Trustees of Dartmouth College v. Woodward*, 17 U.S. (4 Wheat.) 518 (1819). (the Supreme Court held that a corporate charter is a contract, the obligation of which cannot be impaired without violating the Constitution of the United States.)

Charter Revocation and Forfeiture in Delaware

- a. **Delaware Statute:** (Cite: 8 Del. C. § 284)
 - i. **Authority of Court and Attorney General:**
 - b. **Case Law**
 - i. **Dissolution and revocation-**
 - ii. **Remedies in charter revocation and forfeiture proceedings**
 1. affidavits filed by Attorney General was sufficient to grant a preliminary injunction.)
- II. Notable State Charter Revocation and Forfeiture Cases in the US**
- a. **Case Law**
 - i. **Antitrust Legislation**
 - ii. **Quo warranto proceedings in criminal law cases**
 - iii. **Violation of Public Policy**
- III. Texas City Refinery and Deepwater Horizon Disasters**
- a. **Texas City Refinery:**
 - i. **Environmental Concerns**
 - b. **Deepwater Horizon: Environmental impact:** Important facts and issues related to the injuries and harm by the Deepwater Horizon disaster
- IV. The case for charter revocation against BP**
- a. **Texas City Refinery Disaster case, causation, penalties, and damages awarded**
 - i. **Misuse and Abuse of charter:**
 - ii. **Injunctive relief from BP for abuses and misuse**
 - iii. **Public Nuisance/Health threat**

- b. Deepwater Horizon Disaster case, causation, civil penalties and damages awarded:**
 - i. Misuse and abuse of the charter:**
 - 1. Injunctive relief from BP for abuses and misuse**
 - 2. Public Nuisance/Health**
 - 3. Water Pollution Cases**
 - c. Other penalties and violations committed BP and its franchises**
- V. Linzey Cause of Action Implementation into Delaware Revocation Statutes**
 - i. Linzey Cause of Action revision in Delaware statutes:**

Conclusion:

Delaware revocation law would allow BP's charter to be revoked. Also, injunctive relief is possible from preventing BP from causing continuous harm. Writ of mandamus and quo warranto proceedings would allow the Court to review the negligent actions of BP in charter revocation proceedings.

Biogeochemical Analysis of Undocumented Migrants

Robyn Kramer, Nick Herrmann, Anthropology, Texas State University, Eric Bartelink, Anthropology, California State University, Kate Spradley, Anthropology, Texas State University, and Clement Bataille, Geography, University of Ottawa

Objective:

The goal of this presentation is to determine how undocumented migrants fit into the established models by refining coarse-grained baseline strontium and oxygen isoscape models using published data. An additional goal is to determine if using a probability assignment method for the dual-isotopes can aid in estimating most likely regions of geographic residence for unidentified deceased migrants recovered along the Texas-Mexico border. Establishing residential history can reduce the potential matches for unknown cases within the NamUs database and potentially aid in generating positive identifications for deceased migrants.

Impact:

The presentation will shed light on the humanitarian crisis occurring at the US-Mexico border and promote interdisciplinary approaches to forensic identification and human rights issues. An additional outcome is closure for the families that have lost loved ones and can finally have them returned home and laid to rest.

Methods:

Recently developed bedrock, water catchment, and soil strontium isoscape models for Mexico, Central America, and the Caribbean are adjusted using bioavailable strontium ($^{87}\text{Sr}/^{86}\text{Sr}$) data collected from a variety of published sources. Oxygen (^{18}O) precipitation data are gathered from the Global Network of Isotopes in Precipitation online database. Elevation DEM models are factored into the oxygen isoscape to account for isotopic changes in elevation for oxygen precipitation isotopes. Using the Operation Identification collection at Texas State University, dental samples (preference is given to maxillary premolars) are collected from five individuals ($n=5$) and analyzed for strontium and oxygen. Associated cultural material recovered with the deceased migrants are used as a predictor for region of geographic residence (e.g. an individual carrying quetzals is more likely to originate from Guatemala than Mexico). Strontium and oxygen isotope values extracted from the teeth are run through a likelihood assignment model established in previous publications to produce probability densities for the most probable regions of residence for each individual.

Results/Conclusions:

The goal of the research is to map the isotopic variation. The likelihood assignment model in R studio uses probability densities to estimate most likely region of origin. After running the strontium and oxygen ratios through the model, the results consist of multiple heat maps displaying the probability densities for regions of most likely origin for each of the five individuals. Strontium isoscapes tend to be the more accurate model for provenancing migrants, while the oxygen isoscape for the region has a low accuracy rate due to the lack of precipitation data for the regions. Overall, the dual-isotope approach proves successful in narrowing down the region of geographic residence for deceased migrants recovered near the Texas-Mexico border. Adding more strontium and oxygen data to each of the isoscapes will improve the method, allowing it to be applied to all migrants recovered along the US-Mexico border and to be adapted

for other regions of the world where deceased unidentified humans are recovered. The implementation of geostatistical and biogeochemical methods to investigations of unidentified human remains will improve existing techniques and increase the efficiency of current identifications.

Visual Framing of Immigrants During the 2016 US Presidential Election

Ryan Leach, Mass Communication, Texas State University

Introduction:

This paper will evaluate the visual framing techniques *The New York Times* employed from October 8, 2016, to November 8, 2016, on immigrants and immigration. The topic was and remains a divisive and contentious issue. Many of us know people who are vulnerable to deportation, especially now that President Donald Trump has cancelled the Deferred Action for Childhood Arrivals program (DACA).

Methodology:

This research paper will employ a quantitative visual content analysis, so it'll fit within the framework of visual communication. This paper seeks to answer if the *New York Times* visually portrayed immigrants in the same negative light that President Donald Trump did in the month leading up to the election. Since the presidential election was held less than a year ago, this paper will add to whatever limited research is available on visual frames from the past election. Visual frames are underutilized (vis-à-vis textual framing), and it's possible that no academic papers exist yet on visual framing of this topic. My goal is to build a robust literature review on visual framing of immigrants in the next few weeks, and then perform a visual framing analysis of *The New York Times* (from 10/8/16 to 11/8/16). I've selected the *New York Times* because of its large circulation and influence online; it's arguably the most important newspaper in the United States.

Preliminary Results:

Entering the key terms "immigrants" and "election" into the *New York Times*' search engine (spanning the dates October 8, 2016, to November 8, 2016) yielded 202 results. I've discovered the *New York Times*' website to be the best source to do an analysis of visual frames; unlike academic database sites, all the original content (including photos) is included. Because 202 is too large of a sample, I'll select every seventh article in the search, indiscriminately netting twenty-eight results for analysis. In identifying frames, I will employ Dimitrova and Rodriguez's (2011) four-tiered model of identifying visual frames. Two trained coders will be utilized; their intercoder reliability verified within an acceptable percentage (80%) of agreement.

Impact:

This paper will establish whether the *New York Times* employed visual frames sympathetic or hostile to immigrants. Was this stalwart of the fourth estate complicit in spreading President Trump's xenophobic messages? On a professional level, it'll add to the underutilized implementation of visual framing analysis of mass media.

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Social Capital on Instagram

Eun Jeong Lee, Mass Communication, Texas State University

Social network sites have grown rapidly in popularity in the last ten years. Unlike traditional media in which messages are delivered by unidirectional communication, social media allow messages, such as texts, photographs, videos, or even links, to be delivered and shared faster and more widely by interactive communication. With the development of digital technologies, social media have become significant social tools for both maintaining existing offline ties and creating new online ties. Additionally, photo sharing on social media has become a significant part of the online social experience among U.S. young adults. The influence of Instagram on young adults is of particular importance, not only because this particular age group is vulnerable but also because they are among the heaviest users of social networking.

Social capital refers to the resources rooted in social relationships. Bridging social capital is typically associated with the ‘weak-tie’ relationships of people from socially different backgrounds or networks who are loosely connected and do not know each other well. On the contrary, bonding social capital is usually associated with the relationships of strongly tied groups who frequently exchange physical and emotional support for one another.

Despite the significant role that Instagram plays among the young adults, little scholarly attention has been devoted to exploring the effects of Instagram usage on social capital. Therefore, using the framework of social capital, this study will examine whether using Instagram affect bridging and bonding social capital and how the sharing of photographs on Instagram relate to social media outcomes. It is worth exploring as Instagram plays a vital role in broadening online social connections and sharing life experiences among young users.

To map out these relationships, this study will employ an online survey data from undergraduate students in a large university in U.S. using Qualtrics. Undergraduate students were chosen because they represent the young population who are the focus of the study. The online survey was chosen because the surveys are cost-effective. A questionnaire containing 34 items were developed in this study to measure the use of Instagram and its association with heterogeneous and homogeneous network as well as how the use of photographs on Instagram relate to a user’s perception of social capital outcomes.

The results of this study will reveal how Instagram usage will play a role in the formation and strength of both strong and weak networks significantly. The study will also reveal how photograph usage has positive and negative effects on online social capital. Therefore, the results of this study will contribute to, not only our baseline understanding of the photography usage of Instagram among today’s young adults, but also the current scholarly literature on social media and social capital research by exploring how Instagram use is associated with young people’s social capital.

Exploring Visual Frames and News Sources: A Comparison of International Media Coverage of Hurricane Harvey

Eun Jeong Lee, Mass Communication, Texas State University

On August 25, 2017, hurricane Harvey made landfall in Texas as a category 4, and became one of the deadliest hurricanes in American history. As the top story, the Harvey catastrophe grabbed global media attention due to its large scale and destructive aftermath, killing at least 80 people and destroying thousands of homes. In moments of crisis, the media plays a crucial role as the public turn to the media for information. Particularly, visual images play an important part of news coverage as they grab attention, evoke emotions, and generate strong public reaction. The selection of news sources is also a significant part of the news construction because it determines the way in which news stories are framed and influences the public's perception of the news stories.

Therefore, using a framing theory, this study investigates whether and how the news visual frames and sources varied in the coverage of the hurricane Harvey by newspapers in two culturally distinct countries, U.S. and South Korea. In doing so, this study will contribute to visual framing literature by exploring differences and similarities of visual coverage of natural disasters, and international media literature by exploring how news visual frames and sources are shared across national borders and the ways different countries' news media adopt such frames.

