Graduate Research and Creative Activities Symposium
2016 Submissions
Oral Presentations

Edward Mertens, Masters (Curriculum & Instruction): ***Gamification and Learning Analytics, building a bridge to 21st century assessment***

This study attempts to bridge the gap between gamification and learning analytics through analysis of classroom observations, interviews with teachers, and some survey data. Current technology available to teachers and students makes it possible to substantially decrease the amount of a time a teacher spends correcting behavior and grading while increasing student engagement and rate of progress towards developing essential skills. This research concludes that it is possible to integrate learning analytics with a gamified classroom regardless of teachers initial comfort using technology.

Melissa C. Henry, Masters (Counseling, MFCC): ***Secondary Traumatic Stress in Paramedic's Spouses***

This researcher investigated the effects of occupational trauma on the partners and spouses of the paramedics. Prior researchers indicated that partners of peacekeeping soldiers (Dirkwager, Bramsen, Ader, & van der Ploeg, 2005), Vietnam veterans (Jordan et al., 1992), and clinical couples (Goff et al., 2206) experienced similar levels of distress and trauma as their partners. In fact, Dirkwager et al. (2005) found the partners who had symptoms of posttraumatic stress disorder (PTSD) reported more sleeping and somatic problems, more negative social support and judged the marital relationship as less favorable. This researcher replicated Dirkwager et al.'s work with peacekeeping soldiers and their partners but with paramedics from Central California.

Samantha Meroney, Masters (Literature): ***A Watery Warrior Queen: Boudicca as Inspiration for Malory's Nenive in Le Morte Darthur***

There are many different precursory, analogous figures which influenced the depiction of the Lady of the Lake in Arthurian literature. From water nymphs and war goddesses, to fairy brides and druid priestesses, the characteristics of these figures coalesce within this strong female medieval character. This study not only acknowledges these general influences but draws a distinct parallel between Sir Thomas Malory's portrayal of Nenive, chief Lady of the Lake, and the Iceni warrior queen Boudicca from the first century A.D. Weaving examples of this connection through all the different influential aspects of Nenive, it becomes evident that Boudicca played a substantial role in Malory's crafting of one of the most well known women from Arthurian legend.

Ashley Gardea, Masters (Kinesiology): ***Determining Reasons and Barriers for Employee Participation in Fitness Classes Provided by Fresno State's Worksite Wellness Program***

There is an ample amount of literature on the physical and mental benefits of exercise (Have, Graaf, & Monshouwer, 2011; Pederson & Saltin, 2006). Furthermore, physical fitness by worksite wellness programs has been implemented as a health promotion strategy (Gebhardt & Crump, 1990). The benefits for participation are immense, however research reveals that participation rates are constantly decreasing (Lovato & Green, 1990). The purpose of the project was to collect employee perceptions of Fresno State's worksite wellness activity classes including, Tai Chi, yoga, circuit training, water aerobics, swim for fitness, and a walking program known as Bulldog Trials. Reasons and barriers for participation were collected through a survey. The survey was emailed campus-wide via the Office of Organizational Excellence and was be distributed three times over a period of two months. All employees (i.e., Staff, Faculty, and Administration) were encouraged to participate in the study. It is anticipated that employee feedback will directly help determine future changes of the campus' worksite wellness program and ultimately increase campus wide participation.

Carolyn Bentley, Doctoral (Physical Therapy): ***Multiple System Involvement and a History of Falls in a Patient with a Sub-Acute CVA and Right Total Hip Replacement: A Case Report***

"Background and Purpose: Falls are currently the leading cause of death and injury in the elderly. Falls and balance impairments are caused directly by a multitude of factors, therefore rehabilitation needs to incorporate the dynamic equilibrium model. Restoring balance can be complicated when it involves co-morbidities including a stroke and a joint replacement. Treatment for balance impairments need to be multi-dimensional and specific for each patient. The purpose of this case report is to describe the clinical presentation, the intervention and the outcomes in a patient with multi-system balance impairments. *Case Description*: The patient is an 83 year old female with balance impairments and falls secondary to a left cerebrovascular accident and a right total hip replacement. The patient was referred to an outpatient physical therapist 6 months after her L CVA with the chief complaints of falls and abnormal gait. The patient presented with inadequate use of her vestibular and visual cues for postural control, COG mal-alignment, limited LOS with ROM and strength deficits. Physical therapy was provided 2 times a week for 6 weeks with a comprehensive home exercise program with the combination of group exercise classes. Interventions addressed balance, ROM, strength and gait mechanics. *Outcomes*: Patient significantly improved her balance but continues to be at risk for falls. She demonstrates improved use of her vestibular and visual system for balance through the SOT, decreased fall risk through the DGI, improvements in her LOS and completion of her group exercise classes. *Discussion*: This case demonstrates the importance of implementing a comprehensive rehabilitation approach to treating a balance impairment complicated by multiple systems."

Carrie Miller, Masters (English): ***Practicing the Writing Process and Recursive Revision through Purposeful Peer Workshops***

This research analyzes the effectiveness of writing workshops as First Year Writing students practice the entire writing process and writing strategies during prewriting, multiple stages of drafting, to finally editing - with the goals of recursive revision as well as reflection, self-assessment and transference of learning.

Elizabeth Mosqueda* 1, Richard Smith 2, Anil Shrestha 1, Masters (Plant Science): ***A Comparison between the Efficacy of Automated Thinners and Hand Thinning of Lettuce***

Severe labor shortages have impacted California's lettuce industry for the past several years. Growers in the Salinas Valley were recently introduced to automated lettuce thinners, which are designed to aid growers by thinning, or adequately spacing and weeding, a lettuce field. However, it is unknown how well these machines thin lettuce compared to a hand crew. Therefore, the objective of this study was to compare automated lettuce thinners with hand thin crews. Replicated field studies, consisting of treatment comparisons of automated thinning and hand thinning, were conducted during the 2014 and 2015 lettuce season in the Salinas Valley. During both seasons each treatment plot consisted of 5-10 randomly chosen sub-plots from which data were collected. Parameters measured were plant, weed and double (two closely spaced lettuce plants) counts, all done by taking data prior and after thinning, and plant spacing measurements performed after thinning. Time taken for the initial thinning process and the double/weed removal pass in each treatment plots were recorded. The average lettuce thinning time was 3 to 4 times quicker with the automated system than with the manual system. Although the automated system tended to leave more doubles than the manual system, the time required for removal of the doubles was similar between the two systems. Spacing of plants within rows was also similar between the two systems. In terms of weed removal, the automated system was as efficient as the manual system. Therefore, automated thinning holds great potential to aid lettuce growers in the Salinas Valley.

Joshua P Kunnath, Doctoral (EDD): ***A Critical Pedagogy Perspective of the Impact of School Poverty Level on the Teacher Grading Decision-making Process***

This dissertation examined the effects of school poverty level on the teacher grading decision-making process by utilizing both critical pedagogy and teacher grading decision-making frameworks to compare teacher grading practices, influences of teacher grading, and teacher grading rationale by school poverty level. While a small, yet significant group of studies has found grades in high-poverty schools to be less accurate and more subjective than low-poverty schools in communicating student achievement, this study

contributes to the literature by helping to establish the link between high-poverty schools and inaccurate student grades. Additionally, this study is novel in being the first to combine the concepts of teacher grading, poverty, and decision making.

Set in an ethnically and socioeconomically diverse high school district in California's South San Joaquin Valley, this study employed a transformative explanatory sequential mixed methods design to answer a guiding research question: How does school poverty level affect the teacher grading decision-making process? A 36-item grading survey was used to collect quantitative and qualitative data, while focus groups were conducted for additional qualitative data. Results indicated that the direct effects of school-poverty level on the process are nuanced, yet existent. While teachers seek to grade in objective, pedagogically-sound ways that align to their own philosophy, multiple influences cause them to stray from these practices. These influences occur more often in high-poverty schools, which lead to greater subjectivity and less accuracy in grading. Important implications exist both for administrators and teachers in ensuring equity and strong pedagogy in the classroom.

Eryn Baldrica-Guy, Masters (English): ***The Acceptance of the Monstrous and Mystical in World Folktales***

As a result of its acceptance and reproduction by a society, folklore—despite its often fantastic nature—reflects values of the culture from which it arises. The following tales suggest that some degree of popular sympathy for the animalistic—even the monstrous—existed as far back as the twelfth century in regions of Italy and France. I will focus on depictions of the favorable reception of these "othered" figures. I will also explore the prerequisites for the redemption of human characters who possess monstrous morals. Supernatural or physically monstrous characters are portrayed heroically in Marie de France's Bisclavret and Yönec, and in a number of Italo Calvino's Italian folktales. In some of the tales, supernatural, "othered" figures offer acceptance to those who are shut out of human society. In others, monsters are integrated, or reintegrated, into human culture because of their demonstration of morality. I will explore the conditions for permanent acceptance, or reincorporation into human society, of monsters in these folktales. In each of the tales, the human qualities of supernatural figures become clear only when the monstrous aspects of people are acknowledged.

Vah Vue, ED.S : ***Learning from oral teaching: Hmong American students' understanding of their learning process***

Despite much training, educational professionals have limited skills to work with culturally diverse students whose families recently immigrated to the U.S. This study investigates one of these immigrant populations, Hmong Americans, and the conceptual formation of their learning process in order to understand why they encounter academic difficulties in the U.S. A sample of 18 European American students and 40 Hmong American students in kindergarten (N = 22) and fourth grade (N = 36) provided responses to story completion tasks and semi-structured interviews, a research design adopted by Li (2004). Results demonstrated that Hmong American

students made consistent references to the role of parenting and its impact on socializing the learning process whereas European American students referenced learning as a problem-solving task. Findings also indicated ethnic differences in learner evaluation with Hmong American students preferring indirect statements to criticism compared to their mainstream peers. Recommendations for best practices and culturally appropriate interventions were described.

Elaine Esquivel, ED.S: ***Classroom Acoustics: An Online Resource for Parents and Educators***

It is well established that the acoustic qualities of classrooms significantly influence academic performance. The American Speech-Language-Hearing Association (ASHA) and the American National Standards Institute (ANSI) created a set of guidelines addressing classroom acoustics, which focused on reverberation time, overall loudness, and signal-to-noise ratio (SNR). These standards are currently considered voluntary and are not enforced. Prior research has shown that many classrooms are not in compliance and therefore suffer from poor acoustics, which can adversely affect student and teacher performance. This is especially problematic for young students who are still acquiring language. The literature has demonstrated that poor classroom acoustics can be rectified with methods including classroom amplification systems and physical modifications to the classroom. However, the widespread implementation of these manipulations in schools has not been discussed. The concept of classroom acoustics is foreign to many educators and administrators. A comprehensive, evidence-based guide is necessary in order for educators to understand the importance of acoustics in classrooms, the role they play in academic performance, and the many existing methods of improving them.

Kashmir Singh, Doctoral (EDD): ***Trends of Nutrition,fitness,health and attendance in (K-6) schools***

The intent of this mixed methods study is to present a case study to describe the eating patterns of students and how it relates to health, fitness and academics, and to examine the academic, fitness, nutrition and attendance differences at all three elementary schools in comparison to two districts with like schools. Research suggests that the executive functioning of the brain is higher functioning if the body has proper nutrition. Researchers have suggested that for every one dollar invested in childhood nutrition programs, potentially three dollars is gained in academic achievement and more. Additionally, physical fitness data indicates student achievement improvement.

This case study caught the complexity of a single phenomenon at three schools in Fresno Unified School District. The qualitative data was collected through face-to-face interviews with parents, focus group of teachers, cafeteria managers and administrators. Observations were conducted at all three school sites during the lunch periods. In addition, quantitative analyses examined differences among students who have the Fresh Fruit and Vegetable Program (FFVP) at their site compared to like schools who do not have the

FFVP with academics, fitness or attendance. Data mining was completed from public CDE website for district Annual Yearly Progress reports per No child Left Behind mandates to determine changes in student achievement. The outcome of the qualitative data analysis indicate that there is lack of nutrition education, students are hungry and poor, and the healthy snacks (FFVP) is beneficial at each school site to meet the hunger needs of students as well as trying a variety of fruits and vegetables the students may not have the opportunity in their homes. The quantitative results also shows similarities among schools."

Nathalie M. Gomez, Masters (Counseling, SAC): ***ACCESS TO HIGHER EDUCATION FOR MIGRANT HIGH SCHOOL STUDENTS***

"The objective of this literature review project was to create a handbook with resources available for high school counselors to help migrant high school students overcome challenges when pursuing higher education. The major problem is that previous literature has only described the barriers and the lack of understanding from high school counselors, yet not where to find resources. This project hopes to enhance counselors' multicultural awareness by merging culture understanding and college resources available all in one handbook.

The research was gather from the Henry Madden Library, using the search engines: Education Research Complete (EBSCO), Education Research Information Center (ERIC), ProQuest, and Psych Info. Additional information was collected from online educational and governmental web pages. The search for this project was limited to mostly California information.

In order to best serve migrant students, counselors must become aware that school mobility, negative political climate, and, financial hardships are major barriers that contributes to migrant students' lack of academic achievement (Nuñez, 2009; Ramirez, 2012). An understanding of available resources, in depth information, and advocacy is imperative (Vela-Gude et al., 2009).

The barriers migrant students face can be overcome by bringing awareness to counselors about early college exposure in residential programs, becoming involved with the Migrant Educational Program, and, experiencing career/college readiness workshops. The aforesaid are efficient ways to develop a college-going behavior for this population, which can be facilitated by counselors having the knowledge of this resources (Granston-Gingras & Anderson, 1990: Nuñez, 2009)."

Bing Xu, Masters (Mathematics): The Relationship between the Topological Properties and Common Modal Logics

This talk is about interpretations of modal logics in topological spaces. It is well-known that S4 is sound and complete over all topological spaces. In this work we reserve the question and study the influence of modal axioms on topological properties. We show

that given any set X and any interpretation of necessity (the box operator) in X that satisfies S4, the image of this interpretation is a topology on X. We also determine which modal axioms of S4 guarantee which topological properties of the image. In particular, we show that if any one axiom of S4 is dropped, then there exists an interpretation of necessity (the box operator) in some set X such that the image of this interpretation is not a topology.

Matthew Ogbuehi*, Delwar Hussain, Jason Bush, Masters (Biology): Nanoparticle delivery of Curcumin and chemotherapeutics for the treatment of drug-resistant pancreatic cancer

Pancreatic cancer, one of the deadliest diseases in the United States, is difficult to treat in a safe and effective manner. This disease is especially problematic when the tumor becomes resistant to treatment. Using nanometer-sized drug delivery devices, known as nanoparticles, to deliver chemotherapeutics specifically to the tumor site is a promising treatment option for drug-resistant cancers. Nanoparticle delivery increases the bioavailbility of the encapsulated drug, delivers it specifically to the tumor site, and lowers the effective dose necessary to kill the tumor cells, thus reducing the risk of toxic side-effects on the patient. Recently studies have demonstrated the effectiveness of curcumin, a natural compound found in turmeric spice, in re-sensitizing drug-resistant cancer cells to treatment when given in combination with standard-of-care chemotherapeutics such as gemcitabine and docetaxel. Here we have developed nanoparticles that contain curcumin in combination with gemcitabine or docetaxel. We validated these formulations by characterizing its size and electrical charge by dynamic light scattering analysis and use high performance liquid chromatography (HPLC) to confirm their chemical composition. We demonstrate with viability assays that the nanoparticles are more effective in killing the cancer cells at lower doses than treatment with high doses of the chemotherapeutics alone. The long term benefits of this work are the development of a novel, safer and more efficient treatment for drug-resistant pancreatic cancer and a significant reduction in moralities associated with this disease.

Emily Beals, Masters (English): ***The Contemplative Composition Classroom: Ontological Pedagogy for Meaningful Reading and Writing***

This research draws on studies within a variety of higher education models that provides the structure for the use of contemplative practices that focus on self-compassion strategies for the writing classroom, centering on this question: How might mindfulness-based practices and self-compassion help students improve their writing practices in the first-year writing classroom? To answer this question, this study explores the benefits of creating a reflection-based classroom atmosphere that includes the use of contemplative skills that will enhance students' ability to engage in a deeper and more profound way within the writing classroom while supporting the NCTE's Framework for Success in Post-Secondary Writing. Quantitative data from student surveys along with qualitative data

from student writing is evaluated and discussed in relation to the Framework's Habits of Mind, specifically focusing on metacognition, flexibility, and responsibility. We discover the benefits, challenges, and practical applications of implementing a contemplative writing classroom within first-year writing programs, and as such the positive effects of these pedagogical approaches are experienced not only by students and through the writing they do, but by instructors as well.

Michele Dodd, Masters (Social Work): ***Perceptions of Factors Affecting Recidivism and Recovery***

This study looked at recidivism rates, the barriers to maintaining a life outside of a correctional institution, and ways to address these barriers and achieve a better quality of life for those individuals released from correctional institutions. At the forefront of the issue of recidivism is the lack of individual resources and the hopelessness that is present upon release when faced with a life no different than the life one left behind upon being sent to prison. The study used a qualitative method and employed the use of individual interviews with a group of recovering, female and male ex-felons from varying demographic backgrounds, geographic locations, and varied experiences with incarceration and community supervision, as well as those individuals who have successfully completed supervision and reintegrated into society

Lizbeth De La Cruz, Masters (Spanish): ***Narración y memoria en testimonios chilenos después del 11 de septiembre de 1973***

Hernán Valdés con Tejas Verdes Diario de un Campo de Concentración en Chile (1974) y Claudio Durán Pardo con Autobiografía de un ex-jugador de Ajedrez (2003) presentan la identidad fragmentada del narrador mediante la estructura de archivos personales, el diario y la autobiografía. Con sus testimonios ambos exponen los actos de terror, crimen de Estado y trauma que sufre la víctima del régimen militar de Augusto Pinochet (1973 - 1990). Valdés y Durán Pardo son agentes de la memoria al utilizar su trauma para romper el silencio. Esta tesis cuestiona por qué Valdés y Durán Pardo dan voz a su experiencia, por qué optan por hacerlo dentro de la estructura en la que se presentan sus testimonios, cómo logran desarrollar la imagen del <<yo>> a base de fragmentos narrativos, y cuál es el propósito de sus testimonios tanto como individuos y como esta postura presenta ser un acto colectivo.

