



UNLV

20TH ANNUAL

GRADUATE & PROFESSIONAL
STUDENT RESEARCH FORUM

ABSTRACT | **SATURDAY**
BOOKLET | **FEBRUARY 3**
2018
UNLV STUDENT UNION

UNLV

*The Graduate & Professional Student
Research Forum is sponsored by the
Graduate & Professional Student Association
and the Graduate College*

*We'd like to thank the faculty judges and student volunteers. Without your
support this event would not be possible.*



20th Annual Graduate & Professional Student Research Forum

Letter from the University President Len Jessup, Ph.D.

Dear students, colleagues, and guests:

Welcome to UNLV's 20th Annual Graduate Research Forum, a time when we celebrate and showcase the incredible scholarship and creative activity produced by our graduate and professional students each year. Enhancing our graduate-level education, research, and creative activities is a key element of UNLV's Top Tier initiative and drive to rise in national prominence.



I am consistently impressed by the innovation and creativity of our graduate students, and even more amazed at how well UNLV's research community fosters and promotes their contributions across the community and even internationally. We are truly championing a culture that is open to new ideas and collaboration while valuing our diversity and unique academic strengths.

I know from personal experience how conversation can spark a new way of thinking and set a student on a path for world discovery. So, I encourage you to be curious and engage in conversation about the projects. Ask participants to share their moments of discovery, as well as their setbacks and how they overcame them. Find out more about the faculty and fellow students who helped along the way and learn how their work can transform our community and improve your life.

After you spend time learning more about the work that our graduate and professional students are doing every day on this campus, I am sure you will find their achievements as innovating, inspiring, and truly exceptional as I certainly do.

Thank you for your participation and ongoing support for research excellence.

20th Annual Graduate & Professional Student Research Forum

Letter from Executive Vice President and Provost
Diane Z. Chase, Ph.D.

Strong research and creative activity form a cornerstone of all top tier universities, and the work on display at the 20th Annual Graduate & Professional Student Research Forum is evidence that we're well on our way to achieving this aspiration for UNLV.



As student researchers and creators, the work you do is critical to our success as a university. I believe strongly that just as student learning is enriched through engagement with faculty who are innovators in their fields, our faculty benefit from the fresh perspectives you, as students and researchers, bring to our university.

Since the mid-1980s, I have carried out archaeological research at the ancient Maya site of Caracol, Belize. Our research team is excavating this large city, its royal tombs, and major centers of civic life. We are uncovering the complex relationships that existed between these ancient people and their environment. During this time, the contributions of hundreds of students – some of whom are now colleagues – have helped our team refine theories, challenge ideas, and shape the direction of our work. I am delighted this project is now affiliated with UNLV, and that I will be able to work with and learn from our talented students. Importantly, this research also has been informed by and made richer through collaborations with colleagues from various disciplines outside of my own.

As I near the end of my second year at UNLV, I am amazed at the breadth of research and creative activity occurring on our campus every day – and at the willingness to innovate across disciplines. I am also eager to see the impact your innovations have on the community. So, during today's forum, I encourage you to listen and learn from presentations made by your peers, and to engage in conversations outside your core areas.

I am confident that you will be as impressed and inspired by UNLV research as I am.

20th Annual Graduate & Professional Student Research Forum

Welcome from Interim Graduate College Dean

Kate Hausbeck Korgan, Ph.D

Hello and welcome to the 20th Annual Graduate & Professional Student Research Forum at the University of Nevada, Las Vegas! It is a great pleasure to participate in this grand UNLV tradition with you. When this event began in 1998 we had far fewer graduate programs and students, and we were not yet recognized as the Carnegie Research High institution that we are today. Today, UNLV is a thriving Minority Serving Institution on the path to top tier status, and graduate education is a key indicator of our excellence, as well as a significant site of growth. Over these past 20 years UNLV and Southern Nevada have grown in size, stature, and diversity; and the Graduate and Professional Student Association has become a strong, thriving, well-established voice for the more than 5,000 graduate and professional students enrolled in more than 150 graduate programs and certificates today. By participating in this 20th-anniversary Graduate Research Forum, you're participating in a little part of history. At this event we celebrate our proud history, our stimulating experiences together today, and our shared vision for a strong future for graduate education at UNLV.



The evolution of human history is driven by the dual engines of inspiration and innovation. As thinkers, analysts, researchers, scholars, and creatives, graduate students are at the cusp of change. You are, indeed, often the drivers of change. Graduate education is unique insofar as graduate students must innovate and create new ideas in their field in order to earn their advanced degrees. No longer passive students absorbing knowledge, graduate and professional students are active generators of new ideas, new theories, and new approaches to pressing problems. With more than 140 graduate and professional programs at UNLV, our students span the disciplinary spectrum. We have excellent STEAM programs (Science, Technology, Engineering, Arts & Math), strong business programs, impactful social science programs, outstanding law and dental schools, innovative professional masters and doctoral programs in an array of fields, and excellence in our health programs. Our students are diverse, and your range of expertise is even more so.

This is one of the most exciting aspects of the Annual Graduate & Professional Student Research Forum: it showcases research, scholarship, professional and applied projects, and creative activity from every corner of campus, addressing a vast array of questions and issues. By bringing all of our students together in this single event we foster communication and collaboration across disciplinary silos and encourage students to expand their own understanding by learning from one another. It is an event that inspires us to know more, to work harder, to be better --- as individuals, and as a community of graduate scholars. Equally importantly, participation in this event helps develop your professional socialization skills, provides an opportunity to practice talking about your work to non-specialists in your field, and highlights the impact that our graduate programs are having on students, and through your work, on the world we live in.

It is an honor to be involved with this event, and to celebrate you, our graduate and professional students. You inspire me! I wish you a wonderful and provocative Research Forum.

Sincerely yours,

A handwritten signature in black ink that reads "Kathryn Korgan". The signature is fluid and cursive, with a period at the end.

Kathryn Hausbeck Korgan, Ph.D.

20th Annual Graduate & Professional Student Research Forum

Schedule of Events

Friday, February 2, 2018

Inspiration, Innovation, Impact Reception 4:00 – 6:00pm Student Union Ballroom

Saturday, February 3, 2018

Graduate & Professional Student Research Forum 8:30am – 2:00pm Student Union

Podium Sessions Student Union

Science Podium Session: 9:00 – 11:45am Room 205

Allied Health Science, Community Health,

& Medicine Podium Session: 9:00 – 11:45am Room 207

Engineering Podium Session: 9:00 – 11:45am Room 222

Social Science: Podium Session A: 8:45 – 12:00pm Room 208B

Social Science: Podium Session B: 9:00 – 11:30am Room 208C

Social Science: Podium Session C: 9:00 – 11:30am Room 209

Social Science: Podium Session D: 8:45 – 11:30am Room 211

Education: Podium Session: 9:00 – 11:30am Room 213

Education and Hospitality: Podium Session B: 9:15 – 11:00am Room 218

Poster Sessions Student Union

Fine Arts: Poster Session: 9:00 – 10:00am Gallery

Education: Poster Session: 9:00 – 11:45am Ballroom

Social Science: Poster Session A: 9:00 – 11:30am Ballroom

Social Science: Poster Session B: 9:00 – 11:30am Ballroom

Social Science: Poster Session C: 9:00 – 11:30am Ballroom

Social Science and Hospitality: Poster Session D: 8:45 – 11:15am Ballroom

Science: Poster Session A: 9:00 – 11:45am Ballroom

Engineering: Poster Session B: 9:00 – 11:45am Ballroom

Science and Health Science: Poster Session A: 9:00 – 12:00am Ballroom

Science and Health Science: Poster Session B: 8:45 – 11:45am Ballroom

Science and Health Science: Poster Session C: 8:45 – 11:45am Ballroom

Luncheon and Awards Ceremony: 12 pm – 2:00 pm Ballroom

20th Annual Graduate & Professional Student Research Forum

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Presentations

- 8:45 – 9:00am Travis T. Parsons, School of Life Sciences
- 9:00 – 9:15am Sharang Chaudhry, Kaushik Ghosh, Department of Mathematical Sciences
- 9:15 – 9:30am Bhagya De Silva and Ronald K. Gary, Department of Chemistry and Biochemistry
- 9:30 – 9:45am Chandler Hassan and Ernesto Abel-Santos, Department of Chemistry and Biochemistry
- 9:45 – 10:00am Joy A. Immak and Helen J. Wing, School of Life Sciences
- 10:30 – 10:45am Holly Martin, Kate Porter, Carmen Vallin, Mario Pedraza-Reyes, School of Life Sciences
- 10:45 – 11:00am Amro Abdalla, Hong Sun, Department of Chemistry and Biochemistry
- 11:00 – 11:15am Michael R. Isaacs, David V. Lee, School of Life Sciences
- 11:15 – 11:30am Daniel Mast, Keith V. Lawler, Kenneth R. Czerwinski, Frederic Poineau, Paul Forster, Bradley C. Childs, Alfred P. Sattelberger, Department of Chemistry and Biochemistry
- 11:30 – 11:45am Lauren Parry, Stephen Rowland, Department of Geoscience

Science Podium Session – Room 205



Science Podium Session – Room 205
8:45 – 9:00am

Delineating Drosophila Centripetal Migration: How do cells migrate to cover an oocyte?

Travis T. Parsons | Life Sciences

All animals start out as a single cell, which then develops into a complex organism with hundreds to trillions of cells. As an organism grows, its cells multiply and take on distinct identities, forming complex organs that perform distinct roles in the body. To build a functional organ, cells work together not only build the initial structure, but also to actively maintain it throughout the lifetime of the organism. In my work, I use a simple but powerful model to study how cells coordinate their actions to build tissues as a group. Due to the amount of genetic similarity to humans, the developing eggs inside of a fruit fly ovary are an excellent model to study these processes. My research specifically is investigating how a group of cells known as the “centripetally migrating cells” rearrange themselves and move to create a functional tissue during fruit fly oogenesis. The behavior that these cells exhibit as they perform this process is reminiscent of a behavior cancer cells exhibit when they metastasize. By understanding how cells within this organism synergize to change shape and build a tissue, further research may be able to apply these findings to other more complex organisms like humans to understand how they develop, or even grow new organs in a lab for transplant. Similarly, since diseases such as cancer often involve cells that are changing shape aberrantly, researching these questions may further understanding of how cancer cells operate.

Science Podium Session – Room 205
9:00 – 9:15am

An Improved Scheme For Resolving The Number And Orientation Of Nerve Fibers Using Diffusion MRI Data

Sharang Chaudhry, Kaushik Ghosh | Mathematical Sciences

The most popular non-invasive imaging method used for structural inference of the brain is diffusion MRI. This involves considering the brain as composed of 3D elements (voxels) and measuring the intensity of scalar signals in each voxel, obtained when the protons therein are excited under a magnetic gradient. The most prevalent paradigm for tractography involves first estimating the number and direction of nerve fibers within each voxel (local problem), and using the information obtained from each voxel to trace the paths of the neuronal fibers through the brain (global problem). In this work, we develop an efficient and objective method of addressing the local problem. Our novel Reversible Jump Markov Chain Monte Carlo (RJMCMC) algorithm is completely model-based and involves fewer moves to traverse the model space compared to a previously proposed method, resulting in faster computations. Furthermore, this new method aspires to be an excellent precursor for the global problem to reduce the number of false positives, which is reportedly a concerning issue for users of tractography.

Science Podium Session – Room 205
9:15 – 9:30am

Preferential Interaction of Beryllium Ion with Carboxylate-Rich Peptides

Bhagya De Silva and Ronald K. Gary | Chemistry and Biochemistry

Hyperactivity of Glycogen synthase kinase-3 β (GSK3 β) has been related with Alzheimer's disease, bipolar disorder, type-II diabetes and cancer. Therefore GSK3 β is a desired target for therapeutics. Lithium ion (Li⁺) is a classical inhibitor of GSK3 β , but beryllium ion (Be²⁺) is approximately 1000-fold more potent. Be²⁺ is believed to inhibit GSK3 β by competing for magnesium ion (Mg²⁺) binding sites featuring aspartic acid (D) or other acidic residues. As an initiative to understand how Be²⁺ competes with Mg²⁺ in metal-protein interactions, we used model chelators and simple peptides partially mimicking a carboxylate-rich binding pocket, and compared their binding properties towards Be²⁺ and Mg²⁺. Isothermal titration calorimetry (ITC) binding studies for nitrilotriacetic acid, 4,5-imidazole dicarboxylic acid, and salicylic acid displayed higher binding affinity towards Be²⁺ than Mg²⁺. Using ITC, Be²⁺ and Mg²⁺ binding with three short peptides: DDDD, GGGG and KKKK were compared. Under experimental conditions, Be²⁺ bound the carboxylate-rich DDDD while Mg²⁺ displayed no binding. No metal-peptide interactions were observed respectively for neutral GGGG and polybasic KKKK peptides. Analysis of Be²⁺ with peptides GDDD and GGDD showed reduced binding affinity compared to DDDD. These results demonstrate that Be²⁺ has stronger affinity for carboxylate-rich peptide sequences than Mg²⁺. These interactions may result conformational changes that distinguish between the inactive Be²⁺-GSK3 β and active Mg²⁺-GSK3 β complexes. Because GSK3 β regulates multiple cellular pathways, the ideal therapeutic inhibitor would produce selective downstream effects. Investigations using an unusual class of inhibitor like Be²⁺ might provide insight into the variety of modes potentially available for controlling GSK3 β activity.

Science Podium Session – Room 205
9:30 – 9:45am

Temporal and spatial distribution of spore calcium during intracellular *B. anthracis* spore germination

Chandler Hassan and Ernesto Abel-Santos | Chemistry and Biochemistry

Anthrax is a disease that occurs in individuals following exposure to *Bacillus anthracis* spores. Inhalation of spores leads to the most severe form of the disease and was the means by which the 2001 bioterrorist attacks in the U.S. were delivered. Following phagocytosis by alveolar macrophages, spores are transported to the lymph nodes where they germinate inside the phagosome. The outgrowing bacteria begin toxin production one to three hours post-infection, eventually killing the macrophage before escaping to the bloodstream where extracellular multiplication occurs.¹ Newly germinated *B. anthracis* cells are devoid of protective structures afforded by the spore composition. Hence, this nascent form of *B. anthracis* should be the most vulnerable to macrophage attack. The mechanism used by the newly germinated *B. anthracis* cells to survive within the macrophage is not completely understood. Upon germination, the cell excretes a large depot of calcium.² In this study, a combination of radiotracing and imaging techniques will be applied to follow the intracellular fate of calcium in macrophages infected with *B. anthracis* spores. Intracellular calcium overload can disrupt signaling pathways required for normal macrophage function and trigger cell death. The results of this study will bring new insight to our understanding of *B. anthracis* germination that may assist in our defense against future bioterrorist attacks.

Science Podium Session – Room 205
9:45 – 10:00am

Two remotely located and independent VirB-binding sites are required for VirB-mediated transcriptional anti-silencing of the *ospD1* promoter in *Shigella flexneri*

Joy A. Immak and Helen J. Wing | School of Life Sciences

The bacterial pathogen, *Shigella flexneri*, is the causative agent of shigellosis in humans and is transmitted by the fecal-oral route. Infections can develop in to acute symptoms of nausea, fever, and bloody diarrhea. The transcriptional regulator, VirB, is essential for the virulence of *Shigella* species. The VirB protein turns on the expression of VirB-dependent genes by anti-silencing the silencer protein H-NS, a histone-like nucleoid structuring protein. Regulatory properties of VirB are dependent upon the initial binding of VirB to a specific DNA sequence known as the VirB-binding site. However, DNA sequences required for VirB binding remain poorly understood. Previous studies have characterized DNA sequences required for VirB-dependent regulation and binding for two VirB-dependent genes: *icsB* and *icsP*; however, the sites differ in their relative position to the transcriptional start site and in sequences required for VirB-dependent regulation. Using the current understanding of a VirB-binding site, we hypothesized that the VirB-binding site is organized as an inverted repeat and located as far as 2 kilobases immediately upstream of the respective gene. With those criteria, twenty-one putative VirB-binding sites were identified immediately upstream of thirteen VirB-dependent genes. To begin, VirB-dependent regulation of one of those genes, *ospD1*, was assayed. Interestingly, two identified VirB-binding sites, located over 1 kilobase upstream of the gene, were essential to VirB-dependent regulation of *ospD1*, which has never before been demonstrated. As both VirB-binding sites at *ospD1* were organized as inverted repeats and located far upstream of the gene, our hypothesized criteria for a VirB-binding site is supported.

Science Podium Session – Room 205
10:30 – 10:45am

Beyond transcription-coupled repair: Mfd protects against oxidative stress in *Bacillus subtilis*

Holly Martin, Kate Porter, Carmen Vallin, Mario Pedraza-Reyes, Universidad de Guanajuato, Eduardo A. Robleto | School of Life Sciences

Previously, our lab has shown that mutagenesis in nutrient-limiting conditions is dependent on Mfd in *Bacillus subtilis*. However, beyond its function in transcription-coupled repair, the activity of Mfd is less understood. Particularly, the protective role of Mfd against oxidative damage to DNA has been discrepant, chiefly in *Escherichia coli*. We used a genetic approach to test whether Mfd conferred protection from exposure to the oxidant tertbutyl-hydroperoxide (TBH) in *B. subtilis*. Mfd-replete cells survived TBH exposure significantly better than Mfd-deficient cells. This protective effect was independent of UvrA, a component of the canonical transcription-coupled repair pathway. Further, the TBH survival results suggest that Mfd and MutY, a DNA glycosylase that processes 8-oxoG:A DNA mispairings generated by oxidative damage, appear to work in the same pathway to resolve this damage. This result is consistent with the findings in which Mfd and MutY acted together in mutagenesis in the absence of exogenous sources of reactive oxygen species. We also tested the role of Mfd in mutagenesis in starved cells exposed to TBH. We found that, in conditions of oxidative stress, Mfd and MutY worked together in the formation of mutations. Remarkably, Mfd also increased survival when cells were exposed to the oxidant diamide, which limits oxidative damage to proteins. Under this type of oxidative stress, the effect of Mfd effect was independent of MutY which suggests that Mfd affects the expression of antioxidant factors. These results are significant because they compellingly showed that Mfd is a dynamic factor that mediates error-prone repair of DNA as well as expression of protective proteins. These observations redefine the functions of Mfd in DNA repair and point to a novel role in protection against oxidative stress.

Science Podium Session – Room 205
10:45 – 11:00am

The effect of Acid sphingomyelinase on mesenchymal stem cells mediated by receptor tyrosin kinase signaling

Amro Abdalla, Hong Sun | Chemistry & Biochemistry

Acid sphingomyelinase (ASM) is a lipid modifying enzyme that catalyzes the breakdown of a plasma membrane lipid sphingomyelin. Consequently ASM induces changes the composition and signaling throughout the plasma membrane. Previous work in our lab using *C. elegans* and human cancer cells showed that ASM regulates Receptor tyrosine kinase (RTK) signaling. Moreover, previous reports have indicated that RTK signaling; Insulin like growth factor like 1 receptor (IGF-1R) and hepatocyte growth factor receptor (Met) influences mesenchymal stem cells (MSCs) maintenance. Forte et al., 2006 and Xian et al., 2012 showed that Met and IGF-1R respectively exert a critical role in bone development through modulation of MSCs proliferation. Whether ASM regulates mouse MSCs survival and proliferation through modulation of IGF1R and Met signaling is still unknown. My research project aims to elucidate the mechanisms by which ASM regulates MSCs survival and proliferation through RTK signaling. In order to do so, we created an *asm* gene knock out mouse model where ASM is genetically inactivated. Our preliminary data shows that, IGF-1R and Met signaling have been reduced due to loss of ASM. Specifically, during spring 2018, I will be using in vitro excision assay to acutely excise *asm* gene; to confirm the effects of *asm* gene knock out on RTK signaling in vivo. To functionally characterize *asm* knock out in MSCs, I will also test the ability of MSCs from *asm* knock out mouse to migrate in vitro. Furthermore, I will test the ability for MSCs from both mutant and wild type littermate to differentiate into bone forming cells. To achieve this goal, I will be using in vitro genetic approaches and cell migration and differentiation assays.

Science Podium Session – Room 205
11:00 – 11:15am

An Update to Human Walking Mechanics

Michael R. Isaacs, David V. Lee | School of Life Sciences

My research focuses on the mechanical principles that govern human walking. I apply a simplified geometrical analysis of force and motion to determine the mechanical cost of the most widely adopted form of human locomotion: walking. While most people achieve and maintain walking gaits with high rates of success, there are subpopulations that suffer from locomotor impairments due to neuromuscular disease, amputations, and injury. Physicians and specialists who work with people with motor impairments do not possess a simple tool to help them hone in on costly mechanics of human walking. I will demonstrate that a geometrical approach can determine when costs are high and by how much. Our method analyzes the forces applied to the ground and the resulting motion of the body during walking to determine mechanical costs - misdirected forces result in higher costs. As a proof-of-concept, we first apply our analysis to control human walking gaits and then compare the resulting costs to walking gaits of persons with amputations using a single ankle prosthesis. We found striking differences between the populations and propose an updated approach to future comparative gait research avenues. Our findings hope to influence future standard practices in gait rehabilitation, prosthetic design, and healthy human walking.

Science Podium Session – Room 205
11:15 – 11:30am

Thermal motion in ditechnetium heptoxide, Tc₂O₇

Daniel Mast, Keith V. Lawler, Kenneth R. Czerwinski, Frederic Poineau, Paul Forster, Bradley C. Childs, Alfred P. Sattelberger | Chemistry and Biochemistry

The thermal expansion properties of Tc₂O₇ in the solid-state have been investigated by single crystal X-ray diffraction over a range of 80 – 280 K and by ab initio molecular dynamics (MD) from 50 – 600 K. The thermal expansion was experimentally determined to be $248 \times 10^{-6} \text{ K}^{-1}$ at 280 K. The calculations accurately reproduce the experimental crystal structure and thermal expansion within a few percent. Observations of the high melting point and low vapor pressure seems to be at odds with the volatile nature of molecular solids. By understanding the structure and the motion of the molecules in the solid state as the temperature rises and approaches the melt, we explain those interesting properties of solid Tc₂O₇. The mechanism of melting is discussed in the context of the transverse libration motion of the bridging oxygen.

Science Podium Session – Room 205
11:30 – 11:45am

The Fairbanks Spring Mammoth Site, Nevada, U.S.A.