This study will conduct content analysis of news coverage of hurricane Harvey by the *New York Times* and *Chosun Ilbo* from August 25, 2017 (the day the hurricane made landfall in Texas) to September 15, 2017 (two weeks after the landfall). This timeframe was chosen because it represented the peak period of the hurricane Harvey. The units of analysis will be news photographs and sources in the new articles. Through a random sampling, the *New York Times* articles will be searched using the LexisNexis database with the key terms "hurricane Harvey" and "Harvey", and *Chosun Ilbo* articles will be searched using the newspaper website with the key terms "허리케인 하비" and "하비", which mean and read hurricane Harvey in Korean. The two newspapers were selected due to their large sizes and daily circulations, which can have the greatest potential to impact large audiences. Two trained graduate students will code the variables. Chi-squares will be used to test for differences in the usage of photographs and news sources between the newspapers.

Because the news media tend to reflect the interest of their own country, the photographic portrayal of hurricane Harvey in a U.S. newspaper might differ from a South Korean newspaper. There also might be differences in news sources used in either country's coverage due to different access of resources. Therefore, the results of this study will broaden our understanding of how newspapers in each country present the same issue differently due to distinct circumstances, geographical distances, social and political systems, and cultural beliefs. This will help the news readers, scholars, and professional practitioners better understand how the same event may be portrayed differently in each country.

If Hair is Relaxed, are Folks Truly Relaxed? A Study of Modern Audience's Perceptions of Natural Hair in the Media

Janel Lee, Mass Communication, Texas State University

Introduction:

On January 27 of 2015, NBC News published their article "If Big, Natural Hair is In Why Don't We See it on Television?" that discussed how despite the natural hair trend among African-American women, the same trend didn't seem to affect television. This article prompted me to think about my own natural hair journey and how I couldn't recall a point in the past nine years where I saw someone in mainstream media with hair like mine. This reflection led me to this research question: What are the perceptions of the audience when they see natural hair in the media? My hypothesis is that while there has been improvement, overall there remains a strong bias against natural hair that is pervasive across gender and ethnicity and the media reinforces the message of straight hair being preferable. The research is based on the phenomenistic theory.

Methodology:

For this research, a survey will be implemented. The purpose of the survey is to gauge how audiences perceive natural hair. To get the most accurate picture, the survey will be sent to a variety of people and not just the students on the Texas State University Campus. Sending a survey to college students who have a greater chance of seeing natural hair in their day-to-day lives may not paint an accurate picture of how audiences perceive natural hair. Because of this goal, the survey will analyze if race/ethnicity, gender, and economic status affected the results. In the survey, images and videos of Black women with natural hair will be shown and participants will have to pick from a list of options describing how they feel. Here are a sample of questions that will be asked:

1. After watching this commercial (Pantene Gold Series Commercial), how do you feel?
2. Of the two pictures (comparing the character from *Queen Sugar* with her hair straight, then curl) which one do you prefer?
3. Of the two pictures (Teyonah Parris' promo photos from *Survivor's Remorse*), which one do you prefer?

Impact of the Research:

It would update the existing literature with new data. Most of the literature that measured audience's response and perception of natural hair is dated with the most recent article being published in 2000. It would not only benefit studies in North America but abroad as well. Lastly, if the research found a strong bias against natural hair, it could pave a way into how employment chances are affected for African-American women compared to Asian-American and White American women.

Gatorade Sports Advertisements: The Design of the Ads

Samantha Lopez, Mass Communication, Texas State University

The purpose of the thesis was to investigate the role of design in Gatorade sports ads, how it works and what the effects are on consumers. I analyzed the design of Gatorade ads and discussed how their ads attract their target market and other consumers. Gatorade is an American sport themed, which is built on their signature line of sports drinks. Gatorade is the fourth largest brand of products that are sold worldwide and is the official sports drink of all professional, collegiate, and high school sports team. The scope of the project was to understand Gatorade sports ads and how the design of their ads persuades consumers. This study explains how ads, whether it is media or paper, lets the consumer think about the relationship between an object, a sign, and a meaning and the representation of Gatorade ads using the semiotic theory. The methodology used was content analysis, which examined the visual communication and the design in Gatorade ads. The study examined the top 10 memorable print Gatorade advertisements of 2002, 2008, 2013 and 2017 from www.adsoftheworld.com, and explored the content of the ads. The research showed that Gatorade ads are a powerful message to persuade consumers to purchase their products and there is a reasonable correlation between the quality of the ads and the quality of products. Moreover, findings concluded how print ads, frame the way consumers view the product and a way for consumers to purchase Gatorade. Visual persuasion of the ads gives the researcher the understanding that the design of the ads plays a huge role in framing a reality that consumer can win in their sport. The visual persuasion of the ads demonstrated how art, color, and athlete can spark consumer's determination to win by the design of the ads. The ads visual persuades the consumers by picturing famous athletes, which influences younger adults to purchase the product to believe they can win if they drink, eat, or use Gatorade products. The information on Gatorade's design will likely impact consumer's understanding of how consumers interpret the ads.

Marketing Through Visual Communication to Different Personality Profiles

Aaron Lugo, Mass Communication, Texas State University

Problem:

In this day and age, it is becoming increasingly difficult to advertise and market products and services to the general public because just as new ways to market are constantly a topic of innovation, so are ways for the consumer to strategically avoid being advertised or marketed to. Increasingly, individuals appear to be aligning themselves more closely with brands that they identify most with rather than brands that are popular or have been able to be accessible for a majority of the population. The purpose of this research is to identify how visual communication strategies can be utilized to create messaging to appeal to different personality traits in order to incite action.

Background and Significance:

This research will help marketers, advertisers and strategic communicators understand how individual consumers of different personality types will respond to different types of visual messaging while measuring the effectiveness of that messaging to incite action against the personality type.

Research Design and Methods:

For this body of research, a survey will be conducted to examine the perceived personality types of individuals and what kind of visual messaging they would be most likely to respond to both positively and negatively.

To conduct the survey a sample will be taken out of the student body of Texas State University and the participants will be asked to take online Meyers Briggs personality tests. After those tests, the participants will participate in the survey administered online that will measure the participants' likelihood of purchasing or signing up for the focus of visual messages.

The survey will consist of different visual messages and a rating system where participants will identify the level of likelihood that they will act upon said messaging. If the participant chooses the highest or lowest levels on the scale, they will be required to answer an open-ended question on why they feel that way. This research therefore, will bring not only quantitative data but qualitative data as well.

The data from the research will be compiled and charted to find a correlation between personality profiles and types of messaging that participants responded positively and negatively to. Additionally, participants may give reasoning to explain their choices which can be used to further design the visual messages that future surveys will be built with.

Preliminary Suppositions and Implications

The research will either show a correlation to personality types and messaging strategies that will work for different personality types or a lack of correlation. The outcomes of the research could even suggest that visual messaging is not a useful strategy for certain personality types. In corporate settings the results of this research could impact the types of marketing efforts that are employed when launching products/services to consumers. Companies would be encouraged to collect demographic data on their clients that would show the personality makeup of their base so that they could make informed decisions on the best way to market to them visually.

Using Museum Records to Re-examine the Historic Range of the Houston Toad (*Bufo houstonensis*)

Andrew R. MacLaren and Michael R. J. Forstner, Aquatic Resources, Texas State University

Animals in museum collections often retain the binomial nomenclature given for the taxa at the time of collection. Updates to specimen repositories may not keep pace with taxonomic revisions of constituent species. This coupled with misidentifications at the time of collection, clerical error at the time of cataloguing, or re-curation of whole collections, may confound pertinent information to present or historic species distributions. Here, we examine these errors with regard to the endangered Houston Toad (*Bufo houstonensis*). This anuran is historically known from a narrow range of southeast central Texas counties. However, historic museum records for the species occur from outside of the putative historic range. Additionally, museum records for the closely related Dwarf American Toad (*Bufo americanus charlesmithi*) complicate the situation beyond simple taxonomic recognition. We qualitatively examined diagnostic morphological features of specimens contained within 16 museum collections. These assessments were carried out through visits to museums as well as by examination of digital images of specimens. Our efforts have resulted in a historic range extension for the Houston Toad, that was previously verified yet went unreported. Bufonids possessing characters unique to Houston Toads were found well outside the taxon's reported range. Our results emphasize the importance of museum collections in the understanding of species distributions and the need to incorporate taxonomically comprehensive specimen reviews in any examination of a species' distribution.

The Role of the Vacuolar (H⁺)-ATPase in Neuroblastoma Cell Differentiation induced by microRNA-506-3p

Geraldo Medrano and Liqin Du, Biochemistry, Texas State University

Brief introduction to the topic/problem/research question in relation to existing research/theoretical framework:

MicroRNA 506-3p (miRNA-506) was previously identified to be a potent inducer of neuroblastoma cell differentiation and cell cycle arrest. A gene expression array determined that the ATP-driven proton pump, vacuolar (H⁺)-ATPase (V-ATPase) is directly targeted by the miRNA-506. However, the role of V-ATPase in neuroblastoma has not been investigated. We recently found that by using siRNAs to knock down V-ATPase expression we were able to reduce neuroblastoma cell viability and the ability to proliferate. These results warrant further investigation to determine the molecular mechanisms through which V-ATPase helps mediate the effects of miRNA-506 on neuroblastoma cells.

Methodology or approach:

Using in vitro approaches, we investigated the role of V-ATPase in neuroblastoma. BE(2)-C neuroblastoma cells were transfected with siRNA that targets the e subunit of the V-ATPase complex. Knock down of the e subunit resulted in the reduction of cell viability and proliferation. Neuroblastoma cell differentiation was not detected as a result of e subunit knockdown.

Results or preliminary results:

Our findings suggest that by using siRNAs to knock down V-ATPase expression we are able to reduce neuroblastoma cell proliferation and viability. These results warrant further investigation to determine the molecular mechanisms through which V-ATPase helps mediate the effects of miRNA-506 in neuroblastoma differentiation and cell cycle arrest.

Impact of this research on the field:

This study will elucidate the underlying mechanism involved in the effects of miRNA-506 on neuroblastoma cells. These investigations can help lead to the fundamental understanding of neuronal differentiation as well as potential targets to inhibit cancer growth.