Caleb Pratt, Doctoral (Physical Therapy): ***Rehabilitation in a Skilled Nursing Facility Following a Total Hip Arthroplasty: A Case Report***

Background and Purpose: Fractures of the femoral neck are one of the most common results of falls that happen among the elderly. Choosing the appropriate intervention and implementing rehabilitation services after surgery are crucial in achieving the highest possible return to function. The purpose of my case study is to provide an evidence based rationale for the appropriate treatment of an

elderly male following a femoral neck fracture managed with a total hip arthroplasty (THA). *Case Description:* The patient is an eighty-five year old male, who recently underwent total hip arthroplasty (THA) of the right hip secondary to a displaced, Garden grade 3 femoral neck fracture. He was referred to rehabilitation services at a Skilled Nursing Facility with the primary goal of improving functional mobility. *Outcomes:* The patient was able to significantly increase his functional mobility over the course of 9 physical therapy treatments allowing him to be safely discharged to home with caregiver support. *Discussion:* Due to an early mobilization approach and proper selection of surgical intervention the patient was able to begin weight bearing and mobility training as soon as medically stable. Complications were faced secondary to the surgical procedure that required treatment modification, however these were overcome and the patient was able to attain improvements in functional mobility."

Rebecca J. Rocha, Doctoral (EDD): ***An Investigation on the Sustainability of Character Education Programs and the Impact of Principal Turnover***

"This dissertation examined the impact of principal turnover on the sustainability of Character Education Programs (CEPs) in the elementary school setting. The four research questions that guided this study were: What content on the Bonner Center Character and Citizenship Application results in qualification for the award? What is the principal's perception of the CEP? How does the principal influence the sustainability of the school's CEP? How does principal turnover impact the continuity of an elementary school's CEP? This study explored the CEPs in a total of 96 elementary schools from 4 counties and 22 districts in California's Central Valley in schools that applied for a distinguished character education award through California State University, Fresno's Bonner Center for Character Education and Citizenship. This study focused on data from the years 2000-2014, focusing on alternating years which pertained to elementary schools. This study employed a case study qualitative approach through the use of content analysis, 11 principal semi-structured interviews, and the researcher's journal to ensure triangulation. Data from applications have been archived through the Bonner Center and semi-structured interviews from principals were collected to analyze a relationship between principal turnover and the continuity of CEPs. Principals who have continued to lead at winning schools and principals who have left their position will be interviewed and data will be triangulated."

Joshua Madonick, Doctoral (Physical Therapy): ***Early Mobilization Following ORIF for a Femoral Intertrochanteric Fracture: A Case Report***

With a growing geriatric population in America, there has been an associated increase in falls, hip fractures, and patients requiring physical therapy following surgery to repair these injuries. Recent literature suggests early mobilization of post-operative hip fracture patients improves functional outcomes and aids in faster discharge from the acute care setting. This report examines a 90 year-old

Caucasian female with dementia and rhabdomyolysis who received open reduction internal fixation surgery following a fall and hip fracture. She demonstrated impaired functional mobility, decreased gait tolerance, and cognitive deficits at the time of her physical therapy evaluation. The patient in this case followed an established rehabilitation protocol consisting of therapeutic exercises, gait training, and caregiver training. The only exception to the program followed in this patient's treatment included the addition of out of bed mobilization on the day of her surgery. Following 3 30-minute physical therapy sessions over the course of 1.5 days, and 3 total days of hospitalization, she met the requirements for discharge to home health physical therapy. With this patient's rapid improvement in function, this case adds to the existing literature that suggests early mobilization has a positive influence on the recovery process following surgical intervention for hip fracture.

Meghan E. Anderson, Masters (History): ***Redefining British Female Identity: Fanny Burney "Brief Reflections Relative to the Emigrant French Clergy"***

One of the most prominent and influential British novelists of the late eighteenth century, Fanny Burney was a brilliant recorder of British aristocratic and middle-class experiences. Though scholars have analyzed many of her letters and novels as commentaries on British culture and life at the turn of the eighteenth century, they have overlooked some major social and political aspects of her writings, particularly those evident in her 1793 pamphlet, "Brief Reflections Relative to the Emigrant French Clergy." In the pamphlet, Burney took on the role of social activist, pleading with the Ladies of Great Britain to aid the large number of destitute French clergymen fleeing France's Reign of Terror. In "Brief Reflections", Burney argued for the immediate relief of these men, a socially-conscious exercise she claimed the ladies of Great Britain were better equipped than Parliament to undertake, both because of women's greater empathy and the immediacy of their actions in the realm of charity. Through her pamphlet, I propose, Burney claimed for herself and the ladies of Great Britain an untraditional authority, by which they actively alleviated the woes of the émigré clergy. To achieve this authority, Burney played upon women's traditionally embraced domestic roles, harnessing British society's novel acceptance of women's capacity to participate civically. Burney offered aristocratic and middle-class women the opportunity to empower themselves by appropriating an active socio-political role, taking her work from a mere reflection to a feminist call to action and in the process, helping reconstruct and redefine British female identity.

Kathy Bays, Doctoral (EDD): ***Teaching the Next Generation of Scientists: Science Education in the Primary Grades***

The emphasis on achievement in the fields of science, technology, engineering and math (STEM) has shifted in recent decades from being solely an issue of national security, as it was during the Cold War, to becoming a combination of security and efforts to maintain global economic primacy. Economies are becoming more dependent on the ability of workers to design and implement solutions to

the many resource challenges that are becoming common as populations and demands on raw materials increase and industries evolve and emerge. Although the federal government has implemented many reform programs designed to increase the numbers of workers in STEM fields over the past six decades, the nation continues to experience critical shortages of workers in these areas. For many years, foreign nationals filled the manpower void in STEM fields, but as the economies of other countries have become more developed, recruitment of these workers by foreign entities has increased, resulting in greater competition for the finite resource of qualified STEM workers. Maintenance of the level of innovation necessary to ensure continued economic growth is dependent on effective teachers in an educational system that is able to produce workers who possess the ability to persevere through challenges and who think both creatively and analytically. Production of workers with such skills must be accomplished while supporting the development of the human capital potential of all citizens and prospective workers, which places a heavy burden upon schools. To support these efforts, the United States government has invested significantly in science education. In 2010, the federal government spent $3.4 billion to support research and science education programs, yet the results of the 2012 Programme for International Assessment (PISA) administered by the Organisation for Economic Cooperation and Development (OECD) showed that the performance of U.S. students has remained static over the past decade. Increasing the science content knowledge and science pedagogical content knowledge of teachers in the primary grades may improve the self-efficacy of teachers in science education and result in gains in student achievement in STEM fields. This study examined the state of science teaching in the primary grades in two Central San Joaquin Valley school districts.

Shanda Lewis, Masters (Nursing): ***Female to Male Transgender Experience of Pap Testing***

The purpose of this project is to improve understanding of the health needs of female-to-male (FTM) transgender patients, specifically their experience of Papanicolaou testing. FTM individuals were born with female bodies yet identify as male, and many do have a cervix. (Coleman et al., 2012). Transmasculine patients are significantly less likely to adhere to Papanicolaou testing recommendations than the general female population (Peitzmeier, Khullar, Reisner, & Potter, 2014). This decreased rate of testing could increase morbidity and mortality due to cervical cancer. One small study suggests that gynecologic care is important to FTM patients despite the discomfort they feel when undergoing such exams (Dutton, Koenig, & Fennie, 2008). Before interventions can be designed to reduce discomfort and improve testing rates, further research is needed to better understand this subjective experience. This project qualitatively explored the experience of Pap testing among FTM adults via face-to-face interviews. Themes identified include: use of correct pronouns and respect (or lack thereof) from healthcare providers, severe physical pain, dysmorphia and dysphoria, feelings of violation, and the need for healthcare providers to “walk me through it.” These findings can be used by health

professionals and staff to better understand the healthcare disparities faced by the transmasculine population and tailor interventions to improve care delivery to these vulnerable patients.

Kelsey Friesen, Masters (Mathematics): ***The Extended Kauffman-Jones Polynomial of Virtual Singular Knots***

"A singular knot is an immersion of a disjoint union of circles into three-dimensional space that admits only finitely many singularities that are all transverse double points. A singular knot diagram is a projection of a singular knot into a plane, and contains classical and singular crossings. Virtual knot theory, introduced by Louis Kaufman in 1996, can be regarded as a projection of classical knot theory in thickened surfaces. We take one step further by studying virtual singular knots, which can be thought of as immersions of disjoint unions of circles into thickened surfaces. As for classical knots, when studying virtual singular knots we seek for ways to tell them apart. One way is through the use of invariants, which are objects associated to virtual singular knots that are independent on the knot diagram. In this work, we go over an approach to the Kauffman-Jones polynomial of a classical knot via a certain type of bivalent graphs and extend it so that it is also an invariant for virtual singular knots. After this extension, we investigate a splitting property of the polynomial."

Jocelyn Hively* and Dr. Nancy Akhavan (Dissertation Chair), Doctoral (EDD): ***Equity and Impact of Linked Learning for Students with Disabilities: An Investigation of Implementation Fidelity***

"Students with disabilities have diverse needs that can be difficult for schools to meet. One promising approach that addresses this issue is Linked Learning (LL). LL is a high school reform initiative aimed at simultaneously preparing all students for college and career (Oakes & Saunders, 2008). Although research has shown that participation in LL is associated with positive student outcomes such as higher rates of graduation and enrollment in postsecondary institutions, educators continue to report difficulties of LL schools to meet the needs of students with disabilities (Saunders, Rogers, & Terriquez, 2013; Guha et al., 2014). Significant inconsistencies in the implementation of LL practices across districts impede the initiative's equitable and meaningful impact for all students (Saunders et al., 2013). Likewise, the fragmented nature of transition programming inhibits achievement and sustainability of positive outcomes for students with disabilities. This mixed-methods study compares transition practices in LL and traditional high schools, examines the self-determination, career maturity, and school engagement of students, and investigates the factors that inhibit or facilitate effective transition services. Participants include a convenience sampling of special education teachers and students with disabilities from six high school districts in California. Preliminary results indicate that LL and non-LL schools have similar challenges regarding transition programming for students with disabilities. Fidelity of implementation of transition programming best practices appears to

be a moderator for LL's impact. The preliminary results also suggest areas for developing future policy initiatives relevant to transition programming for students with and without disabilities."

Saika Esani*, Tricia Van Laar, Masters (Biology): ***Genetic analysis of Persister cell formation in Pseudomonas aeruginosa***

"Persister cells are small percentage (0.01-10%) of phenotypic variant cells that survive antibiotic therapy and other stressors. The exact mechanisms of persister cell formation are still not completely understood. That said, the study of toxin-antitoxin (TA) complexes has begun to answer a lot of questions recently. In our lab, we are in the process of identifying genes important for persister cell formation in Pseudomonas aeruginosa. P. aeruginosa is a gram-negative, rod-shaped bacterium and is largely associated with nosocomial infections.

Our lab has performed RNA sequencing (RNA-seq) of P. aeruginosa persister cells. We found upregulation of 99 open reading frames (ORFs) and downregulation of 13 ORFs. Quantitative real time PCR (qRT-PCR) supported trends from RNA-seq results. Differential expression includes categories like cell wall synthesis, stress response, and metabolism. The interesting part is that more genes were upregulated compared to downregulated. These results indicate that previously held ideas about persister cell dormancy are debatable. We performed high-throughput screening of a P. aeruginosa transposon mutant library and analyzed growth curve patterns to select mutants that appear to form different numbers of persister cells compared to wild type. We further quantified persister cell formation in selected mutants by directly evaluating the number of colony forming units (CFUs). Selected hits included pyocin synthesis genes, where mutants failed to form any persister cells. This was suggested by our RNA seq data. The knowledge derived from these studies will help identify better targets for treatment of P. aeruginosa acute infections, chronic infections, and post-treatment relapses."

Rutu Dalal, Masters (Education, ECE): ***Barriers for Fresno County Early Childhood Educators in relation to pursuing a Bachelor's Degree***

The minimum education level currently required for preschool and childcare teachers working within private childcare centers in the state of California is twelve college units in child development coursework. In contrast, California regulations require that family childcare providers complete fifteen hours of health and safety training with no college unit amount needed. These minimum education and training level standards are well below the number of units or hours needed to complete a Bachelor's degree, and are in direct conflict with multiple research studies that have found that preschool and childcare program quality levels increase significantly if the teachers or providers that work in the programs hold Bachelor's degrees. The short and long-term positive outcomes for children demonstrated through these research findings have convinced administrators in California to implement a Quality Rating and

Improvement System (QRIS) that assesses the quality of preschool and childcare programs based in part on the education level of the program's lead teachers. Even with all of the emphasis that has been placed on increasing the education level of preschool and childcare teachers, however, there are still many barriers that stand in the way of degree attainment for teachers in this particular career field. This study focuses on identifying what the main barriers to Bachelor's degree completion are for Fresno County childcare providers. The researchers in this study anticipate finding that Fresno County childcare providers' main barriers to Bachelor's degree completion are the costs of tuition, textbooks, transportation to school, and childcare while attending school classes.

Rima Maldonado, Masters (Education, Higher Ed.): ***CHALLENGES AND MEDIATORS OF LATINA WOMEN IN MIDLEVEL LEADERSHIP WITHIN STUDENT AFFAIRS***

The purpose of this qualitative narrative study was to explore the experiences of Latina women in mid-level leadership in the California State University (CSU) System. This study explored the challenges Latina women in leadership faced while also exploring how they transcended those challenges. A narrative inquiry with the utilization of semi-structured interviews were used to obtain data from three participants. The findings revealed that participants experienced challenges in their path to leadership. However, participants shared their support systems such as mentors and leadership development assisted in transcending those challenges to their attainment to leadership.

Arika R Jackson, Doctoral (EDD)*: AN EXAMINATION OF INDIVIDUAL, FAMILY, AND SCHOOL FACTORS THAT PROMOTE KNOWLEDGE AND MOTIVATION FOR AFRICAN AMERICAN FEMALES TO ATTEND COLLEGE*

The purpose of this qualitative research study is to examine and explore factors that promote knowledge and motivation for African American females to attend college. The researcher is seeking to gain a clear understanding of the challenges experienced by African American females to gain admission into higher education. This study uses Critical Race Feminism as its conceptual and theoretical foundation to examine the educational experiences of African American females.

Tiffany Ketcherside, (ED.S): ***Video Self-Modeling of Social Skills for Children with Autism Spectrum Disorder***

Autism Spectrum Disorder has been associated with detrimental social skills deficiencies that can have a lifelong impact on social functioning. With 1 and 68 children being identified with the disorder, it is important that early identification and interventions are put in place to improve social interactions and ultimately reduce the discrepancy experienced by children with autism compared to normal functioning peers. Although social skills interventions are overall effective, most are time consuming and sometimes difficult to

implement. Previous research demonstrates the effectiveness of video self-modeling in addressing a variety of behaviors of children with autism spectrum disorder as well as other populations. The current study examined the effects of video self-modeling as an intervention to increase social interactions for three young children with autism. Using a multiple baseline design, all three participants viewed videos that featured themselves initiating and responding appropriately to peer interactions. Natural, unprompted social interactions were then recorded during an unstructured playtime. Results indicated that video self-modeling was effective for the two participants with higher levels of verbal communication. The results of the video self-modeling intervention are provided and future research is discussed.

Carolyn Bentley, Doctoral (Physical Therapy): ***Multiple System Involvement and a History of Falls in a Patient with a Sub-Acute CVA and Right Total Hip Replacement: A Case Report***

Falls are currently the leading cause of death and injury in the elderly. Falls and balance impairments are caused directly by a multitude of factors, therefore rehabilitation needs to incorporate the dynamic equilibrium model. Restoring balance can be complicated when it involves co-morbidities including a stroke and a joint replacement. Treatment for balance impairments need to be multi-dimensional and specific for each patient. The purpose of this case report is to describe the clinical presentation, the intervention and the outcomes in a patient with multi-system balance impairments. The patient is an 83 year old female with balance impairments and falls secondary to a left cerebrovascular accident and a right total hip replacement. The patient was referred to an outpatient physical therapist 6 months after her L CVA with the chief complaints of falls and abnormal gait. The patient presented with inadequate use of her vestibular and visual cues for postural control, COG mal-alignment, limited LOS with ROM and strength deficits. Physical therapy was provided 2 times a week for 6 weeks with a comprehensive home exercise program with the combination of group exercise classes. Interventions addressed balance, ROM, strength and gait mechanics. Patient significantly improved her balance but continues to be at risk for falls. She demonstrates improved use of her vestibular and visual system for balance through the SOT, decreased fall risk through the DGI, improvements in her LOS and completion of her group exercise classes. This case demonstrates the importance of implementing a comprehensive rehabilitation approach to treating a balance impairment complicated by multiple systems.