Lauren Parry, Stephen Rowland | Geoscience

We are currently engaged in the excavation of a portion of a Columbian mammoth (*Mammuthus columbi*) from Late Pleistocene groundwater-discharge deposits in Amargosa Valley, Nye County, Nevada, about 100 km northwest of La Vegas. A preliminary radiocarbon date indicates a Last Glacial Maximum age of about 20,000 years. To date we have exposed the proximal ends of both tusks and associated skull material, along with other elements, including at least one scapula. The tusks are each about 17 cm in diameter, which suggests that the animal was an adult male. A ground-penetrating radar study has revealed additional "hot spots" to be excavated. An unusual feature of this site is the orientation of the tusks, which are in life position relative to each other. Anomalous, the tusks are oriented nearly straight down into the sediment, with their proximal ends projecting upward out of the ground. Our preliminary interpretation is that this animal died in a body of water that was deep enough for the bloated carcass to float in an upright orientation, thus allowing the tusks to be oriented vertically. This interpretation is supported by the presence of abundant freshwater gastropods and tiny bivalves in the matrix. The site is on BLM-managed land, and the excavation is being conducted mostly by student volunteers, under permit from the BLM. The project is being supported by a crowdsource fundraising campaign through the UNLV Foundation that has generated more than \$10,000. The success of the fundraising campaign has been greatly enhanced by inviting donors at the \$500 level and above to visit the site and assist with the excavation.

Presentations

Allied Health Sciences, Community Health Sciences, & Medicine Podium Session – Room 207



- 9:00 – 9:15am Marwa K. Maki, Edward Simanton Ph.D, Monica R. Arebalos, Faun Botor, School of Medicine
- 9:15 – 9:30am Saruna Ghimire, Rachelle Rodriguez, Department of Environmental and Occupational Health
- 9:30 – 9:45am Nicole Marmillo, Department of Kinesiology and Nutrition Sciences
- 9:45 – 10:00am Lee-Kuen Chua, Department of Kinesiology and Nutrition Sciences
- 10:30 – 10:45am *Monica Arebalos, Faun Botor, Edward Simanton PhD, Marwa Maki, School of Medicine

Allied Health Sciences, Community Health Sciences & Medicine Podium Session – Room 207
9:00 – 9:15am

Innovations in Medical Education: An Introduction into Student Evaluation Teams as Alternative to Student Surveys

Marwa K. Maki, Edward Simanton Ph.D, Monica R. Arebalos, Faun Botor | School of Medicine

Introduce a novel way of performing course and faculty evaluations by having alternating student evaluation teams replace the course and faculty evaluations completed by all students. Program evaluations in medical schools pose particular challenges. Many faculty members are involved in teaching which entails additional required evaluations compared to traditional undergraduate education. Additionally, the survey's needs and time demands from medical students make them less eager to spend time completing surveys. The result of these challenges is that traditional program evaluation methods at most medical schools lead to survey fatigue and unreliable data. The class is divided into evaluation teams each consisting of a few students. Each evaluation team is assigned a single course and becomes responsible for completing all evaluation forms associated with the course via electronic surveys. For needed changes while the course is ongoing, The Director of Educational Outcomes conducts focus groups with the team. At course conclusion, evaluation team members are free from program evaluation responsibilities for the rest of the year. Students are not overburdened with evaluation surveys. They feel engaged in the course review process and institutional quality improvement becomes transparent. Additionally, current students would be expected to feel less stress given their higher sense of perceived control.

Allied Health Sciences, Community Health Sciences & Medicine Podium Session – Room 207
9:15 – 9:30am

Decline in Telomere Length by Age, Gender, Allostatic Load and Comorbidities in National Health and Nutrition Examination Survey (1999-2002)

Saruna Ghimire, Rachele Rodriguez | Environmental and Occupational Health

Background: Substantial evidence exists for the association between health status and telomere length (TL) but the rate at which TL declines with increasing age is unclear. We aim to assess the cross-sectional rates of age-related TL change and evaluate variability in the rate by gender, chronic stress, and comorbidity in a representative sample of the US population. Methods: Cross-sectional data on 7826 individuals, aged ≥ 20 years with a TL measurement available, were included from the National Health and Nutrition Examination Survey, years 1999-2002. The population rate of decline in TL across 10-year age categories was estimated using crude and adjusted regression. Results: The mean (\pm SE) age and TL of the participants was 45.2 ± 0.4 years and 5.8 ± 0.04 kilobase pairs (kbp), respectively. In an adjusted model, the population rate of decline in TL with age was consistent and linear for only three age categories: 20-29 ($\beta = -0.0196$, 95% CI: -0.0360, -0.0032), 50-59 ($\beta = -0.0200$, 95% CI: -0.0326, -0.0074) and 70-79 ($\beta = -0.0164$, 95% CI: -0.0318, -0.0010) years. In the oldest age category examined (≥ 80 years), the population rate of decline in TL ($\beta = -0.0103$, 95% CI: -0.0412, 0.0207) was highly variable and did not follow a linear pattern. The population rate of decline in TL with age was significantly greater for males and those with high allostatic load and a history of comorbidities. When the population rate of decline in TL was analyzed by gender in 10-year age bins, a fairly consistent yet statistically non-significant decline for males was observed; however, a trough in the rate was observed for females in the age categories 20-29 years ($\beta = -0.0283$, 95% CI: -0.0468, -0.0099) and 50-59 years ($\beta = -0.0216$, 95% CI: -0.0396, -0.0036).

Allied Health Sciences, Community Health Sciences & Medicine Podium Session – Room 207
9:30 – 9:45am

Change in IGF-1 Serum Level Pre-Post Deer Antler Velvet Supplementation

Nicole Marmillo, James Navalta, Brian Schilling, Tedd Girouard, Jennifer Pharr | Kinesiology and Nutrition Sciences

Context: Deer antler velvet has been used in traditional Chinese medicine for thousands of years but has recently gained popularity in Western medicine as an ergogenic aid. According to Oriental medicine deer antler velvet can be attributed to enhancing immune system function, improving athletic performance, increasing muscle recovery, enhancing sexual function, improving disease recovery, and enhancing cardiovascular function. Deer antler velvet is orally taken in pill, powder or spray form. Although a number of health and human performance effects have been attributed to deer antler velvet the scientific rationale behind these beliefs is ambiguous
Objective: The purpose of this study is to examine the effect of deer antler supplementation on IGF-1 serum levels. Design: Double blind study Setting: Exercise Physiology Laboratory Patients or Other Participants: Thirty male and female college aged students (18-30 yrs. old) volunteered for this study. Inclusion criteria included participants able to consume a supplement for 7 days. Exclusion criteria included collegiate athletes.

Allied Health Sciences, Community Health Sciences & Medicine Podium Session – Room 207
9:45 – 10:00am

Enhancing Performance Expectancies Through Visual Illusions Facilitates Motor Learning in Children

Lee-Kuen Chua | Kinesiology and Nutrition Sciences

In a recent study, golf putting performance was found to be affected by the Ebbinghaus illusion (Chauvel, Wulf, & Maquestiaux, 2015). Specifically, adult participants demonstrated more effective learning when they practiced with a hole that was surrounded by small circles, making it look larger, than when the hole was surrounded by large circles, making it look smaller. The present study examined whether this learning advantage would generalize to children who are assumed to be less sensitive to the visual illusion. Two groups of 10-year olds practiced putting golf balls from a distance of 2 m. A projector, suspended from the ceiling, projected the “hole” (10.4 cm in diameter) and 11 small circles (3.8 cm in diameter) or 5 large circles (28 cm in diameter) surrounding the target onto an indoor putting green. After a pre-test, participants performed 50 practice trials, and 2 days later a 10-trial retention test without visual illusions. Manipulation checks confirmed that perception of hole size was affected by the visual illusions. The group with the perceived larger hole demonstrated more accurate putting performance during practice. Self-efficacy after practice was also increased in this group. Importantly, learning (i.e., delayed retention performance without the illusion) was enhanced after practice with the perceived larger hole compared with the perceived smaller hole. The findings replicate previous results with adult learners and are consistent with the notion that enhanced performance expectancies are key to optimal motor learning (Wulf & Lewthwaite, 2016).

Allied Health Sciences, Community Health Sciences &
Medicine Podium Session – Room 207
10:30 – 10:45am

**Medical Students & Population Health: Community
Exploration and Health Assessment Through
Participatory Community Learning**

Faun Botor, Edward Simanton PhD, Marwa Maki |
School of Medicine

Background - “Participatory community learning equips students with public health skills and enhanced understanding of communities. It offers a way to teach public health, while emphasizing the extensive role and societal responsibilities of doctors” (Essa-Hadad et. Al, 2015). UNLV SOM is dedicated to community engagement; students participate in community exploration in the first six weeks of medical school, to provide a foundation for continued community engagement throughout their careers. Objective/Purpose - As part of the Population Health Course, students: Utilize public health data, statistics, surveys, and observation of environmental factors. Utilize interview responses of community stakeholders and health assessment tools. Formulate the basis for clinical questioning and application of evidence-based medicine to provide quality healthcare to individuals and populations. (Culley et. al, 2017).

**Engineering Podium
Session – Room 222**



Presentations

- 8:45 – 9:00am Robabeh Jazaei, Moses Karakouzian, Brendan O'Toole, Department of Civil and Environmental Engineering and Construction
- 9:00 – 9:15am Shahab Tayeb, Department of Electrical and Computer Engineering
- 9:15 – 9:30am Samad Gharehdaghi, Sami F. Moujaes, Department of Mechanical Engineering
- 9:30 – 9:45am Kazi Ali Tamaddun, Ajay Kalra, Sajjad Ahmad, Department of Civil and Environmental Engineering and Construction
- 9:45 – 10:00am Vahid Vahidi, Ebrahim Saberinia, Department of Electrical & Computer Engineering
- 10:30 – 10:45am Lina Chato, Shahram Latifi, Department of Electrical and Computer Engineering
- 10:45 – 11:00am Sayan Sakhakarmi, Pramen Shrestha, Jacimaria Batista, Department of Civil and Environmental Engineering and Construction
- 11:00 – 11:15am Matin Pirouz, Department of Computer Science
- 11:15 – 11:30am Medya Fathi, Pramen Shrestha, Department of Civil and Environmental Engineering and Construction

Engineering Podium Session – Room 222
8:45 – 9:00am

The effect of Multi-Walled, Single-Walled, and Hybrid Carbon Nanotubes on Impact and Tensile Strength of Cement-Based Composite

Robabeh Jazaei, Moses Karakouzian, Brendan O'Toole |
Civil and Environmental Engineering and Construction

Conventional concrete turned to High-Strength or High-Performance Concrete (HSC, HPC) by utilizing smaller particle sizes. For over five decades, fibers of all types have been employed to augment the mechanical properties of cement-based composites. Traditional fibers include, but are not limited to, steel, glass, carbon, aramid, basalt, natural, and synthetic. The application of Carbon Nanotubes (CNTs) in cementitious materials is a newly emerging field. Very recently, nano cement-based composite has been introduced as a replacement alternative where high mechanical properties and low structural weight are required. The aim of this research was to study the compression and impact behavior of cementitious composite with Single-Walled Carbon Nanotubes (SWCNTs), Multi-Walled Carbon Nanotubes (MWCNTs), and hybrid (50% of MWNTs and 50% SWNTs) additives. The variable factor is the percentage of CNTs to achieve the optimum amount of CNTs; 0.2, 0.4, and 0.6% by weight of cement. Due to hydrophobic properties of CNTs, ultra-sonic waves in a sonicator were provided for proper CNTs dispersion in water to make adhesive matrix. The quality control of matrix has been checked through Field Emission Scanning Electron Microscopy (FESEM). The result has shown higher impact and compression strength for cementitious composite incorporating with hybrid CNTs.

Engineering Podium Session – Room 222
9:00 – 9:15am

Discovery of Dynamic Malicious IP Clusters

Shahab Tayeb | Electrical and Computer Engineering

Detecting malicious activity in networks is becoming a critical problem in network security analysis. The goal of this paper is to develop a technique that uses the blacklist to predict which nodes in the network might also be malicious. Protecting users in a network from unwanted traffic can efficiently be done by using Firewalls and NAT devices; however, there is no efficient way to detect suspicious flows leaving the network. If we had the perfect blacklist, then we could simply forbid access to malicious IPs but a perfect blacklist is far from realistic. This paper develops a novel way to detecting suspicious flows in a given network using a probabilistic argument to classify an entire network block as malicious and thus preventing access to them. The propagation technique proposed in this paper allows for some quantity to “spread” through a weighted network. The spread of the quantity depends on the weighted edges. In this paper, the quantity that will spread through our weighted network is the probability of maliciousness of a given node. This paper proposes a novel malicious IP cluster detection algorithm by first grouping related IP addresses using a similarity score and then, comparing the cluster with the existing blacklists to find the malicious ones

Engineering Podium Session – Room 222
9:15 – 9:30am

Computational Analysis of flow field and heat transfer inside the receiver element of a parabolic trough collector carrying supercritical CO₂

Samad Gharehdaghi, Sami F. Moujaes | Mechanical Engineering

The aim of this research is to provide a detailed numerical analysis of flow field and heat transfer inside the heat collecting element of a parabolic trough collector. The parabolic trough collector is used as the boiler in a direct Super Critical Carbon Dioxide (S-CO₂) Brayton cycle. A single collector is modeled and analyzed with different inlet conditions. The working fluid is supercritical since its pressure is increased to above critical pressure in the compressor while its temperature reaches 300 °C after passing through the recuperators and before entering the solar field. For the first time, this research considers both the non-uniform solar radiation irradiance around the trough receiver and the natural convection inside the receiver combined with the nonlinear variations in the physical properties of S-CO₂. Moreover, to investigate the variations in the outputs during a typical day a pseudo steady state scheme is applied. The changes in ambient conditions are so slow compared to the variations in the flow field that in each time step the flow field is considered to fulfill the steady state conditions. Hence, steady state numerical analysis is repeated for five time-steps (8 AM, 10 AM, 12 PM, 2 PM and 4 PM) and the results are graphed. A curve is then fitted to the thermal efficiency graph and outlet temperature of receiver graph to let the user interpolate the middle time steps.

Engineering Podium Session – Room 222
9:30 – 9:45am

Learning Climate - From Unpredictability to Artificial Reality

Kazi Ali Tamaddun, Ajay Kalra, Sajjad Ahmad | Civil and Environmental Engineering and Construction

Hydro-climatic variables have always been considered to be highly unpredictable. To understand the spatiotemporal change in such variables, this study showed how time-series data distributions can be decomposed to its frequency components and the correlation between the factors affecting those changes can be observed visually. Learning the frequency components (or the underlying hidden patterns) of the detected associations can be extremely challenging as the correlations vary at each frequency components and also across time, which results in a huge volume of data. To address this issue, at first, the study applied the concept of wavelet transformation on the historical time-series data of streamflow and snow-water- equivalent of the western U.S. to evaluate their multi-frequency correlation (across time) with the Pacific Ocean climate variability. Later, to learn about the detected associations, the study coupled the decomposed data with artificial neural networks (ANN) - a method known as wavelet-neural- network (WNN). ANN is a machine learning technique that simulates the learning process of human brains by mathematically modeling the information transfer process between multiple neurons. By using a relatively small number of neurons (or nodes), compared to human brains, this technique can learn about the relationships between multiple variables. The current study used this technique and improved its potential by incorporating the decomposed time-series data as the input to the developed WNN model. The findings of this research can help improve confidence in forecasting models that can potentially reduce the risks associated with the breaching of dams, overtopping of floodplains, and extreme flood events.

Engineering Podium Session – Room 222
9:45 – 10:00am

Channel Estimation for Wideband Doubly Selective UAS Channels

Vahid Vahidi, Ebrahim Saberinia | Electrical & Computer Engineering

Reliable high-speed wireless communication is essential for abundant new unmanned aircraft system's (UAS) applications. While orthogonal frequency division multiplexing (OFDM) has been widely used for wideband communications because of its efficiency and its robustness to multipath propagation, high Doppler shift of UAS channels makes the implementation of OFDM challenging for UAS applications. Doppler shift makes the communication channel to vary with time and therefore, destroys the orthogonality between the subcarriers in OFDM and results in inter carrier interference (ICI). To mitigate ICI, channel state information (CSI) is needed at the receiver. In numerous scenarios, UAS wideband wireless channel is sparse. Therefore, compressed sensing (CS) methods can be implemented for the channel estimation. In this paper, both the sparsity of the delay spread and Doppler shift of the UAS payload communication channel are considered for channel estimation and three major adjustments to a regular CS method are proposed in order to enhance the channel estimation performance for high Doppler shift scenarios of UAS. The proposed modifications take into account the precise frequency domain channel model, the Doppler shift statistics of UAS wireless channels, and the ICI effect of the data on the channel estimation precision. Simulation results indicate that the proposed modifications enhance the channel estimation accuracy considerably for high Doppler shift scenarios.

Engineering Podium Session – Room 222
10:30 – 10:45am

Machine Learning and Deep Learning Techniques to Predict Overall Survival of Brain Tumor Patients using MRI Images

Lina Chato, Shahram Latifi | Electrical & Computer Engineering

This paper presents a method to automatically predict the survival rate of patients with a glioma brain tumor by classifying the patient's MRI image using machine learning (ML) methods. The dataset used in this study is BraTS 2017, which provides 163 samples; each sample has four sequences of MRI brain images, the overall survival time in days, and the patient's age. The dataset is labeled into three classes of survivors: short-term, mid-term, and long-term. To improve the prediction results, various types of features were extracted and trained by various ML methods. Features considered included volumetric, statistical and intensity texture, histograms and deep features; ML techniques employed included support vector machine (SVM), k-nearest neighbors (KNN), linear discriminant, tree, ensemble and logistic regression. The best prediction accuracy based on classification is achieved by using deep learning features extracted by a pre-trained convolutional neural network (CNN) and was trained by a linear discriminant.

Engineering Podium Session – Room 222
10:45 – 11:00am

Cost Comparison of Cement Concrete and Polymer Concrete Manholes Used in Sewer Systems

Sayan Sakhakarmi, Pramen Shrestha, Jacimaria Batista |
Civil & Environmental Engineering & Construction

Due to high vulnerability of the cement concrete manholes to chemical corrosion, requiring a need for frequent maintenance and replacement, polymer concrete manholes are used as a substitute in water and wastewater pipelines. Polymer concrete manholes have a longer service life and more resistance to various chemical corrosives than normal concrete manholes. Despite the benefits of using polymer concrete manholes, the higher initial capital cost has been a barrier to wider application in public works. In this study, data was collected for the initial installation costs and replacement frequency to compare the life cycle costs for both types of manholes. The data was collected from the Clark County Water Reclamation District, the public entity responsible for constructing sewer pipelines in the City of Las Vegas. The scope of the cost analysis was limited to the initial capital cost of these two types of pipes used in sewer systems. An initial capital cost data (material, equipment, labor) and as well as replacement frequency data for both types of manholes were analyzed. The results showed that the life-cycle installation cost of polymer concrete pipes was significantly less than that of cement concrete manholes for this sample. However, due to lack of data, a comprehensive life-cycle cost analysis of cement concrete manholes could not be conducted. The findings of this study will help water and wastewater engineers to identify the cost-effectiveness of these two types of manholes.

Engineering Podium Session – Room 222
11:00 – 11:15am

Community Detection and Ranking

Matin Pirouz | Computer Science

One of the important methodologies to understand the structure of complex networks is community detection and analysis. The application of finding such information is in finding relationships and hidden structures in social communities or finding useful correlation biochemical networks. Existing community detection algorithms are either computationally expensive in large-scale real-world networks or require specific information such as the number and size of communities. Another problem with the existing benchmark algorithms is the resolution problem, meaning as the data grows larger the identified community structure loses quality. In this paper, we introduce an edge influenced label propagation algorithm that uses the network structure to create values for the edges. The edges are used later as a guide to create the flow that leads to creating community structure. Next step every node is initialized with a unique label and at every step, each node adopts the label of the neighbor with the lowest edge weight. In this iterative process, densely connected groups of nodes form a consensus on a unique label to form communities. BWLP is tested on numerous real-world data whose community structures are known. It is demonstrated that the BWLB is linear to the order of nodes and hence it is computationally less expensive than what has been possible so far.

**Performance Comparison of Design-Build Projects
for Highways and Buildings**

Medya Fathi, Pramen Shrestha | Civil & Environmental
Engineering & Construction

Design build (DB) is one of the most widely used alternative project delivery methods for constructing buildings and infrastructure projects in the U.S. According to a market intelligence study by RSMeans, 40% of nonresidential construction projects used the DB method in 2013. The use of DB in infrastructure and building projects has experienced a 100 percent increase in the last decade. Various studies have compared project performance between DB projects and traditional design bid build (DBB) projects, and most showed that a cost as well as schedule advantage were the major benefits of DB compared to DBB. However, until now, no studies have been conducted to determine the differences in performance among DB projects or to compare cost growth with schedule growth in these projects. These were the focus of this study. Data from 26 highway and 31 building DB projects were collected, and the cost and schedule growth were compared to determine cost and time effectiveness. The results showed that there was no significant difference between the cost and schedule growth in highway and building projects. When schedule advantage was compared to cost advantage in these types of projects, it was found that owners were receiving significantly higher schedule advantage compared to cost advantage. This finding shows that DB delivery method should be used to save time rather than to save money.

**Social Science
Podium Session A – Room 208B**



Presentations

- 8:45 – 9:00am Sarah MacIntosh, Levent Atici,
Department of Anthropology
- 9:00 – 9:15am Moritz Rissmann, Department
of Political Science
- 9:15 – 9:30am Megan Shope, Kristen Culbert,
Department of Psychology
- 9:30 – 9:45am Michael Moncrieff, Pierre
Lienard, Department of
Anthropology
- 9:45 – 10:00am Trevor R. Pollom, Ibrahim A.
Mabulla, and Alyssa N.
Crittenden, Department of
Anthropology
- 10:30 – 10:45am Laura Werner, Dr. Colleen
Parks, Department of
Psychology
- 10:45 – 11:00am Alex Nelson, Kyujin Yon,
Sogang University, Department
of Anthropology
- 11:00 – 11:15am Kristen N. Herlosky and Alyssa
N. Crittenden, Department of
Anthropology
- 11:15 – 11:30am Erika K. Masaki, Department
of Political Science
- 11:30 – 11:45am Anthony Jordan, Department of
Political Science
- 11:45 – 12:00pm Alek E. Krumm, Russell T.
Hurlburt, Department of
Psychology

Social Science Podium Session A – Room 208B
8:45 – 9:00am

Assessing the Correlation between Bone Artifacts and Body Part Profiles: A Case Study from the Central Anatolian site of Kaman-Kalehöyük

Sarah MacIntosh, Levent Atici | Anthropology

This paper investigates the production of bone artifacts during the Bronze Age (ca. 3000-1200 BCE) at the central Anatolian site of Kaman-Kalehöyük. At this time, small agrarian societies transformed into more complex polities and states, which gave way to a more centralized and specialized market economy. These transformations in sociopolitical and economic organization resulted in other changes as well. For example, animal exploitation patterns began to reflect a more regulated economy to meet food production, distribution, and consumption demands. Urbanized food management systems also had to meet the demands of craftspeople and specialist, if any, who might have preferred certain skeletal elements over others. In a rural site like Kaman-Kalehöyük, craftspeople, in particular, would use bone as raw materials readily and constantly available for production purposes. More specifically, we seek to elucidate whether preferences for specific bone elements reflect changes in the demands for consumer goods such as game pieces, jewelry, furniture inlays, archer's thumb rings, bone shaft loom, and needles. More broadly, we aim to test whether there are correlations between changes in sociopolitical and economic organization and production of bone tools through time.