Lack of Products for Diverse Skin Tones in the Cosmetics Industry

Kira Moreland, Mass Communication, Texas State University

Research Problem:

The recent launch of Fenty Beauty by recording artist Rihanna has started a debate within the cosmetic industry over historic inclusion practices. For decades, cosmetic and beauty companies have focused their portfolio of products to mainly individuals with fairer skin tones. Despite this practice, ethnic populations have continually purchased cosmetic products and made due the best they could with the limited options. The presence of social media has placed increased pressure on cosmetic companies to increase their product offerings for a more diverse customer base. In this study, I examined the historical social, economic and psychological trends in the cosmetics industry that has led to exclusivity in product development and the copycat actions of other cosmetic companies after the recent financial success of Fenty Beauty.

Methodology or approach:

To understand the current climate of the cosmetics industry, I performed a lengthy literature review that focused on the early beginnings of the cosmetics industry, the expansion of cosmetic lines to include ethnic populations and socioeconomic impacts on different customer bases within the cosmetic industry. Next, I examined 12 popular cosmetic companies' portfolio of products related to foundations to determine the total number of skin tones covered by each company in comparison to Fenty Beauty to test if inclusion has truly been accomplished. Findings of both the literature review and product portfolio test were discussed, implications were summarized and suggestions for future studies were recommended.

Results or preliminary results and their impact on the field:

The literature review found that the psychological impact of beauty standards associated with fairer skin contributed to a limited initial demand for cosmetic in ethnic populations. Various socioeconomic studies showed that over time, income gaps do not account for the trends in the cosmetics industry as Blacks spend just as much on cosmetic and beauty products as their White counterparts. Recent launches of ethnic focused makeup lines were a meager attempt by cosmetic giants to capture an additional revenue stream but their main advertising focus was still consumers with fairer skin. Preliminary results of the cosmetic company comparison confirm that there is indeed a clear bias against individuals with darker skin tones. The cosmetic companies were divided into two categories: those considered cosmetic giants and those who launched and gained popularity in the social media area. The study showed that regardless of categorical placement, there was significantly more foundation shades for fairer skin individuals than darker skinned individuals. Lastly, the financial success of Rihanna's Fenty Beauty line was examined and it was discovered that several key cosmetic companies responded with immediate expansions to their foundation lines. Normally in economics it is assumed that copycat marketing dilutes the industry, however, in this scenario it has improved inclusion in the cosmetics industry because it was so far behind on a diversity basis. Suggestions for future studies include a long-term follow-up to see if inclusion remains an important advertising variable in the cosmetic industry and is not just a short-term trend for social media gain.

Optimized Sparse Matrix Operations and Hardware Implementation in FPGA

Dinesh Kumar Murthy and Semih Aslan, Engineering, Texas State University

Sparse matrices are the key component in many scientific computing applications, where increasing the sparse matrix operation efficiency can contribute significantly to improve overall system efficiency. The increasing importance of sparse connectivity representing real-world data has been exemplified by the recent work in areas of graph analytics, machine language and high-performance computing.

Research Problem:

1. **Indirect addressing:** The non-zero entries of a sparse matrix must be addressed by indirect addresses in its index array. This leads to random accesses that requires more memory transactions and lower cache hit rate.
2. **Memory Allocation:** The distribution of zero and non-zero entries are not known in advance. Pre-allocating of memory blocks of specific size may waste memory, when the intersection of nodes is large.
3. **Low Arithmetic Intensity:** This is caused by the lack of temporal locality in the access to sparse matrices. If the matrix is not structured or blocked, most of the entries in cache line fetched to get an element remain unused. This leads to high memory overhead per sparse matrix operation.

Methodology:

After carefully reviewing all the previous methods of dealing with sparse matrices, the next solid step for improving the performance no longer involves proposing new expensive optimization, but applying the optimizations whenever they are effective. To avoid the extra computation and storage imposed by majority of zeros, auxiliary data structures are employed for the matrix elements. Since the hardware does not need to change for varying matrices, the time required for initialization can be minimized. The architecture is simple to implement and highly scalable, capable of handling matrices of various sizes. Design includes setting up of counter, so that the elements are stored in a register so the feedback buffer is high. The I/O operations is reduced enabling simple control logic. Also, deep pipelining is carried out to achieve high optimization by taking advantage of the data flow.

Results:

The sparse matrices obtained from SuiteSparse Matrix Collection and manually created test case values with various sparsity were used for simulation and testing. These results were verified with the MATLAB results to check the output accuracy and precision loss. In comparison to the normal algorithm for matrix operations, speed-up with a high throughput and low latency was achieved in the proposed research. Also, resource utilization of the architecture was highly reduced by 1/4th from the normal method. The design minimizes gate count, area reducing the number of multiplication and addition hardware.

Implication and Future Work:

Today's applications require higher computational throughput and distributed memory approach for real-time applications. The research work is primarily to design an optimized architecture for sparse matrix operations, allowing it to be more efficient from normal operations. Research

improvement in this area is needed for increase in logic resources by comparable increases in I/O bandwidth and on-chip memory capacity, especially when the matrix sparsity is unstructured and randomly distributed.

Measuring Students' Perceptions of Social Media in Science Courses

Zachary L. Nolen and Kristy L. Daniel, Aquatic Resources, Texas State University

Introduction of Topic:

Social media has become an integral part of students' lives and has garnered much attention as a potential instructional tool. Currently, there is little evidence about the integration of social media into science courses despite social media being successfully incorporated into business, economics, and marketing courses. Current social media studies build on the assumption that students want to use social media in their courses but provide little evidence to support this assumption.

Methodology:

Our goal was to provide evidence about how students perceive the use of social media in their science courses using the newly developed Perceptions of Social Media (POSoM) questionnaire. We assessed the perceptions of 51 students at various years in their biology degree program. We calculated each student's average score for the four POSoM factors and then classified the score as positive, neutral, or negative. We carried out an ANOVA with a Gabriel post hoc test to identify any significant differences in perception based on class level.

Results:

Students reported mostly neutral perceptions (57%) about the benefits of using social media in science courses. The majority of students were split between positive (49%) and neutral (43%) interests in using social media in their science courses. However, most students (55%) indicated that they did not care to use social media for academic communication in their science courses. We also found that there were no significant differences in perceptions of social media for academic purposes among class level. We did find a significant difference in personal communication through social media, with doctoral students having a significantly lower average score than other class levels.

Impact of Research to the Field:

Our findings provided further evidence that social media has become a major part of everyday life for students given their highly positive perceptions towards using social media as a personal communication tool. However, this trend did not continue into using social media for an academic communication tool. Our findings can be used to help inform instructors about the most efficient ways of integrating social media into their science courses. Social media can be a useful tool for reaching younger students. However, it is important to not jump to assumptions about how students perceive adopting new technology in ways not originally intended.

Conductive Capacity of the State: An Assessment of Mexican Political Institutions Since the Merida Initiative

Jose Olvera, Public Administration, Texas State University

The purpose of this applied research paper is to conduct a preliminary assessment of Mexico's political institutions since the Merida Initiative to evaluate the progress, or lack thereof, in relation to the agreement's explicit goals of institutionalizing reforms and supporting democratic governance. The project's framework is structured using three core pillar questions that address Mexican state capacities: coercive, extractive, and conductive capacity. Conductive capacity refers to the state's ability to effectively channel citizen demands through the state apparatus. First, an assessment of Mexico's political institutions is performed using a variety of methods, including data, survey-item, and case study analyses. Second, the dimension of conductive capacity is tested against coercive and extractive capacities to evaluate whether an interaction between these exists. The results of the assessment demonstrate that the Mexican state's coercive and conductive capacities have significantly decreased since the implementation of the Merida Initiative, while demonstrating that coercive and extractive capacities of the state significantly predict conductive capacity dimension variables.

The Effects of Story Translation on Sentence Complexity

Klarissa Perez, Marcia Monk, Thinh Nguyen, Maria Resendiz, and Amy Louise Schwarz,
Communication Disorders, Texas State University

Based on past research aims by Ferreira, translating efficiently and quickly has become an area of interest and concern as the translations may or may not carry the same linguistic (i.e., semantics, morphosyntax, etc.) information as the original storybook. Our goal is to determine whether syntactic complexity remains the same when translating storybooks that are perceived as easy, and storybooks perceived as challenging. Systematic Analysis of Language Transcripts (SALT) software was used to determine syntactic complexity of each sentence. (The easy storybooks contain simple syntax, while the challenging storybooks contain complex syntax). In our study, we looked at the English to Spanish oral translations of two storybooks chosen by rating scale. We measured the latency between the clauses to determine if there was a correlation between complexity and latency. We anticipate that we will find a shorter latency between clauses with the easy storybook compared to the challenging storybook. This research is relevant for bilingual SLPs as they are required to translate storybook material for assessment and treatment purposes. This research may indicate the importance of choosing an easy rated storybook in order to preserve linguistic information.

- We must consider the client's current language abilities while choosing the level of difficulty of storybooks for assessment and/or treatment. However, it may be more appropriate to choose a storybook that the SLP can translate without losing linguistic information.

Factors in Rejection of Presidential Nominees to the U.S. Supreme Court

Amy Denn Perry, Political Science, Texas State University

Brief introduction in relation to research framework:

This paper is based upon research of academic journals, newspaper articles, court blogs, and Congressional records to ascertain the factors that led to Senate rejection of Supreme Court nominees. The goal was to identify if there were common factors and what they were. I looked specifically at five Supreme Court nominees - Abe Fortas, Clements Haynsworth, Harold Carswell, Robert Bork, and Merrick Garland.

Methodology or approach:

I undertook a non-empirical approach, analyzing and identifying common circumstances within the nomination process. I then examined those factors that were present in the rejection of nominees.

Results:

Findings included that in spite of nominee characteristics, there are also outside influences that become dominant factors. Polarization in Congress, a divided government, and the year in the nominating president's term also play a significant role.

Impact of this research on the field:

This research elps to inform a historical or political audience about the factors involved in Senate rejections of presidential nominees. For the literature in these fields, this paper contributes an in-depth look at factors involved in historical nominating processes.