Katy Hogue, Masters (Art): ***Gilded Age Liberalism in the American West***

In early August 1872, San Francisco newspapers were the first to publish an exciting American diamond discovery, and by late November, they were also the first to reveal that it was an elaborate hoax. Western journalists who framed the discussion of this event were initially irritated by the financiers who perpetrated yet another fraudulent mining scheme. However, they quickly shifted to

expressing effusive gratitude to Clarence King, leading geologist of the new U.S. Geological Survey, who took it upon himself to investigate and exposed the deception. Additionally, Henry Janin, the European-educated mining engineer who initially verified the find, was remarkably able to retain his sterling reputation when the hoax collapsed. These incidents highlight the respected position of professional scientists at the time and speak to a shift from privately-funded marketable science to a marriage between government and science in pursuit of more idealistic goals. Particularly significant is the fact that the public began to trust the federal government as a defender against fraud in the wake of the divisive Civil War, especially as the West was a sanctuary for those disenfranchised by the conflict and its aftermath. These developments corresponded with the early stages of a trend in American liberalism, which called for a federal meritocracy of educated experts in later years. Through the media coverage of The Great Diamond Hoax of 1872, this paper will explore the nature of government and scientific legitimacy in the American West.

Vivian I Ojieh, Masters (Education, Higher Ed.): ***The Impact of spirituality on Students' Persistence in Higher Education***

Higher education students, who identify as spiritual, usually have different values than the general population of students. Their different perspectives may come with unique challenges. Highly spiritual students refer to spirituality as their source of inspiration and support, but also as a source of separation from the rest of the academic community. The purpose of this study was to explore the impact of spirituality on students' persistence at California State University, Fresno. The qualitative study utilized a survey questionnaire administered to 13 undergraduate students of CSU Fresno. The survey instrument used in this study combined the College Students Beliefs and Values (CSBV) 2007 follow-up survey designed by Alexander Astin, Helen Astin and Jennifer Lindholm of UCLA with two open-ended questions designed by the researcher. This study attempted to answer the following research questions; how does spirituality inform CSU Fresno students' ability or choice to stay in school and how do CSU Fresno students express their spirituality? Responses from the study were analyzed using frequency tables and discussion was based on participants' response to open-ended questions regarding their experience of spirituality and persistence at CSU Fresno. Through the course of data collection for this study, the researcher was able to make valid, though not generalizable conclusions about the relationship between spirituality and students' persistence at CSU, Fresno."

Lisa Harrington, Doctoral (EDD): ***A Study of Teacher Preparation Programs for Preparedness in Classroom Mangagement to Affect Student Learning***

A growing body of research has emerged which defines the need to reorganize and refocus teacher preparation programs at Institutions of Higher Learning (IHEs). An effort on the part of numerous school districts and IHEs have paved the way for the enhancement of teacher preparation programs. Many programs today are alternative in nature and provide teacher candidates

experiences in how to create conditions for student learning. The objective of this study was to examine the effectiveness of teacher preparation in classroom management of first year teachers within a partnership program between a local CSU institution and the 4th largest district in the state of California. The Fresno Teacher Residency Program (FTRP) is one such partnership in which the collaborative work between Fresno Unified School District and Fresno State are refining the work of teacher preparation.

Through the use of a 30-response, online survey (BIMS), interviews, and observations, a comparative study on the perceptions of first year teachers prepared through the FTRP, traditional 5th year program, and site administrators was conducted and analyzed. Preliminary results indicate there is not a significant difference in the perceived levels of effectiveness in classroom management. There is however, varying significance to perceived levels of preparedness and levels of job satisfaction when accounting for gender, ethnicity, type of degree held and type of preparation program. Further analysis will help define results and provide recommendations. The conclusions will be used to further research in the area of enhancing teacher preparation programs to affect student learning outcomes."

Kalyani Singh*, Brent Auernheimer, Masters (Computer Science): ***Protocol Verification System***

"Safety Critical Systems are the ones whose failure may lead to death, injury, loss or damage to an equipment or environmental harm. There are many well-known examples in application areas such as medical devices, aircraft flight control, weapons and nuclear systems. These systems need proper monitoring and concrete background software in order for their smooth running over a period of time. The criticality of these systems makes them significant for research and improvement. This thesis uses a specification of user interface for a critical system and translates it from one specification language to another. The simple user interface is based on a mouse-window display that could be used at engineering workstations to control safety critical systems. The context of this simple user interface is a 'mission control', where engineers at workstations monitor different aspects of a safety critical process. Although the engineers are working toward a common goal, our user interface model assumes a common underlying functionality that allows individual customization. That is, it could be required that all engineers have a system clock ('countdown clock') and common alarm areas on their display, but the remainder of the screen real estate is available for customization."

Patricia A. Fronda, Masters (Music): ***Overuse Syndrome in Instrumental Musicians- Causes and Prevention***

In the US alone, up to 76% of professional musicians have suffered from musculoskeletal injuries and 50% of professional orchestra members have been diagnosed with Overuse Syndrome (OS). There is no singular cause for OS in musicians, but the culmination from poor habits of too many hours of practice/rehearsal without breaks, non-ergonomic movement, and muscle imbalance. However,

the pressures from peers and music educators to play through pain heavily contribute to the widespread notion that it is absolutely necessary. Though some of these causes cannot be altered easily, I have provided preventative strategies that cater to the needs of instrumental musicians.

May K. Yang, Masters (Education, Higher Ed.): ***Asians in Academia: A Closer Look at Fresno State Students***

"Asian students are typically associated with high academic performance, attributed to natural talents and cultural factors. However, the reality is this is a stereotype that harms Asian students. This stereotype has very real and lasting effects on the Asian experience in higher education as Asian students' are often overlooked in institutions of higher education or held to a higher standard.

In a survey of undergraduate students at Fresno State, Asian students reported the lowest rates of feelings of inclusion when compared to their peers. These findings are important in demystifying this pervasive stereotype by providing quantitative data on how students feel and experience campus life. Given that existing research indicates feelings of inclusion are directly tied to student success, this research adds to recent counter narratives indicating Asian students are indeed in need of support services.

As our country's population continues to diversify and is reflected in our universities, the university setting serves as a critical environment for research and conversations on race, inclusivity, and social justice. In order to make educational settings more inclusive, not just for Asian students, but for all students, it is important to consider the socio-political, historical, and economic forces that affect how Asian students are portrayed, discussed, and how services are tailored to their needs. Without the fundamental understanding of the Asian experience in the United States, federal grants that are available, or student engagement theories, institutions will be hard pressed as to how to address their increasingly diverse students. "

Igor Kowal*, Jenelle N. Gilbert, Stephanie D. Moore-Reed, Wade D. Gilbert, Masters (Kinesiology): ***The Relationship Between Resilience and NCAA Swimming Times: Does It Contribute to Peak Performance?***

In NCAA competition, each swimmer's result contributes to the team score, and hundredths of a second can be the difference between first and eighth place. Resilience, the ability to respond positively to setbacks, obstacles, and failures (Fletcher & Sarkar, 2013), is thought to be important for peak performance. It was hypothesized that high resilience scores would have a relationship with faster swimming times at the collegiate level. Male and female NCAA Division I swimmers (n = 246) completed the Conner-Davidson Resilience Scale-10 (Davidson & Connor, 2015) and a demographic survey. Swimming times from Fall 2015 were gleaned from the

public website www.usaswimming.org, which officially documents results for all NCAA competitions. A Pearson's r correlation coefficient was performed to evaluate the main hypothesis, which was the relationship between resilience scores and swimming times and an independent t-test was calculated to compare swim times between swimmers who had experienced injury/illness and those who had not. Also, a One-Way ANOVA was used to examine the differences between swim times and athletic scholarships. No statistically significant relationship between resilience scores and swimming times was found. Also, no significant differences were found for the secondary hypotheses. Possible explanations for the lack of significant findings between resilience and faster swimming times are discussed. Implications for coaches, certified athletic trainers, and mental training practitioners are also discussed.

Bregan Lonnie Gray, Masters (Industrial Technology): ***Crop Cam UAV***

The project and presentation is about collecting data for the crop cam uav. The cropcam is a agriculture and industrial technology plane it takes images of Fields, crops, and other parts of an agricultural operation. The plane is programmed to fly a said Padron taking photos and lands at the end of the flight autonomously. The images provide high-resolution based on digital images from the GPS for hand launched and hands on precision agriculture. The programs used to collect data are micropilot horizon, auto cad 2016, solidworks 2012, autodesk inventor, and ni multisim.

Tony Losongco, Masters (Counseling, SAC)*: Jobs of the Working College Student: Time, Career Relevance, and Student Success*

In the United States, about 20 million students are enrolled in degree-granting colleges and universities, pursuing long-term goals of gaining well-paying jobs in career fields that interest them. In the short term, however, maintaining a paid job is a reality for many students, regardless of the connection to their career interests. The purpose of this study is to shed light on the job commitments of college students, especially the degree to which those commitments are relevant or incidental to their student success. A stratified random sample of 3,000 students enrolled at California State University, Fresno, in Spring 2016 was invited to take an online Qualtrics survey about their Fall 2015 employment status, including which one of 16 Career Clusters best matched their job. An analysis of 1,159 responses found that students who worked averaged 21.85 hours per week in their primary job ($n = 740$, $SD = 10.38$). As for job relevance, 34% of employed students worked in a Career Cluster that matched their major, and 43% reported working in a job related to major or career interests. Further statistical analysis found term GPA was positively correlated with number of hours worked per week on campus ($p = .001$), within Career Cluster ($p = .000$), and within major/career interests ($p = .000$). Conversely, term GPA was negatively correlated with number of hours worked per week off campus ($p = .020$), outside Career Cluster ($p = .000$), and outside major/career interests ($p = .000$).

Xiang Li, Masters (?): ***Chemical Modifications of 3-OH in 3', 4'-Dimethoxyflavonol and 3', 4', 7-Trimethoxyflavonol Attenuate Prostate Cancer Cell Proliferation***

Flavonoids are a class of polyphenolic compounds ubiquitously distributed in a variety of dietary plants with an array of biological activities. Flavonols are a sub-class of flavonoids featuring a hydroxyl group at C-3. Certain flavonols, such as quercetin and fisetin, have been evidenced by in vitro cell-based and in vivo animal experiments as potential anti-prostate cancer agents. The Achilles' heel of flavonols as drug candidates is their poor bioavailability and moderate potency. The objective of this study is to explore the possibility of enhancing both bioavailability and anti-proliferative potency by chemical manipulations of 3-OH in flavonols. 3', 4'-Dimethoxyflavonol and 3', 4', 7-Trimethoxyflavonol, as our two model compounds, and their derivatives have been synthesized through aldol condensation and Algar-Flynn-Oyamada(AFO) reaction. Their structures were characterized by interpreting the 1H and 13C NMR spectra. Their anti-proliferative activity towards three human prostate cancer cell lines has been assessed by WST-1 proliferation assay. Our findings indicate i) that alkylation of 3-OH attenuates the cell proliferation in the prostate cancer models and ii) that incorporation of a dibutylamine group to 3-OH through a three- to five-carbon linker leads to the optimal potency in inhibiting prostate cancer cell proliferation.

Jason Hodgson*, Linda Hauser, James Marshall, Kevin Silberberg, Doctoral (EDD): ***ONE-TO-ONE TECHNOLOGY INTEGRATION: AN EXAMINATION OF ACADEMIC TASKS AND PEDAGOGICAL SHIFTS AND CHANGES TO THE INSTRUCTIONAL ENVIRONMENT***

Teachers across the nation are being asked to do something they have never done before and may not have developed the capacity to do, yet—educate every student at a high level for the 21st century by designing lessons and academic tasks that integrate the use of one-on-one technological devices to deepen learning of Common Core State Standards and 21st century skills. However, what this integration looks like in K-12 classrooms remains largely unknown. Key to understanding the rigor of the academic work expected of students and a predictor of future student performance is the academic task. Little is known about the academic tasks teachers are using to produce a literate 21st century learner. The purpose of this study was to examine and describe what one-to-one technology and 21st century skill integration in middle school academic tasks looks like and the extent to which teachers are using technological tools to substitute, augment, modify, or redefine traditional academic tasks. Additionally, the most significant instructional environment changes and pedagogical shifts resulting in the greatest impact due to integration of one-to-one devices were explored. A mixed method approach was used involving the concurrent collection and analysis of archival/written documents (student academic tasks) with a corresponding written survey and teacher focus group interview data. Purposive criterion sampling was the technique

used to select study participants, teachers from two school districts where one-to-one classroom technology integration is a district initiative. The eligible population was approximately 500 teachers in 14 middle schools serving approximately 12,000 students.

Maria Witrado Maldonado, Doctoral (EDD): ***THE EFFECT OF SPECIFIC PROFESSIONAL LEARNING PRACTICES ON ENGLISH LEARNERS' ENGLISH LANGUAGE ACQUISITION AND READING ACHIEVEMENT***

English learners have been part of the landscape of California public schools for many years. Since English Learners (ELs) became a "significant subgroup" under the No Child Left Behind legislation of 2001, the urgency of ensuring the academic achievement of ELs has become a major focus for schools throughout the state. However, teachers are unprepared to meet the instructional needs of this group of students. A quantitative research method was utilized to examine how professional learning focused on practices designed to teach ELs impacts the academic achievement of ELs. A professional learning survey was used to measure teacher perceptions about the effectiveness of specific aspects of professional learning in preparing them to teach ELs. Additionally, results of the California English Language Development Test (CELDT) were used to measure impact in learning English and results of the Degrees of Reading Power (DRP) and Benchmark Assessment System (BAS) were used to measure impact in reading achievement. Findings indicate that teachers found the professional learning moderately effective, with job-embedded instructional coaching slightly more effective than traditional face-to-face training. Students' learning English and reading achievement were found not significantly impacted. Conducting similar studies throughout the nation would be helpful in identifying the instructional practices needed to accelerate the academic achievement of ELs."

Carla Caffrey-Casiano*, Karl Oswald, Masters (Psychology): ***My Best Friend is a Cat: An Investigation of the Relationship Between Pet Ownership, Attachment, Stress, and Episodic Memory***

Previous research on companion animals has focused on both the psychological benefits through attachment and physiological benefits through stress reduction and health improvement. Research has shown that the mere presence of a companion animal can reduce stress in humans (K. M. Allen, Blascovich, Tomaka, and Kelsey, 1991). Stress has been shown to cause decreases in executive functioning and deficits in overall cognitive processing, while having a particularly unique impact on episodic memory abilities. Because of the decrease in stress that companion animals can provide, and the known relationship between stress and episodic memory, the current study sought to investigate the possible relationship between having a companion animal and episodic memory abilities. Using the three measures of Pet Attachment, STAI, and Picture Sequence Memory Test, we predict that companion animal ownership will predict reduced stress and enhanced episodic memory. These findings will extend the psychological literature on the effects of pet ownership to cognitive processes.

Giuliano Galdi, Masters (Plant Science): ***Field Performance of 21 Alfalfa (Medicago sativa) Varieties under Saline Irrigation: dry matter yield, mineral composition and soil mapping***

California has been facing a drought in the last 4 years that is changing state's agriculture. Good quality water tends to be used in high value crops, such as almonds, or more salt sensitive crops such as tomato and strawberry. Alfalfa is known to have a moderately salt tolerance, and according to Mass and Grattan (1999), the crop starts to loose yield with ECe above 2 dS/m. However, according to preliminary data, this threshold seems too conservative. To assess new alfalfa varieties bred to salt tolerance, an experiment was initiated in October 2014 under the field conditions in the western San Joaquin Valley. Two levels, low and high salinity irrigation water, with an average of 1.05 and 10.0 dS/m respectively, were applied to assess how 21 new alfalfa varieties develop and yield in these conditions. Varieties performance was assessed on shoot dry matter basis in each of the 5 cuts done in 2015. Sodium and Potassium accumulation will also be assessed in order to correlate the accumulation of these cations with yield response. EM-38 (geonics) surveys were conducted in October/15 and March/16 in order to correlate varieties performance and the pattern of salt distribution in the field. According to preliminary data, all varieties yielded well in the saline condition and the relative yield (LS/HS) ranged from 75.1 to 100% (average of 86.5%). Data from EM-38 surveys showed a pattern in salt distribution in the soil where the high salinity basin had more spatially differences than the low salinity basin.

Mike Burchett, Doctoral (EDD): ***Investigating the Effect of a Performance-Based Instructional System on the Perceived Academic Self-Efficacy and College Readiness of Students***

"The purpose of this study is to investigate the effects of a Performance-Based Instructional System on the perceived academic self-efficacy and college readiness of high school students and recent graduates. This study uses a mixed-methods convergent parallel design. Quantitative data collected will be from high schools seniors attending two high schools using the performance-based instructional system and two comparison high schools and include cumulative GPA, SAT scores, and answers to an instrument on perceived academic self-efficacy. Data will be analyzed using a MANOVA, and significant results will be further analyzed by post-hoc univariate ANOVAs. Qualitative data will be collected by conducting semi-structured interviews from selected college freshmen, half from a performance-based instructional system, and half from a comparison school. Qualitative analysis will be analyzed using a grounded-theory approach (Russell, 2006) to look for common themes in interviews. Atlas TI software will be utilized as needed to help with the coding process."

Elaina Aceves, Masters (Mathematics): ***A Study of Projections of 2-Bouquet Graphs***

"A new field of mathematical research has emerged in knot theory, which considers knot diagrams with missing information at some of the crossings. That is, the observer does not know which strand lies over or under the other at a crossing, and this new type of crossing is known as a precrossing. Pseudodiagrams are knot-like diagrams that contain precrossings and crossings, while projections are knot-like diagrams that only contain precrossings. The trivializing number (or knotting number, respectively) of a pseudodiagram is the number of precrossings that need to be changed to a crossing to obtain a diagram that represents the unknot (or a nontrivial knot, respectively) regardless of how the remaining precrossings are resolved. Spatial graph theory is a subfield of knot theory that focuses on embeddings of graphs in three-dimensional space. In this presentation, we extend the concepts of trivializing and knotting numbers to spatial graph theory, where we focus on 2-bouquet graphs. Specifically, we calculate the trivializing and knotting number for projections and pseudodiagrams of 2-bouquet spatial graphs based on the number of precrossings and the placement of the precrossings in the pseudodiagram of a spatial graph."