Social Science Podium Session A – Room 208B
9:00 – 9:15am

Disastrous Voting: How Natural Impact Voting Behavior

Moritz Rissmann | Political Science

Does the electorate punish incumbent political parties for natural disasters? Social scientists have investigated this question and produced somewhat of a paradox. Studies from Barnhart (1925) and Abney and Hill (1966) have started this research program and found that natural disasters have conditional impacts on incumbents electoral performance. This dissertation asks whether electorates punish incumbents for natural disasters and tests this assumption with an unprecedented scope using a cross-country and cross-time statistical analysis. Using an original data set and more sophisticated methodology than previous studies in this research field, I attempt to answer whether the results by Barnhart, Abney and Hill can be generalized beyond the United States of America. Preliminary results suggest that the findings can only be generalized to other societies with low expectations of corruption. Here, incumbents are punished for natural disasters, presumably because the electorate expects them to prevent most natural disasters through good policy. In contrast, societies with high experience (and expectation) of corruption seem to reward incumbents for natural disasters. This happens, presumably, because natural disasters allow governments to appear like the knight in shining armor giving out pork. If this result holds beyond the preliminary analysis, this study might provide a missing link to account for differing findings about electorates punishing or rewarding incumbents across different societies.

Social Science Podium Session A – Room 208B
9:15 – 9:30am

Elucidating the Lasting Influence of Early Pubertal Timing on Eating Pathology: Evidence for Specific Effects on Binge Eating Symptoms

Megan Shope, Kristen Culbert | Psychology

Early pubertal timing predicts disordered eating (DE) in females. Physical changes of puberty (e.g., adiposity) and psychosocial effects (e.g., idealization of thinness) have been presumed to account for early pubertal timing effects on DE; however, biological influences could also be at play. Animal data indicate that gonadal hormones rise and exert organizational (i.e., long-lasting/permanent) effects on neural systems during puberty, which drive individual differences in behavior during adolescence and adulthood. Moreover, the brain is more sensitive to organizational effects of gonadal hormones at a younger age (earlier pubertal maturation). If pubertal gonadal hormones organize neural circuitry to alter DE risk, then early pubertal timing effects on DE would be expected to persist into adulthood, even after controlling for body mass index (BMI) and psychosocial factors. This study investigated this hypothesis in 209 females. Age at onset of menses was the indicator of pubertal timing. Well-validated measures assessed DE and psychosocial factors: pressures for thinness, thin-ideal internalization, and history of weight-based teasing. Early pubertal timing predicted higher binge eating and related symptoms (e.g., loss of control over eating, food cravings), even after controlling for BMI and all psychosocial variables. Pubertal timing was also inversely associated with body dissatisfaction, but this effect was diminished once BMI and psychosocial variables were accounted for. Other DE symptoms (e.g., dietary restraint, excessive exercise) did not vary with pubertal timing. Thus, the long-term link between early pubertal timing and DE is primarily relevant to binge eating symptoms, which may arise from biological rather than psychosocial mechanisms.

Social Science Podium Session A – Room 208B
9:30 – 9:45am

The Application of Moral Norms during Conflict: Commitment or Coordination?

Michael Moncrieff, Pierre Lienard | Anthropology

Morality warrants extensive social cooperation among unrelated individuals, yet during times of conflict the application of typical moral accommodations (e.g., do not harm) contract to an individual's alliance or coalition. It is argued that morality facilitates social interactions by coordinating efforts to punish or exclude violators of implicitly agreed upon moral norms. If morality is sensitive to social coordination, then we can examine why the moral sphere suddenly shrinks during periods of conflict. Thanks to a Fulbright research grant, ethnographic research, including interviews and psychological experiments, was conducted in a region of Croatia affected by the War of Independence. The goal was to examine how aspects of the social environment such as ethnic affiliation, coordination, and relational mobility affect moral reasoning during times of peace and conflict. Results indicate that beyond the effects of ethnic identification and urban/rural living, social coordination and relational mobility significantly affect moral reasoning. Further implications of the research findings and how these variables might affect behavior before, during, and after periods of ethnic conflict will be discussed.

Social Science Podium Session A – Room 208B
9:45 – 10:00am

Hadza Foragers: Transition of the Last Hunter-Gatherers

Trevor R. Pollom, Ibrahim A. Mabulla, and Alyssa N. Crittenden | Anthropology

Hadza foragers are often cited as a semi-nomadic hunter-gatherer society, living a lifestyle similar to the human environment of evolutionary adaptation. Humans have evolved as hunter-gatherers, and the Hadza are often cited as the most accurate sample of our Pleistocene ancestors. However, the Hadza are rapidly transitioning into a sedentary lifestyles, becoming more involved in a market society, and have increasingly greater access to corn and other market foods. This study has utilized a mixed-methods approach to begin baseline investigations into the effect of nutrition transition on Hadza foragers. Focusing on Hadza juveniles aged 7-15, this study has recorded interview, body composition, physical fitness, and foraging returns data of Hadza children living in three bush camps and one remotely located village. Our results indicate that Hadza juveniles are now less productive foragers than what is indicated in the ethnographic record, and suggest that the Hadza be designated “mixed-subsistence foragers.” While our study cannot provide an entire profile of juvenile diet, interview data does suggest that caloric needs previously being met by wild foods are now available in the form of corn and other agricultural products. These results, when viewed in conjunction with other available biological data, are important for understanding the directionality of Hadza health as they transition away from their traditional foraging lifestyle. Also, these data provide important documentation for human history, as we are witnessing the last hunter-gatherers give up their foraging lifestyle and begin practicing modern styles of living. This work is supported by the National Science Foundation under grant numbers IIA-1301726 and 1539843 and the National Institutes of Health under grant number 8 P20 GM103440-11.

Social Science Podium Session A – Room 208B
10:30 – 10:45am

Forgetting distractors: An investigation of competing theories of inhibition and decay in working memory

Laura Werner, Dr. Colleen Parks | Psychology

What happens to distracting information in working memory when it needs to be forgotten? According the Time-Based Resource Sharing model (TBRS; Barrouillet & Camos, 2012; 2015) they passively decay over the course of time, whereas the Serial Order Box model (SOB-CS; Oberauer, 2012) suggests that they must be actively removed from working memory space. Recently, there have been studies published supporting both of these models. However, it is difficult to compare their conflicting results, because each study used different methods (Dagry, Vergauwe, & Barrouillet, 2017; Oberauer & Lewandowsky, 2016). For that reason, I will combine the methods from each study in order to investigate which model best predicts distractor forgetting. I will also explore whether there are individual differences in distractor forgetting, and whether the results lend support to one model over the other. Thus, the purpose of this research is to investigate the processes responsible for forgetting distractors, while also examining the assumptions made by the TBRS and the SOB-CS model.

Social Science Podium Session A – Room 208B
10:45 – 11:00am

South Korean Romantic Love in Cross-Cultural Perspective

Alex Nelson, Kyujin Yon, Sogang University | Anthropology

This paper draws on an online survey of 151 participants in South Korea and 14 months of ethnographic fieldwork exploring South Korean conceptualizations of romantic love. By comparing Korean conceptions to love to those documented in other cultural contexts using similar measures, we are attempting to distinguish the universal aspects of romantic love from those aspects which are culturally specific. By drawing on measures developed by Munck et al. (2010) For the US, Russia and Lithuania, and by Jankowiak et al. (2016) For China, we tested the findings of these two studies in an additional non-western context. In this paper we take our study a step beyond our predecessors by utilizing qualitative analysis from interviews and comparing quantitative demographic data which allowed us to interpret in greater nuance the conclusions of the prior studies, particularly in regard to two key gender differences we found Koreans held in common with China, the first regard men and women's discourse about the altruistic nature of romantic love, the other regarding gender differences in Korean's attitudes towards to relationship between the sentiment of love and the practical realities of tying one's financial destiny to another person. We find that these gender and cultural differences exhibited in South Korea and China reflect these societies' continued struggles to reconcile systemic inequalities, stemming from historically patriarchal social structures, and the egalitarian ideals of their emergent romantic love ideologies.

Social Science Podium Session A – Room 208B
11:00 – 11:15am

Maternal Breastfeeding Practices and Implications of Social Change among the Hadza Foragers

Kristen N. Herlosky and Alyssa N. Crittenden | Anthropology

Breastfeeding immediately following delivery is both advantageous for the mother and infant, as it facilitates bonding, oxytocin release from nipple stimulation, increased likelihood for lactation longevity success, and immunological benefits. Colostrum, the first fluid produced by new mothers, is different in composition to breast milk and may provide immunologic functions. The aim of this study was to assess existing and changing maternal breastfeeding patterns and attitudes among adolescent and multi-parous mothers among the Hadza Foragers of Northern Tanzania. Hadza women report that they traditionally engaged in long-term breastfeeding practices and colostrum consumption but that these patterns are changing. Here, we report on data extracted from semi-structured interviews of 83 mothers residing in 6 village camps and 7 bush camps. The Hadza are undergoing nutrition transition and social change as they struggle to maintain land rights and rights to personhood as a minority population in a low-income country. Their routine interaction with missionaries, NGOs, tourists, government agencies, researchers, and health care providers are likely associated with this change in breastfeeding practices, as many women report that they have heard that colostrum has negative consequences for their infants. These data serve as part of our pilot study for a much larger future study on the ethnography of birth, postpartum health, and weaning practices among Hadza mothers. The data presented here will also explore how the continuous interaction among these outsider groups might have unintended consequences for mothers and babies.

Social Science Podium Session A – Room 208B
11:15 – 11:30am

Noncompliance in Multilateral Environmental Agreements: The Case of CITES

Erika K. Masaki | Political Science

Some scholars argue that multilateral environmental agreements are created by powerful countries, often at the expense of developing nations. At the same time, these developed states often complain of a lack of compliance by smaller states. The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), which attempts to regulate trade of species threatened by extinction, is no exception to this power dynamic. Despite positive efforts to conserve biodiversity through trade regulations, the CITES still suffers from lack of compliance with the terms of the treaty. Some scholars have identified lack of will as the reason for non-compliance, but the results of this paper suggest otherwise. By conducting a survey of the Managing, Scientific, and Enforcement Authorities of CITES, I have found that lack of political will is hardly a sufficient explanation. Rather, lack of compliance stems from issues as simple as the inability to access or use technology to problems as complex as government corruption. Using grounded theory, I have discovered several patterns in the responses of developing nations that help to explain noncompliance in environmental agreements. Consequently, this paper has implications not only for improving compliance with and participation in the CITES agreement itself, but also for the design and implementation of other multilateral environmental agreements.

Social Science Podium Session A – Room 208B
11:30 – 11:45am

You're Out! Explaining Non-Criminal Diplomatic Expulsion

Anthony Jordan | Political Science

In past work I have identified a relationship between the presence of a radical, populist left (New Left) president in Latin America and the expulsion of representatives of the United States under the theory that they expelled as a low cost, low risk move to signal to their constituents that they were following through on campaign rhetoric to stand up to the regional hegemon. Past work theorized that there were domestic gains to be made while this paper will attempt to identify those gains. This paper will examine practical reasons for these expulsions. The argument advanced is that these expulsions happen close to elections to attempt to maximize the effect of the message sent when a president expels a representative of the United States. Using statistical estimation, while controlling for trade and official development aid, on data from 1991 to 2016, to control for the Cold War, on 20 Latin American states, this paper will suggest that presidents expel both before and after elections, but for different reasons. Pre-election expulsions are made as an attempt for electoral gains while post-election expulsions are made as a signal of the faithfulness of the president to their anti-American rhetoric.

**Becoming a Mother: An Account from Everyday
Inner Experience**

Alek E. Krumm, Russell T. Hurlburt | Psychology

Pregnancy has been called a “psychological event,” yet science has largely focused on physical and physiological (rather than psychological) factors related to pregnancy. Recent neuroscience research has begun to address this gap, finding significant changes in brain matter among mothers from pre- to postnatal examination: Postnatal mothers are said to evidence “synaptic trimming” related to improved social cognition, potentially an evolutionary adaptation for motherhood. If science is truly to address the psychological impact of pregnancy and childbirth, it must necessarily begin with studies of careful observation, which have never been done. The present study enters that arena by using descriptive experience sampling (DES) to explore my (A. Krumm) inner experience across pregnancy and after childbirth. DES is a method that employs a random beeper to capture naturally occurring ongoing inner experiences (thoughts, feelings, sensations, and so on). Results show the significant influence of pregnancy, childbirth, and parenthood on my inner experience the way a baby “barges” into the minutiae of everyday momentary experience. Of the 142 during-pregnancy samples, 24 (17%) were baby-related, nearly all of which (92%) were in the last trimester. Of the 63 post-birth samples, 34 (54%) were baby-related. In these random samples of experience, we witness some of the ways I become experientially attuned to all things baby. Examples include experiences of: my body during pregnancy, primal-like instincts and awareness, attunement to baby’s needs, relating to and “working out” parenthood with my husband, and many more.

**Social Science
Podium Session B – Room 208C**



Presentations

- 8:45 – 9:00am Maggie Bukowski,
Department of History
- 9:00 – 9:15am Manuel Rodriguez-Perez,
Department of World
Languages and Cultures
- 9:15 – 9:30am Vanessa Nunez, Department
of Sociology
- 9:30 – 9:45am Shae Cox, Alan Mattay, and
Billy Marino, Department of
History
- 9:45 – 10:00am Matthew LeClaire,
Department of Sociology
- 10:30 – 10:45am Erick B López, Takashi
Yamashita, Department of
Sociology
- 10:45 – 11:00am Neil Dodge, Department of
History
- 11:00 – 11:15am Stephen Bohigian,
Department of History
- 11:15 – 11:30am Lydia E. Maas, Department
of World Languages and
Cultures
- 11:30 – 11:45am Jessica Fasano, Department
of Sociology
- 11:45 – 12:00pm Lizette Arellano, Department
of World Languages and
Cultures

Social Science Podium Session B – Room 208C
8:45 – 9:00am

Archiving Personal Memories: Scrapbooks, Advertising Trade Cards, and the Creation of Memory in the United States, 1860s-1900

Maggie Bukowski | History

This research examines how and why nineteenth-century Americans saved advertising trade cards and pasted them into personal scrapbooks. The research traces how advertising trade cards proliferated with the invention of new printing and coloring techniques during the late 1800s and why children and women collected, saved, and created memories with them. The goal of this research is to understand why people took a consumer object and integrated it into a memory saving device, the scrapbook. The research uses material culture, such as magazines, newspapers, scrapbooks, and trade cards, to investigate how nineteenth-century people were already primed to put printed material, such as newspapers, into scrapbooks and how advertising trade cards were incorporated into the understanding of what should be saved and remembered. The prescriptive advice printed in newspapers telling people to scrapbook is compared with actual scrapbooks from the time revealing the practice to be wide spread and the trade card an important component. The research reveals that nineteenth-century Americans understood a need for memory saving devices and saw scrapbooks as the perfect medium. They were aided in the creation and understanding of memories with consumer trade cards that were used to help aid the creation of visual, personal memories.

Social Science Podium Session B – Room 208C
9:00 – 9:15am

Aspects of an antagonist in "Nada"

Manuel Rodriguez-Perez | World Languages and Cultures

Aspects of an antagonist in "Nada" In *Nada* (1945), the author Carmen Laforet writes a complex work that places her figures during the Franco dictatorship in Spain. The characters are living examples of the effect of oppression in a country in the midst of radical change. Laforet utilizes various themes, in particular the conflict between those who would defeat and those who would be defeated, as well as situations that would imbue hunger and miseries onto the morality of its citizens. Of all of Laforet's creations, the character of Roman requires an in-depth study to fully understand his role in those conflicts. He is represented with three different "faces" that share characteristics with the aspects of three personas – Orpheus, Xochipilli, and Ena – which define him psychologically and contribute to show how this stimulus causes an evolution in all of the characters in the strange world they all inhabit. Every aspect serves as a window into the life of lies and secrets that the antagonist has created and meticulously manipulated. In this analysis I propose to demonstrate that the aforementioned aspects will clearly define Roman and show that he is the paradigm of an antagonist in the post-war Spanish novel.

Social Science Podium Session B – Room 208C
9:15 – 9:30am

Nothing About Them, Without Them: A Community Based Participatory Research (CBPR) Approach

Vanessa Nunez | Sociology

The summer institute I attended at the University of New Mexico is highly ranked and one of the few in the nation that focuses on Community Based Participatory Research (CBPR) approaches. I attended the institute in order to gain more knowledge on CBPR approaches to research and how we could implement it into a study that was recently completed on Undocu/DACAmented student access and barriers to access resources at “Desert Rose University”. Community based participatory research is a collaborative research methodology that privileges the voices of the community members and includes them in all stages of the research project from the writing of the research question to the dissemination of the results. While there are many variations of CBPR, this study design aligns closely with the CBPR assumption that community members are equal collaborators and experts of their lived experiences in the project. Therefore, the community members have been involved in writing of the research questions, writing of the interview/focus group questions, writing of/review of the research protocol, and have been trained and CITI certified and are members of the research team. In this presentation, I will discuss how CBPR was implemented in our research and our experiences utilizing CBPR for this ongoing project.

Social Science Podium Session B – Room 208C
9:30 – 9:45am

Levels of Collaboration

Shae Cox, Alan Mattay, and Billy Marino | History

Collaboration is an unusual practice in the history profession. Historians isolate themselves in their research, test ideas at conferences, and make brief sojourns to libraries away from home. While academic conferences and scholarly publishing offer historians an opportunity to share their research with other academics, we must expand our understanding of “collaboration” beyond the peer review process. The profession is moving, albeit slowly, toward more inter-departmental, co-authored, and cooperative relationships. The 2004 JAH roundtable highlighted the beneficial aspects of “Interchange” between scholars, and the various forms in which we present our research. Historians increasingly venture outside their offices, classrooms, and disciplines to collaborate on popular representations of history such as films, games, preservation sites, and graphic histories. These kinds of collaborations shift away from the lecturer-audience relationship, engage the public with different perspectives, invigorate our field, and invite people to share in the appreciation and study of history through different mediums. Working with various people and institutions, our panel concluded that collaboration is a necessity for producing physical and digital venues for teaching history. Two of our panelists discuss their experiences working on the museum exhibit Ready to Roar. Shae Cox, the Project Manager, provides an in-depth discussion of the logistics for overseeing the accessioning, housing, handling, and display of material objects from six museums as well as individual lenders from across the nation. Alan Mattay, Ready to Roar’s Digital Curator, examines the collaborative process of creating an expanded digital exhibit for UNLV’s public history website.

The Influence of Extracurricular Participation on the Different Forms of Bully Victimization

Matthew LeClaire | Sociology

The act of bullying can be direct and physical, direct and verbal, or indirect (e.g. spreading rumors or excluding individuals from participation) (Nansel, Overpeck, Pilla, Ruan, Simmons-Morton, and Scheidt 2001). Traditional forms of bullying include direct and indirect bullying. Cyberbullying is a postmodern variant of bullying in which adolescents use email, text, social networking sites, and online gaming platforms to victimize. This study examines the connection between extracurricular participation and the different forms of bullying using the Bureau of Justice Statistic (BJS) 2013 National Crime Victimization Survey (NCVS) School Crime Supplement (SCS). Of 5,780 students, 22 percent of students reported being victims of direct bullying (n=1,269). Of 5,778 students, 20 percent of students reported being victims of indirect bullying (n=1,151). Of 5,755 students, 9.1 percent of students reported being victims of cyber bullying (n=522). Past studies indicate that extracurricular participation decreases individual likelihood of being victimized through bullying. This study finds support for past research, but also finds that the extracurricular activities are stratified. While participation in athletics and academic clubs decrease the likelihood of direct and indirect bully victimization, the current study also finds that all forms of extracurricular activities increase the likelihood of cyber bully victimization (athletics 5 percent greater odds [b = .1, SE = .002, p < .0001] and academic clubs 8 percent greater odds [b = .1, SE = .002, p < .0001]). Cyberbullying is an emergent trend in adolescent behavior and aggression, and these results confirm the importance of its associations with extracurricular activities.

The relationship of education and acculturation with vigorous intensity leisure time physical activity by gender in Latinos

Erick B López, Takashi Yamashita | Sociology

Latinos have poorer health outcomes among certain conditions (e.g. diabetes, obesity, mental health) compared to non-Latino Whites in the U.S., in part due to difference in the amount of physical activity, which are heavily influenced by sociocultural factors such as educational attainment and acculturation. Vigorous-intensity leisure time physical activity (VLTPA) may provide health benefits with a shorter amount of time than moderate-to-light physical activity. However, VLTPA has been significantly understudied compared to LTPA in general. The purpose of this study is to examine the associations between educational attainment, acculturation, and VLTPA by gender among Latino adults in the U.S. Design: Nationally representative samples of Latino adults aged 25 years and older (n = 4393) from the 2010 National Health Interview Survey were analyzed. VLTPA was measured as the number of hours per week of VLTPA consisting of heavy sweating or large increases in breathing and heart rate. Acculturation was measured as the degree to which the English language versus the Spanish language was spoken most often. The zero-inflated Poisson regression model was constructed using the full information maximum likelihood estimation and controlling for a series of sociodemographic characteristics and relevant health behaviors. Results: Educational attainment was positively associated with VLTPA among Latino adults [exp(b) = 1.09, p < 0.05]. Similarly, greater acculturation was associated with greater hours/week of VLTPA [exp (b) = 1.10, < 0.05]. Lastly, the effect of educational attainment on VLTPA significantly varied by gender. Conclusions: Education had a positive association and acculturation had negative association with the hours/week of VLTPA among Latinos.

Social Science Podium Session B – Room 208C
10:45 – 11:00am

We are a Diné Nation: People and Territory, 1846-1868

Neil Dodge | History

My research examines Diné (Navajo) claims to sovereignty in the mid-nineteenth century Southwest. I argue that American claims of control over the Southwest did not supersede Diné claims to territorial and jurisdictional sovereignty. Rather, the Diné consistently reminded the Americans that they were a separate people and fully capable to exercising their own authority and power. The significance of this work can be found in the primary documents I have examined. Over and over, American military and territorial officials reference a robust of Diné population and their extensive wealth. One official goes so far as to call the Diné's Mountain Lords and the Scourge of New Mexico. This points to the significant power and influence Diné wielded at this time. I argue that the Diné were a formidable stumbling block to American westward expansion. My work brings together New Mexico territorial records, records from the Ninth military department, correspondence from Indian agents, newspapers, and oral history to find points of contact between the Diné and United States. It is at these points of interaction where Diné leaders articulate their vision of sovereignty. My work is part of a growing interdisciplinary movement that seeks to reclaim the indigenous ethos and experience.