Ebola in Liberia: A Narrative of the Communication Failures and Successes

Maximilian E. Petri, International Studies, Texas State University

The Ebola Virus Disease (EVD) was first identified in Zaire, West Africa in 1976. Virologists theorize that the virus is carried by bats. The Ebola outbreak in West Africa began with an unknown “patient zero” in early March 2014. On March 23, 2014, the Guinean Ministry of Health (MoH) notified the World Health Organization (WHO) that there were 49 cases, including 29 deaths, near the Sierra Leone and Liberian borders. The first confirmed death from EVD in Liberia was March 2014. The outbreak spiked in August with then tens of thousands in West Africa infected by EVD. The epidemic spread because of a remote, porous border between Guinea, Sierra Leone, and Liberia; lack of medical infrastructure; and lack of medical knowledge by the general population. A key reason for the spreading epidemic was a lack of meaningful, timely communication that likely contributed to the final death toll. The purpose of this paper is to analyze the communication practices surrounding the 2014 Ebola outbreak. More specifically, this paper seeks to analyze and put forth best communication practices in the region of Liberia. This communication research will employ a meta-analysis approach by comparing communication techniques between international organizations, the Liberian government and non-governmental organizations.

Family Structures and Matrimony in *Doña Perfecta* (1876): Representation of the Creation of Nation

Angela Pierce, Spanish, Texas State University

Introduction to the Topic in relation to existing research framework:

Doña Perfecta has been analyzed as a thesis novel that contrasts modernization and traditionalism or the liberal and conservative movements in Spain after the Restoration (1874). It has also been read from a feminist perspective, focusing on why *Doña Perfecta* acts as she does in a patriarchal society. Galdós reveals the complexity of the division within Spain with the models of family structures and the role of marriage in *Doña Perfecta*'s and her former servant María Remedios's families.

Methodology or Approach:

To support my thesis that Galdós represents Spain as a nation in conflict through the family structures and the role of marriage in the novel, I use historian Benedict Anderson's and literary theorist Homi Bhabha's theories of nation. Orbajosa is a community that employs imagined boundaries of who belongs and who does not belong, similar to the ones that Anderson describes that are created by nations. This imagined community is within the nation and is guided by *Doña Perfecta*, the female leader of her household and the community. Like the community that is wary of outsiders, *Doña Perfecta* and María Remedios are resistant to change and new aspects to the town that could be introduced through Pepe Rey's marriage to Rosario. Change is part of what Bhabha notes is necessary for the creation of nation. Instead, Orbajosa seals itself off as separate from the nation. This resistance to change is evident in *Doña Perfecta*'s effort to thwart Pepe Rey's and Rosario's marriage. Critic Jo Labanyi notes that by maintaining patrimony, local authority is maintained, and by protecting her patrimony, *Doña Perfecta* protects not only her interests but the local interests of Orbajosa. Critic Doris Sommer's theory of marriage as a representation of the union of regional interests also can be applied to the failed relationship of Pepe Rey and Rosario.

Results:

Galdós shows that as the leader of Orbajosa and in her home, *Doña Perfecta* closes off the possibility of change through her plans to impede the marriage between her daughter and nephew. Orbajosa remains unincorporated in the nation. María Remedios, also occupying the traditionally masculine role in her household, tries to impose order in by promoting the marriage between her son and Rosario. Her attempts fail much like the central government imposing itself onto Orbajosa. Orbajosa imagines itself as its own community that is separate from the nation that the central government imagines. The conflict between these two different identities within the nation is evident in the failure of the marriage between the cousins which represents the possibility of union within the nation.

Impact of Research:

This research adds to the analysis of the significance of Galdós's novel as a representation of the conflict within Spain after the Restoration. The family structures and the role of marriage in the novel highlight the division of identities within the nation.

Curating Memory through Pinterest and The Postmaterial Memorial

Krista Pollett, History, Texas State University

This paper is a case study about the use of Pinterest as a valuable historical tool to analyze material culture and personal memory. I argue that in analyzing the ways in which users post and organize content about a specific topic on Pinterest, one can view different trends in the construction of personal memory due to the site's association with identity. For this study, I rely on content surrounding the Vietnam Veterans Memorial. By analyzing a monument site on a website like Pinterest, I also re-contextualize the site as a "postmaterial memorial," meaning that the use of the digital medium to collect images or media about the memorial removes the need for viewers to interact with the memorial physically. In redefining the physical materiality of the memorial through a digital collection the meaning, impact, memory, and accessibility of the memorial changes.

A historical analysis interrogating the role Pinterest plays in personal memory has yet to be seen at length. Scholarship that most clearly resembles this research involves digital information, collecting, and public history. Whereas other historians, sociologists, and public historians have argued that the infinite possibilities of online collecting only hold significance in regards to the capabilities of the internet and the short attention spans of users, I insist that there is more to be learned from these sources. Instead, I am the first to analyze the ways that people collect information through Pinterest, and examine what that means regarding personal memory and identity in reference to an object, image, or topic. From the pins that are observed, if someone is remembering and memorializing the Vietnam Veterans Memorial through a Pinterest board, pins depicting the monument reinforce the user's connection to that era of American history, the meanings or aesthetics associated with the monument, or the user's connection to passed loved ones. In this digital information era, a person's identity and memory of recent history is influenced and strengthened just in the way that they interact with and collect content on the internet. By studying these trends, both the study of material culture and digital history can be expanded to include each other in ways that have not been done before. As we move into a digital age, this research becomes more relevant and important as a means of being a new source for information and resources that could possibly influence future historical research in a way that has never been utilized to this extent before. This type of information is more accessible to more people as a means for research than ever before. The internet and social media sites like Pinterest inherently present the idea of limitless information that is no longer bound by paper resources or archive accessibility.

The Spectrum of Inequality: Depictions of Colorism in Makeup Color Names

Hayden Prince, Sociology, Texas State University

In order to address issues of racism, sexism, and colorism in society, we must evaluate where these prejudices exist within ourselves—especially in our language. Dr. JeffriAnne Wilder, of University of North Florida, asserts that the way we talk about skin color is important in understanding the larger social implications about racism and colorism. Colorism, or the social preference of light skin tones, affects the lives of many People of Color, but most harshly affects Women of Color. To demonstrate how colorism is a gendered issue, it has been widely observed that the skin complexion of Women of Color influences their opportunities in job markets, marriage markets, and even personal self-esteem, more so than Men of Color. Using unobtrusive methods, this paper analyzes the names of make-up colors to detect colorism biases fostered by the cosmetic industry. Across a sample of over 300 foundation colors, there is evidence the light skin tone names portray more positive and feminine images than the names of medium and dark skin tones.

Climate Change Depiction

Ashley Pritchard, Sustainability Studies, Texas State University

This qualitative content analysis contributes to the growing research on climate change depiction within the news industry, and aims to expand the previous research on climate change depiction. Unintentionally, this research also shows the political polarization of climate change belief or skepticism within the news outlets. More specifically, this study looks at the depiction of climate change between a historically 'red' (republican or conservative) state vs a historically 'blue' (democratic or liberal) state, which are Texas and California respectively. The portrayal of climate change differs from Texas and California's popular news outlets, and readers in one state are receiving messages that contrast from another state. The only theme that is repeatedly found in both Texas and California's news outlets is the political polarization of climate change, as the popularly known political figures from one party do not agree with the other party's ideas on the debate. The denial of climate change was not found within a single article published out of Los Angeles Time or San Francisco Gate, and where conservative individuals were quoted denying climate change, the article also illustrated the said individual as ignorant or senseless. Although this research did not measure individual perceptions, the portrayed messages on climate change in the historically conservative state(Texas) aligned with views that fit with McCright's Anti-Reflexivity Thesis and Dunlap's research, while the liberal state (California) portrayed an unambiguously different image. The most concerning finding was the promotion of a commodified response out of Texas news outlets, what Andrew Szasz (2007) calls an inverted quarantine. This response threat slows systematic and necessary changes, while also promoting a false sense of solutions.

Stress and Stress Management Among Texas State University Undergraduate Students

Taylor Roberts, Anthropology, Texas State University

Stress is experienced by most individuals throughout many different stages of life. Although stress can have positive and negative effects on individuals, the negative effects are more commonly studied with the hope of finding the best stress management techniques. Past research has shown that negative effects of stress on undergraduate students can have a significant impact in their college experience. However, the majority of past research was conducted using survey methods and therefore lacks an in depth understanding of how individual students are experiencing and managing their stress throughout college. My research aims to fill in this gap with in-depth, first person accounts from students concerning their biggest stressors, their stress management techniques, and their knowledge of programs and resources offered through Texas State University. My research methods include interviews and focus groups with both male and female undergraduate students ages 18-23. There are some patterns that are emerging regarding the types of stressors that students are experiencing and how they tend to manage their stress throughout the school year. However, there seems to be a lack of knowledge and interest in the programs and resources that Texas State offers to help students with stress relief. Findings from this study will provide additional information to Texas State University administration about the stressors that their students are experiencing and will allow them to have a better understanding of whether or not the programs and resources offered on campus are successful in helping students manage their stress.

A Semantic Supervised Text Analytics Technique for Classification of Manufacturing Suppliers

Ramin Sabbagh and Farhad Ameri, Technology Management, Texas State University

Brief introduction to the research question in relation to existing research framework:

There is high volume of useful information hidden in suppliers' websites. In manufacturing area, suppliers provide valuable information about their capabilities such as manufactured products, processes, and achievable qualities. Capability data published on suppliers' websites is often in unstructured format. If this unstructured textual manufacturing capability information could be analyzed and evaluated, more informed decisions would be made when forming manufacturing supply chains. To achieve this goal, there is a need for development of an automated text mining tool supported by analytical techniques. The objective of this research is to create a capability analysis framework for manufacturing supplier's classification. This research is intended to answer the following questions: What is the most suitable text classification technique for supplier classification problem? How can text classification techniques help organize suppliers based on their capabilities? What types of hidden knowledge patterns exist in manufacturing suppliers' websites? What are the important terms which manufacturing suppliers use to describe their capabilities?

Methodology:

In traditional text mining (Bag of Terms) the data dictionary is built automatically with different approaches such as machine learning, using the most frequent terms of the documents in the corpus which is breaking phrases and concepts into single words. Basically, in this method concepts lose their semantic. As an alternative method, the bag of concepts method (BOC) is presented in this research which keeps concepts and phrases' semantic and do not break them into single words. In order to conduct an experiment based on BOC method, it is required to manually create the data dictionary. Accordingly, the SKOS-based manufacturing capability thesaurus was created and concepts associated with manufacturing capability was built. After assigning the concepts to each target class, a score demonstrating the importance of concepts in each class are assigned. The Concept Model Builder is created to build the concept model which is a vector model including concepts and their associated weightings is created. The Entity Extractor tool was created to automatically extract concepts' frequencies from suppliers' URL and provides user with website's text as well as vector of concepts and their frequencies.