Diana Joyner, Doctoral (Physical Therapy): ***The effectiveness of conservative physical therapy intervention in a patient with acute Guillain-Barre Syndrome: A Case Report***

Guillain-Barré Syndrome (GBS) is an acute peripheral neuropathy affecting 1 to 2 of every 100,000 people worldwide each year. Symptoms present with rapid progressive, ascending, symmetrical muscle weakness as well as tingling in the extremities and diminished or absent deep tendon reflexes. Early diagnosis and medical attention is necessary for severe cases due to the incidence of ventilator failure and cardiovascular instability. This case describes a 46-year-old male who presented to a large multi-service hospital with a medical diagnosis of respiratory distress and limb paralysis, secondary to rapidly progressive GBS. The physical therapy evaluation revealed profound weakness throughout bilateral upper and lower extremities, and required maximal assistance for all functional mobility tasks. Treatment focused on restoring functional independence and strengthening exercises, careful not to fatigue the patient, along with daily plasmapheresis treatments. After 8 days of treatment, the patient was able to perform exercises with resistance, bed mobility with minimal assistance and 50 feet of gait training using an assistive device. The outcomes in this case suggest the importance of an early physical therapy intervention combined with a full multi-disciplinary team, in order to decrease long-term effects and aid in future treatment for similar patients.

Joseph Fonseca, Doctoral (Physical Therapy): ***When Shoulder Impingement Isn't Really Shoulder Impingement: A Case Report***

"Background: Shoulder pain is responsible for 1.2% of visits to a general medical practitioner, and 30% of these patients are referred to physical therapy. The purpose of this case report is to describe the differential diagnosis of a client referred for left shoulder impingement presenting with limited overhead movement, anterior shoulder pain and lateral shoulder numbness.

Case Description: This client is a 20 year-old female referred to an outpatient physical therapy clinic with a diagnosis of "left shoulder impingement." She complained of left shoulder pain with shoulder elevation and occasional numbness/tingling. Examination findings included decreased shoulder range of motion, upper-crossed syndrome, neural tension and pain with cervical spine passive range of motion. She was treated for these impairments and achieved resolution of pain and restoration of shoulder range of motion.

Outcomes: The Disabilities of the Arm, Shoulder and Hand (DASH) was used to monitor progress of this patient's shoulder pain. She demonstrated a 58-point improvement over six physical therapy visits.

Discussion: This report can be used to help further the understanding of shoulder limitations as they relate to neural extensibility. While painful shoulder elevation is a hallmark sign of Subacromial Impingement Syndrome, the mechanism of injury in this case was inconsistent with the referral diagnosis. Obtaining a thorough history is a vital component of any physical therapy evaluation, as it can expedite the diagnostic process. A cervical spine screen should be included in the upper-extremity examination to rule out neural entrapment and mobility deficits, as these impairments can lead to more distal symptoms."

Nicole Richardson, Doctoral (EDD): ***Agricultural Literacy of Students in the Central Valley in California***

This research study investigated the agricultural literacy of students in the Central Valley in California. Surveys were administered to students throughout the Central Valley in California to assess their understanding and knowledge of Agriculture. Follow-up interviews were conducted with their teachers. Convenience sampling techniques were used to provide a sample from the larger populations. This study was conducted using a concurrent triangulation mixed methods design which allows for the confirmation, cross-validation, and corroboration of results. Although this study did have some limitations, the implications of the students' knowledge will lead to further research.

Carlos Moreno*, Ming Li, Masters (Computer Science): ***A Survey of Filtering Methods for Point Clouds in Real-Time Video Streaming***

"Sensors for collecting 3D spatial data from the real world are becoming more important. They are a prime research area topic and have applications in consumer markets, such as medical, entertainment, and robotics. However, a primary concern with collecting this data is the vast amount of information being generated, and thus, needing to be processed. This problem requires the use of filtering methods to remove unimportant data. Because there exists different filtering methods, a comparative study must be conducted to find which methods work best and under what situation. To collect the 3D spatial data, called point clouds, we used the Microsoft

Kinect sensor. In addition, we utilized the Point Cloud Library (PCL) to process and filter the data being generated by the Kinect. Two different computers were set up: a client which collects, filters, and transmits the point clouds; and a server that receives and visualizes the point clouds. In order to compare the filtering methods, quality of service (QoS) metrics were calculated and collected. These metrics include frames per second, filtering time, number of points filtered, and more. These QoS metrics indicate how well a certain filtering method accomplishes the goal of transmitting point clouds from one location to another in real-time. In addition to the comparison, we concluded that, regardless of the filtering method chosen, there is still too much data for a satisfactory QoS. For a real-time system to provide reasonable end-to-end quality, compression will be required."

Taylan L. Bennett, Masters (Education, Higher Ed.): ***Women Student Affairs Administrators: An Analysis of Challenges and Career Mobility***

Women are currently underrepresented at senior-level positions in higher education. Statistics show that 49% of university presidents are 61 or older; thus, a majority of these presidents will be retiring within the next 10 years (King &Gomez, 2008). With this transition, key administrative staff will move up the ranks, making room for a new generation of administrators in higher education, specifically for women. According to Enke (2014), much of the research that has been conducted on leadership and power has focused primarily on male perspectives. If higher education institutions are employing more women, yet have a limited perspective of what their strengths and needs are, the retention of these women administrators is going to decline (Jo, 2008). Women senior student affairs officers face gender specific challenges such as salary inequity, personal and professional life balance difficulties, and power structures that are currently in place that constructed for male success. This qualitative collective case study will engage women senior student affairs officers at three different California State Universities. A cross-case analysis will be done after interviewing the participants. The purpose of the cross-case analysis is to understand the similarities and differences in the challenges that women senior student affairs officers face. This study will also examine how these challenges have affected the participant's career mobility.

Lukas Janzen, Masters (History*): Anticipating Attack: Civil Defense in the Early Cold War*

The presentation I am proposing is an analysis of American civil defense programs from the 1950's, and will examine the political and social aspects of these programs. During the beginning of the Cold War, the American government created the Federal Civil Defense Administration, with the goal of civil defense being to ensure the public that nuclear war could be survivable. If this could be accomplished, it would keep the public from growing panicked and help ensure faith in their government. This presentation will take focus on specific FCDA programs, and others created during the Truman, Eisenhower, and potentially Kennedy presidencies, and how the public reacted to them.

Manee Patanapongpibul*, Xiaojie Zhang, and Qiao-Hong Chen, Masters (Chemistry): ***Synthesis and Antiproliferative Evaluation of (1E,4E)-1,5-bis(1H-imidazol-2-yl) penta-1,4-diene-3-one***

Curcumin, the major compound in turmeric which is an Asian spice, was found to possesses variety of biological activities including anti-cancer activity. However, the moderate potential and low bioavailability of curcumin prevented it from the clinical therapeutic improvement. (1E, 4E)-1,5-bis(1-alkyl-1H-imidazol-2-yl)penta-1,4-diene-3-ones and (1E,4E)-1,5-bis(1-alkyl-1H-benzo[d] imidazol-2-yl)penta-1,4-dien-3-ones curcumin analogs have been established by our research group as promising scaffolds of anti-prostate cancer agents, exhibiting over 100-fold enhanced antiproliferative potency in human prostate cancer cell models. However, our recent in vivo study in mouse model indicated that one of (1E, 4E)-1,5-bis(1-alkyl-1H-imidazol-2-yl)penta-1,4-diene-3-ones only exhibits 2-10 folds improvement in its bioavailability. In the present study, we are exploring the possible metabolic product of (1E, 4E)-1,5-bis(1-alkyl-1H-imidazol-2-yl)penta-1,4-diene-3-ones. We will present the synthesis and in vitro antiproliferative evaluation of (1E, 4E)-1,5-bis(1H-imidazol-2-yl)penta-1,4-diene-3-one, one of the proposed metabolic products.

Monica Quintero, Masters (Education, Higher Ed.): ***Women Leaders in Higher Education: An exploration of their career choices*** This study focused on women leaders in higher education in mid-level positions. Women represent a large portion of mid-level positions but there is limited research exploring their experiences. Little is known about women leaders career trajectories and it is unclear if these women want to advance to senior level roles in higher education. This was a qualitative narrative inquiry focused on four women at four different California State University institutions, which currently hold mid-level positions. This study explored these women's career trajectory in higher education and their aspirations to move up the ladder. This study looked into account the factors that play a role into their career choices and what ways women experience support from their mentors, department, and institutions. The purpose of this study was to discover what it is like for women leaders in higher education and explore those decisions that women make for career advancement. Also, to help guide aspiring leader, exploring the perceived support systems that have had impact on the success of the participants will help guide future women leaders. The findings from this study were gathered by interviewing four participants. In-depth interviews were conducted to allow participants to recall and reflect on their experiences both inside higher education and out, the interview questions were semi-structured. The findings from this study support previous research regarding the barriers women encounter as well as the importance of mentorship programs and other similar development programs.

Peyvand Hajian, Aly Tawfik(Ph.D.), Masters (Civil Engineering): ***Potential Impact of SAV on the Transportation System in Fresno***

"Many people believe future may bring us driving without stress or the frustrating of other drivers. It may sound unbelievable getting to work while listening to your favorite music and flipping through a newspaper. However, thanks to the autonomous vehicle (AV), this will be possible in a close future. There is hardly any literature that studies the impact of shared autonomous vehicle on the congestion and vehicle travel mile. Owing to lack of research in this area, it became the main focus of this study. This research studied the impact of shared autonomous vehicles (SAVs) in different aspects on 770 zones in Fresno and Clovis; the two major cities in the Fresno County. This study analyzes the potential effect of the number of SAV stations, and modal share (i.e. Private vehicles vs. SAVs) has on VMT. Using four-step transportation planning model, trip production and attraction calculated for each traffic analysis zone (TAZ) and distributed between zones using gravity model. Additionally, using Network Analyst extension, ArcGIS shortest path and travel time have been calculated from SAV's stations to the centroid of each TAZ. It is found that VMT will increase due to change in individuals' trip chain. The tour with SAVs contains three segments. First from 1st station to home then from home to work and lastly from work to 2nd station. It is hoped that SAVs bring unlimited movement along with environmental justice and increase VMT, however, by ridesharing it is possible to decrease VMT and improve air quality."

Cheenou Her1*, Yin Yeh2, and Krish Krishnan1,2, Masters (Chemistry): ***Structural study of antifreeze glycoproteins (AFGP) using high-resolution nuclear magnetic resonance (NMR) spectroscopy***

"Intrinsically disordered protein (IDP) is best described as an ensemble of rapidly inter-converting alternative structures, nevertheless, is their native, functional state. Antifreeze glycoproteins (AFGP) are considered intrinsically disordered. The ice-crystal growth inhibition property of AFGP is crucial for the survival of certain Arctic and Antarctic fishes in subzero temperature. We hypothesize that the inherent flexibility of AFGP to be disordered is closely coupled to its function.

Nuclear magnetic resonance (NMR) spectroscopy provides a powerful option to investigate the structure and dynamics of proteins in the solution state. As the AFGP behave as IDPs in the solution state, there is a significant overlap of resonance in the proton (1H) NMR spectrum even at high magnetic fields. One of the solutions to overcome this problem is using two dimensional (2D) NMR techniques. The 2D NMR techniques provide information on the primary structure through covalent bonds interaction and on the solution state conformation through space interaction of the amino acid residues. Another solution to the overlapping resonance is to isotopically modified AFGP with a NMR active nuclei, such as carbon-13 (13C) nuclei which increase the sensitivity of the carbon-13 spectrum about 100 folds (natural abundance of 13C is ~1%). Structural information of AFGP and the chemically modified AFGP were obtained in pure DMSO-d6 and pure D2O using modern NMR methods. The structural aspects of AFGP, as determined by the

high-resolution NMR experiments in the above solvent conditions, will be presented and its implication to the overall function of AFGPs will be discussed."

Jeffrey Park, Masters (Mathematics): ***Bell Multiplier Sequences***

"Given a sequence of real numbers, we can define an operation that maps polynomials with real coefficients to polynomials with real coefficients. If the operation defined by the sequence maps hyperbolic polynomials to hyperbolic polynomials, we call the sequence a classical multiplier sequence. In place of the standard basis, we may consider a different polynomial basis that induces a different operation with respect to the sequence. If the sequence can be expressed as a polynomial, we say that the polynomial interpolates the sequence or the sequence is polynomially interpolated.

In this thesis, we study multiplier sequences for the Bell polynomial basis, referred to as Bell multiplier sequences. We begin with establishing the existence of trivial Bell multiplier sequences. We also disprove the existence of nontrivial linearly, geometrically, and quadratically interpolated Bell multiplier sequences. We conclude with a discussion of open questions in regards to Bell multiplier sequences."

Annabel Rodriguez*, Sharon Benes, Sonet Van Zyl, J. Alfonso Cabrera, Louis Holloway, Masters (Plant Science): ***Effect of Irrigation Regimes on the Soil Movement and Nematicidal Efficacy of Fluopyram for Grape Production***

Plant-parasitic nematodes impact many perennial crops throughout California. As the phasing out of methyl bromide continues, finding alternatives to help manage nematode populations is important. A new contact nematicide, fluopyram, has shown promise in managing populations in soils through drip applications. Knowing the best time to inject during a normal irrigation cycle is crucial to obtain an effective concentration of the nematicide within the root zone for optimal control. In the first trial, fluopyram was injected through drip irrigation onto bare soil at different intervals within a 24-hour irrigation cycle to evaluate its movement in the soil. The second trial consisted of injecting fluopyram at the same intervals within an irrigation cycle as previously used, but in a vineyard setting. Results from the first trial indicated no significant difference in the concentration of fluopyram among treatments and depths, although there was a non-significant trend towards higher concentrations of the nematicide in the top two feet of soil. Applications conducted in a nematode-infested vineyard for the second trial showed no significant decreases in Meloidogyne arenaria and Mesocriconema xenoplax nematode populations when compared to the control, but a significant difference among treated and untreated plots at 150 days post-application was found for M. arenaria only. Suppression of M. arenaria populations could have an impact on the amount of inoculum present for the next season. No significant differences in yield were observed.

Alexandra Jones, Masters (History): ***The Southern Rebels of 1850-1865***

The nineteenth century has been deemed the "Age of Nationalities" by scholars who study the development of modern nationalism and the nation-state on a global scale. The conflicts that occurred in the middle of the nineteenth century in the United States and China are a part of this age. Both countries were embroiled in Civil War at some point in the period of 1850 to 1865. This presentation seeks to cover the Southern perspective of the American Civil War and the Taiping perspective in the Taiping Civil War, in which both struggled for nationhood. The goals of this presentation are twofold: first, to demonstrate what led up to the outbreak of both Civil Wars, which caused the Southern rebels to want to create their own respective nations. Second, to illustrate points of comparison between the South and the Taiping, which will then situate both Civil Wars in a more global context, providing a better understanding of the local. The perspective that this presentation will be approached from, is that of nationalism. By looking at nationalism we will examine how ethnicity and Christianity helped the South and the Taiping shape their cause as they fought to be their own "nation," though both ultimately lost their battle for nationhood.

Ashlee Small, Masters (History): ***Cruel Murderesses and Thievish Rogues: A Comparative Look at Gender in Seventeenth-Century English Crime Pamphlets*** As technological improvements made printed materials more readily available, the sale of cheap, sensational pamphlets proliferated along English streets. These pamphlets were very popular, particularly those dealing with crime. Crime pamphlets commonly followed a stylistic pattern in which authors described male criminals as heroic or blameless, while female criminals were monstrous and unjustified in their actions. This presentation examines a sample of seventeenth-century English crime pamphlets and argues that examining crime pamphlets as a whole, and directly comparing descriptions of male and female criminals, reveals misogynistic views of redemption and culpability.

Guadalupe Remigio Ortega, Masters (English): ***Blending Disciplines to Include Marginalized Latino Students in Writing Courses***

The focus of this paper is to analyze and discuss how writing can be taught through interdisciplinary approaches in order to engage Latino/a students in the first year composition (FYC) classroom. My research was prompted by the question: What kind of texts and writing prompts can be assigned in the classroom in order to be more inclusive of racial minority groups, and how can knowing the answer to this question help educators be more effective in the writing classroom? I present some of the benefits of interdisciplinary teaching in general followed by how the marginalization of Latino students in the classroom calls for the integration of cultural awareness in order to resolve their lack of engagement in the classroom which stems from the disconnectedness they experience from reading the assigned texts. Methods such as culturally responsive teaching (CRT), the inclusion of culturally-relevant texts, and the

formation of culturally-centered learning communities can improve the transfer of learning from FYC and beyond, particularly when we consider the direct correlation that such marginalization can have in discouraging Latino/a students to pursue a higher education. As scholars such as Marcio Moreno, Eleni N. Pappamihiel, and Jessica Vasquez point out, an interdisciplinary approach to teaching, which seeks to acknowledge cultural backgrounds, has the ability to promote the inclusivity of Latino/a students and result in more successful learning in the transfer of knowledge from FYC to other areas outside the classroom.

Daniel Perez, Masters (Education, Higher Ed.): ***Engaging Students diagnosed with Autism Spectrum Disorder in Higher Education***

The objective of the qualitative study is to gain an understanding of how peer mentorship can help students diagnosed with Autism Spectrum Disorder be involved in student activities and how student affairs professionals can engage these students. This is a collective case study that will utilize semi-structured interviews as a means of data collection. A cross-case analysis, that compares similarities and differences in five different cases, will be utilized. For this study we will define student engagement as the active participation in one's education both inside and outside the classroom (Harper and Quaye, 2009).