Social Science Podium Session B – Room 208C
11:00 –11:15am

Blurring the Line: William Parker's LAPD and the Surveillance of Postwar Black South Central

Stephen Bohigian | History

This paper examines the development of Los Angeles Police Department (LAPD) surveillance during Chief William H. Parker's term before the Watts Rebellion in 1965. It demonstrates that Parker constructed a system of both physical and bureaucratic surveillance to track and police the postwar black residents of South Central as a method of urban social control. LAPD surveillance emerged, in part, as a product of Parker's adherence to professionalism, a policing philosophy predicated upon bureaucratic efficiency, the use of modern technology, political independence, and a military-like code of conduct. Convinced of the infallibility of crime statistics, Parker formed new bureaus and divisions to process, store, and analyze crime statistics and create geographic crime maps. These statistics and maps numerically, spatially and geographically defined South Central divisions—and those living in them—as “high crime” and “dens of vice.” Equipped with this information, Parker's highly-mobile, two- and one-man automobile patrol and vice units flooded black South Central, stopping and arresting anyone deemed “suspicious.” These “preventative” and “proactive” policing strategies funneled black Angelenos into the LAPD's criminal database and state criminal justice system—often despite being convicted of a crime. Policies and reform measures such as these effectively blurred the line separating policing and surveillance in the immediate postwar years. By 1965, surveillance had ceased being a mere tool or strategy of the police officer and had become fully integrated into everyday policework. In short, surveillance became a way to police, control, and track black “criminal” populations.

Social Science Podium Session B – Room 208C
11:15 – 11:30am

**The Catalan Identity and Culture in the films
“*Companyys, a procès a Catalunya* and *Salvador*”: The
Parallel Lives of the Protagonists**

Lydia E. Maas | World Languages and Cultures

Spain is a country which possesses such a rich history that upon closer inspection, one truly discovers how multifaceted it is. The official languages consist of four: Euskadi, Spanish (Castilian), Gallego, and Catalan. This last one is of particular interest as in recent times it has stirred up some of its own controversy. Catalan is a language primarily spoken in Catalonia, one of the autonomous communities of Spain which boasts its own heritage, culture, and identity. The history between Spain and Catalonia hasn't always been of peace and there are some underlying tensions that have yet to be resolved. The Franco regime sought to unite all of Spain as one and eliminate any threats that opposed this agenda. This did not leave much room for those regions like Catalonia to enjoy and develop their own cultural heritage. The purpose of this study is to examine Catalonia: its history, identity and language and how these aspects are represented in their cinema. With the aid of two films, *Companyys, a procès a Catalunya* and *Salvador*, the aim of this work is to provide an in-depth analysis of how the two protagonists of these films undergo a very similar development and journey and how their struggles are a reflection of the struggles the Catalan people have and do endure to this day.

Social Science Podium Session B – Room 208C
11:30 – 11:45am

**Youth Identity Formation & Participation in High
School Marching Band**

Jessica Fasano | Sociology

Based on data from semi-structured interviews of marching band students, their parents, and band directors, I seek to better understand the ways that marching band culture enables students to construct and negotiate their identities within and outside of the marching band. The literature on youth identity formation in similar settings suggest that negotiations vary across race, class, and gender. Through preliminary analysis of these interviews, I identify common themes and highlight differences in experiences. These findings further our understanding of the impact of extra-curricular activities on youth identity formation and indicate how such participation may enrich the educational experiences of adolescents, increasing the likelihood of graduation and success in higher education.

Shakespearean Tragic Heroes: Othello, Hamlet, and the Cervantine Cardenio

Lizette Arellano | World Languages and Cultures

In recent years there has been a resurging interest in a play entitled *The History of Cardenio*, which is attributed to the English dramatists William Shakespeare and John Fletcher. This play, which was performed by the London theater company, *The King's Men*, in 1613, has since disappeared. To this day, its content remains unknown, however, a scene from Miguel de Cervantes' *Don Quixote*, in which a character by the name of Cardenio describes his misfortunes, is widely accepted as the lost play's main source. Two individuals have come forward claiming to have found the lost play: in the early 1700's, Lewis Theobald claimed to be in possession of the original manuscripts with which he wrote *Double Falsehood*; in 1990, Charles Hamilton declared *The Second Maiden's Tragedy* as the original. Neither claim received support perhaps because their respective plots greatly differed from that of the "Cardenio" episode in *Don Quixote*. Because these works have been discredited, for the purpose of my study their content will be disregarded. The invitation is rather to consider why, of all the intercalated stories in *Don Quixote*, did Shakespeare choose Cardenio as the protagonist of one of his plays. By making a comparative analysis between Cardenio's story in *Don Quixote* and some of Shakespeare's most iconic tragedies, specifically *Othello* and *Hamlet*, I conclude that the main characteristics of Cardenio are those of a typical Shakespearean tragic hero, thus suggesting that the lost play was indeed a tragedy.

**Social Science
Podium Session C – Room 209**



Presentations

- | | |
|-----------------|--|
| 9:00 – 9:15am | Timea Sipos, Department of English |
| 9:15 – 9:30am | Olufunke Ogundimu, Department of English |
| 9:30 – 9:45am | Nicholas Lepp, Communication Studies |
| 9:45 – 10:00am | Claudia Chiang-Lopez, Communication Studies |
| 10:30 – 10:45am | Gabrielle Williams, Department English |
| 10:45 – 11:00am | Ryan Hyun, Department of English |
| 11:00 – 11:15am | Darrian Carroll, Communication Studies |
| 11:15 – 11:30am | Joe Milan Jr, Department of English |
| 11:30 – 11:45am | Patrice Bisbee, Communication Studies |
| 11:45 – 12:00pm | Karli Nave, Joel Snyder, Erin Hannon, Department of Psychology |

Social Science Podium Session C – Room 209
9:00 – 9:15am

Translation

Timea Sipos | English

I would give a reading of the translation that I will have completed by the time the date of the presentation arrives. This translation will be a result of my trip to the international literary conference in Budapest for which I have received funding from GPSA. While I am not yet certain which Hungarian author's short story I would read, I can guarantee that it would be the work of an emerging, contemporary writer whose work would be of a very high quality. Young Hungarian authors often write in a style that is easily accessible to an international audience, and it is a pleasure for audiences of all backgrounds to read or listen to their work, as often it is very imaginative, experimental, and breath-taking. The translations of mine that I have read so far, at the UNLV Creative Writing MFA's monthly reading series, Neon Lit, and at the 2017 American Literary Translators Association Conference in Minneapolis, have been very well received. Thus, I am confident that my reading would be engaging and that it would function well as a palate cleanser for the audience between program events. As an added benefit, it may also arouse the interest of the audience in my work as a literary translator of Hungarian.

Social Science Podium Session C – Room 209
9:15 – 9:30am

Memories of Many Rivers

Olufunke Ogundimu | English

Olufunke Ogundimu is an MFA (Fiction) candidate in the English department. Her MFA thesis, "Memories of Many Rivers" seeks to demystify the history of lives hidden in religion, myth, and legend, and also to reimagine Old Oyo's interactions with surrounding Yoruba sister states, and the neighbouring kingdoms of Borgu and Nupe, especially politics, trade, art, wars, and diplomacy. With the invaluable support she got from the UNLV LIED librarians, she was able to access to a wide range of texts, but encountered huge gaps in the history of the Yoruba, Nupe, and Borgu kingdoms of this time, 13th – 15th century. During her research, she visited the palaces of Oyo and Ife, the Osun Osogbo grove, the Old Oyo national park, and museums in Onikan, Ife, and Oyo. She interacted with local people and they recounted myths and legends preserved in culture and art. She listened to chief priests, and Arokin, palace historians, who preserve Yoruba history and traditions in oral archives recite the genealogy of royalty and commoners. She also had the opportunity to converse with Yoruba scholars and connect with mentors who helped her decide on an area of focus for a PhD in African studies, the next step in her academic pursuits.

Social Science Podium Session C – Room 209
9:30 – 9:45am

A critical review and application of Judith Butler's Undoing Gender

Nicholas Lepp | Communication Studies

This paper presentation critically analyzes Judith Butler's Undoing Gender, detailing the book's central arguments and value as a critical praxis. In doing so, I first unpack Butler's primary arguments, mainly focusing on her challenge of modern gender prohibitions through what I have called a queer Foucauldian analysis, given that her theories here draw heavily from her previous work in queer theory and from Michel Foucault's analysis throughout his works. In detailing this queer Foucauldian analysis, I explain the two major premises to her arguments, mainly that neither agency nor social norms are individual but rather tied to our existence as social beings, and that gender is something that we do at the same that it is being done unto ourselves (for Butler, this means that gender is performative). I then explain the various topics which Butler applies this analysis to throughout her book, focusing primarily on her applications of it towards humanism, the gender binary, gay marriage, and feminism. Finally, I apply her queer Foucauldian analysis to the recent Netflix show Big Mouth, focusing primarily on the very first scene of the show, arguing that through Butler's critical lens, the show invites viewers to think about puberty in a radically queer and critical manner.

Social Science Podium Session C – Room 209
9:45 – 10:00am

Sensemaking through Community: My Favorite Murder fandom

Claudia Chiang-Lopez | Communication Studies

The true-crime comedy podcast My Favorite Murder has developed a fanbase. This community allows fans to share their fears and their stories, whether they have been victimized themselves or they are simply intrigued by true crime narratives. I examined the community through narrative performance theory and symbolic convergence theory. Narrative theories assume humans use stories to sense-make their identity, relationships and life. Storytelling is the performance which enables members to enact their identity and group membership. One purpose of murderinos's storytelling is to create and reaffirm the murderino community and their individual identities as murderinos. Symbolic convergence theory helps us analyze the way murderinos's shared symbols reflect their views of the world and their identities. I discuss the role of murderinos in their narratives, the constraints placed on stories, their use of symbols, and how narratives become a way for murderinos to do community. Observation was conducted through the My Favorite Murder Facebook page, which serves as an interactive communication channel for members. This study extends the research on narrative performance theory and symbolic convergence theory, to voluntary group and online communication.

Social Science Podium Session C – Room 209
10:30 – 10:45am

Contemporary Cuban Poetry: Dulce Maria Loynaz and Linda de Feria

Gabrielle Williams | English

Recently, the US government has reinstated travel and trade restrictions between the US and Cuba that were previously opened under the Obama Administration. This, in combination with five decades of embargo constraints, has continued to adversely affect the Cuban people and Cuba's economy. Limiting travel for US citizens and Cubans threatens what was the start of a flourishing cultural exchange between artists and writers. For the first time since the Revolution, The Annual International Havana Poetry Festival invited American writers to visit and participate. This past year I spent two months in Havana, the island's capital, researching contemporary Cuban poetry. Dulce María Loynaz is a canonical Cuban poet whose most prominent writing came during the 1930s -50s. Her first book was published shortly after women received the right to vote in Cuba in 1935. Her poetry touches on subjects of the Revolution, Socialism, and Feminism. Lina de Feria has been writing poetry for decades in Cuba. She still resides and writes there today. While her work also speaks to the pitfalls of a socialist government and the state of poverty many Cubans live in, de Feria's poetry centers on the loneliness that comes from growing up on an island isolated from the rest of the world due to decades of political upheaval and foreign obstruction. My research is translating the poetry of these two poets into English with the intent to continue this important conversation between Cuban and American writers so that both literary worlds are enriched rather than stymied.

Social Science Podium Session C – Room 209
10:45 – 11:00am

Do Japanese Millennials Represent A New Lost Generation?

Ryan Hyun | English

During my six-week stay in Tokyo, Japan in Summer 2017, I researched the socioeconomic, as well as emotional, status of millennials living in the city. Information collected through research and firsthand interaction with Japanese youth has aided progress on my MFA thesis (a novel exploring themes of alienation, disenfranchisement, and depression amongst millennials) as well as a critical essay discussing the presence of 'lost and depressed' millennials as an international (and not simply North American) phenomenon. After frequently reading English-language articles propounding a view that Japanese millennials were somehow the 'most depressed and unhappy' young adults in the world, my goal became to discern to what extent these claims were true. My research and personal interviews with young adults in Japan has led me to conclude that, while many journalists' claims are based on legitimate socioeconomic statistics and markers, allegations of crippling depression and hopelessness within the 20-35 age set seem hastily drawn, and generally serves as a distortion on Western lens examining contemporary Japanese society.

Social Science Podium Session C – Room 209
11:00 – 11:15am

Revolutionary Praxis from within San Quentin Prison: A Rhetorical Analysis of George Jackson's Blood in My Eye

Darrian Carroll | Communication Studies

Many a rhetorical author has lamented at the disconnection between rhetoric and its material implications. Michael Calvin McGee, when attempting to describe the rhetorical milieu, can be quoted as saying “I grit my teeth and shudder as I say it, but I think the term post-modern condition is likely to prove best.” As a response, this paper endeavors to be an intervention either as corrective or compliment to the “post-modern condition” that seems to be overtaking rhetoric. This essay focuses on the conversation between George and Jonathan Jackson in George Jackson's Blood in My Eye to highlight that material problems require sustained material solutions. The 30 pages that this analysis focuses on highlight the beauty and despair held within Blood in My Eye. This essay adapts the rhetorical lens of antithesis to make the case that the conversation between George and Jonathan is instructive in how to create and sustain revolutionary praxis. Through analyzing the Jackson's rhetoric this essay produces an account of how material conditions can constrain and also create rhetorical opportunities. Particularly, the section on revolutionary praxis highlights how the depravity of George's position while writing Blood in My Eye contributed to the directness and honesty of the book.

Social Science Podium Session C – Room 209
11:15 – 11:30am

Reflections on the Practice of Writing: Transnational Fiction

Joe Milan Jr. | English

What does it mean to be a transnational writer? What writing processes, creative considerations, and cultural reflections change when a US writer wields their craft in English while living in Asia? After nine and a half years living and working as a US creative writer in South Korea, I try to answer these and other questions regarding the nature of dislocation, borders (literal and figurative), and reinvention when it comes to writing literary fiction with this talk.

Social Science and Hospitality Podium Session C – Room 209
11:30 – 11:45am

Problematic Financial Communication in Romantic Relationships: An Intervention Proposal Grounded in the Theory of Motivated Information Management

Patrice Bisbee | Communication Studies

Constructive financial communication between romantic partners is crucial for partners who wish to plan for their future and make sound financial decisions; however, research has shown that financial communication between romantic partners is problematic. Romantic partners often do not discuss financial information with one another, and when financial communication does occur, it often results in negative consequences. Drawing from the theoretical foundation of the Theory of Motivated Information Management (TMIM), this paper proposes a study to test an intervention that may help to mitigate the negative consequences of problematic financial communication between romantic partners. The proposed intervention involves a workshop designed to manipulate romantic partners' communication efficacy and coping efficacy across four treatment groups in an effort to increase direct financial information seeking strategies between romantic partners. A 2 x 2 experimental factorial design will be used to test the intervention. Changes in information seeking behaviors will be measured via a comparison analysis of pretests completed by participants at the start of the workshop and posttests completed via email two weeks following the workshop.

Social Science and Hospitality Podium Session C – Room 209
11:45 – 12:00pm

21. Musical rhythms induce long-lasting beat perception in older children but not younger children

Karli Nave, Joel Snyder, Erin Hannon | Psychology

Perceiving rhythmic structure in auditory patterns is critical for listeners, assisting with synchronized movement (e.g., walking and dancing), as well as music and speech perception. It is assumed that listeners perceive a beat (periodic pulse) from regularly occurring events in the musical surface and sustain this percept once it is inferred. However, few studies have attempted to disentangle the surface information from the internal beat percept, and even fewer studies have done so with children. We presented 4- to 9-year-old children with a rich musical context that induced one of two beat patterns, followed by an ambiguous rhythm consistent with either beat pattern. In a final probe phase, children indicated whether a drummer did or did not match the beat. To investigate how long children could internally sustain the induced beat, we varied the duration of the ambiguous phase. Older children (age 8-9) accurately matched the probe with the induced beat regardless of the ambiguous phase duration. Younger children did not perform significantly above chance. We also administered the Comprehensive Test of Phonological Awareness, as previous studies have evidenced a relationship between rhythm ability and phonological skills. Older children showed a significant correlation between beat perception and CTOPP scores. These results suggest that by 8-9 years of age, children have developed the ability to maintain long-lasting musical beat, which is related to their phonological skills, but younger children are unable to maintain the beat when the physical stimulus is beat-ambiguous. Future work will investigate long-lasting beat perception in adolescence.

**Social Science
Podium Session D – Room 211**



Presentations

- 8:45 – 9:00am Michelle Petty, Shon Reed, Linsey Belisle, M. Alexis Kennedy, Department of Criminal Justice
- 9:00 – 9:15am Logan P. Kennedy, Department of Criminal Justice
- 9:15 – 9:30am Stephanie Kaplan, Emily Troshynski, Department of Criminal Justice
- 9:30 – 9:45am Megan L. Becker, Nina B. Paul, RyAnna P. Zenisek, Mary Vertinski, Matthew B. Frantom, Edward T. Call, Rocio I. Gomez, Daniel N. Allen,
- 9:45 – 10:00am Miliiaikeala SJ. Heen, Joel D. Lieberman, Terance D. Miethe, Department of Criminal Justice
- 10:30 – 10:45am Michael Biesiada, SEPA
- 10:45 – 11:00am Ryan Radmall, Bill Sousa, Ph.D., Department of Criminal Justice
- 11:00 – 11:15am Jaclyn Keen, Department of Criminal Justice
- 11:15 – 11:30am Cecelia Gonzalez, Tereza Trejbalová, Matthew P. West, Department of Criminal Justice

Social Science Podium Session D – Room 211
8:45 – 9:00am

Planting the seed: Examining how childhood abuse matures into adulthood perpetration of abuse and revictimization

Michelle Petty, Shon Reed, Linsey Belisle, M. Alexis Kennedy | Criminal Justice

Child abuse is a prevalent issue in society. Research has focused on the long-term impacts of child abuse, but little research has been conducted on whether victims of child abuse perpetrate similar behavior over the course of their life. Bandura's Social Learning Theory and the Cycle of Violence hypothesis were utilized to develop research questions related to the outcomes of childhood abuse. Specifically we wanted to know whether childhood abuse was an indicator of future perpetration of similar behavior or revictimization within interpersonal relationships. Data for this study was collected from a large Southwestern university in 2015. The total sample consisted of both male (n=295) and female (n=440) undergraduate students, with the vast majority being between the ages of 18 and 22 and in their first or second year at the university. The Child Abuse and Trauma Scale (CAT) and Conflict Tactics Scale 2 (CTS2) were utilized to assess histories of childhood abuse and the prevalence of violence perpetration and victimization within interpersonal relationships. In accordance with the CAT scale, the frequency of childhood physical, emotional, and sexual abuse in addition to neglect as a child were examined. Instances of physical, sexual, and emotional aggression were measured utilizing the CTS2. Descriptive frequencies found a high level of childhood abuse and violent behavior/victimization in adulthood. Stepwise regression analyses indicated that different types of childhood abuse have different predictive factors for the likelihood of adulthood perpetration of abuse and adulthood victimization. These relationships held true when controlling for variables such as socioeconomic status, gender, religiosity, and ethnicity.

Social Science Podium Session D – Room 211
9:00 – 9:15am

When Protests Become Violent: A conjunctive analysis of contextual factors for violent and non-violent activities

Logan P. Kennedy | Criminal Justice

Protests have become an especially controversial and relevant topic within the last few years, partly due to mass gatherings like Ferguson and the Baltimore riots. These occurrences were covered heavily in the media as examples of what might happen, should a protest become violent. Instances of protest violence have become a widespread fear for not only citizens, but also police agencies throughout the country. Using secondary data from the New York Times media reports and the method of conjunctive analysis (Miethe, Hart, and Regoeczi 2008), the current study examines the situational context of protests and the factors that lead to violent consequences. Elements of the situational context include the motivation for the protest, their size and locations, the presence/absence of police, the nature and severity of injury. The results of this study are discussed in terms of their implications for future research and public policy on police and organizational responses to protest situations.

Societal Opinion of Government & Private Agencies Surveillance Capabilities Post 9-11

Stephanie Kaplan, Emily Troshynski | Criminal Justice

Since the September 11, 2001 attacks, the United States has placed an increased focus upon government and private agencies to engage in surveillance practices in order to combat terrorism. The passing of the United States PATRIOT ACT (2001) expanded the surveillance capabilities of law enforcement officials thus allowing both federal and state agencies to legally wiretap a range of communication devices. Under the justification of “fighting terrorism,” federal and state agencies now have more access to sensitive data on/about a range of persons including subjects of interest. Legal scholars (Bam, 2015, as well as the American Civil Liberties Union (ACLU), have questioned the constitutionality of the advancement of surveillance practices in government agencies including the role private agencies play in assisting federal agencies in criminal investigations. Even so, research dedicated to how the public understands the expansion of state and federal surveillance capabilities, and connections to private entities, is under studied. Using the Globalization of Personal Data (GPD) survey questionnaire from Surveillance, Privacy, and the Globalization of Personal Information by Elia Zureik, the goal of this research project is to identify how individuals in the United States perceive the transfer of their personal data between government and private agencies. Through non-probability online quota sampling methods (Singleton and Straits, 2005), responses from participants stratified into five different racial strata are analyzed and used to examine the extent to which citizens in the United States are either concerned or unconcerned about surveillance practices used by government (state and federal) and private agencies.

Performance on a Novel Brief Measure for Social Cognition in Individuals with Schizophrenia

Megan L. Becker, Nina B. Paul, RyAnna P. Zenisek, Mary Vertinski, Matthew B. Frantom, Edward T. Call, Rocio I. Gomez, Daniel N. Allen | Psychology

Social cognitive deficits in psychiatric disorders contribute to impairment in functioning. However, few neuropsychological measures are available to assess social cognition, including screening procedures. This study assessed differences in performance on a novel brief measure for social cognition in people with schizophrenia or schizoaffective (SZ) disorder. Participants included 30 people with SZ recruited from a community outpatient clinic (mean age = 45.8, $SD = 9.1$; male = 78%) and 31 healthy controls (CN) from the community (mean age = 36, $SD = 11.6$; male = 61%). The Brief Test of Social Cognitive Abilities (BTSCA) was developed for this study to assess affect recognition (AR), social perception and processing (SP), and theory of mind (ToM). Mixed model ANCOVA was used to compare groups (SZ vs CN) on the social cognitive composite scores (AR, SP, ToM) controlling for age differences between groups. ANCOVA indicated that the SZ group performed significantly worse than controls across all domains $F(1,56) = 28.49, p < 0.001, \eta^2 = 0.337$. These results provide preliminary support for the BTSCA as a screening measure to detect social cognitive deficits in individuals with SZ. To establish its clinical utility, sensitivity to deficits in other neurological and psychiatric populations should be determined in future research.