Results and their impact on the field:

Four classification techniques, namely, Nave Bayes, KNN, Random Forest, and SVM, were used. For all techniques, 70% of the data was randomly selected as training data and the rest was regarded as the test data. To eliminate the bias caused by the specific choice of training data, the classification was run for 10 times per technique. The results indicate that the SVM technique has the best performance among the used techniques with an average precision of 99%. Moreover, the overall precision improves when concept weightings are applied.

This method provides users with streamlined supplier sourcing, more efficient supplier evaluation and screening and supply chain risk mitigation through rapid supplier replacement. It also allows users to systematically assess the manufacturing suppliers' capabilities.

Pilot Study: Characterizing Neuromuscular Trunk and Balance Response to Instrumented Hippotherapy

Benjamin Salinas, Sarah Edmiston, Denise Gobert, Physical Therapy, Texas State University

Introduction/Background:

Purpose of this study is to investigate whether patients who undergo physical therapy with a mechanical horse stimulator (MHS) receive the same functional benefits: trunk stability, balance, and improved posture, as those who experience traditional hippotherapy with a live horse. Hippotherapy using a live horse has been used since the 1960's as a form of physical therapy to emphasize repetitive motion and trunk stability. Treatment programs including hippotherapy utilize the cyclic, multidimensional motion of a horse as well as multi-sensory stimulation to encourage adequate patient responses to achieve functional outcomes and goals. There is growing evidence which supports the benefits of hippotherapy for improving flexibility, strength, symmetry, postural control, balance, and motor planning as well as other abilities in populations with neuro-motor impairments. The motion of MHS simulates that of a live therapy horse, but literature lacks evidence regarding patient benefits as compared to traditional hippotherapy.

Methodology:

Forty physical therapy patients from either the Texas State Outpatient Clinic in San Marcos, Texas or the Sports Medicine & Physical Therapy clinic in Marble Falls, Texas will be asked to be part of this study. All participants will be sampled by convenience. Inclusion criteria requires: diagnosis of trunk instability caused by a neuromuscular impairment, ability to cognitively follow simple commands, age greater or equal to 18 years, a combined Fugl-Meyer Assessment score of no less than 70/100 (UE=40; LE=30), no spinal musculoskeletal abnormalities or pathologies, and ability to tolerate sitting position on a MHS or bolster during treatment. Consent form and Sitting Balance Score will be collected on initial study date. Participants will then undergo MHS therapy, following a protocol, as part of their therapeutic care provided by the physical therapist student during their scheduled treatment sessions.

Preliminary results:

Preliminary results of 3 participants (M: F=2:1) was analyzed using descriptive statistics. Initial results displayed a mean age of 66, Sitting Balance Score mean of 42 out of 44, and mean hours of sleep was 6.67hrs. Medical diagnosis for two of the patients was left cerebrovascular accident (CVA) and the third participant had a right CVA.

Clinical Relevance:

The mechanical horse system has the potential to make hippotherapy more accessible to a larger patient population. Besides the benefits provided by MHS, this device would allow physical therapists to objectively track patient progression and response, promote functional improvements, and control the exercise intensity, frequency, and duration of hippotherapy.

Connected Through Dissonance

Sean Sawicki, Communication Studies, Florida State University

Abstract:

With the prominence of Hispanic millennials continuing to grow, understanding how these Hispanics connect with their heritage in comparison to their parents (and grandparents) would highlight opportunities to communicate generationally. The research will investigate which core values remain consistent, which elements are lost, and which elements are adopted from the new host culture in the emergence of Hispanic biculturalism.

Keywords: Hispanic, biculturalism, acculturation, identity, generation

Introduction:

The research aims to investigate the generational differences between Hispanics as it relates to values that are retained, lost, and gained as they navigate through the American culture in order to understand how to better communicate with targeted marketing messages. Social comparison theory will help guide this research.

Methodology:

The initial phase of research includes thorough review of existing studies and publications regarding Hispanics, with a focus on the differences that Hispanic millennials have displayed. Subsequent research will include a qualitative approach (focus groups with various generations) and a quantitative approach (surveys that will essentially take an inventory of values, attitudes, and beliefs) to allow for detailed generational profiling. This will allow the message creator (e.g., marketer, public relations specialist, public announcement, etc.) to craft a meaningful message to this segment.

Findings:

While marketers initially predicted that bicultural individuals would eventually assimilate to their new host culture, the reality has proven to be quite the opposite; and, this has become the case of bicultural Hispanic millennials (Korzenny et al., 2017, p. 194).

With 40 percent of Hispanic millennials being foreign-born, many are eager to be a part of their new host culture, exhibiting a desire to buy American brands (Gallagher, 2017). However, this does not indicate that the Hispanic millennial is attempting to abandon his or her heritage with regard to food, as there is a significant interest to “stay connected to their culture” (Liber, 2017). With “more than two-thirds of the U.S. Hispanic digital population [speaking] English”—and 45 percent speaking primarily English—communicating with Hispanic millennials requires a language factor as well (Fulgoni & Lella, 2014, p. 255).

This leads into the process of delivering an effective social media campaign: the bilingual and English-primary digital Hispanics are younger and more tech-savvy, which, in turn, would lead to language selection as a vehicle for success. Still, language selection has its own caveats, as there is no distinct structure for Spanglish, creating a unique challenge for marketers (Korzenny et al., 2017, p. 159). Several challenges can emerge, including delivery through a channel where other non-Hispanic viewers would also receive a mixed-language message. However, in the case

of digital media, marketers could essentially utilize existing data to target Hispanic millennial consumers and deliver tailored messages to them.

In identifying key opportunities within the segment, Aleena Astorga Roeschley of Communicus, Inc., has uncovered an untapped market for the Hispanic millennial: health and wellness (Roeschley, 2016, p. 30). While Hispanic millennials are technologically savvy like their non-Hispanic counterparts, the focus on health and wellness is not as strong. This is likely attributed to the traditional sense of wellness instilled into them by their parents: being healthy “meant having enough to eat every day, a place to call home and a stable home environment” (Roeschley, 2016, p.30).

Conclusions:

By incorporating digital media tactics and crafting a narrative to encourage health and wellness to millennials, marketers could potentially see an incremental lift in revenue with respect to Hispanic millennial spending. Additional research is required to further establish what differences and similarities exist between the different generations of Hispanics along with the level of acculturation.

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Advertising to the Black Diaspora: Texturism as an Extension of Colorism

Jené Shepherd, Mass Communication, Texas State University

Problem or Research Question:

In her 1982 essay, Alice Walker defines the term colorism as the, “prejudicial or preferential treatment of same-race people based solely on their color” (Walker, 1982). There has been a tremendous amount of research on colorism in the African Diaspora. Prior research has focused on how colorism is portrayed in advertising and the social and emotional effects that it has on the Black community. But little research has been conducted on another physical feature that distinguishes those of African descent from those of European descent: hair.

Black hair can be defined as a culture, that has a long history and is steeped in politics (Byrd & Tharps, 2014). The most recent step in its evolution is the natural hair movement. This can be defined as the movement of Black women embracing their natural hair texture rather than using chemicals to alter it. As this movement continues to reach revolutionary heights in the Black community, many feel that there is a growing divide in the natural hair movement. Where women with kinky textured hair are not equally represented in the natural hair community; rather, women with curly or wavy hair are the face of the movement. This results in many believing that the Natural Hair Community is conveying the message that, “if you’re a black woman with natural hair that is considered “nappy,” your hair isn’t beautiful in its natural state,” (Blay, 2016).

The purpose of this research is to answer the following questions: (RQ1) are models with curly, wavy hair more often used in content geared towards marketing hair care products to the Black community? (RQ2) are images of models with curly, wavy hair more positively received by the brands’ follower base than models with kinky textured hair?

Methodology or Approach:

A content analysis was performed on the Instagram feeds of the three largest hair care brands geared towards afro-textured hair: Carol’s Daughter, SheaMoisture and Cantu. Twenty images, featuring female models, posted by each brand on their respective Instagram feeds between January 1, 2016 and July 31, 2017 were analyzed. Using an expanded version of the most well-known and widely used hair typing chart, developed by Andre Walker, the hair of each model was coded into ten hair types, type 1, 2a, 2b, 2c, 3a, 3b, 3c, 4a, 4b, and 4c.

Preliminary Results and Impact on the Field:

Preliminary results of the analysis revealed type 3 (curly, wavy) hair is more likely than any other hair texture to be represented on the Instagram platform of Carol’s Daughter, SheaMoisture and Cantu. Furthermore, photos of women with type 3 (curly, wavy) hair are more likely to be positively received, have more likes and shares, than those featuring women with type 4 (kinky textured) hair. This study highlights the idea that despite the Natural Hair Movement being considered a positive step towards Black women ditching Eurocentric ideals and embracing their own beauty, remnants of colorism remain and is perpetuated in the social media advertising of natural hair care products.

Estimating Population Size of the Rio Grande Cooter (*Pseudemys gorzugi*) for the Devils River in Texas

Shashwat Sirsi, Andrew R. MacLaren, Aquatic Resources, Texas State University, Daniel H. Foley III, Aquatic Resources, Sul Ross State University Rio Grande College, and Michael R. J. Forstner, Aquatic Resources, Texas State University

Brief introduction to the topic/problem/research question:

Rio Grande Cooters (*Pseudemys gorzugi*) are a narrowly distributed freshwater turtle species, restricted to the Rio Grande River/Rio Bravo del Norte and its tributaries. This chelonian represents one of the most poorly documented turtle species in the United States. Modification to in-stream flow rates of the river systems that constitute species range are considered to have caused reductions in the extent of occurrence and abundance of *P. gorzugi*. In response to these putative declines, the species has been petitioned to be listed as federally endangered or threatened. Obtaining baseline information on species status is critical to inform the listing process as well as future management options.

Methodology and preliminary results:

Capture-Mark-Recapture data have been collected over multiple years (2011 and 2014-2017) at the Devils River to provide baseline estimates of species status. We applied open model formulations to these data that yielded estimates with a margin of error (1262 ± 480 turtles) that are not meaningful to conservation management. This is presumably because of low recapture rates. We subsequently analyzed the data using Pollock's robust design to enable the estimation of additional parameters, such as temporary emigration, and thereby present improved estimates of species status.