Cherylyn Crill-Hornsby, Masters (Education, Higher Ed.): ***Financial Training Effects on Student Outcomes: Student Support Services Interventions & Their Results***

This quantitative study seeks to determine the effects of financial aid training included in three California community college Student Support Services (SSS) on student educational outcomes of participants in those services. These same outcomes serve as the grant-funded programs legislatively required objectives and include the percentage of student who persist from fall-to-fall, have earned a certificate or degree, and/or transferred to a four-year institution. The study will review four years of existing student data from the community colleges in order to track the rates of success for a cohort of both SSS participants and non-SSS students in these three identified areas. Campus records which indicate time spent by non-SSS students with various assistive units (counseling and tutorial services) will be reviewed in order to establish a control group for analysis. Once purposive sampling is complete data for the sample set will be statistically analyzed, including reporting by both the Student Support Services program and regular college student records.

Erin T. Dolen, Doctoral (EDD): ***An Analysis of the Effectiveness of Curriculum Embedded Handwriting Instruction and the Impact on Student Achievement***

No Abstract submitted

Ton Cha, Doctoral (EDD): ***AN ANALYSIS OF THE FFECTIVENESS OF HMONG LITERACY PROGRAMS AT THE SECONDARY LEVEL***

Language loss seems to be an inevitable outcome confronted by the Hmong people since their arrival here in the US over forty years ago. Despite the first generation being able to retain the spoken, cultural and written aspects of their language, the threat of language loss resides in the second and now very young third generation living in an English dominated society. Though organizations have worked to meet the needs of this targeted Hmong population, they have been unable to broaden their scope to encompass the broader population which can only be reached within the public education system. California is one of three states in the US with the highest concentration of K-12 Hmong population. This dissertation study conducted by a Hmong Native Speaker teacher in the secondary level analyzed Hmong World Language programs in California to determine elements within the teaching profession that defines effective teaching practices in Hmong language courses. This study encompassed four California districts with Hmong World Language programs to analyze student perception, literacy skills, teaching pedagogy, resources, and teacher perceptions.

Sandip Roy, Masters (MBA): ***The Impacts of Gender, Personality, and Previous Use on Consumer Behavior in the Sharing Economy***

The current study was undertaken to understand consumers in the sharing economy. The sharing economy, being a relatively new phenomenon, has attracted a diverse array of consumers. In this study, I examined personality factors, specifically extraversion and openness to experience, and their effect on consumer's attitude toward, and their perceived value of, the sharing economy. Attitude, in this context, refers to the overall positive or negative feeling of the consumer towards the sharing economy. Perceived value, refers to the value that consumers perceive to be reaping from a product, service or experience. Furthermore, how these factors impact consumer's intentions to use sharing economy services were examined. The study's results suggest that extraversion had a strong positively impact across the three outcomes. On the other hand, openness to experience was significantly related to perceived value, attitude or future use intention. In addition, past experience with the sharing economy also had a positive relationship with perceived value, the consumer's attitude and also their intention of future use of one or more of the sharing economy services. Implications and directions for future research are also presented and discussed.

Savonna Greer, Masters (History): ***The Mexican-American Educational Experience in 1920s Fresno California***

"Immigration debates have plagued the United States since its inception. Native-born Americans have most commonly feared disloyal immigrants and being overtaken by another culture. These fears have spawned various initiatives such as immigration restriction, segregation, and Americanization programs. This presentation will focus on how Americanization efforts and racial biases affected the academic experience of Mexican-American children in 1920s Fresno. Americanization programs began before the turn of the century, but the 1920s is a time period specifically relevant in researching Americanization's effects on Mexican American education. First, this period followed the Mexican Revolution; a time period of great turmoil that sent many Mexicans to California in search of safety. Second, women had recently won the vote and they were enthusiastically taking their places as leaders in the Americanization movement. Third, the end of the first world war brought an increased sense of nationalism and fear of everything foreign. And fourth, the 1920s was a time when scientifically-based Progressive education reform initiatives were sweeping California. During the 1920s Fresno was a rural environment built around the agriculture industry. Both its landscape and ideology were very different from that of urban Los Angeles, where schools relegated students of Hispanic origin to separate classrooms and schools. Segregation of whites and Hispanics was not the law in California, but Southern California school districts enforced it as if it were. Mexican-Americans in Fresno had a different experience, and that experience is what I will be presenting."

Posters:

Daniel Cavallero, Masters (Communications): ***CHOOSE YOUR INDENTITY: GENDER INDENTITY FORMATION THROUGH VIDEO GAME CHARACTERS***

Video games have always been seen as a male dominated pastime, despite the number of female gamers rising in recent years. Video game developers continue to publish games targeted toward young, straight males in order to make guaranteed profits, instead of trying to reach those who do not identify with that audience. The main focus of this study is to discover how stereotypical characters created for traditional (young, male, heterosexual) gamers can, and have, affected nontraditional (women, LGBTQ, older) gamers when it comes to how they see themselves. Those who are outside of the target audience do not feel as if they have the ability to call themselves gamers because of their age, gender, and sexual orientation. By examining industry professionals and nontraditional gamers, we would be able to see what changes are being made to the industry and how nontraditional gamers manage the traditional gamer expectations.

Melissa Lai, Doctoral (Physical Therapy): ***Nonspecific Trochanteric Bursitis in a 70 year Old Patient with a History of THA: A Case Report***

Lateral hip pain is a common symptom to both lateral hip trochanteric bursitis and lumbar radiculopathy symptoms. Incidence of development of lateral hip trochanteric bursitis has been found in post-operative total hip arthoplasty (THA). Conservative physical therapy interventions have previously been demonstrated to improve strength, mobility, tissue, and muscle length along with decreasing pain and impairments with people with hip trochanteric bursitis. However, there are limited reports that such outcomes are evident in patients over the age of 70 with lumbar radiculopathy symptoms. The purpose of this case report is to demonstrate the effectiveness of conservative physical therapy interventions for a 70-year-old male patient with nonspecific hip trochanter bursitis and lumbar radiculopathy symptoms with a history of THA. Discussion of accurate physical therapy diagnosis utilizing subjective and objective measures will help guide the care of other individuals with similar clinical presentations. A 70 year old male presented to physical therapy a year post operative THA with left lateral hip pain and lumbar radiculopathy symptoms. Evaluation identified hip trochanteric bursitis symptoms. Impairments included weak left hip abductor muscle, tight tensor fasciae latae (TFL) and iliotibial band (ITB), and pain with movement that limited mobility and function. He participated in a 5-week conservative physical therapy program focusing on stretching and strengthening exercise to improve hip mobility. Manual therapy and modalities assisted in reduction of pain. The patient's improvements on specified outcome measures demonstrate the effectiveness of conservative physical therapy interventions for patients with hip trochanteric hip bursitis.

Courtney Williams, Doctoral (Physical Therapy): ***Complex Regional Pain Syndrome Physical Therapy Diagnosis: A Case Report***

Purpose: to demonstrate the importance of differential diagnoses in the field of physical therapy (PT) when a patient presents with chronic uncharacteristic pain. This case report also provides useful insight into successful and unsuccessful treatments of chronic pain conditions, specifically complex regional pain syndrome (CRPS). Design: a case report. Subject: a 45-year-old female with chronic pain in her left lower extremity (LE) originally referred to PT with a medical diagnosis of lumbar spondylosis without myelopathy. Methods: interventions included aquatic therapy, graded exposure therapy, mirror therapy (MT), edema control, vibration therapy, and patient education. Results: Following the history and examination, signs and symptoms were all consistent of a PT diagnosis of CRPS type one, rather than lumbar spondylosis without myelopathy. Conclusion: Often times, patients seek PT without seeing a medical doctor beforehand or are referred to PT with a medical diagnosis that is unclear or different from PT findings. For this reason, this case report demonstrates rationale for the development of thorough differential diagnoses in the field of PT.

Andrea Staples, **Doctoral (Physical Therapy):** ***Physical Therapy Treatment of a middle-aged woman after surgical arthroscopy secondary to micro-traumatic SLAP lesion and chronic shoulder injuries: a case report***

Superior Labrum Anterior Posterior (SLAP) Lesions are a relatively common cause of shoulder dysfunction, pain, and instability. Generally, SLAP Lesions are caused by a traumatic mechanism of injury, and are typically seen in young, male, overhead athletes. However, they can also occur in middle aged and older adults, secondary to degenerative micro-trauma. Depending on the extent of the injury, and the type of SLAP Lesion, they can be treated surgically by SLAP Repairs or arthroscopy and debridement. Although there are many studies outlining rehabilitation protocols for treating SLAP lesions, a majority of them are centered on the treatment of young athletes who have undergone SLAP Repairs, and not older patients with degenerative tears who have undergone arthroscopic debridement. As such, there is little research on how physical therapy treatments may need to be altered for this population. This case report outlines the physical therapy treatment of a middle-aged, female patient who underwent a SLAP arthroscopy secondary to chronic shoulder injuries and pain.

Spencer Lee, Doctoral (Physical Therapy): ***Conservative management of a 64 year-old female with chronic shoulder pain and complications following reverse total shoulder arthroplasty revision: A Case Report***

"Background and Purpose: Reverse total shoulder arthroplasty (rTSA) is currently a viable alternative to traditional total shoulder arthroplasty (TSA). Following rTSA several biomechanical differences must be accounted for by the patient and understood by the therapist. Evidence for an effective acute healing phase rehabilitation program exists for a period of several weeks to months immediately following surgery, however the long-term rehabilitative process (and specifically chronic pain due to complications) is not as well understood or documented in the literature. The purpose of this case report is to detail the treatment of a patient with complaints of chronic pain and instability resulting from rTSA complications. *Case Description*: A 64 year-old female presented with chronic left shoulder pain secondary to OA and a reverse total shoulder arthroplasty (rTSA). Conservative PT treatment consisted of strengthening, range of motion (ROM), manual therapy, patient education, and modalities. Treatment was provided in 1-hour sessions, 1-2 times per week, for 10 weeks. Manual muscle testing (MMT) and goniometric ROM testing were primarily used as outcome measures. *Outcomes:* The patient demonstrated significant improvements in the areas of exercise tolerance, motivation, and compliance with keeping PT appointments. She also gained enhanced functional ability with left shoulder movements, as evidenced by her increased propensity to perform activities of daily living (ADLs) and instrumental activities of daily living (IADLs) with less pain. *Discussion*: The finding suggest that physical therapy is an effective treatment for long-term management of chronic shoulder pain and instability, secondary to OA, following rTSA. Additional research is necessary to ascertain the most beneficial treatment mechanisms for this patient population.

Jude Xie, Doctoral (Physical Therapy): ***Fear Avoidance Behavior Secondary to Delayed Access to PT in a College Female with MCL and POL Injury: A Case Report*** "Background and Purpose: Recent research shows that elevated fear-avoidance beliefs are associated with poorer outcomes in physical therapy. Research has also suggests that fear reduction patient education are an effective measure to improve patient outcomes. The purpose of this case report is to explore a physical therapy intervention strategy for a college student with a medial knee injury that was complicated by delayed health services and the development of fear-avoidance behaviors. *Case Description*: Patient is a 21 year old female college student with a medial knee injury that required an emergency room visit. A month-long delay in health services prior to physical therapy lead to the development of fear avoidance behaviors that resulted in increased pain, immobility, and healing time.

Intervention: Patient education focused on reducing the threat value of pain and to embrace pain as a guide. Afterwards, the patient received a series of stretching, strength training, and weight-bearing exercises. *Outcomes:* Noted elimination of pain and swelling, full bilateral knee extension, and independent ambulation. Patient also improved their functional status as measured by the lower extremity functional scale. *Discussion:* The reduction of fear-avoidance beliefs and behaviors through patient education was effective in empowering the patient to self-manage their condition and allowed for effective physical therapy treatments."

Alexandra Bachtelle, Doctoral (Physical Therapy): ***Interdisciplinary Therapy Post CVA with Right Hemi-Spatial Neglect and Expressive Aphasia: A Case Report***

Background and Purpose: Cerebral Vascular Accident (CVA) is the second most common cause of death and a major cause of disability worldwide. Older age and hypertension are the most prevalent risk factors for CVA in patients with atrial fibrillation. The primary deficits accompanied from a CVA are loss of motor function and loss of sensory of the contralateral side to the lesion. Other less common deficits secondary to CVA are expressive aphasia and hemi-spatial neglect. These deficits can pose difficult roadblocks in the treatment process. The purpose of this case study is to explore and identify effective interventions and interdisciplinary approaches for post CVA patients who suffer from hemiparesis, hemispatial neglect, and expressive aphasia. *Case Description*: 75-year-old man post left CVA with resultant right hemiparesis, right hemispatial neglect, and expressive aphasia being seen in a skilled nursing facility for multidisciplinary rehabilitation. The main areas of treatment intervention aimed to increase his functional mobility deficits. Treatment focused on postural control, functional mobility, wheelchair management, and gait. These treatments included static sitting while incorporating dynamic challenges, multidirectional reaching, weight shifting, proprioceptive neuromuscular facilitation (PNF), developmental positioning, gait training, stair training, and inhibition of tone. *Outcome*: The patient was discharged from the skilled nursing facility after receiving his allotted visits per medi-care. All set goals were met as he went from a level of total

dependence with all activities to being able to perform functional mobility activities with supervision and gait activities with hand held contact guard assist. *Discussion*: Treatment approaches for subacute CVA vary greatly depending upon a multitude of factors, however the common goal is to regain functional mobility as early as possible. This case followed progression of functional mobility from gaining bed mobility, to transfer skills, and ultimately progression with gait. This patient in particular showed great progress with his gait once he was introduced to primitive rolling, developmental positioning techniques, and mass practice stair training. His gait normalized, gait speed increased, and overall fluidity of his gait improved. "

Justin Yun, Doctoral (Physical Therapy): ***The Effectiveness of an Early Mobilization Protocol Status Post Rotator Cuff Repair in a 72-Year Old Patient with Multiple Comorbidities: A Case Report***

"Background and Purpose: Patients who underwent open rotator cuff repair revealed excellent results in functional improvement (75-95%) and pain relief (85-100%)3. However, research currently does not provide a standard post-operative rehabilitation protocol. Prognostic factors may influence the success of rotator cuff repairs. This case report documents the effectiveness of an early mobilization protocol (EMP) to reduce pain, protect the surgical repair site, and improve functional impairments in an older patient with a repaired rotator cuff and multiple comorbidities.

Case Description: The patient is a 72-year old female who arrived to physical therapy 3 weeks post-operative rotator cuff repair. She presented with limitations in joint mobility, motor function, muscle performance, and range of motion (ROM) associated with the surgical procedure. *Intervention:* The patient participated in an EMP to safely return her to functional activities. She presented with multiple factors that can influence the healing process. Therefore, the program was adjusted based on her pain tolerance and correct demonstration of exercises. Outcomes were assessed by her subjective pain response, the Quick Disabilities of Arm, Shoulder, and Hand (QuickDASH), and shoulder ROM. *Outcomes:* The patient made slow, yet steady improvements with pain tolerance, QuickDASH, and shoulder ROM. She reported increased ability to perform functional tasks at home with improved mobility. *Discussion:* The patient's outcome suggests the protocol may not be an effective intervention. However, due to the involvement of a deltoid release, concomitant procedures, and patient characteristics, the protocol appeared to support progress towards functional independence and preventing shoulder stiffness."

Erica Quitoriano, Masters (Nursing): ***Standardized Method of Hourly Rounding on a Medical/Surgical Unit***

The purpose of this project is to reinforce education for nursing staff about the importance of consistent, purposeful hourly rounding on a Med/Surg unit. An educational module on purposeful hourly rounding will be presented to nursing staff at a staff meeting at

Clovis Community Medical Center's Medical/Surgical (Med/Surg) unit. Prior to the presentation the staff will complete a pre-survey regarding hourly rounding. Following the survey, a presentation on consistent, purposeful hourly rounding will be presented. After one month, a mass email will be sent to the Med/Surg unit's nurses; those who participated in the pre-survey would then be instructed to click on a link to complete a post-survey. In addition to the information gathered through the surveys, the number of falls will be reviewed and compared one month prior and one month after the presentation. Participation of this educational module is completely voluntary. Hourly rounding has already been implemented on the CCMC Med/Surg unit. There is an inconsistency in which nurses are rounding, as seen in "post-fall huddle" reports. Therefore, will reeducation with an emphasis on the importance of consistent hourly rounding improve hourly rounding on CCMC's Med/Surg unit thereby decreasing the incidences of falls? Results from this project are still pending.

Annie Wu, Doctoral (Physical Therapy): ***PT intervention for a 40-year-old male with CIDP in inpatient rehabilitation facility - A case report***

Background: Chronic inflammatory demyelinating polyneuropathy (CIDP) is the most common chronic neuropathy in adults. It is an immune-mediated demyelinating disease of the peripheral motor and sensory nerves, and it is characterized by progressive weakness and impaired sensory function in the legs and arms. Primary goals of treatment for CIDP are to reduce symptoms such as strength and sensory loss, balance disturbances, pain, and to improve functional status. The purpose of this case report is to review the management of a patient with CIDP in an inpatient rehab (IRF) setting. This traditional case report will focus on interventions to improve the patient's functional status. *Client Description:* The patient was a 40-year-old Caucasian male who was admitted into the hospital emergency room because of sudden decrease in sensation and strength in the extremities (greater in lower extremities). His medical diagnosis at the hospital was a CIDP exacerbation. This was his third admission to the hospital because of CIDP exacerbation and he was transferred to IRF 3 days of acute care.

Intervention and outcome: Reducing weakness or functional impairment as a consequence of weakness is the main focus of the interventions. The rehabilitation treatment included therapeutic exercise, stretching, functional activities such as bed mobility, transfers, wheelchair mobility, scooter mobility, gait training, and stair training, as well as neuro-reeducation, patient education, donning of orthotics, recommendation for durable medical equipment (DME), and family training. Outcome: The patient was discharged with FWW to home health physical therapy, which will focus on stair training and ambulation within his house. Upon discharge, he has made 15 points FIM gain in the motor subscale with improvements in bed mobility, transfers, gait, and stairs. *Discussion:* The treatment followed recommendations for early intervention, focusing on functional mobility training, minimizing

strength training, and practicing energy conservation. The patient responded well the all treatments and has made significant gains in FIM scores. There is very limited research on PT intervention for patients with CIDP as well as best outcome measures to use for these patients. Development of standardized treatment guidelines and outcome measures would help therapists develop the best plan of care for patients."