Social Science Podium Session D – Room 211
9:45 – 10:00am

On Bended Knee: Police Use of Visual Surveillance Technology in the Black Lives Matter Era

Miliaikeala SJ. Heen, Joel D. Lieberman, Terance D. Miethe | Criminal Justice

The NFL protests appear to be driven by concerns over racial and social injustice and unfair treatment of minorities by police. These protests have become a lightning rod for the expression of strong public opinions for and against the protestors, on the part of the athletes, politicians, fans and the general public. As these are related to issues of procedural fairness and police legitimacy they are highly relevant to perceptions of police practices, including the use of surveillance technology in not just a reactive manner, but a proactive manner as well. Previous research has demonstrated that the public has mixed reactions to police use of drones for surveillance purposes, with strong support in some contexts (search and rescue and tactical operations) and opposition in other cases (monitoring in open public places and for crowd management). Public attitudes appear to be driven, in part, by perceptions of police legitimacy, and procedural justice. The current study looks at the relationship between support and opposition to the NFL protests, and attitudes towards police use of drones for a variety of surveillance purposes, including crowd monitoring at large events, such as professional football games, the eye of the storm for these protests.

Social Science Podium Session D – Room 211
10:30 – 10:45am

Contextual Factors that Impact Citizen Initiatives: Evidence from a National Case Study

Michael Biesiada | SEPA

The purpose of this dissertation is to examine county-level contextual factors that impact citizen initiatives. County governments play a vital role in American democracy, yet little is known about why some counties permit citizen initiatives while others do not. I address a gap in the literature that focuses on policy outcomes that can vary at the county-level due to election laws. Election laws that permit citizen initiatives often benefit voters to advance legislation that more closely reflects the citizenry, and allow citizens to propose initiatives in response to unpopular legislation. Given the dearth of political institutional research at the county-level, I examine 1) a provision for initiative (e.g., ordinance or home rule), 2) legislative referendum, 3) popular referendum, and 4) provision for recall. To investigate counties that permit citizen initiatives, I focus on contextual factors that include form of government, community characteristics, demographics, and economics. I apply a series of cross-sectional multinomial logit regressions by using micro-level county data from the 2014 county form of government survey produced by the International City/County Management Association (ICMA). I use the models to detect and explain variations of citizen initiatives that exist in the 3,031 county governments surveyed with populations between 25,000 and 500,000.

Social Science Podium Session D – Room 211
10:45 – 11:00am

Predicting Law Enforcement Officer Turnover and Use of Force from Variables Measured by the 2013 Law Enforcement Management and Administrative Statistics (LEMAS) Survey

Ryan Radmall, Bill Sousa, Ph.D. | Criminal Justice

Law enforcement requires comprehensive hiring and training practices in order to curb misconduct and turnover. Some of the available data suggests a shift in the dynamics of law enforcement toward a more objective approach that favors education, cognitive ability testing, a community policing orientation, and technological advances, such as body cameras, that hold enforcers of the law and the American public, accountable for misconduct and violations of the law. The utilization of various technological advances requires assessment and dynamic, comprehensive analysis. The present study examined the influence of education and the professionalization of policing hiring requirements, cognitive ability tests and training, community policing initiatives and training, and the utilization of body cameras, on the number of dismissals and voluntary resignations and police use of force incidents recorded, while considering gender composition, and ratio of officers to size of the community served, in a federally-released report. Many of the hypotheses were not confirmed. However, support for the relationship between education and officer dismissal, SARA training and all dependent variables, and gender composition and reduction in the number of use of force incidents reported, were substantiated. Implications, limitations, and directions for future research are explored herein.

Social Science Podium Session D – Room 211
11:00 – 11:15am

Incarceration Costs in Nevada: A Comparison of State and National Expenditure 2010-2015

Jaclyn Keen | Criminal Justice

The U.S. get-tough-on-crime era of the last 4 decades has contributed to the proliferation of harsh sentencing and release policies, a dramatic rise in incarceration, and crippling financial expenditures within the prison system. Serious efforts have been made nationally to cut the cost of confinement, including increasing the utilization of diversion programs and decreasing the employees. The current research utilizes data from the Vera Institute of Justice to analyze spending trends in Nevada's prisons and compares them to national averages. Limitations and implications are further discussed.

Foucault on Death Row: Racial Disparities in Death Row Inmate Misconduct

Cecelia Gonzalez, Tereza Trejbalová, Matthew P. West |
Criminal Justice

The possibility of racial discrimination when sentencing inmates to death has been largely prevalent in academic literature dealing with the death penalty sentencing; however, given that New York Governor Cuomo pursued an investigation of state prisons due to possible racial biases (New York Times, 2016), the attention needs to be also shifted to racial prejudices that may exist within the institutions. Perceiving misconduct of minority inmates as more severe is problematic as it may not only hinder rehabilitative intentions of correctional facilities, but it may also specifically portray death row minority populations as more prone to disruptive behavior, and expose these groups to harsher treatment. The data used in this study were collected through Arizona Department of Corrections Inmate Datasearch. The sample consists of 119 death row inmates out of which 43% of the inmates belong to a minority group; the largest minority group is formed by Hispanic inmates (N=27; 23%). Furthermore, men form the majority of the sample (N=117; 98%). This study is an initial attempt to examine the possible racial prejudices on death row; hence, the results of the current study could have practical implications for the rules within maximum-security correctional institutions that define the severity of misconduct.

**Education
Podium Session – Room 213**



Presentations

- 9:00 – 9:15am Ezgi Yesilyurt, Department of Teaching & Learning
- 9:15 – 9:30am Malayka Neith Cornejo, Tonya Walls, Julie Wilde, Department of Teaching & Learning
- 9:30 – 9:45am Vishe Redmond, Department of Teaching & Learning
- 9:45 – 10:00am Shaoan Zhang and Chengcheng Li, Department of Teaching & Learning
- 10:30 – 10:45am Fereshteh Rezaeian, Department of Teaching & Learning
- 10:45 – 11:00am Erdogan Kaya, Ezgi Yesilyurt, Dr. Hasan Deniz, Department of Teaching & Learning
- 11:00 – 11:15am Michelle Arroyo, Department of Teaching & Learning
- 11:15 – 11:30am Eddie Boucher, Department of Teaching & Learning
- 11:30 – 11:45am Donald Deever, Department of Teaching & Learning
- 11:45 – 12:00pm Ryan Wirth, James Hyman, Department of Teaching & Learning

Education Podium Session – Room 213
9:00 – 9:15am

Investigating Science Teachers' Causal Schemas in the Context of Evolutionary Theory

Ezgi Yesilyurt | Teaching & Learning

This qualitative case study explored causal schemas science teachers applied to explain an evolutionary phenomenon. A multiple-choice test was administered to elementary science teachers to group them according to their understanding level of evolutionary theory. Six teachers with high (n=3) and low (n=3) understanding level were further interviewed based on an evolutionary scenario. The interview data were analyzed based on three coding schemes to examine their evolution conceptions and causal schemas. The results illustrated that direct causal schemas were mostly matched with non-Darwinian explanations among low understanding group. Although emergent causal explanations were mostly prominent among high understanding group, they also generated direct causal explanations. These findings suggested the integration of emergent causal schema in teaching and learning Darwinian principles.

Education Podium Session – Room 213
9:15 – 9:30am

Developing Liberatory Praxis through Critical Inquiry Teacher Action Groups (CI-TAGs)

Malayka Neith Cornejo, Tonya Walls, Julie Wilde (Touro University) | Teaching & Learning

Our research centers the voices and experiences of educators who have been historically minoritized and marginalized within traditional teaching and learning settings. The goal of the session is to explore the development of critical inquiry teacher action groups (CI-TAGs) that employ critical and culturally responsive pedagogies to support the development of newly-energized, student-empowering, social justice educators who teach, lead, and serve with justice and equity in mind. Many teachers struggle to meet the teaching, learning and achievement needs of their students, particularly students from diverse backgrounds, yet, others achieve success. Research in multicultural education indicates that highly effective and successful educators of culturally and linguistically diverse students (CLD) demonstrate a teaching philosophy in alignment with social justice education (Nieto 2000, Duncan, 2005; Furman, 2012; Solorzano and Yosso, 2002). The session will highlight critical pedagogies (Freire, 1970; Ladson-Billings, 1994; Stovall, 2004) to examine and critique how a teacher-led grassroots organizing group (Kohli et al., 2015; Stovall, 2004) provided liberatory and supportive spaces towards the development of teachers committed to teaching for social justice and equity. Paulo Friere (1970) characterizes social justice education as liberatory praxis (LP), or a way of teaching that recognizes systemic inequities in schools and schooling to intentionally address inequities through critical inquiry, reflection, and intergroup dialogue. We conclude that CI-TAGs provide educators with tools for recognizing, naming, analyzing, and confronting poverty, racism, violence, and inequality, the most acute conditions of social inequity in teaching, learning, and leadership environments.

Education Podium Session – Room 213
9:30 – 9:45am

Lifting As We Climb: African American Homeschooling Experiences

Vishe Redmond | Teaching & Learning

African American homeschoolers are the largest growing demographic within the population. Due to the lack of teachers of color in the classroom, Eurocentric curriculum and high stakes testing standards, many Black parents choose to opt out of the school to prison pipeline as a form of racial protectionism. This presentation will cover how homeschooling within the African American community differ from mainstream stereotypes and assumptions as well as how Afrocentric curriculum used by homeschooling communities helps to reignite the love of learning in children. I will explore my own evolution as a homeschooling parent in an auto ethnographic fashion and use my lens as a multicultural educator to dissect my experience being an educator in the Clark County School District as a teacher and as a parent. Navigating my experience using ‘after schooling’ as a supplementary element of my children’s education, I hope to open eyes to another door to what holistic education looks like in the home setting.

Education Podium Session – Room 213
9:45 – 10:00am

Multiple Case Studies of International Doctoral Students’ Resilience and Identity Construction

Shaoan Zhang and Chengcheng Li | Teaching and Learning

This study investigated international doctoral students’ resilience and identity construction. Built on resilience and identity theories, a multiple case study was conducted at a university in the southwestern United States. Participants included three international students. Triangulated data sources included two rounds of semi-structured interviews with doctoral students, one round of semi-structured interviews with people recommended by the doctoral students, and reflective papers. The findings of the study offered three cases of different experiences and challenges; personal, socio-cultural, and professional aspects that involved resilience construction; and the impacts of resilience on professional identity construction. Among the three cases, resilience developed from professional experiences had a significant impact on identity construction. This study contributes to doctoral program improvement and the theories of resilience and identity construction. This study suggested at the initial stage of the program that language, cultural, and emotional supports are very important and that related support is needed. However, after the survival stage, although personal, language, and cultural issues still exist, professional issues such as assistantship assignments and academic writing challenged doctoral students’ resilience. Thus, significant support is needed to prepare their professional capabilities. This study helps understand different types of the resilience of international doctoral students. The significant support may enhance doctoral students’ completion of the program and their ability to become successful in their future career.

Education Podium Session – Room 213
10:30 – 10:45am

The Impacts of Globalization on Educational Systems of the United States and Iran

Fereshteh Rezaeian | Teaching & Learning

Globalization has widely affected all aspects of our daily lives; education is not excepted. In fact, the influence of globalization on education is reflected on every aspect of education including educational policies, teaching methods, textbooks, and curricula. A comparative study of the educational systems of the United States and Iran might help us understand some of the impacts of globalization on educational systems of two countries that have different sociopolitical contexts. This study reviews the similarities and dissimilarities between these two educational systems with an aim to highlight the negative impacts of globalization, commodification, centralization, and corporatization of education on students. It is argued that, in a neoliberalism era, education is used as a means to maintain the political power, unify various ethnicities, and marginalize certain groups of people. It is also argued that, as Puentes and Gougherty (2011) state, the best alternative to alleviate the problems of educational systems is to empower our teachers and teach them how to confront the potential negative impacts of globalization on students. Raising public awareness, appreciating cultural differences as resources that can enrich educational contexts, promoting critical multiculturalism/multilingualism, and critical thinking are some of the strategies that might help teachers cope with the negative impacts of globalization on students.

Education Podium Session – Room 213
10:45 – 11:00am

Examining the Impact of a Relatively Short Intervention on Science Teachers Robotics Teaching Efficacy Beliefs and Interest in Educational Robotics

Erdogan Kaya, Ezgi Yesilyurt, Dr. Hasan Deniz | Teaching & Learning

We aimed to examine to what extent science teachers' robotics teaching efficacy beliefs and interest in educational robotics change as a result of two weeks of classroom intervention about educational robotics as part of a graduate level technology course designed for science teachers. We found that science teachers improved their both confidence and interest in teaching educational robotics. However, they were not sure to what extent they could improve their students' knowledge and skills in robotics.

Education Podium Session – Room 213
11:00 – 11:15am

AERA Campus Liaison

Michelle Arroyo | Teaching & Learning

My name is Michelle Arroyo and I was recently selected as the UNLV Graduate Campus Liaison for AERA-Division K. It is important to understand the AERA, American Educational Research Association, is an essential part of teacher education. Division K helps with research in teacher education from preservice teaching, induction, inservice and beyond. To be associated with this organization is an honor. To represent UNLV with this association is an even greater honor. This program was just introduced this semester, so I am on the beginning stages of helping to create something that is valuable not only for UNLV students, AERA members, but our future teachers. There is a lot of work to do on behalf of education, and I am ready to get started. I am supporting UNLV's graduate students and helping to create a professional community. I have already begun planning activities for UNLV doctoral students on campus for Spring of 2018 with the help of my department chair, Ms. Emily Lin and the graduate student advisor, Mr. Shaoan Zhang.

Education Podium Session – Room 213
11:15 – 11:30am

Exploratory Case Study: Globalization, Media Propaganda, and Education in India

Eddie Boucher | Teaching & Learning

This paper describes an exploratory (i.e., preliminary) case study that theoretically draws from critical media studies and critiques of economic neoliberalism and its role in the globalization of education. In the study I utilized a cultural studies lens to investigate the impact of global neoliberal education policies on the current education system in India. I collected data in India over the months of May and June 2017, and I specifically investigated the role of media reporting of education topics during the two weeks before and two weeks following the announcement of student board exam scores in the city of Jaipur. In this preliminary study my data was restricted to investigations of media sources, and I did not conduct research with human subjects. In this current paper I describe the research design, topical literature, and methodological approach from my exploratory study. Furthermore, throughout the methodology section I describe ways this preliminary exploratory study can be improved upon in anticipation of a more formal and comprehensive case study on the same topic.

Education Podium Session – Room 213
11:30 – 11:45am

Original Digital Calculator: Teaching Centuries Old Math Tricks to New Struggling Students

Donald Deever | Teaching & Learning

While conventional scholarly protocol recommends that research references should be no older than five to ten years, when it comes to the topic of teaching math, researching ancient textbooks reveals that some of the oldest ideas may be the best. Such ideas include the Egyptian method of duplation, which is a multiplication technique that allowed ancient architects to multiply extremely large numbers (big enough to build entire pyramids) without their practitioners having to memorize a single multiplication fact. In this evidence-based best practice presentation, conference attendees will rediscover their own personal original digital calculator, gain potential insights into where the new math has erroneously veered away from some of the time-tested wisdom of old, and show that math is an art form where numbers are composed of beautiful but logical patterns than when recognized, make problem-solving fun. This research also introduces an entirely new alternative concept developed by the presenter for enhancing multiplication instruction for learners in a way that requires no carrying of numbers when conducting simple multiplication exercises of two-digit numbers multiplied with one-digit numbers.

Presentation: Conference on Academic Research in Education (January 2017)

Education Podium Session – Room 213
11:45 – 12:00pm

It's About Time: Electrophysiological Evidence for Temporally Mediated Consolidation of Spatial Memories

Ryan Wirth, James Hyman | Teaching & Learning

Formation and retrieval of new spatial information is highly dependent on the hippocampus (HC), but over time these memories become increasingly reliant on other areas, including the anterior cingulate cortex (ACC) (Bontempi et al., 1999). We hypothesized that if this were the case then the retrieval of older spatial memories would engender different interactions between the HC and ACC than more recent memories would. Specifically, there should be changes in synchrony between these two areas and the direction of the interactions should shift from the HC leading for recent memories to the ACC leading for more remote retrieval. We recorded single units and local field potentials from the ACC and HC as animals were exposed to unique spatial environments and then re-exposed to those same environments at differing time delays (1-18 days). Behavioral data revealed a significant decrease in exploration-related movement as early as the second exposure regardless of the delay period, indicating that the animals quickly became familiar with the environments. We found that neural synchrony between the ACC and HC was significantly stronger on the remote retrieval days, despite no discernible behavioral differences from recent retrieval days. Time-lag correlation analysis revealed that while on days 1-7 HC theta activity led the ACC, on day 14 this effect reversed and theta in the ACC led the HC. These results reveal electrophysiological signature of spatial memory consolidation to the ACC, and they pinpoint that the observed changes were due to time passing and not other possible factors.

Education and Hospitality – Room 218



Presentations

- 9:15 – 9:30am Eun Joo Kim, Sarah Tanford,
and Choongbeom Choi,
Department of Hospitality
- 9:30 – 9:45am Kristin Withey, Kathy
Ewoldt, Department of
Education and Clinical
Studies
- 9:45 – 10:00am Kristine Bragg, Department
of Educational Psychology &
Higher Education
- 10:30 – 10:45am Ok Kyung Wi, Department of
Hospitality
- 10:45 – 11:00am William Woods, Department
of Education and Clinical
Studies
- 11:00 – 11:15am Shon Reed, M. Alexis
Kennedy, Department of
Criminal Justice

Education and Hospitality – Room 218
9:15 – 9:30am

Less is More: The Representativeness Heuristic in Online Travel Purchase Decisions

Eun Joo Kim, Sarah Tanford, and Choongbeom Choi | Hospitality

Traveler purchasing behavior exemplifies decision processes in the digital world. When making online purchases, travelers are bombarded with multiple cues simultaneously, leading to information overload. Heuristics are mental shortcuts that can simplify decisions involving uncertain or complex information, but they can systematically bias. Price bundles of online travel agencies (OTA) can activate the representativeness heuristic, leading to inaccurate judgments of package value. Consumers approach travel purchases with a particular goal in mind. OTA websites often promote deals to attract customers, but these may be inconsistent with travel goals. The “less is more” principle of representativeness suggests that consumers may devalue the travel package with inconsistent items, even if the total package are worth than an alternative. This study investigates how the consistency of promotional offers with travel goals influences online travel purchase decisions. This experiment uses a 2 (travel goal) x 2 (consistency of add-on item) x 3 (pricing of add-on item) mixed design. Stimuli will be a stimulated OTA website (e.g. Expedia) where people can select their travel objective or “collections” of a particular vacation type. The primary outcomes are choice, evaluations, willingness to pay, and price assessments. The research advances knowledge about consumer decision processes in the online purchasing environment. The study identifies how pricing, promotion and search cues on OTA sites affect travel purchase decisions. Discovering how heuristics operate in today’s digital world can help operators stimulate future travelers. The findings contribute to consumer psychology and marketing disciplines while addressing a critical industry issue.

Education and Hospitality – Room 218
9:30 – 9:45am

Becoming an Academic Author: The First Year

Kristin Withey, Kathy Ewoldt | Educational & Clinical Studies

Academic writing is a genre in a class of its own. The characteristics, style, tone, and content are unlike any other form previously encountered by beginning scholars. While learning to become an academic author, it is an enormous transition from simply consuming academic material to producing it. Two novice academic authors chronicle their first year of this transition, including challenges, shifts in perceptions, and victories. Additionally, the presenters will share insights with new doctoral students, academic authors, and their mentors so that they can learn successful strategies to implement as part of a mentoring program to develop prominent scholars in your field.

Education and Hospitality – Room 218
9:45 – 10:00am

Conversational movement dynamics and non-verbal indicators of second language development: A microgenetic approach

Kristine Bragg | Educational Psychology & Higher Education

A relational developmental worldview has become increasingly recognized in the field of developmental research as an alternative to the cognitivist tradition and was used in the current study. This perspective conceives of learners as active agents in their own development across differing eco-social environments, and characterizes knowledge development as highly individual and non-linear in association with complex dynamical systems theory (CDS) (Overton, 2014). The study also depended on sociocultural theory (SCT) because of its focus on learning and development through social interaction. Additionally, in accord with relational development, SCT and CDS, we analyzed movement in addition to speech, which has proven integral to cognitive development (Fischer & Zwann, 2008; Richardson & Chemero, 2014; Scorolli, 2014). The primary purpose of the study was to extend the SCT research on second language development through the use of dynamical modelling as situated in the data collection contexts of English language learners at the undergraduate level interacting with native English speakers, tutors, during writing consultations centered on class assignments that the learners sought help with in relation to English usage. Dyads were video-recorded so as to capture upper body and head movements, and a second camera was employed to focus on the writing assignment, allowing the recording of all discourse and movement directed at the document itself (copies of the assignments after consultation were made).

Education and Hospitality – Room 218
10:30 – 10:45am

Robots in the Hospitality Workplace: Implications for the Workforce

Ok Kyung Wi | Hospitality

The purpose of this study is to examine the influence of patron/employee relationship on acceptance of robotics in workplace and find a strategic way to implement robots in the hospitality industry. A mixed-methods approach, combining an expert panel and interviews which include customers, robotics companies and faculty members from the hospitality and robotics engineering departments was used to understand the different perspectives of hospitality professionals, robotics experts, and customers. The demand for robots in Asian countries such as Taiwan has been increasing due to aging population and low birth rate. However, the United States has been slower in acceptance of robotics since initial costs to adopt robots are still high and labor costs in the hospitality industry are relatively lower. Also, cultural differences plays a role in patron/employee relationship. Customers in the United States want to be in part of service experience by engaging with employees. The outcome of this research provided the theoretical predictions of the behavior of customers and how to benefit hospitality professionals and engineers to integrate technology in the hospitality industry. Results showed that employee nonverbal communication positively influenced positive emotions of customers and customer-employee rapport (Lin, 2017). A “Do Not Disturb” (DND) sign is used at a hotel when a guest needs privacy. As a strategic way to implement technology with limited rejection, I created a marketing model called, “DND marketing,” which allows customers to choose not to be disrupted. This model will help design the business models utilizing technology in the hospitality industry.