Impact of research on the field:

Findings from this study represent a systematic start on addressing knowledge gaps in a species that has been petitioned for federal listing. Our results provide a first determination of species status and potentially pave the way toward stage-specific survival rates and generation times. These will prove foundational in understanding vital rates and demography that are pertinent to conservation management options.

Political Interactions on Social media by college students

Sean Smith, Alexandra White, and Logan Self, Mass Communication, Texas State University

Title:

Political interactions on social media by college students

Introduction:

With Twitter sitting at more than 300 million users, and Facebook nearing an astounding two billion active accounts, social media platforms have the potential to reach large populations with relatively little monetary and geographic barriers (Chaffey, 2017). Politicians have turned to these platforms as means of campaigning in recent years, with 75 percent of those running for the U.S. House and Senate sending well more than 100,000 tweets in the last two months of the 2014 midterm elections (Evans, Smith, Strouse, and Gonzales, 2017). Questions remain, however, if these tweets are being seen, and if they have any impact on the reader. Political news can facilitate learning through social media, but some barriers exist, such as the customizability of information presented in social media feeds resulting in a low-choice media environment (Bode, 2016). This customizability manifests in the ability to “unfriend” or unfollow certain social media accounts, thus filtering out certain political views (Yang, Barnidge, and Rojas, 2016). Further, if opposing viewpoints are seen, users are not likely to engage these posts; a classic exhibition of the spiral of silence theory (Gearhart and Zhang, 2015). Therefore, we must explore if, when, and how social media users interact with politicians and political posts. Political interactions on social media can vary from active to passive; just scrolling and viewing posts dealing with politics may suffice per the means described by Bode (2016), while some interactions consist of online conversations between users or politicians and the electorate.

Research question:

What motivates the social media-based political interactions, or lack thereof, of college students?

Method:

We conducted a focus group consisting of 10 undergraduate students at Texas State University. These undergraduates ranged in age from 18 to 25 years old and were users of both Twitter and Facebook. The students respond to questions discussing who they follow on social media, what encourages or discourages them from following or engaging with politicians, and if and/or when they discuss politics with friends, family or other followers on social media. We also administered a small survey to collect demographic information and other nominal data as a basis to expand the research in a future study.

Expected results:

We expect about half of the focus group participants will follow politicians on social media. We believe it is becoming more important for this generation to stay informed, especially regarding politics. Further, we expect the students to follow significant political figures, i.e., the president, but not local and state politicians. Those who do follow politicians will most likely follow members of their own political party, rather than opposing representatives, we predict.

Impact:

This research will provide better insight on how a younger generation interacts with politicians, whether or not they engage in political topics on social media, how politicians can strategize their social media presence for college students, and how social media site can foster constructive political interactions through development of their platforms.

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Novel Electroactive Polymers

Marisa Snapp-Leo, Kelli Burke, Chemistry, Mariana Ocampo, Materials Science, Engineering, and Commercialization, and Jennifer Irvin, Chemistry, Texas State University

Conducting polymers are polymers that conduct electricity and change properties in an electric field, with the possibility of fine-tuning electrical properties via minor alterations to chemical structure. Conducting polymers have a myriad of uses, ranging from sensors and LEDs, to alternative energy and biomedical applications. The Irvin Research Group is investigating the synthesis of novel electroactive polymers based on 3,4-ethylenedioxythiophene, using coupling chemistry and various other methods. Polymers are analyzed electrochemically to explore relationships between structure and electrochemical properties. Newly synthesized polymers are projected to be used in alternative energy, cancer treatment, and as chemical sensors.

A Comparative Study of Middle School Mathematics Teachers' Pedagogical Content Knowledge and Belief Towards Teaching Between the U.S. and China

Zhaochen Song, Mathematics Education, Texas State University

In 2010, U.S. former President Barack Obama launched one of the world's most ambitious education reform agendas "Race to the Top", which encourages U.S. states to adopt internationally benchmarked standards and assessments as a framework within which it can prepare students for success. On the other hand, international comparison studies indicate that Chinese students outperform many of their peers in mathematics tests and competitions, and it is reasonable to hypothesize that this learning gap is connected to their teachers, as teaching is a major determinant in students' learning gains. My experience as a student in both the U.S. and China and as a teaching assistant, my knowledge in teaching, as well as my cultural background motivated me to research the area of teacher's pedagogical content knowledge and their cultural beliefs more in-depth, especially as the pedagogical content knowledge is closely related to the actual teaching and directly affects teachers' instructional quality. In this study, I plan to answer the following research questions:

1. What is the pedagogical content knowledge of middle school mathematics teachers from Shandong Province, China and south Texas, USA?
2. What are the beliefs towards teaching in relation to their PCK and teaching?
3. How do Chinese teachers compare to the U.S. teachers with respect to PCK and cultural beliefs?

A case study method will be applied for this study. In this study, three middle school mathematics teachers in each country will be chosen. In general, the data will be collected in two stages. The data will first be collected from the Chinese teachers, and three phases will be conducted at this stage. During these phases, teachers will be taking a survey, observed in their classroom, and interviewed about their views and beliefs. All the interviews will be audio recorded for data analysis. The three U.S. teachers will be chosen, in the next stage of the study, from a larger NSF funded research project. Their MKT and MQI scores will be used for future research. Scores of the teachers from two countries will be plotted on a plane to make comparison. Three pairs of teachers will be selected, and their classroom observations and interviews will be further analyzed in depth to answer the research questions.

The large-scale investigation of how teachers impact students' achievement is still sparse in the field, as it is extremely difficult to extensively investigate teachers. Therefore, small, yet in-depth studies become especially important and practical in examining the effects of teachers on students' mathematics learning. This study is designed to contribute to the existing body of knowledge about middle school mathematics teachers' pedagogical content knowledge between the two countries, and hence has its significance in revealing the differences, if there are any, and possibly pointing out a direction for the improvement of professional development training for teachers in the U.S. The purpose of this study will be to discover the differences in pedagogical content knowledge for middle school mathematics teachers as well as their cultural beliefs towards teaching in the U.S. and China.

Prison as a Metaphor for Spain in *El Lápiz del Carpintero* by Manuel Rivas

Kenny Suazo, Spanish, Texas State University

Despite the vast theoretical research by scholars on the novel “*El lápiz del carpintero*” by Manuel Rivas, there is little research done on how the author represents, imagines and describes the nation of Spain during the Spanish Civil War and The Francoism. Many scholars analyze and or apply different theories, however, not much is researched on how Manuel Rivas imagines Spain as a nation. My theory is the following; the author represents the prison of Santiago de Compostela and prison of Coruña as a metaphorical symbol that expresses the captive life of Spanish society. Therefore, daily life for the free and for those imprisoned during the Franco regime experience the rejection of political ideology and the denial of a prosperous life.

After consulting and analyzing literary articles, journals and books, such as; Anderson, Benedict. “*Imagined Communities: Reflections on the Origin and Spread of Nationalism*”; Tronsgard, Jordan. “*Ironic nostalgia: The Second Republic today in Manuel Rivas's El lápiz del Carpintero*,” and the works of Bolloten, Burnett, and George Esenwenwein “*The Brewing Upheaval*.” *The Spanish Civil War: Revolution and Counterrevolution*.” I was able to support and apply my theory to the concept of representation within the novel by exploring other author’s ideas, point of views and translation of the novel.

The research and applied theory give the novel a new dimension. Also, it sheds light on a different path or different way for the reader to view and conceptualize the content within the novel. The research amplifies the social and political spheres during the Spanish Civil War, therefore showcasing the meaning of both prisons and Riva’s vision of what Spain was during that period of time.

Analyzing Brand Resonance for LGBTQ+ Consumers in the Video Game Industry

Samantha Sumler, Communication Studies, Florida State University

Problem or Research Question:

The LGBTQ+ consumer is a growing target market, having a purchasing power of nearly \$1 trillion dollars in 2015 and only being 7% of US adults identifying as being part of the community (Green, 2016). The video game industry is expected to increase revenue to nearly \$119 billion dollars worldwide (NewZoo, 2016). 65% of LGBTQ+ gamers do not feel there is proper representation in video games (Nielsen, 2015). Consumers will continuously purchase from brands if there is a high level of brand resonance (Keller, 2009). However, there is no quantitative data regarding the brand resonance of video games and for the LGBTQ+ consumer. This study was conducted to analyze the relationship between LGBTQ+ culture in video games and brand resonance for the consumer.

H1: The cultural asset of LGBTQ+ Culture positively affects the Brand Awareness of a video game greater than the Entertainment Value and the Graphic Aesthetics.

H2: The impact of Brand Awareness positively affects the Brand Quality.

H3: The impact of Brand Quality positively affects the Brand Loyalty

H4: The cultural asset of LGBTQ+ Culture will have greater value in self-identified members of the LGBTQ+ community than non-LGBTQ+ consumers.

Methodology or Approach:

Using a quantitative questionnaire with a convenience sample of respondents who have played video games that include LGBTQ+ culture, online distribution was used, as to reach the respondent who would have access to the internet and can play video games, through social media of Facebook, Tumblr, and Twitter promotion. It was also promoted at Florida State University's Student Life Gaming Community. The six-factor model of brand resonance by Jung was used, keeping factors for cultural asset, brand awareness, perceived quality, and brand loyalty (Jung, 2014). The factors of fashion equity and technology advancement were replaced with entertainment value and graphic aesthetic. To test entertainment value, Schlinger's Viewer Response Profile was used, composed of a 7-point Likert scale (Schlinger, 1979). Testing the graphic aesthetic was done using Experiential Value Scale, which also was composed of a 7-point Likert scale (Mathwick et. al, 2001).

Results or Preliminary Results and their Impact on the Field:

A total of 524 respondents answered the survey with only 488 able to be analyzed. After determining the scales to be reliable with a Cronbach's higher than .70, the four hypotheses were tested using Pearson correlation and testing effect size for Hypotheses 1-3 and independent sample t-test for Hypothesis 4. Hypothesis 1 was rejected. Hypotheses 2-4 were supported. Additional findings revealed that LGBTQ+ culture affected brand loyalty more than the other factors. The LGBTQ+ video game consumer is loyal to brands that include the aspects of the culture. If companies can focus on increasing brand awareness as LGBTQ+ supportive, it will increase brand quality and lead to brand loyalty a.k.a. brand resonance. Yet, the most highly effective way to gathering loyal consumers is to include options representing the LGBTQ+ culture.