Mario Ernesto Crespin, Doctoral (Physical Therapy): ***Postsurgical Interventions for a 44 Year-Old Patient with an ACL and MCL Allograft Reconstruction: A Case Report***

The anterior cruciate ligament (ACL) is a multi-fascicular structure providing stability to the knee, preventing forward translation, and excessive rotation of the tibia on the femur. The medial collateral ligament (MCL) provides dynamic valgus stability. Hyperextension, extreme rotation, and valgus force of the knee tear the ACL and MCL, as well as damaging the menisci requiring surgical repair. The purpose of the case is to investigate the timely and appropriate postsurgical interventions in order to manage pain, decrease swelling, improve range of motion, and strength in order to promote a successful recovery of the knee following a ligamentous reconstruction. *Case Description:* A 44 year-old Caucasian male presented to the outpatient physical therapy clinic with a one-week status post right knee ACL and MCL allograft reconstruction. The patient was toe touch weight bearing with axillary crutches and complained of pain, decrease strength, range of motion. *Outcomes:* The patient demonstrated significant improvements of range of motion, strength, pain management. *Discussion:* The objective of physical therapy focused on increasing range of motion and lower extremity strengthening with proper motor recruitment. By the patient's fifth visit, he was achieving functional range of motion to perform activities of daily living as well as progress to modified functional exercises. Physical therapy is recommended for patients recovering from an arthroscopic surgery of an ACL and MCL reconstruction with an allograft in order to improve functionality and quality of life."

Mason Tregoning, Doctoral (Physical Therapy): ***Physical Therapy Intervention in a Skilled Nursing Facility for a 74-year-old Male 10 Years Post Stroke: A Case Report*** In America today, cardiovascular disease (CVD) and stroke produce an immense health and economic burden. These patients require long-term management; strategies including rehabilitation, psychological treatments, and interventions for social support. Chronic stroke patients have declining functional abilities as time increases post stroke, this increases the burden of care often resulting in these patients becoming institutionalized. There is a gap in the literature when it comes to treatment interventions and outcomes for chronic stroke patients in long term care settings. There is room for functional gains with these patients and the purpose of this case report is to present a treatment plan of care in the skilled nursing setting that improved functional mobility for a patient debilitated by chronic stroke. The patient is a 74 year-old Mexican American treated in a skilled

nursing facility with a diagnosis of late effects of a right CVA. The three treatment intervention phases included posture control (static and dynamic), Functional training (transfers, bed mobility, and exercises), and gait training. Unfortunately, the patient was unable to return to his prior level of function and will remain in the skilled nursing facility long term. The functional mobility gains made by the patient peaked during treatment and the patient was transferred to the nursing staff for continued mobility.

Melissa Miller, Doctoral (Physical Therapy): ***A rotating platform total knee arthroplasty in a 48-year-old patient with obesity: A Case Report***

Background and purpose: Osteoarthritis (OA) is a degenerative disease that often affects weight-bearing joints, such as the knees and hips. In severe cases of decreased range of motion (ROM), a total knee arthroplasty (TKA) is advised to improve a patient's functional mobility and tolerance for activity. Case Description: A combination of therapeutic exercise, activity, and the use of a continuous passive motion (CPM) device were used in the rehabilitation of a 48-year-old African American male, immediately post-operative from a rotating platform right TKA, presenting in an acute hospital setting. The patient was seen for a total of 7 visits over the course of 4 days. The patient's vitals, pain level, ROM, and strength were assessed each treatment session. The patient's progression was appropriate to his physical therapy prognosis, as he was young, in fair health, moderately active, and had limited co-morbidities. Outcome: The patient was able to meet all physical therapy goals, which included modified independent transfers and ambulation with a front wheel walker (FWW), and independent bed mobility. The patient had improved ROM (2° Extension, 105° Flexion), and moderate pain control, which enabled the patient to return to home safely and proceed with outpatient physical therapy. Discussion: Early physical therapy intervention and the use of a CPM device aided in the patient's ability to meet their goals and discharge in a timely manner. The patient's favorable outcomes after surgery further enabled rehabilitation. As such, this case advocates for early physical therapy interventions with patients undergoing a rotating platform TKA. Word Count: 250 Word Count in Manuscript: 3417 Key Words: Rotating Platform Knee Prosthetic, Total Knee Arthroplasty (TKA), Early Mobilization, Continuous Passive Motion (CPM), Osteoarthritis (OA), Diabetes, early onset TKA, pre and post physical therapy, early physical therapy interventions.

Kyle Baxter, Doctoral (Physical Therapy): ***Early Physical Therapy Intervention in an ICU Patient with Confounding Morbid Obesity: A Case Report***

Background and Purpose: Early physical therapy intervention has been recommended as one of the basic and essential requirements for ICUs, yet still is not widely utilized. The purpose of this report is to add to the growing body of evidence in support of physical therapy in the ICU by demonstrating how the intervention helped facilitate the restoration of function in a morbidly obese female in the ICU. *Case Description*: The patient was a 27 year Hispanic female with morbid obesity with previous episodes of recurrent

diverticulitis. Her admittance into the ICU was precipitated by a dehisced site of anastomosis from a recent sigmoid colectomy. She was septic and severely deconditioned. *Intervention*: The patient underwent physical therapy intervention for 7 treatments over the course of 17 days. The primary goal was improvement of functional mobility in order to prepare her for discharge. Treatments consisted primarily of functional mobility training that included bed mobility, transfers, sit to stand and gait. *Outcomes*: The patient initially required moderate level of assistance from 2 staff members for all forms of functional mobility, and was capable only of 3-4 pivot steps. By the 7th visit she was independent with bed mobility, stand-by level of assist for the remaining forms of functional mobility and ambulated 300 feet in the hallways.

Discussion: This report demonstrates the potential benefit to the patient when exposed to early intervention in the ICU setting, and closely mirrors the improvements reported in by other articles in the growing body of early intervention literature."

Brittney Bailey, Doctoral (Physical Therapy): ***Individualized Custom Wheelchair fitting in a Skilled Nursing Facility: A Case Report***

The purpose of this case report was to relay the importance of a properly fitted wheelchair for a long-term care residence with a RCVA and co-morbidities. The custom wheelchair fitting increased the patient's independence, quality of life and decreased fall risk. The patient increased her ability to propel, negate obstacles, stopped slipping out of the wheelchair with new cushion and increased proper foot placement. Through multidimensional and multidisciplinary improved balance, transfer skills, gait training and safety prepared this patient for proper wheelchair management with newly fitted wheelchair. This patient made significant advancement after proper wheelchair fitting with emphasis on secondary impairments but further research needs to be conducted in this area.

Megan Machado, Doctoral (Physical Therapy): ***Impact of chronic diabetes on intervention program status post Achilles tendon repair: case study***

"Background: Diabetes Mellitus (DM) affects over 20.8 million Americans, 10% is due to DM type 1. The long-term presence of DM has the potential to affect multiple body systems leading to complications and has the capacity to significantly slow down the rate of tissue repair. *Purpose:* The purpose of this case report is to present a patient referred for physical therapy s/p Achilles tendon repair, with chronic DM type 1, and to identify modifications made to the rehabilitation program in order to account for the decreased healing rate associated with DM. *Case description*: Patient was treated two times a week for six weeks utilizing a program focused on

regaining range of motion and strength in the right ankle while managing comorbidities including hypertension and diabetes. *Outcomes:* Patient was able to increase range of motion and strength in the right ankle utilizing a less aggressive intervention program leading to improved mobility and balance. *Discussion:* This case report is able to demonstrate the impact DM has on tissue repair and efficacy of a modified treatment program aimed at improving function and decreasing the risk of rerupture s/p Achilles tendon repair."

Kathleen Mae Galinato, Masters (Public Health): ***EXPLORING DIFFERENCES IN INFLUENZA VACCINATION RATES OF HISPANIC AND NON-HISPANIC COLLEGE STUDENTS***

Influenza is a viral illness that has a significant impact on the college population. The National American College Health Association-National College Health Assessment II found that 14.6% of college students reported cold/flu/sore throat as affecting academic performance. Approximately 46.1% of college students received the influenza vaccine in the last 12 months. This study investigated factors of influenza vaccination of college students attending a designated Hispanic-Serving Institution (HSI). Methods: A secondary data analysis was conducted on the ACHA-NCHA II survey, which consisted of 1,707 participants. The Pearson Chi-Square with Yates Correction Factor was used to determine statistically significant differences in the study variables. Results: Of those that completed the survey, 39.3% received the influenza vaccine in the last 12 months. There was no statistically significant difference found by race/ethnicity ($\chi 2$ =.475 n= 1460, df =1 and p=.491) and gender ($\chi 2$ =3.466, n=573, df =1 and p=.063). However, statistically significant differences in influenza vaccination rates and health insurance coverage ($\chi 2$ =19.150, n=1456, df =4 and p=.00001), perceived general health ($\chi 2$ =11.100, n=1457, df =5 and p=049), and reception of cold/flu/sore throat information ($\chi 2$ =13.224, n=1451, df =1 and p=.0001) were observed. Conclusion: Results indicate low utilization of the influenza vaccine by the college population. Various factors were identified in affecting influenza vaccination rates, such as health insurance coverage, perceived health, and reception of cold/flu/sore throat information.

Michael Li, Doctoral (Physical Therapy): ***Conservative Management of a Patient Referred for Repetitive Strain Injury: A Case Report***

Repetitive strain injuries (RSI) are one of the most common work related injuries and are estimated to cost as much as $20 billion per year in worker's compensation. There are two types of RSI and it is critical for the clinician to determine the cause of the RSI symptoms. The current research on the conservative treatment of RSI is largely inconclusive. The purposes of this case report are to (1) demonstrate the diagnostic process for a patient referred to physical therapy for work related repetitive strain injury and (2) to demonstrate the conservative treatment of the symptoms of RSI using a multidisciplinary approach. *Case Description*: Patient is a 41-year-old right-handed female asset manager referred to physical therapy for repetitive strain injury. Her chief complaints were right

neck and arm pain, numbness, and tendency to drop items with her right hand. Examination revealed limited right shoulder active range of motion (AROM), decreased scapular stabilizer strength, decreased right grip strength, positive cervical radiculopathy signs, and positive subacromial impingement signs. She was seen for twelve visits. Treatment included activity modification, ergonomic assessment, manual therapy, strengthening exercises, stretching, soft tissue mobilization, and modalities. Outcome measures used included the Numeric Pain Rating Scale, AROM, hand dynamometer test, and special tests. *Outcomes*: After twelve visits, the patient had minimal shoulder pain, no neck pain, no numbness, full functional shoulder AROM, increased scapular stabilizer strength, and increased right grip strength. *Discussions:* A multidisciplinary approach of activity modification, ergonomics, soft tissue mobilization, postural education, strengthening, stretching, manual therapy and modalities may be effective in treating patient with repetitive strain injury symptoms secondary to cervical radiculopathy and shoulder impingement."

Michelle Mitchell, Doctoral (Physical Therapy): ***Certified nursing assistant receives a multidimensional therapeutic intervention for low back injury sustained during patient handling: A case report***

Background and Purpose: Musculoskeletal injuries occur at high rates among healthcare workers employed in acute care settings and nursing homes. These injuries commonly occur with overexertion, which is often associated with the performance of manual patient-handling tasks such as patient transferring. Previous studies have shown that certified nursing assistants (CNAs) are at high risk for sustaining low back injuries secondary to the high compressive forces exerted on the spine during activities of this nature. Thus, the purpose of this study is to describe a multidimensional therapeutic intervention program designed to return a CNA to work after sustaining a low back injury while performing a patient-handling task. *Case Description:* The patient is a 27-year-old female with low back pain after sustaining an injury working as a CNA, placing her on light duty. She presented with pain in the lumbar paraspinal and right gluteal musculature with various trunk movements, postural deviations, decreased awareness of proper body mechanics, and the inability to walk, sit, or stand for prolonged periods. Physical therapy was provided two times per week for 6 weeks and consisted of therapeutic modalities, manual therapy, body mechanics training, work-specific activities, and extensive patient education on postural awareness. *Outcomes:* Patient returned to full work duty and tolerated lumbar spine movements without pain. Additionally, her postural deviations were less marked and she demonstrated both knowledge and physical performance of proper body mechanics during lifting and work-specific activities.

Discussion: This case report demonstrates the benefit of extensive patient education on proper lifting and body mechanics in combination with a comprehensive physical therapy program in restoring functional mobility for a CNA who suffered a debilitating injury at work.

MaryBeth Williams, Doctoral (Physical Therapy): ***Improving Functional Mobility of an Elderly Patient with Cerebral Palsy: Case Study***

Overtime cerebral palsy causes decline in functional mobility with progressive musculoskeletal manifestations causing bone deformation, leading to dysfunctional lever arms while ambulating. Adults with CP have poor walking abilities and motor control that is claimed to be from poor balance and weak stability. Strength training, neurorehabilitation, and postural stability are all thought to improve the functional mobility of a patient with CP. This case report reveals a multi-model program including: gait training, strengthening, flexibility exercises, balance strategies, motor coordination activities, and postural training that can improve the functional mobility of an elderly female with a medical diagnosis of spastic diplegia cerebral palsy. She entered a university physical therapy clinic with signs of anxiety, flexed trunk posture, limited muscle length, dependent on her FWW, lower extremity weakness, and motor coordination deficits. The patient improved: functional reach distance, ability to ambulate with the quad cane, gait velocity, motor coordination with the front wheeled walker, upright posture with the front wheeled walker, and the Berg Balance Scale. A more in depth examination of this patient's impairments with inter professional collaboration with her treating physician could have resulted in better understanding of her disorder and giving the patient the best care. The patient's psychosocial complications intervened with consistent progression. But, in the end, the patient was able to point out many improvements in her daily life such as: being able to wash her feet, don and doff her shoes and socks easily, and reporting no back pain.

Estela Acebedo-Gonzalez, Masters (Social Work): ***Pathways to Graduation Among Mexican-American Graduate of Fresno State***

Pathways to college graduation among Mexican-Americans is rarely examined. Latino college students, compared with other racial groups, have low rates of college completion. This phenomenon has persisted in states with high numbers of Latinos, despite a narrowing gap in the graduation rates of Latino college students. The purpose of this study was to conduct a phenomenological examination of the pathways to graduation among Mexican-American graduates of California State University, Fresno. One-hour taped interviews were conducted with six volunteer participants that have graduated from California State University, Fresno. The phenomenological analysis resulted in key findings, including obstacles or challenges as well as supports and strengths among respondents that led to college graduation. Some of the major obstacles and challenges in obtaining their degree as perceived by the participants include; a lack of knowledge about the application process parental and family pressures, and the lack of education and knowledge of higher education on behalf of their parents. Major sources of support and strengths among participants that led to college graduation were identified to include; the presence of a mentor that provided academic guidance or support along with the

presence of parental or family support. The study includes recommendations for future research and a discussion about the implications for practice at the micro, mezzo, and macro levels.

Benjamin Fox, Doctoral (Physical Therapy): ***The Use of Conservative Treatment to rehabilitate an Elderly women with a Rotator Cuff Tear***

"Rotator cuff pathology is a common shoulder injury caused by trauma or overuse. The risk of having a rotator cuff injury increases with age and is commonly found in the elderly although it may not always be symptomatic. The purpose of this case report is to follow the rehabilitation of an elderly woman with a rotator cuff injury by means of conservative treatment. *Case description*: The patient is an 81 year old female who was referred to physical therapy from her general practitioner with the diagnosis of left shoulder pain. The onset of her shoulder pain came after a fall in the shower which left her with a significant decreased in strength, ROM and many functional limitations. *Interventions*: The patient received physical therapy 2 days a week for 6 weeks which was broken into 3 phases of treatment. Phase one was aimed at reducing pain and inflammation with passive ROM and modalities. Phase 2 was focused on regaining AROM for improved ADL's. Phase 3 was focused on regaining strength and functional activities. *Outcomes*: The patient made significant improvement in strength, ROM and functional activities following a conservative treatment plan of physical therapy twice a week for 6 weeks. *Discusion*: There are two major options of treatment of a rotator cuff tear; Operational (surgical) and conservative treatment. This patient underwent the conservative treatment route with physical therapy and pain management through medication. Conservative treatment proved to be successful at improving all of our outcome measures including functional activities to improve her quality of life."

Lucie Taba, Doctoral (Physical Therapy): ***Physical therapy intervention to treat subacromial impingement through kinetic chain rehabilitation in a 64-year-old African American female: A Case Report.***

Background and Purpose: Shoulder impingement is one of the most common complaints of shoulder pain and has become highly prevalent in the healthcare setting. With many different opinions as to how to classify shoulder impingements symptoms and many viable treatment options, this case report describes the effects of a treatment emphasizing the neuromuscular and biomechanical re-education of the kinetic chain. *Case Description*: A 64-year-old female African American emergency room doctor presents to an outpatient physical therapy clinic with acute symptoms of a chronic shoulder pain. The patient is experiencing pain and decreased range of motion(ROM) and strength with arm elevation. *Intervention*: Interventions included modalities, manual therapy, neuro-muscular rehabilitation, patient education, therapeutic exercises, and a home exercise program over the course of eight visits in four weeks. *Results:* Increased passive and active ROM with decreased pain, increased strength with decreased pain, increased postural

body awareness, decreased functional disability, and increased length/strength relationship. *Conclusion*: This study supports rehabilitation of the kinetic chain through neuromuscular and biomechanical interventions as a viable option for treatment of shoulder impingement syndrome."