Education and Hospitality – Room 218
10:45 – 11:00am

Social Skills Modeling for Adolescents ASD Eligible in Common Areas

William Woods | Educational & Clinical Studies

Adolescents identified on the Autism Spectrum have difficulty interacting with peers on a social level in common area settings, such as the cafeteria. While they may feel a strong sense of social anxiety stemming from approaching their peers and engaging in a conversation, the use of role-play may be a tool to aid them that can increase peer interactions. Our pilot study evaluated the Managing Feelings lesson from the We Have Choices (WHC) curriculum using a single-subject non-concurrent multiple baseline model to determine if a functional relationship was present. Each of the three participants had a history of low positive social behavioral interaction in the cafeteria. At the conclusion of our pilot study, each participant's social behavior improved and social interactions increased in common areas. During the course of this study, the positive behavior of the participants increased ranging from 10 to 90 percent. Results are discussed in relation to utilizing WHC with adolescents, teachers, and parents.

Social Science Podium Session D – Room 218
11:30 – 11:45am

Male Sexual Victimization: A Common but Unvoiced Issue

Shon Reed, M. Alexis Kennedy | Criminal Justice

Media and researchers have been struggling to raise awareness about sexual abuse of children for decades. The focus has primarily been on girls rather than boys (e.g. Butler, 2013; Littleton, Grills, and Drum, 2013). While the rate of male victimization tends to be lower than for females, a male base rate of 20% indicates that this victimization is not rare but relatively common. Among 295 males attending a large Southwestern university, 1 in 5 reported a history of sexual victimization. This study will look at their high-risk behaviors (e.g., alcohol & drug use, casual sexual activity) and negative self-esteem, contrasting victims to non-victims. Research is growing on the long-term negative effects of childhood trauma on physical, mental and social health. It is important that male victims be included in this research. Policy implications, the need for increased prevention programs and future research suggestions will be presented.

**Fine Arts
Poster Session – Gallery**



Presentations

- 9:00 – 9:15am (#1) Brandon Lacow,
Department of Art
- 9:15 – 9:30am (#2) Elizabeth Haynes, Brian
Smallwood, Department of
Theater
- 9:30 – 9:45am (#3) Laura Brennan,
Department of Art
- 9:45 – 10:00am (#4) Dafne Guevara,
Department of Music
(Performance)

Fine Arts Poster Session – Gallery
8:45 – 9:00am

1. On the Fence

Brandon Lacow | Art

On the Fence uses the metaphors of domestic space, a connection to comfort, sanctuary, safety, and privacy, for a comparative exploration of contemporary realities; the demonstration of the queer in conflict with an imagined traditionalism. With the idea of home as an intimate space of public engagement - where one entertains guests taking on a public persona- there comes a bombardment of expectations. The social aspect of being queer is intimidating when faced within a public sphere that may be filled with reactive hostility, indifference, rejection, or the threat of physical harm. The expression “I don't care what gay people do as long as they do it in the privacy of their own home” has continued to influence my art practice. By physically constructing a small-scale house out of fence lumber, viewers are invited to consider what happens when a home is built out of a material intended to exist as boundaries, and how one is divided between the feelings of being comfortable and constricting.

Fine Arts Poster Session – Gallery
9:00 – 9:15am

2. Southeastern Theatre Conference: Interviewing for a Job

Elizabeth Haynes, Brian Smallwood | Theater

Interviewing for jobs can be terrifying. Within the theatrical community, it can cause trepidation because the interviewers are looking for a personality that gels with their team as well as the skills required for the job. When an interviewee is unprepared and nervous, their likelihood of success is low. They may have been qualified for the job, but without the proper level of preparation, they may not be able to show a potential employer their qualifications. This research and conference presentation is to present information and prepare students in a fun way to remove this trepidation from the process. The goal is to provide this information for students to take with them to the interview process for summer jobs as well as beyond to their future careers. All careers, especially in the theatre world, rely on interpersonal communication. On the technical side of theatre, this communication occurs between generally introverted people. Having the opportunity to prepare students for job interviews is so exciting. There are many small things that can be done to provide a greater opportunity for success. Watching this success will be the most gratifying part of this process. The information for this presentation comes from extensive experience interviewing for jobs as well as interviewing potential employees. This presentation was created for the 2018 Southeastern Theatre Conference.

Fine Arts Poster Session – Gallery
9:15 – 9:30am

3. Inaccessible Memories

Laura Brennan | Art

Photographs are taken to preserve a moment in time so that we may reflect on it somewhere down the road. We accept these photographs as a true representation of events in our lives, and they are a source to stimulate the neurons which make up the memories associated with the photos. The problem with our human memories is that they are constantly changing, fading, or become inhibited. My curiosity lies in how can I create photographic pieces which evoke the fault in our memories. In his book, “The Seven Sins of Memory: How the Mind Forgets and Remembers,” Daniel L. Schacter explains three sins of memory being omission sins – Transience, Absent-mindedness, and Blocking. “Inaccessible Memories” is an exploration, through photographic processes, of these three “sins.” Instead of the photograph representing an exact memory of someone, I am exploring how the three sins of omission can be depicted through manipulated traditional photography. The processes which I am utilizing enable me to make images less accessible to the viewer. In many pieces, all the information within the photograph still exists, but the viewer must fight to find any inkling of that information. The goal of these photographically based pieces is to make the viewer feel a similar frustration of not being able to recall specific information.

Fine Arts Poster Session – Gallery
9:30 – 9:45am

4. Performance

Dafne Guevara | Music

Flute Solo Performance.

Education Poster Session – Ballroom



Presentations

- 9:00 – 9:15am (#5) Rachel Part, Harsha Perera, Matthew Bernacki, Gwen Marchand, Department of Educational Psychology and Higher Education
- 9:15 – 9:30am (#6) Kyle Mefferd, Matthew Bernacki, Department of Educational Psychology and Higher Education
- 9:30 – 9:45am (#7) Wonjoon Hong, Matthew L. Bernacki, Department of Educational Psychology and Higher Education
- 9:45 – 10:00am (#8) Ching Hsu-Kim, Department of Teaching and Learning
- 10:30 – 10:45am (#9) Wynn Tashman, Samuel Song PhD, Jacqueline Eddy, Michelle Zochowski, April Giles, Department of Educational Psychology and Higher Education
- 10:45 – 11:00am (#10) Heather Thompson, Stephanie Houle, Samuel Song, Michelle Zochowski, Jacqueline Eddy, Department of Educational Psychology and Higher Education
- 11:00 – 11:15am (#11) Celeste Calkins, Harsha Perera, Peter McIlveen, Brad McLennan, Department of Educational Psychology and Higher Education
- 11:15 – 11:30am (#12) Tiffany Simonetti, Brittnee Smith, Department of Educational Psychology and Clinical Studies
- 11:30 – 11:45am (#13) Lixian Tian, Department of Educational Psychology and Higher Education

Education Poster Session – Ballroom
9:00 – 9:15am

5. Expectancies, Values, and Costs: Reciprocal effects models

Rachel Part, Harsha Perera, Matthew Bernacki, Gwen Marchand | Educational Psychology & Higher Education

The purpose of this longitudinal study was to examine the temporal ordering of undergraduate biology students' (n=334) perceptions of expectancies, values, and costs in order to establish the directionality of associations across a semester. We first investigated and established factorial invariance across time. Next, we assessed the structural relations between expectancies, values, and costs using an auto-regressive cross-lagged panel model with direct paths from self-efficacy and specific task value constructs at each time point to mid semester grade and final exam score. We find that the relationships that exist between expectancies and specific types of values and costs change across a semester, where these constructs were differentially predictive of one another and academic achievement across time.

Education Poster Session – Ballroom
9:15 – 9:30am

6. Tracing Undergraduate Science Learners' Digital Cognitive Strategy Use and Effects on Achievement

Kyle Mefferd, Matthew Bernacki | Educational Psychology & Higher Education

As experts project a need for one million more STEM graduates, half who enter baccalaureate programs leave before completing their degrees (PCAST, 2012). These experts encourage instructors to promote empirically-supported, cognitive learning strategies including practice testing, distributed practice, and pre-reading in courses. When provided digitally in a learning management system, resource use can be examined via log-file traces as representative of cognitive strategies, and association with course achievement can be observed. Regression models capturing traces of pre-reading and (distribution of) self-assessment quizzing (i.e., retrieval practice) predicted final grades of 220 biology undergraduates. Significant predictors included timing and number of practice tests completed prior to exams (i.e., traces of retrieval practice); metrics representing distributed practice and pre-reading did not predict achievement.

Education Poster Session – Ballroom
9:30 – 9:45am

7. Data-Driven Digital Alerts & Learning Support: Effects on Achievement and Moderation by Unintended Course Events

Wonjoon Hong, Matthew L. Bernacki | Educational Psychology & Higher Education

We utilized trace data created by students when they interact with digital course resources hosted on the learning management system (LMS) site of a calculus course. Data on student activity and achievement (N=507) from multiple sections taught by two instructors and a forward selection logistic regression algorithm (with 10-fold cross validation) were used to train and test a prediction model. The prediction model was thus used to deploy an early alert system. Students predicted to perform poorly received an email on day 1 of week 4, a week before their first exam. In Spring 2017, on day 1 of week 4, 160 students were predicted to perform poorly, and 80 were randomly selected and messaged. Student responsiveness to messaging declined from prior study, and effects of messaging differed starkly across course sections. Messaged students in section A outperformed unmessaged students across 5 exams ($d_s = .09$ to 1.107) but unmessaged students outperformed messaged students in Section B ($d_s = .01$ to -2.53). Exploratory analyses confirm that unplanned occurrences may have caused these strikingly different effects. Intervention fidelity in Section A mirrored the Fall 2016 implementation, but In Section B, the instructor fell ill and announced that class was cancelled hours after students received the alert message. These occurrences may be responsible for effects on achievement. We thus conclude that digital, data-driven resources have potential to support learners, but designers must monitor impact of environmental factors and collaborate with instructors to ensure implementation fidelity and increase likelihood of anticipated effects.

Education Poster Session – Ballroom
9:45 – 10:00am

8. International Faculty's Perezhivanie in Teaching and Development

Ching Hsu-Kim | Teaching & Learning

The research I will present at GPSA Research Forum is called "International Faculty's Perezhivanie in Teaching and Development". Through the lens of Vygotsky's perezhivanie, this study seeks to explore international faculty members' lived experiences in American higher education contexts with the special attention to teaching. Perezhivanie was employed as relates to the international faculty's meaningful and memorable experiences, with the special focus on the difficulties they face and forms of mediation they adopt to cope with these difficulties. Querying how international faculty's perezhivanie guides or influences his/her future-oriented development, I adopted a case study in this paper to gain understanding of a Chinese origin faculty who is teaching in the United States. The richness of data in a case study enables me to discuss and explore an international faculty's emotional lived-experiences teaching in a different context through the analyses of such type of the Due to the convenience for the participant, the data were collected through one-on-one interview on Skype. The interview was conducted on December, 15, 2016 and it lasted approximately 1 hour which started from 2:50 PM to 3:55 PM as the participant scheduled. There were 17 questions in total. The interview was conducted in English during the entire process. Through the lens of Vygotsky's theoretical concept-perezhivanie, the purpose of this paper aims to explore international faculty's teaching in American higher education contexts, his/her personal and environmental characteristics are represented through the refraction of the prism of emotional lens of perezhivanie, which leads to their future-oriented professional development.

Education Poster Session – Ballroom
10:30 – 10:45am

9. Websites and Waiting Rooms: Heteronormative Discourse in School Psychology Services

Wynn Tashman, Samuel Song PhD, Jacqueline Eddy, Michelle Zochowski, April Giles | Educational Psychology & Higher Education

School psychologists are uniquely positioned to function as allies to lesbian, gay, bisexual, and transgender (LGBT) students (McCabe, 2014). The National Association of School Psychologists (NASP) expressly recognizes this role of school psychologists as allies who can educate and advocate for LGBT students through their professional practice (NASP, 2004). However, most school psychologists and graduate students do not receive the specialized educational and professional training needed to work with LGBT students in a culturally-sensitive manner (McCabe, Dragowski, & Rubinson, 2013; McCabe, Rubinson, Dragowski, & Elizalde-Utnick, 2013). This lack of awareness reinforces heteronormative discourse and professional practices that reflect prejudices, stereotypes, beliefs, and values of a discriminatory nature against LGBT students (Kitzinger, 2005; Sue, 2010). Therefore, school psychologists must educate themselves on the discourse regarding topics of gender and sexual diversity and then self-reflect on their own beliefs, actions, behaviors, and silences that are rooted in heteronormativity (Dragowski & Scharron-del Rio, 2014; Serano, 2007). This research poster is designed to address the need for culturally-sensitive client recruitment materials that acknowledge LGBT students. Participants will be provided with a review of literature about heteronormative discourse, framed through a queer theoretical lens. Participants will benefit by learning how to identify heteronormativity within client recruitment materials used for their own public or private practice. Presenters will then examine the ethical implications of unaddressed heteronormativity in school psychology services as well as strategies to ‘queer the discourse’ among practitioners.

Education Poster Session – Ballroom
10:45 – 11:00am

10. Understanding the Restorative in School Restorative Justice and Practices

Heather Thompson, Stephanie Houle, Samuel Song, Michelle Zochowski, Jacqueline Eddy, Giles, & Tashman | Educational Psychology & Higher Education

Restorative justice strategies have become an increasingly popular approach to responding to discipline issues in students. Many schools have implemented restorative justice practices due to its ability to holistically remedy behavioral issues rather than more narrow punitive strategies. Despite these efforts, there is a significant gap in the research literature on restorative justice practices. For example, most research has focused on case studies. Still, however, there is enough empirical work that needs to be evaluated and synthesized. To understand and describe this extant literature, we conducted a systematic literature review using electronic databases such as PsychInfo and ERIC (using terms such as “restorative justice” and “school” yielding 77 articles), that outlines the existing research and highlights the areas where more research is needed. This review will present findings that answer these questions for further study: What is restorative justice? What are the core components of restorative justice? Is restorative justice in schools effective? In addition, we identify areas for future study.

Education Poster Session – Ballroom
11:00 – 11:15am

11. Towards an Integrative Perspective on the Dimensionality of Teacher Self-Efficacy Data

Celeste Calkins, Harsha Perera, Peter McIlveen, Brad McLennan | Educational Psychology & Higher Education

The present paper reports on a study designed to examine the dimensionality of teacher self-efficacy data as measured by the Teacher Sense of Self-Efficacy Short-Form (TSES-SF), complete invariance over gender and teaching level, and latent mean differences in efficacy across years of experience. Based on 3735 responses to the TSES-SF, support was found for a bifactor-exploratory- structural-equation- modeling representation of the data. This indicates that teachers may perceive both a general sense of their efficacy, as well as efficacy for domain-specific competencies. Furthermore, results support the complete measurement invariance of scores across gender by teaching level subgroups; however, theoretically, meaningful latent mean differences were found. Finally, evidence was obtained for a curvilinear relationship of years of experience with general self-efficacy.

Education Poster Session – Ballroom
11:15 – 11:30am

12. Avoiding Impairment: A Self-Care Model for Success

Tiffany Simonetti, Brittnee Smith | Educational & Clinical Studies

When do you make time for yourself in a profession dedicated to helping others? Students and new professionals enter the field recognizing the importance of self-care; however, self-care requires awareness, balance, and connection. The presenter will highlight the consequences of impairment, current standards and ethical codes, and strategies to holistically improve well-being. Presenters will provide the Indivisible Self Model for attendees of all levels to practice, model, and facilitate client wellness education.

13. Motivation and Gesture in Foreign and Second Language Development: A Sociocultural Study of Chinese Learners of English

Lixian Tian | Educational Psychology & Higher Education

This study explores motivation and gesture of Chinese learners of English in foreign and second language development across four contexts where they interpret their learning experience. Specifically, this study investigates motivation and how Chinese learners of English use gesture for communication through conscious awareness when asked to reflect on their goal-directed activity in learning the language. Participants are from four different contexts: college students in a secondary college in China; English learners in an English school before studying abroad; Chinese international students in an American university; and returnees after studying abroad in the U.S. This mixed methods study includes a quantitative phase to examine the motivation and gesture of Chinese learners of English, in order to see whether there are any consistent patterns of the influence of motivation and gesture associated with each learning context and across the four contexts. Later, four participants with high or low proficiency based on standard test scores in each context will be interviewed to reflect on their motivational dispositions and gesture awareness and use in their foreign and second language development. This study is developed from a sociocultural perspective considering both cognitive and affective dimensions of individual development in goal directed activity to learn the language, and if and how participants are aware of motivation and gesture in relation to their individual learning experience. Hopefully, the study will contribute to the understanding of motivation and gesture awareness and use in foreign and second language development as found among Chinese learners of English.

**Social Science Poster Session A –
Ballroom**



Presentations

- 9:00 – 9:15am (#14) Megan Claire Cogliano, Matthew L. Bernacki, Department of Educational Psychology and Higher Education
- 9:15 – 9:30am (#15) Stephany Molina, Meghan Pierce, Stephen Benning, Department of Psychology
- 9:30 – 9:45am (#16) Carrie R. Underwood, Rachael D. Robnett, Department of Psychology
- 9:45 – 10:00am (#17) M. Alicia Nunez, Department of Psychology
- 10:30 – 10:45am (#18) Jessica E. Nave-Blodgett, Leah D. Oswinn, & Erin E. Hannon, Department of Psychology
- 10:45 – 11:00am (#19) Julia Hussey, Bradley Donohue, Ph.D., Nina B. Paul, M.S., Christopher Plant, M.S., Daniel Allen, Ph.D., Department of Psychology
- 11:00 – 11:15am (#20) Stacy Graves, Elyse Parke, Abigail Mayfield, Edward Call, Daniel Allen, Department of Psychology

Social Science Poster Session A – Ballroom
9:00 – 9:15am

14. The Effects of a Retrieval Practice Intervention on Undergraduates' Monitoring and Control Using Performance Feedback

Megan Claire Cogliano, Matthew L. Bernacki |
Educational Psychology & Higher Education

The purpose of this study was to evaluate whether training of monitoring practice-test feedback predicts exam performance through enhancing monitoring accuracy and strategy control. Findings suggest that training about metacognitive knowledge and metacognitive regulation of retrieval practice increased final examination performance. We also found that monitoring accuracy of performance from feedback for both well-learned and yet-to-be-learned topics were more beneficial for non-quizzed items on the examination. Last, the effects of training on final exam performance of non-quizzed items was mediated by monitoring accuracy of both well-known and yet-to-be-learned topics. These findings suggest that monitoring feedback accurately from practice-tests is important and can be improved with training.

Social Science Poster Session A – Ballroom
9:15 – 9:30am

15. Psychopathic Meanness and Emotional Processing Deficits within the Context of a Social Support Task

Stephany Molina, Meghan Pierce, Stephen Benning |
Psychology

The Meanness in Psychopathy-Self Report (MiP-SR) is a new measure designed to specifically capture psychopathic meanness in three factors: Malice (agentic disaffiliation), Coldness (lack of emotionality and empathy), and Imperviousness (unreactivity to social censure). In psychopathy, meanness may be driving the maladaptive behaviors that lead to negative interpersonal interactions. Thus, this study sought to validate the MiP-SR through the use of an interpersonal task. Participants were presented with a series of letter cues and informed they may be shocked during one of two letter colors. Participants were instructed to either attend to the color of the letter (threat focus; TF) or the letter case (alternative focus; AF). For half the task, a friend placed a hand on the participant's shoulder as a form of social support. Postauricular reflex potentiation (CS- vs. CS+) in the TF condition was negatively related to Coldness and positively related to Malice. These findings are theoretically consistent with the lack of emotionality in Coldness and the excessive approach processing in Malice. Reduced startle blink potentiation (CS+ vs. CS-) in the AF condition and in the absence of social support (i.e., no friend present) were associated with Malice. Thus, Malice is associated deficit fear responding. No relationships were found with Coldness and the startle blink. Results suggest that those high in Coldness and Malice show alterations in emotional processing of relief cues, with those high in Malice also displaying deficits in fear processing when alone.

16. “But he treats me like a princess.”: Benevolent sexism and women’s relationship maintenance strategies.

Carrie R. Underwood, Rachael D. Robnett | Psychology

“But he treats me like a princess.”: Benevolent sexism and women’s relationship maintenance strategies. Carrie R. Underwood and Rachael D. Robnett Department of Psychology Past research found that women who endorse benevolent sexism (BS), a gender-role attitude, are highly invested in romantic relationships (Lee, Fisk, Glick, & Chen, 2010). Consequently, they may be more likely than other women to remain in troubled relationships. We examined whether participant and partner BS influenced how women maintain troubled relationships. Data were collected from 223 heterosexual undergraduate women. Repeated measures ANCOVA revealed that when presented with a scenario describing a troubled relationship with a BS male partner, both high-BS and low-BS women endorsed positive relationship maintenance strategies (e.g., making interactions enjoyable) more than they endorsed relationship dissolution. Results demonstrate the pervasiveness and appeal of a BS partner such that even low-BS women would rather remain in a troubled relationship with a BS partner than exit the relationship.

17. Auditory Verbal Learning and Memory in a Clinical Sample of Spanish-Speaking Hispanic Adults

M. Alicia Nunez | Psychology

There is a paucity of empirical information concerning the verbal learning and memory performance of Spanish-speaking clinical populations. To address this disparity, this study examined the effects of various neurological conditions on verbal learning and memory, as measured by the Rey Auditory Verbal Learning Test (RAVLT), in a clinical sample of Spanish-speaking Hispanic adults. The sample included 139 Spanish-speaking Hispanic adults (mean age = 42.7 years, SD = 18.5; 52.6% male) with a neurological condition (Parkinson’s disease n = 19, epilepsy n = 12, traumatic brain injury n = 57, mild neurocognitive disorder n = 39, and stroke n = 12). Participants who had been administered the RAVLT were selected from a consecutive series of cases referred for neuropsychological evaluation to the Neurology Section of the University of Puerto Rico Medical School. Multivariate analysis of variance showed a significant effect between neurological condition and RAVLT performance ($p = .027$), after adjusting for age. Results showed a general pattern in which participants with traumatic brain injury performed significantly worse than other neurological conditions in delayed recall ($p = .025$). Additionally, a comparison of trial scores indicated that participants with traumatic brain injury exhibited less learning compared to other neurological conditions ($p = .005$). All groups showed an initial learning curve from Trials I to V. Findings contribute to our understanding that Spanish-speaking Hispanic adults with traumatic brain injury may show decrement in verbal learning and memory performance, even after apparent initial learning. Future research in larger samples is warranted to elucidate factors influencing verbal learning and memory performance of underrepresented populations in neuropsychological research.