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Assessment of Interobserver and Intraobserver Error in the Utility of Dental Cementum Increment Analysis for Estimating Season-of-Death on Naturally Decomposed Skeletons

Mary Swearinger, Anthropology, Texas State University

This assessment is the result of a larger research topic in which Dental Cementum Increment Analysis (DCIA) is used to estimate age-at-death and season-of-death in unidentified Latin American migrants that have been brought to Texas State University for anthropological analyses in a project titled Operation Identification (OpID). DCIA is the microscopic study of the alternating bands in dental cementum called annulations or increments. These bands (layers) are incrementally deposited in an alternating pattern according to season. This pattern is similar to the rings observed in a tree trunk cross-section. The light (also referred to as translucent or bright) bands are deposited between April and September and are categorized as the Spring/Summer increment. The dark or opaque bands are deposited between October and March and are categorized as the Fall/Winter increment. DCIA has been used to estimate season-of-death by previous researchers, using the translucency or opacity of the outer most annulation. Since the Latin American migrants are unidentified and there is a significant concern with intra-/interobserver error when using dental histological techniques such as DCIA to estimate age-at-death, a training sample with known age individuals was used. This training sample consisted of five individuals from the Texas State Skeletal Donation Collection whose date of death is also known. This presentation is outlining the inter-/intraobserver error associated with identifying the outer-most dental cementum increment to estimate season-of-death in the training sample. Tooth sections were mounted to glass slides following standardized dental histological methodology established in the literature. The sections were then viewed live under a microscope under 20x magnification with polarized light. This allowed for the observer to adjust the lighting, region of interest, and focus. Preliminary statistical analysis suggests a low intraobserver error rate. However, the interobserver error rate is higher than anticipated. This is likely due to differences in technique while viewing the tooth section under the microscope. Therefore, this research suggests that estimating season-of-death using DCIA requires formalized training and further standardization of determining the translucency or opacity of the annulations observed.

What Makes a Website/Web Application Popular?

Erika Toney, Mass Communication, Texas State University

Problem:

With the rise of accessibility to the Internet more and more websites are launched to the web. According to Netcraft, as of March 2012 there are 644,275,754 active websites on the Internet. The average lifespan of a website is 100 days. What lives and dies on the Internet is depended upon how the creator defines his or her site. In this study, “What Makes a Website/Web Application Popular?” I aim to uncover the role the most popular websites and apps outside of social networks, play on in a user’s’ interest. Most studies revolving around websites and apps focus on the social networking websites. I will be eliminating social networks from this study and focus on the user gratifications millennials.

The uses gratification theory examines how people use media for their indulgence and needs. It also allows the user to enhance knowledge in sought out content or a way for the user to escape reality. This theory adapts a functionalistic approach to communications and media, and states that media's most important role is to fulfill the needs and motivations of the audience (Mehrad and Tajer 2016). The theory of satisfaction and gratification are based on two core questions: 1) why are people attracted to certain media? and 2) what kind of satisfaction does media provide for people? (Mehrad and Tajer 2016). In this study, I aim to discover:

RQ1: If interactivity and interface design play a part in loyalty to a website or web application?

RQ2: Is there a connection between the level of satisfaction the user experiences with a website and the type of uses it has for the user?

Methodology:

With a qualitative approach I plan on asking questions to 15 millennials to learn what attracts them to these sites. With millennials being the number one demographic online, it is important to understand how millennials use the Internet, what attracts them to a website, and how do websites maintain their interest.

References:

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A Correlation Between Language Proficiency and Self-Report During Oral Translation Background

Cristina Trevino, Ana Cecilia Mena, Jennifer Guajardo, Maria Resendiz, and Jason Tipps, Communication Disorders, Texas State University

According to previous research, student's self-ratings, perceptions, and competence on second language tasks were intercorrelated. Bilingual students tend to underestimate or overestimate their language abilities when self-reporting (MacIntyre et al., 1997). Therefore, self-assessment may fail to correspond with objective measures of second language proficiency.

Participants:

Participants were taken from a larger data set (Schwarz, Resendiz, Gonzales, Gragera. Perez, & Tipps, 2017). 6 participants were taken from a larger data set. Based on Woodcock-Munoz Language Survey-3 proficiency measures, 3 participants were identified as high proficiency in Spanish and 3 were identified as low proficiency in Spanish.

Method:

All participants will be categorized into one of two groups (beginner vs. intermediate) depending on their proficiency according to the Woodcock-Munoz Language Survey-3. Self-report recording overall quality of translation for each participant will be obtained through a questionnaire. All measures will be further analyzed and compared.

Procedure:

All subjects were administered the Woodcock-Munoz Language Survey-3 in English and in Spanish and completed a Translation Process Reflection questionnaire where they self-rated the quality of their translation on a scale of 1-10. Analysis: A Chi-Square Test will be used to determine if there is a significant correlation between a standardized measure of proficiency and a self-report measure of proficiency. Preliminary Results: Preliminary results suggest that self-report and language proficiency will be highly correlated. Impact: This study will help speech language pathologists to further understand the importance of seeking resources when completing book translations.

Lipstick and Politics: A *Teen Vogue* Analysis

Storm Monteiro Tyler, Mass Communication, Texas State University

Problem or Research Question:

Described by its current ad copy as the “rebellious, outspoken, empowering magazine that you need right now,” *Teen Vogue* has become a leader in the women’s media revolution. From superficial to intimate content, *Teen Vogue* is changing the one-dimensional narrative that women can only be interested in lipstick or politics.

Methodology or Approach:

This research focuses on the re-launch of *Teen Vogue* under the current Editor-in-Chief, Elaine Welteroth. As *Teen Vogue* attempts to challenge previous notions of the media as an oppressor, a content analysis will be conducted with reference to the Neo-Marxist theory. To analyze the editorial content from volumes of *Teen Vogue* will be selected (Volume I: The Love Issue (March); Volume II: The Music Issue (June); Volume III: The Future Is (September/October); Volume IV: TBA (winter)).

The content analysis will detail the number of content related to “lipstick:” (beauty/fashion/wellness articles, advertisements, etc.), number of content related to “politics” (current events, social activism articles, advertisements, call-to-action messages, etc.), and external content. The cover stars and their importance to popular culture will also be examined.

Additionally, to reduce personal bias, another coder will examine the quarterly issues to provide inter-coder reliability.

Preliminary results and impact on their field:

Empowered, more informed and empathetic, young women desire greater content from their monthly favorite editorials. Therefore, *Teen Vogue*, “pushes body positivity instead of diet tips and embraces topics like feminism and intersectionality and L.G.B.T. rights and includes diverse people on its covers and in its fashion spreads” (Hughes, 2017, p. 29). Results of this study will determine the topics and trends of *Teen Vogue* as it continues its path toward redefining American editorial culture while establishing itself as a formidable socially conscious brand.

References:

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Translation Variation Among Sequential & Simultaneous Spanish-English Speakers

Maria D. Urbina, Lanize Flores, Marcella R. Murray, Linda R. Rodriguez, Maria Resendiz, and Maria D. Gonzales, Communication Disorders, Texas State University

Introduction/Background:

When analyzing language proficiency among English/Spanish bilinguals, major challenges arise. According to Kohnert (2010), such challenges may be attributed to the distribution of skills across languages, cross-language variability within developmental stages, and differences in language performance. A study conducted by Gibson, Oller, Jarmulowicz & Ethington (2012) revealed that sequential language learners' L1 may be affected as they reach higher language proficiency in their L2. Thus, this can limit vocabulary use when translating books from English to Spanish. Given these factors, our study aims to determine how the quality of translation among sequential and simultaneous English/Spanish speakers will influence diversity of vocabulary.

Keywords: bilingual language acquisition, simultaneous language learning, sequential

Research Question:

Is there a difference between the number of different words used when translating a children's English book to Spanish for sequential and simultaneous language learners?

Methods:

Research participants included 3 bilingual Spanish-English speakers from 22-23 years of age. These participants were taken from a larger data set (Schwarz, Resendiz, Gonzales, Gragera, Perez, & Tipps, 2017). Participant A started speaking Spanish first and English between 18-21 years old. Participant B started speaking English first and Spanish between 18-21 years old. Participant C learned both English and Spanish at the same time. Participants A and B were categorized as sequential bilinguals and Participant C was classified as a simultaneous bilingual.

Procedures:

All participants completed a language use Questionnaire where they reported at what age they started speaking English and Spanish. Each participant orally translated the English children's book *Corduroy* by Don Freeman (Freeman, 2008; 1968), into Spanish. Spanish translations were transcribed and analyzed using Systematic Analysis of Language Transcripts (SALT) (Miller et. Al., 1999). The Type Token Ratio (TTR) of each participant's transcription was calculated. Researchers looked at the number of different words used among the 3 participants.

Preliminary Results:

It is anticipated that translation differences among Spanish-English speakers will be observed with the sequential bilingual, who learned Spanish first, having a higher type token ratio (diverse vocabulary) in their translated version of *Corduroy*. The simultaneous learner is anticipated to have the second highest type token ratio. The sequential bilingual who learned Spanish at a later age is expected to have the lowest type token ratio.

Impact on the Field:

The findings of this study will show how different bilingual language acquisition can affect the amount of vocabulary provided when books are translated. It will support the importance of having books professionally translated from English to Spanish in order to decrease the variability in vocabulary when translating books among Spanish-English bilinguals.

The Influence of Images on Facebook Ad Click Rates

Daylin Van Zandt, Mass Communication, Texas State University

This study strives to understand what visual factors are important in creating Facebook Advertisements that create a click rate to either get more information or sell a product. By defining what engages users, content creators will have a better understanding of what a user values and ultimately how to brand their marketing campaign in order to be successful. Advertising Images were compared to understand what triggers a stronger desire to purchase products online. This study examined multiple Facebook ad formats that advertised the same product. I used the data collection methodology to conduct research. Two hundred Facebook users were given an online survey to take where they select which advertisements make them interested to buy the product. The survey is made up of a series of advertisements that use several different style advertisements. Advertisements created consisted photographs of the product, text from the product, landscape of product, and a combination of the elements mentioned. Participants were surveyed with a series of questions as to what elements of an Ad influenced them to select a specific Advertisement.