Andrea Gutierrez, Masters (Nursing): ***Caregiver Burden in Dementia Caregivers***

There are over 36 million people living with dementia worldwide and the number is anticipated to grow to 115.4 million by 2050 (Boots, de Vugt, van Knippenberg, Kempen, & Verhey, 2014). Astoundingly, 70% of Americans with a type of dementia are cared for within the homes where family members are stepping into the role of caregiver. As the condition of their loved one with dementia declines, the caregiver is expected to be faced with increased responsibilities that may be presented as isolated familial problem, but should be a social concern. Caregiver burden is best defined by Zarit and collegues as, "the extent to which caregivers perceive that caregiving has had an adverse effect on their emotional, social, financial, physical, and spiritual functioning" (1986). It is important to understand and learn the different facets involved with caregiver burden in the caregivers of people with dementia. Due to the increased risk of caregiver burden in these types of caregivers, healthcare providers should be able to help educate common caregiver stressors, be aware of local resources for assistance and cue in the most optimal stress reducing skills or coping strategies. The purpose of this project is to develop an educational pamphlet that will be used in assisting clinicians in providing resources for individuals with caregiver burden. An educational trifold board will also be used in educating family nurse practitioner students on the current research available about caregiver burden. In hopes of creating educational handouts for caregivers of dementia patients, the clinical application to this project is to be able to improve the quality of caregiving in dementia caregivers and to help healthcare providers carry out assistance in the relief of caregiver burden."

Stacy Wong*, Dr. Marilyn Wilson, ED.S: ***Self-Monitoring as an Intervention for Test Anxiety***

Test anxiety is a form of social phobia defined as the fear, apprehension, and worry in academic situations where there is a perception of criticism by others. It affects up to 40% of the school-aged population and leads to lower test scores and lower academic achievement. Current interventions include cognitive therapy, behavioral therapy, and cognitive behavioral therapy. Although effective, most interventions for test anxiety are not implemented in schools due to their time consuming nature. The present study uses self-monitoring as an intervention for test anxiety. A multiple baseline design was used to implement the self-monitoring intervention with four participants in a Central California high school. Results ranged in effectiveness among the four participants from questionably effective to ineffective. Levels of test anxiety appeared to decrease in one participant, increase in another, and remain stable in the remaining two participants. Self-monitoring as an intervention alone did not appear to be effective in reducing test

anxiety; however, it potentially decreased test anxiety when combined with other techniques. When individuals had knowledge of and utilized techniques to reduce anxiety, self-monitoring appeared to be an effective intervention. Future directions on teaching effective techniques prior to introducing the self-monitoring intervention are discussed.

Candice Cortney*, V.V. Krishnan, Masters (Chemistry): ***Keto-Enol Tautomerization Equilibrium of Acetylacetone in Mixed Solvents. Does Meyer's rule still apply?***

The keto-enol tautomerization is a concept that looks at proton migration within a compound. Recent studies have examined the solvent effects on the tautomerization of β-diketones and have shown that the keto tautomer is favored as the solvent polarity increases. This trend is known as Meyer's rule and studies have validated this rule by studying the tautomerization equilibrium of a β-diketone in the presence of a single solvent. In order to evaluate the applicability of Meyer's rule, the tautomerization equilibrium of a β-diketone is studied in a mixture of solvents. By systematically varying the molar ratio of the solvent mixture, this study examines the tautomerization in a mixture of two solvents through 1H NMR spectroscopy. NMR based chemical shift changes are measured using a high-resolution spectrometer (300 MHz) and a desktop spectrometer (82 MHz) for the solvent mixtures Methanol/Chloroform, Methanol/Acetone, Methanol/DMSO, Acetonitrile/Chloroform, Acetonitrile/Acetone, and Acetonitrile/Methanol as a function of molar ratio for acetylacetone, a simple β-diketone. These experiments reveal the change in the equilibrium process as a function of the molar ratio of solvents is not always linear thus providing new insights that could lead to the expansion of Meyer's rule to include ternary mixtures.

AP Lange*, P Yang, E Arteaga, NK Bains, A Mohamed, C Morazan, DD Lent, Masters (Biology): ***The Effect of Local Flower Distribution on the Foraging and Communication Behavior of the Common Eastern Bumblebee, Bombus impatiens***

Bumblebees are able to obtain information both through personal experience and from their conspecifics, however it is unknown if bees are capable of making the best decision when social information conflicts with personal information. This ability to weigh decisions and act on the one with the highest value would allow the bees to make the most of the resources within the territory of their colony, as they would not be wasting time and energy obtaining resources from less valuable sources. It has been generally assumed that insects are incapable of this kind of information evaluation, however recent research has suggested that bumblebees are capable of communicating complex information, a prerequisite for decision making in a social context. We created a foraging situation in which individual bumblebees are confronted with rapid changes in resource distribution. Following changes in resource distribution, collective foraging behavior of the hive was monitored to evaluate the transmission of information. The change in behavior provides insight into what drives a bee's foraging choices following new information and provides a framework to investigate how bumblebees

evaluate and utilize social information that may conflict with their personal information. Bees were presented with an arena where the values of food resources were controlled by altering the sugar concentration within artificial flowers and the pollen distribution of natural flowers. The foraging patches bees chose, the behavior of the hive after the bees returned to the nest, and the subsequent foraging choices the bees made after social information was acquired was monitored.

Keith A. Edmonds*, Lana J. Silva, and Paul C. Price, Masters (Psychology): ***Priming Numbers? In Search of Magnitude Priming Effects on Quantitative Estimates***

Oppenheimer et al. (2008) found that drawing a long or short line influenced subsequent estimations of unrelated quantities such as the length of the Mississippi River and the average high temperature in Honolulu in July. These researchers argue that drawing the long or short line primes concepts related to larger or smaller magnitudes and these primed concepts have a direct effect on people's estimates. We have now failed to replicate this effect twice, where one study was a direct replication and a conceptual replication in which participants drew long or short lines and then estimated the number of jelly beans in a jar (Edmonds & Price, 2015). In the present study we attempted to replicate this phenomenon one last time in the following way. A sample of 120 college students were asked to quickly draw five lines, each of which connected two points on a single oversized piece of paper. In one condition, the lines were approximately 24 inches long and in the other condition they were approximately three inches long (as in our previous conceptual replication attempt). Immediately after completing the line-drawing task, participants were asked to estimate the distance between two points, either approximately 15 feet or approximately 50 feet apart. The study is meant to address the possibility that the line drawing procedure might be more likely to affect distance estimates than other kinds of estimates. The results will be discussed in the context of other kinds of priming phenomena, which have also been difficult to replicate.

Melissa Semas, Doctoral (Physical Therapy): ***Response to Movement Strategy Training and Joint Mobilization to Increase Ankle Range in an 89 Year-old Female with Increased Fall Risk: A Case Study***

Background and purpose: Balance impairments can be either sensory or motor by nature. Sensory balance impairments can be due to deficits in the visual, vestibular, or somatosensory systems. Motor balance impairments can be due to either choice of body movement, generation of that movement, or in this case, both. The relationship between these potential causes of balance deficits is pictorially represented in the dynamic equilibrium model. The purpose of this paper is to demonstrate how a multidimensional and comprehensive approach addressing the motor side of the dynamic equilibrium model, through joint mobilization and movement strategy training, increased the balance abilities of an elderly female patient who was at risk for falls. *Case Description*: The patient was an 89 year-old female who was referred to a university physical therapy clinic for generalized balance problems. She presented

with limitations in ankle range of motion (ROM) bilaterally, gait deficits due to lack of dorsiflexion, and inadequate balance correction strategies after a perturbation. Physical therapy was provided twice a week for eight weeks for a total of sixteen treatments, along with a total of three home exercise programs. Interventions addressed ankle ROM, proper gait mechanics, balance limitations, and balance correction techniques. *Outcomes*: The patient's fall risk decreased secondary to improvement in impairments, which also allowed a decrease in gait deficits. Patient was able to increase her ability to balance due to increased dorsiflexion and decreased fear of falling. She was able to select proper balance correction technique such that she could appropriately choose between ankle, hip, and stepping strategies. *Discussion*: This case demonstrates a successful multi-dimensional treatment approach to a non-traditional motor cause of a balance deficit as supported by literature."

Christian Lopez, Doctoral (Physical Therapy): ***Does an Aquatic Therapy Intervention Produce Improved Outcomes on a Patient with Multiple Sclerosis?: A Case Report***

Multiple sclerosis (MS) is the most common neurological disease diagnosed in young adults. Primary progressive multiple sclerosis (PPMS) is a rarer form of MS, affecting approximately 10% of MS population. Various options are available in physical therapy interventions for patients with MS, and one that has been increasing in popularity is Aquatic therapy. Here, I present an aquatic therapy rehabilitation intervention on a patient with primary progressive multiple sclerosis and describe its outcomes on gait, strength, and balance.

Jacqueline Romero*, Dr. Bhupinder Singh, Dr. Gary Lentell, Doctoral (Physical Therapy): ***A Multi-Modal Approach to Patellofemoral Pain: A Case Report***

Background: Patellofemoral pain syndrome (PFPS) is the most commonly diagnosed orthopedic knee condition, associated with biomechanical and muscular imbalances that lead to the maltracking of the patella. The prevalence is significantly higher in women, owing to anthroprometric factors of widened hips and a larger Q-angle resulting in a more lateral pull of the patella. *Case Description*: The patient is a 19 y.o. obese female who had sustained a patellar dislocation on the right knee, 8 months prior to physical therapy from coming down from a kick in Muay Thai kickboxing. She came in with subjective complaints of anterior knee pain from prolonged standing, walking, sitting, ascending and descending stairs, and fitness activities. Objective examination revealed signs of patellar instability, tight lateral tissue structures, and weakened gluteal musculature – all indicative of PFPS. *Interventions and Outcomes:* The patient underwent 8 weeks of conservative treatment with manual soft-tissue therapy, taping, and a therapeutic exercise program to strengthen hip and knee stabilizer muscles and improve flexibility in the IT band. *Discussion:* Recent trends in

the current literature favor treating PFPS by strengthening muscles of the hip to correct knee alignment at the femur, which decreases the dynamic valgus moment. However, quadriceps strengthening was also indicated due to instability in the PFP joint."

Aaron Bae, Doctoral (Physical Therapy*): Functional Mobility Progression after Total Knee Revision Following Prolonged Bed Rest: A Case Report*

"Background and Purpose: Total knee arthroplasty is an effective way to treat osteoarthritis when conservative measures have failed. This intervention strategy can be complicated by infection of the joint. When the joint implant becomes infected, a total knee revision must be performed. This is strategy includes a longer recovery time which induces physical deconditioning and fear avoidance behavior. The purpose of this case report is to analyze the physical therapy intervention of a 69 year old patient who experienced a total knee revision after a previous surgery of a removal of a cement spacer due to an infection of total knee arthroplasty.

Case Description: Patient is a retired 69-year-old English-speaking Caucasian male, status-post day 1 after a left total knee revision. He was seen in the acute care setting for a total of 5 days.

Intervention: The patient underwent inpatient physical therapy for 2 times a day for 5 days. Physical therapy focused on functional mobility including: bed mobility, transfers, and gait with a front wheel walker.

Outcomes: Patient's LLE knee flexion improved from 55 degrees to 60 degrees, and knee extension improved from -20 degrees to -10 degrees. And patient was able to ambulate 60 feet with a front wheel walker.

Discussion: This report demonstrates the effects of deconditioning and fear avoidance on total knee revision rehabilitation. Functional mobility training and bed exercises addressed deconditioning and fear avoidance behavior."

J.B. Urtecho*, Jennifer Esponiza, and Laurent Dejean, Masters (Biology): *Quantification of a Pro-Apoptotic Protein Using a Conformation-Specific ELISA*

"Apoptosis is the cell's primary response to stress; it is one of the body's most important lines of defense against cancer, and dysregulation of it has also been implicated in a wide variety of other diseases. Establishing mechanisms for these regulatory processes would offer insight valuable to many research fields. The process originates upon reception of a stress signal by regulatory proteins known as Bcl-2 family proteins. Reception of this signal triggers activation of Bax, a pro-apoptotic member of this family, which then assume an oligomeric form and transfer to the mitochondrial membrane. These oligomers embed within the membrane and

form channels through which pro-death effectors leak into the cytoplasm and initiate the apoptotic mechanisms. These activated Bax oligomers are therefore early markers of apoptosis, and thus their levels may be used as a diagnostic tool for cancers, neurodegenerative disorders, and myriad other diseases. However, current methods only provide a qualitative or, at best, semi-quantitative detection of activated Bax. Practical diagnostic application necessitates that fully quantitative measures be developed.

To this end we are developing an enzyme-linked immunosorbant assay (ELISA) protocol in order to quantitatively assess activated Bax levels. We show that this protocol allows the specific quantification of activated Bax versus inactive Bax in vitro and that an increase of the ELISA signal correlates with an increase of activated Bax in apoptotic cells. We conclude that our ELISA protocol allows us to assess the amount of activated Bax and, by extension, how prone to apoptosis the sample cells are."

NIDHI ARORA, Masters (Computer Science): *"AGE CLASSIFICATION USING FEATURE SELECTION"*

In the research of recognition, most facial variations such as identity, expression,and gender has been extensively studied. However, automatic age estimation has been rarely explored. With age progression of a human, the features of the face changes. So we need to address the issue of facial aging and come up with a mechanism that identifies a person's age. In my project, effective age group estimation using face features like texture and shape from human face image are proposed and will provide a new hybrid approach of classification by using fuzzy logic and neural network algorithm.

Methodology

1. I have used Viola Jones face detection algorithm.
2. In feature extraction, I have used two important features of the face which will helpful for age identification.

2.1 Geometrical features (e.g. face angle, left eye to right eye distance, eyeball, eye to nose distance, eye to chin distance and eye to lip distance are calculated by using the feature selection algorithm)

2.2 Wrinkle features

Based on the texture and shape information, age classification is done using the proposed hybrid algorithm of Fuzzy logic and neural network.

3. Hybrid approach of fuzzy logic and neural network used for classification.

Conclusion

1. Perform feature selection and classification using the proposed algorithms to get the optimal result in the field of pattern recognition.

2. Will be able to provide the age estimation (Senior, Adult and Child)"

Stephanie Slonka*, Dr. Madhusudan Katti, Pedro Garcia, and Bradley Schleder, Masters (Biology): ***The effects of changing water availability and landscaping practices on bird communities in a California urban landscape***

"The ongoing drought, and water metering policies enforced since 2013, has forced residents to modify their landscaping practices. In the Urban Long-Term Research Area - Fresno And Clovis Ecosocial Study we focus on the effects of changes in water use and landscaping on urban biodiversity. In 2010, using pre-metering data from 34 residential sites in the Fresno Bird Count, we showed that irrigation intensity, poverty level, and grass height were key drivers of bird species richness. Here we focus on the post-metering years, and examine if 1) patterns of bird species richness have changed, and 2) the above factors continue to drive bird species richness five years later under significantly lower water use.

We used an information theoretic approach to compare multivariate models combining social-ecological variables hypothesized to drive bird species richness within the 34 residential sites. We found strong support for a model combining mean tree height, percentage of bare dirt/mulch, understory shrub density, mean irrigation intensity, and property value as the best predictors of bird species richness ($R2=0.45$, $F(27,7)= 3.7812$, $p=0.0073$). These results indicate that birds are responding to a different suite of variables after the implementation of water metering, with tree height and amount of bare dirt/mulch becoming more important than grass cover in determining species richness. We also found inter-annual variation in the strength and directionality of the relationship between property value and bird species richness, suggesting that the luxury effect in urban biodiversity is not static, but changes with landscaping practices driven by institutional policy."

Allyson McCaffrey*,Dr. Marilyn Wilson, ED.S: ***Check-In/Check-Out Intervention with Children with Attention-Deficit/Hyperactivity Symptoms***

Check-In/Check-Out (CICO) is a positive behavior support program in which an adult mentor works with a student to identify problem behaviors and support appropriate behaviors. The current case study extended the CICO intervention to three children with Attention-Deficit/Hyperactivity Disorder (ADHD) symptoms who exhibited problematic behaviors at school. The three children were selected from a Central California K-6 elementary school. This study explored the efficacy of CICO with an ABA reversal design. After six weeks of intervention and one week of reversal, results were shown to be mixed, ranging from questionably effective to ineffective. Recommendations and limitations are discussed. Further research is needed to evaluate the implementation and effectiveness of CICO with students with ADHD symptoms.

Adriana Sanchez*, Hong Ni, ED.S: ***Promoting Mental Health Awareness in the Hispanic Community***

The concepts of mental health and mental illness are often misconstrued because there are limited definitions of each (Herrman, 2001; Keyes, 2005; Satcher, 2000). The limited definitions appear to focus on each term separately. There is also not a clear discussion of the relationship between mental health and mental illness. The lack of this discussion also adds onto the concepts of mental health and mental illness to be misconstrued (Herrman, 2001; Keyes, 2005; Satcher, 2000). Furthermore, there is not a large breath of research on the concepts of mental health and mental illness. There is also a limited amount of resources available to help explain both concepts (Herrman, 2001; Prince et al., 2007; WHO 2004). Thus, there is an overall lack of research and discussions about the concepts of mental health and mental illness and the relationships between the two concepts. Keyes (2005, 2006, 2007, 2013) proposed the complete state model of mental health that suggests three levels of positive mental health— flourishing, moderate, and languishing mental health. Mental health and mental illness then in this model are conceptualized as a complete state which means that mental health is more than merely the absence of mental illness. An individual must also have mental well-being such as holding positive feelings (i.e., view their life in a positive manner) in addition to being free of mental illness to be considered as flourishing in life (Keyes, 2013). By using this conceptualization, the current project seeks to deviate away from the mental illness stigma present in the Hispanic community and focus on promoting positive mental health through providing information to Hispanic parents regarding the concepts of mental health and mental illness and the relationship between them as well as providing information about local available resources via a power point presentation and a brochure. The purpose of the project is to inform the growing Hispanic community of the positive aspects of mental health while still addressing the cultural barriers and help to reach better mental health. A pilot study was conducted with six Hispanic parents in order to establish preliminary results. Overall, results demonstrated that the information presented to the participants was beneficial in informing them on the concepts mentioned above. Feedback from participants was used in order to improve the power point presentation. Limitations of the pilot study and recommendations for future studies are included.