18. Finding the Common Time: Similarities and Differences in Speech and Music Perception

Jessica E. Nave-Blodgett, Leah D. Oswinn, & Erin E. Hannon | Psychology

Speech and music share many similarities: they are both forms of auditory communication, they are patterns of sound that occur over time, and they are universal human behaviors. Importantly, for listeners to comprehend speech and music, they must accurately parse a continuous sound stream into meaningful units such as syllables or notes, words or melodies, phrases, and so on. One key temporal structure in music (and to some extent speech) is meter, which governs the points in time when a listener would tap or clap along. When listeners experience meter, they usually perceive one strong beat, as well as subdivisions and multiples of beats at multiple, hierarchically related temporal periodicities, which gives rise to repeating patterns of strong (accented) and weak (unaccented) beats. Is speech segmentation related to perceiving the underlying temporal periodicities (meter) in music? Participants will perform natural-language speech segmentation tasks with familiar (overlearned) and unfamiliar (foreign speech/music) sentences, tap to music, and perform a meter perception task with familiar and unfamiliar music. If speech segmentation and metrical perception in music rely on similar processes, the same individuals should perform well on all tasks. Using familiar and unfamiliar stimuli may determine if segmentation and meter processing rely more on top-down cultural knowledge or on bottom-up sensory abilities. Higher correlations on performance within individuals on familiar-stimuli tasks may suggest a strong role of top-down cultural processes, while higher correlations on unfamiliar- stimuli tasks may point to the important role of bottom-up sensory processes in segmentation of speech and music.

19. Influence of Family Relationships on Mental Health in Student Athletes

Julia Hussey, Bradley Donohue, Ph.D., Nina B. Paul, M.S., Christopher Plant, M.S., Daniel Allen, Ph.D. | Psychology

Objective: It is well-established that social support positively contributes to mental health. Social support structures of student athletes' relationships with coaches, teammates, and peers (i.e., non-athlete friends) appear to influence mental health. Family relationships specifically influence student athletes' tendency to worry, recovery prospects after sport injury, and motivation (Kaye, Frith, Vosloo, 2015; Newmark & Bogacki, 2005; Chan, Lonsdale, & Fung, 2012). The current study aims to research the connection between family relationships and student athletes' mental health. Method: 68 participants (30 females) aged between 18 and 33 years ($M = 20.35$, $SD = 2.18$) participated in this study. Participants were student athletes at the University of Nevada, Las Vegas. Mental health was assessed using the Global Severity Index of the Symptom Checklist – 90- Revised (SCL-90-R). Family relationships were assessed using items from the Sport Interference Checklist (SIC) that were relevant to family functioning, and indices from the Student Athlete Relationship Instrument (SARI) (Donohue, Silver, Dickens, Covassin, & Lancer, 2007; Donohue, Miller, Crammer, Cross, & Covassin, 2007). Results: SCL-90- R Global Severity Index (GSI) scores were positively correlated with both participants' ratings of unhappiness with their families ($p < .001$) and participants' ratings of how often problems with their families interfere with their life outside of sports ($p < .001$). The SCL- 90-R GSI was negatively correlated with the extent to which participants indicated their family members positively contributed to their sport performance ($p < .05$) and the SCL-90- R GSI scores were negatively correlated with how often family problems interfered with their performance during training ($p < .001$) and competition ($p < .001$).

20. Social Cognitive Deficits in Children with Attention Deficit Hyperactivity Disorder

Stacy Graves, Elyse Parke, Abigail Mayfield, Edward Call, Daniel Allen | Psychology

Objective: Research suggests that children with Attention-Deficit/Hyperactivity Disorder (ADHD) exhibit deficits in social cognitive abilities and these deficits contribute to social dysfunction. Social cognitive abilities involve processing of social information, and include affect recognition, theory of mind (ToM), and social knowledge. However, little information is known regarding impact of ADHD symptomatology on aspects of social cognition and whether social cognitive deficits predict problem behaviors. This study investigates relationships between social cognition, ADHD symptomatology, and behavioral outcomes. Method: Participants included 25 children diagnosed with ADHD, and 25 healthy controls (HC). Children in the ADHD group were 10.6 years old and 76% male with a Full Scale IQ of 98.1. 64% were diagnosed with ADHD-Combined (n=16) and 36% with ADHD-Inattentive (n=9). Children in the HC group were 10.1 years old and 60% male with a Full Scale IQ of 107.4. Participants were administered a battery of tests designed to assess ADHD symptomatology, behavioral disturbances, and social cognitive domains including affect recognition, ToM, and pragmatic language ability. Results: Mixed model ANOVA comparing the ADHD to HC across social cognition measures indicated that ADHD performed significantly poorer than HC on affect recognition, pragmatic language, cognitive ToM, and cognitive empathy. Largest differences between groups were present on cognitive ToM and cognitive empathy. Conclusions: Children with ADHD had more difficulty with cognitive components of social cognition (pragmatic language, cognitive ToM, and cognitive empathy), rather than the affective domains (affective ToM and empathy). Performance on facial affect recognition tests may be more related to cognitive components of social learning than initially expected.

**Social Science Poster Session B –
Ballroom**



Presentations

- 9:00 – 9:15am (#22) Amber R. Williams;
David E. Copeland,
Department of Psychology
- 9:15 – 9:30am (#23) Yen-Ling Chen, Eric A.
Youngstrom, Robert L.
Findling; Andrew J.
Freeman, Department of
Psychology
- 9:30 – 9:45am (#24) Mary C. Baggio &
Stephen D. Benning,
Department of Psychology
- 9:45 – 10:00am (#25) Samantha N.
Sherwood, Joseph Greenway,
& Andrew J. Freeman,
Department of Psychology
- 10:30 – 10:45am (#26) Ashley Emami, Alicia
Nuñez, Susette Favela,
Gregory Strauss, Dan Allen,
Department of Psychology
- 10:45 – 11:00am (#27) Yulia Gavrilova,
Marina Galante, Elena
Gavrilova, Michael Bricker,
Ally Danlag, Department of
Psychology
- 11:00 – 11:15am (#28) Stephanie Verba,
Jennifer Rennels, Department
of Psychology
- 11:15 – 11:30am (#29) Marina Galante, Brad
Donohue, Yulia Gavrilova,
Department of Psychology

22. Memory and stereotyping of lesbian/gay characters in narratives

Amber R. Williams; David E. Copeland | Psychology

While prejudice and discrimination towards lesbian, gay, and bisexual (LGB) individuals still widely exist in the United States, LGB characters in media are becoming more numerous and prominent. Prior research suggests that in short stories, character sexual orientation can affect what readers remember about characters, with the presence of LGB characters leading to seemingly improved recall of information consistent with stereotypes. A main goal of this project is to determine if this emphasis on stereotype-consistent information is due to genuinely improved memory or due to guessing bias, where stereotypes seem more likely to be accurate. In our study, undergraduates read two short stories involving either a gay couple or heterosexual couple; all characters have stereotypical and counter-stereotypical characteristics. Using questions about the story, we measure recall accuracy and how much participants stereotype the characters. We also measure homophobia, memory ability, and reading times. We expect participants will describe gay characters using more stereotypical characteristics; inaccurate stereotypical descriptions would suggest the use of guessing bias. We also expect differential effects based on the gender of the reader and the main character and that stereotyping scores can be predicted from homophobia, memory, and other factors. Understanding stereotyping and memory for information about lesbian and gay characters can help us learn how cognitive processes are involved in real-world interactions with LGBT individuals. These cognitive processes should be considered when developing methods to reduce homophobic stereotyping, hopefully decreasing the amount of prejudice and discrimination LGBT individuals experience.

23. What Makes a Screening False Positive for Youth Mood Disorders?

Yen-Ling Chen, Eric A. Youngstrom, Robert L. Findling; Andrew J. Freeman | Psychology

Mood disorders are common diagnoses in youth (Merikangas et al, 2010). Mood disorder diagnoses tend to show poor agreement across interviewers (Regier et al., 2013). Questionnaires are recommended to improve the reliability of diagnosis. Screening can result in false positives. Anxiety disorders are likely to increase false positives for mood due to shared negative affect. Therefore, the purpose of the current study is to determine (a) clinical cut-offs and (b) what diagnoses cause false positives. Youth and their caregivers (N=620; ages 4-18) completed the K-SADS. Mood disorders (depressive and bipolar disorders) were common (n=225, 36%). Caregivers and adolescents completed the Achenbach CBCL and YSR. Receiver Operating Characteristic (ROC) analyses indicated that caregiver-report discriminated between children with and without mood disorder, AUC=.71, $p<0.01$. Low scores (T-score \leq 61) decreased risk of mood disorder (DLR=.14). T-scores \geq 71 increased risk slightly (DLR=1.08). Children with ODD (OR=1.97), adjustment disorder (OR=2.80) and adjustment disorders with mood (OR=4.06) were more likely to be false positives. ADHD, CD, anxiety, history of mood disorder and suicide were not associated with false positives. ROC indicated that caregiver report and self-report discriminated between adolescents with and without mood disorders, CBCL AUC=.75, YSR AUC=.67, $p<0.01$. Caregiver T-scores \geq 70 and YSR T-scores \geq 67 doubled the risk for mood disorder. Both adolescent and caregiver-report false positives increased due to adjustment disorder (OR=4.62, 5.34) or adjustment disorder with mood (OR=6.20, 7.02). Diagnoses of ADHD, ODD, CD, anxiety disorders, history of mood disorder, and suicide were not associated with false positives. ODD was significantly more common in children false positives than adolescents.vehicles for the treatment of malignant brain tumors.

24. The Influence of Psychopathic Traits on Scores and Behavior in The Prisoner's Dilemma

Mary C. Baggio & Stephen D. Benning | Psychology

Psychopathy is a disorder characterized by antisocial behavior, emotional impairment, and interpersonal deficits. There is evidence that suggests uncooperative behavior may be one manifestation of the unstable interpersonal functioning, however, there have been inconsistent findings in the literature using Prisoner's Dilemma games to study social cooperation in psychopathy. The current study investigated this in the fearless dominance (FD) and impulsive antisociality (IA) factors of psychopathy in a sample of 177 undergraduates using an iterated Prisoner's Dilemma. We analyzed participant's scores, differences between participant and computer scores, and participant's decisions from the Prisoner's Dilemma game. We examined these variables in the experiment overall, after participant cooperations and defections, and after computer cooperations and defections. Overall, IA was associated with a reduced difference between participant and computer scores. After participant's own cooperation, those higher in FD scored higher than their opponents and were more likely to defect, whereas those higher in IA scored equal to or lower than their opponents and were more likely to cooperate. Also, decisions mediated the relationship between IA and differences between participant and computer scores and tended to mediate the relationship between FD and differences between participant and computer scores. Thus, these factors are related to social cooperation in opposing ways which informs.

25. Trends in Pediatric Mood Disorder Diagnosis in a Nevada Medicaid Population between 2005 and 2015

Samantha N. Sherwood, Joseph Greenway, & Andrew J. Freeman | Psychology

Objective: The diagnostic rate of pediatric bipolar disorder (PBD) increased dramatically in outpatients and inpatients between 1994 and 2004 (Blader & Carlson, 2007; Moreno et al., 2007). However, an adult-consistent definition of PBD has become the dominant definition amongst researchers (e.g., Youngstrom, Birmaher, & Findling, 2008) and criteria used to diagnose PBD in clinical settings may have evolved over the last decade. Therefore, we aim to assess whether PBD diagnostic rates in inpatient units have changed between 2005 and 2015. Methods: Data were Medicaid billing claims from five psychiatric inpatient hospitals in Nevada, including 48,108 unique inpatient admissions for youth (ages 5-17) from 2005-2015. PBD admission rates were converted to rate per 1000 admissions per hospital per year. Multilevel modeling with gender as a covariate was used to determine growth or lack of growth over time. Results: PBD diagnostic rates varied significantly across hospitals, intercept $SD=47.56$ (23.24- 97.34 95% C.I.), and the rate of change varied significantly, slope $SD=6.22$ (2.99-12.95 95% C.I.). There was a nonlinear decline in the rate of PBD diagnoses from 2005-2013 ($b=3.32$ (- 15.55-22.18 95% C.I.), $b^2 = -5.30$ (-9.62- -.98 95% C.I.)) with a mild increase from 2013-2015, cubic $b=.42$ (.14-.70 95% C.I.). Declines were strongest for hospitals with the highest initial diagnostic rates. There were no gender differences in the PBD diagnostic rate or change. Discussion: Between 2005 and 2015, the rate of inpatient PBD diagnosis significantly declined for both males and females. Declining diagnostic rates of PBD over the past decade may be associated with evolving conceptualizations of the PBD phenotype.

26. Examining Serial Position Effects of the Emotional Verbal Learning Test and California Verbal Learning Test-Second Edition in Individuals with Schizophrenia

Ashley Emami, Alicia Nuñez, Susette Favela, Gregory Strauss, Dan Allen | Psychology

Individuals with schizophrenia (SZ) experience cognitive deficits, including problems with short- and long-term memory. Therefore, it is important for providers to use tests that aid in the assessment of learning and memory and to track the course of deterioration or recovery. The current study assessed examined differences in serial position effects for two tests of learning and memory: the Emotional Verbal Learning Test (EVLTL) and California Verbal Learning Test-Second Edition (CVLT-II). The study included individuals with SZ (n=70) and community controls (CN; n=52). Participants in the SZ group were recruited from an outpatient community mental health clinic, and were on average 42.40 years old (SD=11.78), with 11.94 years of education (SD=1.92). The CN group was on average 32.37 years old (SD=12.07) with 13.78 years of education (SD=1.51). The EVLT and CVLT-II were administered to participants in a counterbalanced order. A repeated-measures ANCOVA (controlling for age) was used to examine differences in serial position effects for the EVLT and the CVLT, where serial position (i.e., primacy, middle, recency) and test served as the repeated measures, and group was the between subjects variable. Results of the ANCOVA indicated: a significant main effect for group, $F(1, 119) = 94.23, p < .001$, a significant main effect for serial position, $F(2, 119) = 3.90, p < .05$, a significant serial position by test interaction effect, $F(2, 119) = 5.53, p < .01$, and a marginally significant group by serial position by test interaction, $F(2,119) = 2.87, p = .059$.

27. The effects of a culturally adapted intervention for student-athletes on engagement in mental health services, treatment adherence, and client satisfaction with services

Yulia Gavrilova, Marina Galante, Elena Gavrilova, Michael Bricker, Ally Danlag | Psychology

Athletes evidence special needs pertaining to mental health intervention and sport performance programming. Despite having a high proportion of mental health concerns, athletes continually demonstrate significantly lower help-seeking behaviors compared to their non-athlete peers. The present study aims to understand associations of a culturally sensitive cognitive-behavioral intervention with athletes' help-seeking behaviors and satisfaction with services. Present data is part of a larger randomized controlled trial funded by the National Institutes on Drug Abuse (NIDA; 1R01DA031828) that evaluates the efficacy of The Optimum Performance Program in Sports (TOPPS) compared to treatment as usual (i.e., Counseling and Psychological Services; CAPS) in a population of collegiate athletes evidencing substance misuse. TOPPS is founded on the tenets of Family Behavior Therapy (FBT), an evidence-supported, significant-other-based intervention adapted to fit sport culture. Participants were 78 student-athletes who were assigned to receive services at either TOPPS (n = 38) or CAPS (n = 40). Of athletes assigned to CAPS, only 43% pursued services (at least one meeting), whereas 89% of TOPPS athletes pursued services. The following analyses (e.g., independent t-tests for group comparisons) were completed with athletes who participated in services. Compared to CAPS athletes, TOPPS athletes attended significantly more meetings ($p < .001$) and were significantly more satisfied with services based on the Client Satisfaction Questionnaire-8 (CSQ-8; $p = .003$), which included ratings on quality of services, the extent to which the program met their needs, whether/not they would recommend the program to others, and whether or not the services helped them deal more effectively with problems.

28. Individual Differences in Children’s Display of Attractiveness Biases

Stephanie Verba, Jennifer Rennels | Psychology

We investigated whether 9-11-year-olds and 14-16-year-olds’ self-esteem and perspective-taking ability moderated their displays of bias and flexibility in the attractiveness domain. Children (N=91) completed the Piers-Harris Children’s Self-Concept Scale, the Perspective-Taking subscale of the Interpersonal Reactivity Index, and a non-forced-choice bias task in which they saw eight face pairs that matched on sex, race, and age but significantly differed in attractiveness. For each face pair, children made selections based on two positive traits, two negative traits, and considered who would reciprocate positive evaluations. Children could choose one of the two faces (i.e., displaying bias), or both or neither of the faces (i.e., displaying flexibility). For both age groups, children’s self-esteem and perspective-taking ability positively predicted their flexible thinking, but not their bias. Potential self-esteem and perspective-taking ability interventions may yield avenues to increase flexible thinking, but predictors of bias need to be further explored.

29. A Culturally Adapted Optimization Intervention for Collegiate Student-Athletes: A Case of Bulimia Nervosa in a Lean Sport Athlete

Marina Galante, Brad Donohue, Yulia Gavrilova | Psychology

The present study provides a controlled implementation of The Optimum Performance Program in Sports (TOPPS) in a lean sport athlete with Bulimia Nervosa. Developed with support from the National Institutes of Health, this holistic intervention integrated sport-specific factors into intervention planning to enhance participation in an athlete who previously rejected psychotherapeutic services. The athlete completed an initial pre-treatment assessment, 16 weekly intervention meetings, and a post-treatment and four-month follow-up assessment. All assessments were conducted by a trained assessor. Assessments comprised the Structured Clinical Interview for DSM-IV, Timeline Follow Back (TLFB) Interview for substance use and risky sexual behaviors, Beck Depression Inventory-II, SCL-90-R, Sport Interference Checklist (SIC), and Student Athlete Relationship Instrument (SARI). At baseline, client met full DSM-IV criteria for Bulimia Nervosa and experienced elevated mental health symptoms (via SCL-90-R) including recurrent unpleasant thoughts, overeating, and difficulty making decisions. Interventions were implemented with prescribed protocol checklists, and the performance coach demonstrated strong protocol adherence (88%) and interrater reliability with an independent rater (86.4%). At post and follow-up timepoints, client evidenced full remission of BN DSM-IV diagnosis, improvements in unprotected sex and binge drinking as per the TLFB, and significant reductions in cognitive and behavioral factors that interfered with her sport performance (via SIC). The BDI-II total score remained in the minimal range with an improvement of 55% from baseline assessment to follow-up. The client’s psychiatric functioning in SCL-90-R subscales obsessive-compulsive, interpersonal sensitivity, depression, anxiety, and the global severity index improved by two standard deviations from baseline assessment to follow-up. Intervention components and methods of engaging athlete populations will be discussed.

**Social Science Poster Session Poster C –
Ballroom**



Presentations

- 9:00 – 9:15am (#30) Emilio Jacintho,
Department of Anthropology
- 9:15 – 9:30am (#31) Maryann Calleja,
Department of Anthropology
- 9:30 – 9:45am (#32) Claire Morgan,
Department of English
- 9:45 – 10:00am (#33) Shekinah Hoffman,
Department of Sociology
- 10:30 – 10:45am (#34) Clairia Ralston,
Department of Anthropology
- 10:45 – 11:00am (#35) Leisa Loan,
Department of English
- 11:00 – 11:15am (#36) Danielle Romero,
Barbara Roth, Darrell Creel,
Department of Anthropology
- 11:15 – 11:30am (#37) Daniel M. Perez,
Department of Anthropology

Social Science Poster Session C – Ballroom
9:00 – 9:15am

30. Supranational Identity Politics: Top-Down Effects Of Multicultural Policies in EU Member States

Emilio Jacintho | Anthropology

Implementing policies based on identity politics, conceived at the supranational level, might have the unintended consequence of motivating the coordination of populist movements, decreasing generalized trust, and increasing resentment towards minority groups. My research investigates the transposition and implementation of European Union policies, focusing on positive discrimination toward minority populations, in the legislative systems of new EU member states. The presentation highlights how the implementation of such policies might have contributed to resentment towards ‘outsiders’, the emergence of extremist political parties, and the mistrust of political institutions and traditional parties. The political and economic landscape, at the regional level, is evaluated thanks to qualitative studies, focusing specifically on three EU member states that have undergone a post-communist transition: Poland, Slovakia, and Hungary. The general argument is supported by a quantitative analysis on Eurobarometer time-series data at the country level. I also incorporate a review of World Bank and Eurostat reports on the topics of investigation, and of the theoretical literature on ethnic competition, welfare spending and multiculturalism, and on the specifics of the political parties and systems of the selected countries. Results from this mixed-methods investigation, to assess for potential effects (e.g. motivation of extremist political movements, decreased trust, increased resentment towards minorities) associated to the top-down implementation of multicultural policies, are presented.

Social Science Poster Session C – Ballroom
9:15 – 9:30am

31. Assessing Post-Migratory Health and Violence at Prehistoric Point of Pines (A.D. 1000-1450)

Maryann Calleja | Anthropology

The Point of Pines region in southeastern Arizona is significant as a migratory nexus in the American Southwest (A.D. 1000-1450). Prehistoric groups converged here and decided to either coalesce or remain in distinct cultural enclaves. The extent to which sociopolitical assimilation did or did not occur has been examined and debated through multiple archaeological studies in the past, yet complete bioarchaeological analyses have not been conducted in this area. The use of violence, availability of nutritious foods, and the body’s response to disease and external stressors are all recorded upon skeletal remains. Due to its more obvious display on bones, violence is often only included in its direct form in research analysis. Unequal access to resources and the use of violence – or the threat of violence – for social influence must also be considered in anthropological assessments of social organization. A biocultural approach combines biological evidence with sociocultural information to enable nuanced assessments of social organization in the past. This project serves as a preliminary assessment of a small sample from the Point of Pines Pueblo in Arizona. Skeletal data designed to contextualize health and, as well as markers of repetitive physical labor, are analyzed allowing deeper investigation into questions regarding interpersonal violence, health, and activity levels in relation to migration and sociopolitical integration.

Social Science Poster Session C – Ballroom
9:30 – 9:45am

32. Literary Journals Today

Claire Morgan | English

Literary journals have a critical role in providing platforms for a wide array of voices, as well as prompting social change. This presentation will discuss the continuing relevance of literary journals within academia, the arts, and our sociocultural discussions and understandings. It will also address the challenge many of these publications face in adapting to changes in funding, technology, and readership. This presentation will be primarily informed by my experience with Interim, UNLV's literary journal focused on poetry and poetics, as well as by my attendance at the Association of Writers & Writing Programs (AWP) annual conference, which is the largest and most influential literary conference in the U.S.