Keywords: advertisement, attention, information processing, emotion, images, design

Pre-operative and One-year Post-operative Influence of Major Depressive Disorder on Outcomes Following Total Knee Arthroplasty

Marieke Visser, Krista Howard, Psychological Research, Texas State University

Introduction/Background:

There are a variety of non-surgical factors that impact patient outcomes following a total knee arthroplasty. The purpose of this paper is to analyze the impact of Major Depressive Disorder, both pre-operatively and one-year post-operatively, on functional and psychosocial outcomes of TKA.

Methods:

Two hundred and sixty patients undergoing a total knee arthroplasty completed both the baseline and 12-month follow up assessment. SF36, WOMAC, and KSS were measured both preoperatively and postoperatively. The PHQ was used to diagnose major depressive disorder (MDD) at baseline and follow up; patients were then classified in one of four groups: No MDD, Lost MDD, Gained MDD, and Continuous MDD. Univariate analysis compared the 4 groups at baseline, one-year follow-up, and change scores using a Kruskal-Wallis test for continuous data or a Chi-Square test of Independence for categorical data.

Results:

Two hundred seven (79.60%) patients were in the No MDD group, 22 (8.50%) patients were in the Lost MDD group, 19 (7.30%) patients were in the Gained MDD group, and 12 (4.60%) patients were in the Continuous MDD group. There were significant between group differences present on baseline measures of WOMAC and SF36 mental health summary. In addition, there were significant group differences in the follow up WOMAC, KSS, and SF36 scores.

Impact/Conclusions:

Depression was associated with poorer preoperative and postoperative TKA scores. Patients who were depressed 12 months following the surgery demonstrated poorer recovery than patients who did not show depressive symptoms prior to TKA or within the year following. This suggests that depressed patients may not find the TKA surgery as beneficial.

Gabriel García Márquez’s “Montiel’s Widow”: A Life Without a Name and Freedom

Luann Williams, Spanish, Texas State University

Brief introduction to the topic/problem/research question in relation to existing research/theoretical framework:

This research paper examines the life, identity, and eventual demise of the protagonist in “Montiel’s Widow,” a short story by Gabriel García Márquez. The protagonist is the widow, who never had the freedom to make her own choices, but lived a life of servitude and obedience to her parents, husband, and children. She does not have a name, but is only referred to as ‘the widow.’ This implies that others perceive her as lacking value as a human being. This paper focuses on how Montiel’s political power and position as a man in Colombian society impacts his widow’s identity as a woman living in a male-dominated culture.

Methodology or approach:

I draw from articles, journals, and reviews that express various perspectives on the story. I also include historical references to the Colombian period known as “La Violencia,” an era of civil war that inspired much of Márquez’ work. Particularly, female voices were largely ignored during this time which is reflected in “Montiel’s Widow.” This paper delves into a common theme found in the story: the role of women in a society fundamentally controlled by men, in which women are denied independence. It also considers other female characters created by Márquez whose lives are also subject to oppression.

Results or preliminary results:

My analysis of “Montiel’s Widow” concludes that the demands and conventions of society shape the widow’s identity. Her reality is based in denial, superstition, and hopelessness. She is so accustomed to this that the prospect of freedom is frightening. Ultimately her husband’s death leads to the loss of her identity and eventually her death.

Impact of this research on the field:

This paper reminds readers that oppression against women still exists today in many parts of the world. The widow represents a woman defeated by her lot in life, but she may also be an inspiration to others living in similar circumstances, for they may choose to stand up and fight against the injustices imposed on them.

Ideal Beauty: The Effects of Eurocentric Beauty Standards in the Fashion World with African-American Women

Undria Wilson, Mass Communication, Texas State University

Problem:

The problem within the fashion industry is the double standards that women of color have to endure to maintain or reach mainstream success. Supermodels such as Naomi Campbell, Iman and Tyra Banks conform to Eurocentric beauty standards and have gone on to international success. Although African American culture is apparent in some aspects of the fashion industry, the scope to the influence is limited to physical attributes such as facial features and body type. The average African American woman and African/African American supermodel will never resemble each other. Black women have to succumb to certain Eurocentric beauty standards in order to be accepted.

Methodology:

My research method would be examining two academic books such as: “Black America, body beautiful: how the African American image is changing fashion, fitness, and other industries by Eric J. Bailey (2008) and *The Beauty Ideal: The Effects of European Standards of Beauty on Black Women* by Susan L. Bryant (2013). I would also include magazines that have a diverse audience such as *Victoria Secret*, *Cosmopolitan* and *Vogue*. The key things I will look for are: black/African/African American models, their physical appearance, number of times featured in the specific issue and what type of magazine they are more prominent. Because magazines may vary, I would examine the trend of magazines for six months, noting the similarities and dissimilarities between black models.

Results:

I noticed that majority of black models who are featured in predominantly white magazines do not resemble the stereotypical or average black woman that you would normally see. Most of the models are either light skinned, long hair and are slim. These are characteristics associated with the average European-American-based woman. Black models that are featured do not share similarities to the black woman, but the white woman; this creates the notion that despite being a black woman who is featured in a magazine or other popular publications is not considered beautiful enough if her physical attributes do not fit mainstream American beauty standards.

Impact:

The impact of this field is important to see how it affects the self-image and esteem of young girls of color. Because eurocentrism is the standard, many women of color (African American) will find that the average black model does not in fact look like them. The messages that this is sending are that the more “white” your features appear to be, the “prettier” and more likely, successful, one will be in the fashion industry. Examining black culture and its influence on the fashion world, urban or popular streetwear showcases the influence of African Americans with limitations on what “type” of African Americans are featured.

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Fantastic Reality and Solitude in *El Avión de la Bella Durmiente* by Gabriel García Márquez

Diana Young, Spanish, Texas State University

Introduction:

This study examines one of Gabriel García's Márquez's short stories, "El avion de la bella durmiente" (1982). The brief story contains themes developed by the author in many of his novels and films: love, lack of communication, solitude, old age, and death. The short story narrates the experience of the protagonist on a flight from Paris to New York during which he is seated next to a young woman. The theme of unrequited love is portrayed in the mind of the traveler and readers come to know his emotions, expectations and desires more in love with an idea than with a real woman. In the end the readers are left with the bitter taste of absence of any communication between the two travelers.

Methodology:

This study employs a close reading to the literary text in conjunction with a study of related works of literature and critical studies including the following: Adriana Gordillo's study of collapse of the classic structure of fairy tales, Olga Sigüenza Ponce's studies of intertextuality, and the novel by Yasunari Kawabata, *The House of the Sleeping Beauties*.

Results:

The study supports the hypothesis that the author portrays a "perfect" love which last only the eight hours of the flight and which never exists in quotidian reality. It is a matter of love lived only in one's imagination. The distancing of reality and fantasy and the voyeuristic perspective of the traveler enable the author to portray this imagined love.

Impact: By analyzing a story that has been ignored by critics this study contributes to a broader understanding of the literary production of the Gabriel García Márquez, winner of the 1982 Nobel Prize for Literature.

Linear and Vertical Function of Guttural Vocals in Death Metal

Kaylie Young, Music, Texas State University

Introduction:

Heavy metal was born on Friday, February 13, 1979 with Black Sabbath's debut album. Over the past 50 years, heavy metal has expanded through a multitude of subgenres around the globe. Scholarship concerning metal music is on the rise: its history, lyrics, virtuosity, and compositional technique, as well as a focus from gender studies. The International Society for Metal Music Studies, founded in 2011, produces a scholarly journal. Striking in current metal scholarship is minimal contributions by music theorists. More salient, however, is the lack of research on guttural vocals, a hallmark of the death metal subgenre that resembles speech more than song.

Methodology:

I transcribe and analytically compare music by Amon Amarth, The Black Dahlia Murder, Fleshgod Apocalypse, Death, and Cannibal Corpse. I focus on four aspects of guttural vocal lines: rhythmic interest, frequency filling, text painting, and relationship with lead guitar.

Preliminary Results:

My research reveals that guttural vocals have three distinctive characteristics within the realm of texted music. Guttural vocals do not primarily deliver text, since the distorted timbre is nearly impossible to decipher in a first listening. As a non-pitched vocal style, guttural vocals cannot deliver a melody, a trait common among vocal styles. A phenomenon occurs when a guitar's melodic rhythm is similar to the rhythm of the guttural vocals: the lyrics could be sung to the guitar melody. This is a direct result of the unique place of guttural vocals in the compositional process, which is after all instrumental parts have been composed.

Impact:

Metal music has been developing for almost 50 years, and as an established genre deserves attention from music scholars. I believe attention to this genre from an analytical perspective will aid in the development of a pedagogy for metal studies, and eventually degree concentrations in the field. This work is the first half of what I hope to contribute in my thesis, in which I will also produce a comparative analysis between guttural vocals and other classical vocal genres: *Sprechstimme* and recitative. The more an approach to analysis of metal music and guttural vocals grows, the better music scholars of all concentrations can understand connections and diversions between classical and popular music genres.

Incorporate Remote Sensing Techniques and “Local Climate Zone” Concept to Investigate “Surface Urban Heat Island” Phenomenon for Three Metropolitan Areas of Texas

Chunhong Zhao, Geographic Information Science, Texas State University

Urban Heat Island (UHI) refers to a city or urban area that is warmer than the surrounding rural area. Traditional UHI investigation has focused on atmospheric UHI, where air temperature pattern is investigated by field measurements. However, it is time-consuming and thermal climate characteristic owing to their surface properties. This study focuses on three major metropolitan areas in Texas, U.S. Dallas-Fort Worth (DFW), San Antonio, and Austin all demonstrate UHI effects. This study incorporates the Local Climate Zone (LCZ) concept and current classification method to study and compare surface UHI effect for three major metropolitan areas in Texas. This study aims to answer **the following research question**, “Does the SUHI vary within and among the three major metropolitan areas in Texas and how can LCZ be used to improve the characterization of SUHI?” With the help of remote sensing and GIS, we did spatial analysis and calculated the mean LST for each LCZs for three study area. Different LCZ shows the differences of the mean LST, varying from 33.96°C “Water” LCZ in Austin to 53.86°C in “Heavy industry” LCZ in DFW. This study shows that LCZs are able to efficiently facilitate intra- and inter-comparisons for surface UHI intensity for the three metropolitan areas (Figure 4).