Marissa Carranza, Doctoral (Physical Therapy): ***Is physical therapy intervention effective for a middle-aged female 4-years post hemorrhagic stroke??***

Background & Purpose: Stroke is a leading cause of long-term disability in the U.S. The purpose of this case report is to present the impact of physical therapy services provided for a middle-aged female at a university clinic, four years post-hemorrhagic stroke.

Case description: This case report focuses on a 58 year-old Asian-American female who was affected by a hemorrhagic stroke, four years ago. This patient received rehabilitation services appropriately post-stroke onset, however she continued to seek services to help with chronic functional limitations she dealt with as a result of stroke.

Interventions: Areas of focus for selecting interventions with this patient included: postural training / postural alignment, weight shifting, gait training, upper extremity fine motor activities, mirror box therapy, developmental sequencing and fall recovery.

Outcomes: Patient achieved increased functional mobility as demonstrated by improved 6MWT, 9HPT, gait velocity, and Modified Ashworth Scale for left upper extremity tone. In 8-weeks, this patient made improvements in gait and was able to transition from a community-rolling walker to a single point cane (SPC) upon discharge.

Discussion: Eight weeks of skilled intervention allowed this patient to make significant improvements in her functional mobility. This supports current literature citing improved outcomes in those with chronic stroke after attending student run clinics.

Conclusion: Further research should be done to explore the feasibility of a university clinic to serve as a means of extending the continuum of care for those with chronic stroke."

Karen Murata, Doctoral (Physical Therapy): ***Outpatient Physical Therapy Focuses on Functional Mobility Progression for an 85 Year Old Femal Post Right CVA: A Case Report***

"Background: Stroke is a leading cause of serious long-term disability, and an estimated 700,000 persons in the United States will have a stroke. Depending on the type of stroke a patient has suffered, different clinical manifestations and prognoses can be expected. This patient's symptoms are consistent with an interruption of the anterior cerebral artery, which is associated with the least dysfunction following stroke, and is associated with contralateral hemiparesis and sensory loss in the lower extremity. The purpose of this case report is to provide a retrospective review of the physical therapy management of a high functioning 85 year old female who is 6 months post right-sided cerebral vascular accident (CVA). Patient History: Patient is an 85 year old female 6 months post minimal right-sided CVA. She resided at an assisted living facility, and was primarily wheelchair bound. Her main goal was to increase lower extremity strength so she can increase her walking capacity (with a front wheel walker), and perform transfers with her walker more safely and independently.

Interventions: The plan of care included therapeutic exercises chosen to strengthen the patient's lower extremities, and therapeutic activities including stepping over hurdles using a single handrail for arm support, sit to stand, and stair climbing. Gait training and transfers with the correct use of an assistive device (four-wheel walker) was the main focus of interventions.

Outcomes: The patient improved her walking capacity from 50 feet to greater than 200 feet. She was able to ambulate and transfer with her assistive device with general supervision, however still required occasional verbal cues for correct performance. The patient partially met her goal of improving lower extremity strength to 4+/5.

Discussion: It is speculated that if the patient was allotted further rehabilitation visits past 6 weeks, she may have been able to achieve the strength goal. Studies have shown that the geriatric population requires longer time periods to see strength gains. In retrospect, the inclusion of more outcome measures to better understand the functional capacity, balance ability, psychosocial elements attributing to the patient's functional impairments would have been added to the plan of care."

Heather Waldron*, Marianne Jackson, Ph.D., BCBA, Masters (Psychology): ***The Effects of Choice on Exercise Contingencies for Children***

The effects of children having a choice in physical activity on the duration they continue exercising will be examined. The study will take place at an elementary school with four elementary school children as participants. An alternating treatments design will be used. Opportunities for choice in physical activity will alternate throughout the intervention. Data will be collected on the duration of time participants engage in physical and leisure activities. It is predicted that the duration engaged in physical activities will be longer during conditions allowing for a choice than conditions without choice. Data will be analyzed using visual analysis and percentage of non-overlapping data points.

Shadi Haji Adineh, Joseph A.Ross, Masters (Biology): ***Quantifying paternal mitochondrial DNA transmission in Caenorhabditis briggsae hybrids***

Mitochondria are usually inherited by an offspring from its mother. Previous work in Caenorhabditis elegans has shown that sperm-borne mitochondria are eliminated at fertilization. Such a system might have evolved to prevent heteroplasmy (the presence of multiple mitochondrial genotypes in a cell), which can result in mitochondrial disorders. However, in two populations of C. briggsae, repeatedly backcrossing female hybrids to parental male results in male mitochondrial transmission. Empirical results shows hybridization leads to an increase in paternal mitochondrial transmission, raising the hypothesis that hybrid genotypes facilitate an increased frequency of paternal mitochondrial transmission. This hybrid effect might exist because of recombination of unknown strain-specific molecular signals of paternal mitochondria and their unknown maternal receiver molecules. To develop C. briggsae as a system for identifying the cellular mechanisms that routinely act to prevent male mitochondrial transmission, my objective is to measure and compare the frequencies of male mitochondrial transmission occurring during hybrid and non-hybrid crosses. The null

hypothesis is that I will only detect maternally-transmitted mitochondria in hybrids. However, the hybrid crosses to be performed provide opportunities for paternal mitochondrial transmission. I currently made 12 hybrid lines of FV59- FV64 and FV83-FV88 and 3 out of 12 hybrids, showed the possibility of paternal mitochondrial DNA transmission. I am currently working on the single worm PCR on each generation of worms leading up to the cybrid generation. This effort will be useful in future to identify the genetic architecture of the quality control system responsible for paternal mitochondrial elimination."

Haddad, Rania*; Ross, Joseph, Masters (Biotechnology): ***Investigating adaptability to climate change by monitoring temperature effects on genetic inheritance patterns in Caenorhabditis briggsae***

To understand how natural selection affects individual fitness in a given environment, one might study whether DNA inheritance patterns are altered under varying environmental conditions. Two strains of the nematode Caenorhabditis briggsae, AF16 and HK104, isolated from locations with average temperatures of 25°C and 20°C, are genetically distinct. Some of these heritable differences might have adapted those populations to their environments; possibly to temperature. I hypothesized that AF16-HK104 hybrids would retain HK104 alleles more frequently than expected when created at 20oC. Thus, I created a total of 110 AF16-HK104 experimental hybrid strains, and 50 control strains, at either 20oC or 25oC. I determined DNA inheritance patterns using Polymerase Chain Reaction (PCR) genotyping of seven loci in order to map regions of the genome potentially involved in adaptation to climate change. Remarkably, inheritance deviated from expected patterns, with biased inheritance depending both on cross direction and on temperature. The genotype data suggest that genetic variants on multiple chromosomes might be involved in temperature adaptation, consistent with my hypothesis. The unexpected discovery that cross direction impacts inheritance patterns suggests the possible involvement of mitochondria on temperature adaptation. These findings motivate further studies to identify the underlying genome-wide genetic variants and how they impact the ability of organisms to adapt to their environments. Such studies are critical for assessing the ability of individual species to cope with climate change and also the potential for climate change to drive extinction and speciation events.

Katlin Kaundart, ED.S: ***The Effect of White Noise on Sentence Recall in College Students At Risk for ADHD***

There is evidence that shows that white noise may prove to be an effective study intervention for college students with attention problems. White noise has shown to be an effective intervention for both elementary and middle school students in helping students to remain on-task longer and improve sentence recall (Cook, Bradley-Johnson, & Johnson, 2013; Söderlund, Sikström, Loftesnes, & Sonuga-Barke, 2010). The present study examined the effect of white noise on sentence recall in college students. Most college students are exposed to a substantial amount of information and are expected to remember it. Some of this information is abstract in

nature and some concepts are more concrete. If white noise demonstrates effectiveness in this study, this can be a helpful study strategy for college students. This study utilized 96 verb-noun sentences. Forty-eight of the sentences were considered abstract (e.g., "form the hypothesis") and 48 of the sentences were considered concrete (e.g., "pet the cat"). White noise was present for half of the sentences and not present for half of the sentences. Results indicated that white noise did not help or harm individuals at risk for ADHD or individuals not at risk for ADHD. The white noise helped all individuals in remembering concrete sentences and harmed all individuals in remembering abstract sentences. This may indicate that white noise does not have a differential effect on sentence recall in individuals with attention challenges or ADHD.

Brad Mendes, Masters (Animal Science*): Evaluation of the Reduction of E. coli in Beef Strip Loins at Temperatures Lower than 54.4°C*

"According to the CDC, Salmonella is a leading cause of gastroenteritis in humans. The lowest temperature and holding temperature in Appendix A to achieve a 6.5-log reduction in Salmonella is 54.4°C for 121 minutes. Limited research utilizing lower temperatures exists. We evaluated the reduction of Escherichia coli in strip loins cooked to internal temperatures of 54.4°C or lower. A company provided meat, brine and rub ingredients for the experiment. A cocktail of Escherichia coli (ATCC® BAA-1427, 1428, 1429, 1430, 1431) were utilized (surrogates for Salmonella). The combination of temperatures and times held were 54.4°C for 2 and 3 hours, 51.7°C for 3 and 5 hours, and 48.9°C for 10 and 12 hours. Times were determined utilizing a model from the NAMI. Inoculations were prepared by inoculating TSB with each E. coli strain and allowed to grow at for approximately 24 hours. Samples were plated on MacConkey Agar. Data (three replications/two samples per replication) were analyzed using the GLM procedure of SAS.

Strip loins had a 6.5-log reduction at 54.4°C when held at both 2 and 3 hours. When the cooked and held to an internal temperature of 51.7°C a 5.5-log reduction could be achieved when held for 3 hours and a 6-log reduction when held for 5 hours. Strip loins that were cooked to 48.9°C and held for 10 hours resulted in a 5.7-log reduction and holding for 12 hours resulted in a 5.3-log reduction. Lower temperatures could possibly achieve a 6.5-7.0-log reduction if the correct combination was utilized."

Katelyn Shea*, Stephanie Moore-Reed, Luke Pryor, Bhupinder Singh, Masters (Kinesiology): *Fatigue Induced Compensation of the Infraspinatus and Lower Trapezius in Volleyball Players*

Purpose: To examine fatigue-induced compensation of the posterior shoulder muscles, while jump-float serves are performed. Participants: Seven female Division I college volleyball players (age=19.2±1.10 years, height=182.88±2.54cm, weight=82.1±12.18 kg). Methods: Electromyography (EMG) was used to assess muscle activation of the infraspinatus and lower trapezius. Electrodes were applied according to Surface Electromyography for the SENIAM regulations and procedures. Subjects performed a standardized 10-minute warm-up routine. Participants performed the fatiguing protocol, serving 87 jump-float serves from the service line on the back of the court. Dependent variables included Median Power Frequency (MPF) of the infraspinatus and lower trapezius, as well as RPE, Borg, fatigue, and heart rate. Pearson Correlation Coefficients were conducted to examine relationships between the dependent variables. Paired t-tests were performed to determine the differences in MPF over time. Results: There is a significant moderate-high correlation between the Borg and fatigue ($r= .899$, $p<.001$) and Borg and HR ($r= .639$, $p<.001$). There was also a significant but very small correlation between the infraspinatus and lower trapezius ($r= .208$, $p=.051$), Borg and the lower trapezius ($r= .282$, $p>.008$), fatigue and the lower trapezius ($r= .231$, $p=.030$), and HR and lower trapezius ($r= .316$, $p=.003$). Comparison between the mean MPF of the infraspinatus from serving set 1 (serves 1-3) (M±SD; 55.27±8.78) and serving set 13 (serves 85-87) (45.05±12.72) showed a significant decrease ($t= 2.573$, $df= 5$, $p= .050$).

Meghan Loper*, Amanda McKeith, Masters (Animal Science): ***Stocking density effects on production qualities of antibiotic free broilers***

"In antibiotic free (ABF) broilers, enteric diseases, mainly coccidiosis and necrotic enteritis (NE), pose the biggest threat to the intestinal health. Through knowledge of litter condition and management, these diseases can be minimized. Stocking density for ABF houses are typically lower than those raised in conventional housing. With coccidiosis and NE being the main source of mortality and morbidity in ABF flocks, it is important to understand the relationship stocking density has on the prevalence of those enteric diseases. Enteric diseases will directly affect the feed conversion efficiency, creating a less efficient bird. If there is no relationship between stocking density, coccidiosis and NE, broiler houses could maintain similar stocking densities as conventional housing.

Two stocking densities were selected for the study, a high stocking density (0.76) and a low density (0.90). The study had a total of 19,740 straight run Cobb broilers split into four pens. The experiment consisted of two pens with 4,203 broiler chickens and the other two with 5,355 broilers. All chickens were fed ad libitum. Fifty chickens (25 males and 25 females) were randomly selected per pen for body weights and feed conversion. All data was evaluated as an ANOVA. Environmental factors such as location in the house

were more influential in feed efficiency, mortality, and carcass yield. While the stocking density differences were influential in body weights and litter moisture."

Brandon Ortega*, Joseph Ross, Masters (Biotechnology*): Investigating the genetic basis of delayed development with Caenorhabditis briggsae recombinant inbred lines*

How does one species become two over time? The mechanisms involved in speciation can answer this question. Speciation occurs when two populations with a common ancestral origin diverge in DNA sequence, becoming genetically incompatible and thus reproductively isolated. Little is known about the genetic and molecular mechanisms involved in the process of speciation, which are generally thought to involve epistatic interactions between alleles unique to each population. The goal of this study is genetically map such loci using two strains/populations (tropical AF16 and temperate HK104) of the nematode model Caenorhabditis briggsae. C. briggsae is a useful model for studying the genetic basis for the onset of speciation by the tropical AF16 and temperate HK104 populations exhibiting genetic hybrid incompatibilities. Approximately 20% of the F2 AF16/HK104 hybrid offspring are developmentally delayed and display a decrease in fitness by taking 4 days to reach sexual maturation compared to their wild type siblings reaching sexual maturation in 3 days (Ross et al 2011). Genotypes of the F2 developmentally delayed offspring revealed homozygosity for AF16 alleles across a poorly defined region in the center of chromosome 3 (Ross et al 2011). Phenotyped F2 hybrid progeny of tropical AF16 and temperate HK104 strains crossed with a set of 22 genotyped recombinant inbred lines (RILs) produced inconsistent results using single locus genetic mapping. This suggests that the developmental delay phenotype is a multi-loci epistatic interaction and not a 1:1 epistatic interaction as previous studies suggest.

Tristan Kuizenga, ED.S: ***Teaching Sight Words Using Incremental Rehearsal with a First Grader***

This poster will summarize an intervention with a first-grade student identified at-risk based on DIBELS grade-level oral reading fluency benchmarks. Topics include: incremental rehearsal, acquisition rate, and suggestions for technological improvement. The student's sight word vocabulary improved while meeting the expected rate-of-growth benchmarks for DIBELS oral reading fluency. Attendees will gain information about the incremental rehearsal technique including details for replicating or adapting this intervention.

Alyssa Lozano, Masters (Public Health): ***HPV Awareness in Female College Students***

HPV and cervical cancer is an important issue for females. Close to 20 million people are carriers of the human papillomavirus and 6.2 million new people are infected every year with HPV (Warren, 2010). Sandfort and Pleasant (2009), state that low levels of knowledge about HPV and cervical cancer among college females have been identified and it makes it imperative to know more about this population's knowledge, perceptions and beliefs regarding HPV. The purpose of this study is to determine the difference between the knowledge, perceptions, and beliefs about HPV and vaccination in regards to age, ethnicity, and relationship status of female students attending Fresno State. The primary data will be collected at California State University, Fresno and analyzed to investigate the knowledge, perceptions and beliefs about HPV and HPV vaccination. The findings of this study will add to the current literature about college student's knowledge of HPV and the HPV vaccination as well as provide information for further prevention programs on college campuses.

Jaideep Singh* Cheenou Her Krish Krishnan, Masters (Chemistry): ***Role of enzyme kinetics on the anomerization of glucose using real time quantitative NMR (qNMR) spectroscopy.***

When α-D-glucose is dissolved in solution it undergoes an anomerization process to form β-D-glucose when the equilibrium between the two anomers is reached. Although the anomeric equilibrium was discovered over a century ago, the mechanism that determines the kinetics of glucose anomerization is not fully understood. Traditionally, anomerization kinetics is performed by dissolving either the α- or β- form of glucose while monitoring the conversion process as it approaches equilibrium. In the traditional approach, the starting condition does not have 100% of either α or β form of glucose. This study proposes a new approach that uses the enzyme invertase to convert sucrose into α-D-glucose which is further converted to β-glucose. This ensures that the starting material contains only α-D-glucose. Using real time quantitative NMR (qNMR) , the kinetics and thermodynamics of the anomerization of glucose is monitored as a function of enzyme concentration. The results show that the anomerization depends on two independent events: the conversion of sucrose to α-D-glucose by the Michaelis–Menten mechanism and the anomerization of α- to β-glucose by a pseudo first order reaction. The qNMR approach developed demonstrates the capacity to determine both kinetic and thermodynamic parameters of the anomerization process in the presence of enzymes thus being widely applicable to other carbohydrates and enzymes.