Social Science Poster Session C – Ballroom
9:45 – 10:00am

33. Is Sociology Too WEIRD? Observations from the Gambling/Gaming Discipline

Shekinah Hoffman | Sociology

Social scientists studying the field of gambling and gaming consistently publish generalizations about gambling behavior and habits in top international journals based on samples drawn exclusively from Western, Educated, Industrialized, Rich, and Democratic (WEIRD) societies. Based on Henrich, Heine, Norenzayan (2010)'s comparative study, which concludes that WEIRD societies are the "least representative populations one could find for generalizing about humans," our review of secondary data from top gambling/gaming journals over the past 5 years suggests a similar circumstance in the field: a considerable percentage of gambling/ gaming sample populations are derived from WEIRD societies, particularly the United States, Canada and Australia.

Social Science Poster Session C – Ballroom
10:30 – 10:45am

34. Belén Plaza Vieja Preservation

Project: Excavation, Preservation, and Conservation of a Historic Genízaro Community

Claira Ralston | Anthropology

The presented research showcases the initial site survey and public outreach strategy conducted during the summer of 2017 in preparation for an archaeological project. There has been an increasing trend toward transparency between anthropologists and the communities they work in, and this is the guiding principle of the research project discussed here. Presented are the site map and meetings the project researchers arranged with various community “stakeholders” to acquire the proper legal permissions to excavate the site, while facilitating community awareness of the project. The long-term project seeks to investigate the general demographic and health profile of a community of Native-American freed slaves, known as Genízaros, interred within the Plaza Vieja—a colonial mission dating to the late 18th and 19th century in Belén, New Mexico. The early colonial history of Belén’s founding mission church and plaza, its founding families, and their society have been gradually obscured by colonial and civic narratives. Osteological and archaeological analyses will be used to reconstruct the lived experiences of the Genízaro community, and what those experiences reveal about colonial life and identity formation in New Mexico during the 18th and 19th centuries. The Plaza Vieja cemetery is potentially the largest known colonial-era cemetery for Native American freed-slaves from the 18th and 19th centuries. Therefore, this site presents a unique opportunity to explore the history of a marginalized community and population of people in the Southwest who are mostly invisible in colonial and historical narratives. This project will serve as a model for engaged anthropology.

Social Science Poster Session C – Ballroom
10:45 – 11:00am

35. Poetry's Place in 2017

Leisa Loan | English

For my research I will be attending the Association of Writers and Writing Programs (AWP) Conference this spring in Tampa, Florida. This historic conference connects a large and diverse community of writers, professors, and scholars each year to help promote growth and development in the field of writing. As a first year poetry MFA I am specifically interested in the panel discussions hosted by leading experts in their fields of study that will focus on the place of poetry in modern day society. Through this research I hope to uncover who the main audience for poetry is in 2017 and how we as writers can target and maintain that audience as well as expand it. As an instructor at UNLV who will be teaching creative writing to undergraduates I also want to engage in this conversation through my research to find out how to best teach creative writing to a younger audience and how to guide them in their creative work. Aside from panel discussions on craft and pedagogy, I am also going to study the vast number of small presses and literary magazines on display at the conference. I am interested to see how these presses are marketing themselves to a contemporary audience and how they advertise their work and distribute the poetry they publish. The literary magazine is one of the most vital ways new voices in poetry are found and heard so examining the ways modern day literary magazines are functioning is imperative to my research.

36. Home Is Where The Hearth Is: Pithouse To Pueblo Transition At The Elk Ridge Site, New Mexico

Danielle Romero, Barbara Roth, Darrell Creel | Anthropology

The transition from pithouses to pueblo rooms in the Mimbres Valley was long thought to have been a rapid shift. Using archaeological evidence from excavations at NAN Ranch, Harry Shafer posited that transitional pithouse structures existed in the Mimbres Valley during the late Three Circle phase (ca AD 900s) and that this architectural change would have been a multi-generational process. During the 2017 season at Elk Ridge, a Classic period (AD 1000-1130) pueblo located on the Gila National Forest, a transitional pithouse was discovered beneath an Early Classic pueblo room that had later been turned into a ramada surface. The south and east walls of the pithouse were reused as the walls of the pueblo room, indicative of a connection between the two households. This poster examines the architecture and artifacts recovered from the pithouse and pueblo room in order to provide information on chronology, household activities, and abandonment activities leading to the pueblo construction.

37. Assessing Ceramic Vessel Size Variation Between the Harris Site and Elk Ridge, New Mexico

Daniel M. Perez | Anthropology

Site duration of prehistoric archaeological sites in the American Southwest can be ascertained using various chronometric and chronological methods, including radiocarbon dating and ceramic seriation. While many archaeological studies focus on using ceramic data as chronological markers to delineate site occupation(s), further applications of the same ceramic data are not usually applied toward considerations of group size and inter-site artifact variability. Using two prehistoric archaeological sites in the Mimbres River Valley, southwestern New Mexico—the Harris Site and Elk Ridge—I explore ceramic vessel variation between these two sites. Methods utilized for assessing ceramic vessel variability comprise two general steps: first, a classification of vessel types; and second, quantitative considerations of each vessel type frequencies between the two sites. Among the considerations proposed in this study are: the correlation between vessel type and associated proveniences; vessel size variation; and the relationship between vessel size and site occupation, population size, and habitation strategies between the Harris Site and Elk Ridge. The overarching significance of this project stems from two broad aims. First, inform anthropologists, archaeologists, and the broader Mimbres Valley community of the cultural heritage in southwestern New Mexico, while contributing to the growing appreciation and sense of archaeological stewardship among avocational archaeologists and the public alike in this archaeologically-rich region. Second, present the usefulness of a largely under-utilized approach using archaeological data from a widely-studied region in the American Southwest.

**Social Science & Hospitality
Poster Session – Ballroom**



Presentations

- 8:45 – 9:00am (#38) Stacey L. Clouse,
Logan P. Kennedy, Tamara
D. Madensen, Department of
Criminal Justice
- 9:00 – 9:15am (#39) Eric Noonan,
Department of Hospitality
- 9:15 – 9:30am (#40) Dory A. Mizrachi,
Department of Environmental
and Public Affairs
- 9:30 – 9:45am (#41) Jason Tang,
Department of Hospitality
- 9:45 – 10:00am (#42) Jonathan Mehanna,
Rafael Oganessian,
Department of Political
Science
- 10:30 – 10:45am (#43) Allison Cox,
Department of
Communication Studies
- 10:45 – 11:00am (#44) Jonathan M. Birds,
Tamara D. Madensen,
Department of Environmental
and Public Affairs
- 11:00 – 11:15am (#45) Tefvik Demirciftci,
Mehmet Erdem, Department
of Hospitality

Social Science & Hospitality Poster Session – Ballroom
8:45 – 9:00am

38. From Verbal Judo to Physical Restraint: A Multi-disciplinary Content Analysis of De-escalation Techniques

Stacey L. Clouse, Logan P. Kennedy, Tamara D. Madensen | Criminal Justice

The United States is currently experiencing incidents of civil unrest in response to police actions. With widespread media coverage of police use of force incidents, police agencies have quickly embraced training that emphasizes de-escalation tactics. However, little is known about the effectiveness of specific tactics or training programs. The current study provides a content analysis of multi-disciplinary research to identify de-escalation techniques used in alternative fields (e.g. nursing, education, mental health). We assess the degree to which these techniques (1) are similar to de-escalation tactics commonly used in police training programs and (2) align with the four elements of the RDFC Interaction Model that explains citizen acceptance and support of police intervention (Sousa & Madensen, 2016). Findings are used to explore how current de-escalation strategies can be modified to enhance police training.

Social Science & Hospitality Poster Session – Ballroom
9:00 – 9:15am

39. Wine and the Greenhouse Effect of Climate – Sustainability

Eric Noonan | Hospitality

Wine has had a momentous impact on society, whether it has been during ceremonies of the church, festive gatherings, over a meal with friends, or just sitting and enjoying a beautiful bottle from a particular vintage. Since the beginning of wine production centuries ago, it has had a significant position in both cultural and social settings the world over. As the welfare of the wine industry is being exposed and become vulnerable to climate change, the focus of my research has been to discover and bring attention to the industry and the various solutions others are using to address their sustainability issues. It is imperative to pay attention to these resolutions if the wine industry is going to survive. In looking at how wine producers, grape growers, and vineyard owners respond to climate change and manage mitigation and utilize the various adaptation strategies, some answers to the questions asked should assist in the future of the wine industry. My research thus far is only a sampling of how various vineyards in Napa Valley have been handling this dilemma. My research format includes different types of methodology, such as qualitative analysis, quantitative analysis method, and being able to identify the relationship between the various solutions and industry (correlation/regression analysis). The findings of this research are analyzed and the implications of these adaptation strategies given by the participants, any other information considered.

Social Science & Hospitality Poster Session – Ballroom
9:15 – 9:30am

40. Criminological Factors Predicting Repeat Domestic Violence Victimization

Dory A. Mizrachi | Environmental and Public Affairs; Dr. William H. Sousa | Criminal Justice

Repeat victimization is commonly understood as the pattern and prevalence of victimization and supports the idea that past victims are often at high risk of future victimization. This is an important factor for local authorities in their attempt to predict and prevent crimes. Thus, many police departments around the country, including the Las Vegas Metropolitan Police Department (LVMPD) have adopted the Lethality Assessment Program (LAP). The LAP is a tool used by officers on domestic violence calls, designed to prevent victims from future risk of lethal violence. However, a recent report published by the Department of Justice questions the predicative validity of the LAP and suggests that some police departments may want to explore utilizing alternative tools. The current study provides an analysis of recent trends, including demographic information on domestic violence homicides in Las Vegas, Nevada over a two-year period, as well as preliminary findings from the evaluation of the effectiveness of LVMPD's implementation of the LAP program.

Social Science & Hospitality Poster Session – Ballroom
9:30 – 9:45am

41. The Effect of Server Wage Rate on the Socially Accepted Average Tip Rate

Jason Tang | Hospitality

Total income of restaurant servers is comprised of tips received from customers and direct wages received from their employers. Restaurants pervasively pay servers the lowest possible legal wage in the form of either the minimum wage or the tipped minimum wage. Despite recent increasing attention and focus on the economic impact of tipping, academicians have not previously explored the association between server wage rates and socially accepted average tip rates. Extending prior research of restaurant tipping motivations, antecedents and consequences, this current study seeks to combine appropriate economic and psychological drivers of tipping with server hourly wages to determine if there is a relationship between server wage rates and socially accepted average tip rates.

42. African Economic Voting

Jonathan Mehanna, Rafael Oganessian | Political Science

Recent scholarship has moved beyond traditional interpretations of the economic vote - commonly referred to as valence economic voting - to much more dynamic interpretations of how the economy impacts the electoral success of political parties. This article tests various dimensions of the economic vote, including patrimonial and positional economic voting, in the African Continent. Moreover, it addresses how economic perceptions impact non-electoral forms of political action. Relying on the most recent wave of the Afrobarometer (Round 5), I analyze how the classical economic voting model ranks against patrimonial and positional economic voting. The results suggest that Africans interpret the economic vote largely as a valence issue. That said, traces of positional economic voting are found in a case study of Kenyan voters. In all, economic attitudes drive both electoral as well as non-electoral forms of political action.

43. Managing Family Dynamics: Communication Strategies for Families with a Child with Intellectual Disability Breaking Down Societal Stigmas

Allison Cox | Communication Studies

The importance of the family's role that has a child with an intellectual disability breaking down societal stigmas surrounding intellectual disabilities has not been a topic explored immensely. The way that families with a child with an intellectual disability constructs their identity is partially through already socially constructed ideas. Based on the social views at a particular time, it creates the sociohistorical context which has a high influence on how a family perceives a disability diagnosis (Ferguson, 2001). Their identity, can be carried on through generations and if positive can start to change negative social ideas or stigma of intellectual disabilities thus improving their quality of life. An individual's quality of life is determined by their level of self-identity, as well as feeling included in society (Blacher, Neece & Paczkowski, 2005; Canary, 2008; Hole, Stainton, Wilson, 2013; Schalock, Brown, Brown, Cummins, Keith, Parmeter, 2002). A large aspect of feeling included in society for an individual with an intellectual disability is through the family unit. Having a sense of belonging and having clear interpretations, is having good family communication and is vital for all members of the familial unit. Strong communication is needed because they all rely on each other for support. Households with a child with intellectual disabilities are faced with stressors such as behavioral outbursts that other families may not face and need effective communication to move forward. Effective communication strategies can be prescribed by applying communication theories such as Narrative Theory, Attribution Theory and Politeness Theory. Each of these theories provide the framework for crafting positive family narratives that can shift society's stigma against individuals with intellectual disabilities.

44. Exploring Land Use, Place Management, and Crime

Jonathan M. Birds, Tamara D. Madensen | SEPA

Repeat victimization is commonly understood as the pattern and prevalence of victimization and supports the idea that past victims are often at high risk of future victimization. This is an important factor for local authorities in their attempt to predict and prevent crimes. Thus, many police departments around the country, including the Las Vegas Metropolitan Police Department (LVMPD) have adopted the Lethality Assessment Program (LAP). The LAP is a tool used by officers on domestic violence calls, designed to prevent victims from future risk of lethal violence. However, a recent report published by the Department of Justice questions the predicative validity of the LAP and suggests that some police departments may want to explore utilizing alternative tools. The current study provides an analysis of recent trends, including demographic information on domestic violence homicides in Las Vegas, Nevada over a two-year period, as well as preliminary findings from the evaluation of the effectiveness of LVMPD's implementation of the LAP program.

45. Exploring Technology Interference in the Classroom: Implications for the Hospitality Workplace

Tevfik Demirciftci, Mehmet Erdem | Hospitality

Hospitality industry offers many part-time and on-call employees. College students comprise a considerable portion of part-time and on-call positions in most geographies across the U.S. and especially in convention cities such as Las Vegas. Today's college students are also referred to as Digital Natives due to their exposure to a digitally connected world at a young age. Several studies have shown that digital natives suffer from a short attention span as well as anxiety when they have limited use of communication related technologies, i.e. when in the classroom or at work. They struggle with being digitally 'disconnected'. The aim of this exploratory study is to define the scope of technology interference experienced by college level hospitality students in the classroom as well as at the workplace. The study will attempt to determine potential solutions and policies to assist the students with their behavior management in the classroom and at the workplace.

**Science
Poster Session – Ballroom**



Presentations

- 9:00 – 9:15am (#46) Surbhi Sharma, Martin Schiller, School of Life Sciences
- 9:15 – 9:30am (#47) Tatiana Ermi, Carmen Vallin and Eduardo A. Robleto, School of Life Sciences
- 9:30 – 9:45am (#48) Adam Dick, Department of Chemistry and Biochemistry
- 9:45 – 10:00am (#49) Toluwalope A. Bamisile, Elisabeth M. Hausrath, Oliver D. Tschauner, Wendy Calvin, Zoë Harrold, Christopher Adcock, Charity M. Phillips-Lander, Seth Gainey and Rebecca Gabriel, Department of Geoscience
- 10:30 – 10:45am (#50) Natiera K. Magnuson, Department of Chemistry and Biochemistry
- 10:45 – 11:00am (#51) Christopher Yip, Department of Chemistry and Biochemistry
- 11:00 – 11:15am (#52) Nam Hoang, Xuan Zhang, Chunxiao Zhang, Van Vo, Feng Leng, Lovely Saxena, Feng Yin, Fei Lu, Guangrong Zheng, Pradip Bhowmik, Hui Zhang, Department of Chemistry and Biochemistry
- 11:15 – 11:30am (#53) Cindy X. Kha and Ai-Sun Tseng, College of Life Sciences
- 11:30 – 11:45am (#54) Cheng Chen, Rebecca Martin, Zhao-Huan Zhu, Department of Physics and Astronomy

Science Poster Session – Ballroom
9:00 – 9:15am

46. Investigating the carboxyl end of human proteins for minimotifs

Surbhi Sharma, Martin Schiller | School of Life Sciences

13% of the human genes encode for proteins containing ~3,500 carboxyl-terminal minimotifs. The C-terminal minimotifs are 2-10 amino acid long contiguous residues in proteins that are involved in primarily three molecular functions: binding, modification and trafficking. We mined the C-termini of human proteome and predicted 9 million C-terminal sequences that could be potential minimotifs. We tested ~30 predictions through co-immunoprecipitation experiments followed by liquid chromatography tandem mass-spectrometry and identified potential binding partners of these minimotifs indicating that the selected 30 C-terminal sequences could potential function as minimotifs.

Science Poster Session – Ballroom
9:15 – 9:30am

47. The Role of non-B DNA in Bacillus subtilis Stationary Phase Mutagenesis

Tatiana Ermi, Carmen Vallin and Eduardo A. Robleto | Life Sciences

Stationary phase mutagenesis (SPM) is a phenomenon in which mutations arise in non-growing conditions. In *Bacillus subtilis*, it has been proposed that the process of transcription influences SPM. The specific mechanisms of how transcription mediates mutagenic events during stationary phase are still being investigated. One hypothesis is that during transcription, the formation of non-B DNA structures can block RNA polymerase (RNAP) and trigger Transcription Coupled Repair (TCR). TCR is a DNA repair pathway that directs repair to transcribed regions of the genome and is recruited when RNA polymerase pauses. During stationary phase, this repair is often mutagenic due to an abundance of error-prone polymerases. G4 DNA, a type of non-B DNA, has been shown to block RNAP and trigger TCR. I will test the hypothesis that G4 DNA promotes the formation of mutations in highly transcribed genes of *B. subtilis* during stationary phase through error-prone repair. Previous work in our lab has shown that Stem Loop Structure (SLS), another type of non-B DNA increased mutagenesis levels and with this work, we plan to expand on this idea. These non-B DNA structures have been linked to instability and disease, and this work will provide insight as to the mechanism for which this is occurring. This understanding will also shed light on novel mechanisms that lead to evolution in all organisms.

48. Drug inhibition of Acid Sphingomyelinase (ASM) Induces Aberrant Trafficking of Autophagosome marker LC3-Phosphatidylethanolamine (LC3-II)

Adam Dick | Chemistry and Biochemistry

Autophagy is vital pathway the cell uses to degrade and recycle cellular components. A response to stress, starvation, and toxins, autophagy promotes cell survival and maintenance of cellular energy levels. Diseases like cancer may have up regulated autophagy to support growth and resistance to treatments. Targeted cytoplasmic constituents are isolated in a double membrane vesicle, autophagosome, that will fuse with lysosomes and contents are degraded or recycled. Formation of Autophagosomes and fusion with the lysosome can be tracked using markers LC3-II and lysosome associated membrane protein (LAMP2). ASM is located inside the lysosome and catalyzes the breakdown sphingomyelin to ceramide. There is evidence that some neurons show higher sensitivity to ASM function and inhibition results cell death. Glioblastomas are highly resistant to drug treatments, which may be attributed to upregulated autophagy. It was the goal of this experiment to determine if inhibition of ASM resulted in a change in the autophagosome fusion with the lysosome. Using glioblastoma cells, the study suggests fusion of the autophagosome and the lysosome may be disrupted during inhibition of ASM. Through fluorescent confocal microscopy using green fluorescent tagged LC3-II and red fluorescent antibodies to LAMP2, there is clear indications that fusion is perturbed, and aberrant levels of autophagy is present. These results provide an avenue into further understanding of brain cancer and the role of autophagy has in neurons.

49. Analysis of Iron-Rich Weathering Products in Serpentine Soils and Their Implications for Mars

Toluwalope A. Bamisile, Elisabeth M. Hausrath, Oliver D. Tschauer, Wendy Calvin, Zoë Harrold, Christopher Adcock, Charity M. Phillips-Lander, Seth Gainey and Rebecca Gabriel

X-ray amorphous materials, detected in Gale Crater, Mars are thought to be Fe-rich weathering products based on their chemical data and volatile-rich nature. The presence of Fe- rich poorly or nanocrystalline materials on Mars may indicate minimal water-rock interaction and/or low temperatures during weathering of mafic materials. However, the identity of these Fe- rich X-ray amorphous weathering products remains unclear, limiting our ability to interpret the conditions of past aqueous alteration on Mars. To better identify and understand conditions necessary for the formation of Fe-rich X-ray amorphous weathering products, like those potentially present on Mars, we are investigating weathering products in Fe-rich and Al-poor terrestrial serpentine soils formed in the Trinity Ultramafic body of the Klamath Mountains, California. These soils have been recently deglaciated, and have a cool, Mediterranean-type climate. The clay-sized fraction, considered most likely to contain an X-ray amorphous component, was isolated from soil samples via flocculation and centrifugation. Samples were characterized by powder X-Ray Diffraction (XRD), Scanning Electron Microscopy (SEM) with Electron Dispersive Spectroscopy (EDS), Synchrotron- X-ray diffraction (μ XRD) and Synchrotron- X-ray fluorescence spectroscopy (μ XRF). XRD analyses of two samples revealed poorly or nano-crystalline smectites being formed as weathering products. If similar materials are found on Mars, this might imply short duration of water-rock interactions after their precipitation. Further investigation of morphology, composition and crystallinity of materials on a microscale by Transmission Electron Microscopy will help yield insights that will expand our understanding of conditions of formation of Fe-rich X-ray amorphous materials on Mars.

Science Poster Session – Ballroom
10:30 – 10:45am

50. Effect of DPA on *Bacillus anthracis* Spore Cytotoxicity

Natiera K. Magnuson | Chemistry and Biochemistry

Bacillus anthracis spores form in response to starvation and can withstand extremes of heat, radiation, and chemical toxins. These characteristics make *B. anthracis* spores ideal vehicles for infection. The resistance and dormancy of bacterial spores are dependent on a largely dehydrated core. The spore core is not only devoid of water, but contains between 0.8 to 1M calcium complexed in equimolar amounts with 2,6-pyridinedicarboxylic acid (dipicolinic acid, DPA). An anthrax infection starts with the germination of *B. anthracis* spores inside the phagolysosome of an alveolar macrophage. During germination, spores release the CA-DPA depot into the environment. The germinated spore can then produce toxins that eventually kill the macrophage. The pyridine nitrogen of DPA has a pKa of 4.97. This pKa is close to the pH of the phagolysosome, leading to the pyridine nitrogen being partially protonated. This partial protonation could result in a weakening of the DPA-calcium complex and/or increase in the pH of the phagolysosome. This project focuses on whether DPA plays a part in *B. anthracis* spore cytotoxicity, perhaps by acting as a buffer in the phagolysosome. To discern the role of DPA in *B. anthracis* spore cytotoxicity, DPA-null mutants will be generated using allelic exchange. We will observe the effect of these DPA-null mutants on infected macrophage viability versus wild-type. From there we will then label wild-type and DPA-null *B. anthracis* spores with pH sensitive dyes and monitor phagolysosomal pH during intracellular spore germination. And, by using a V-ATPase inhibitor, shutoff the lysosomal proton pump thereby de-acidifying the phagolysosome.

Science Poster Session – Ballroom
10:45 – 11:00am

51. Characterization of Germination Inhibitors against *Clostridium difficile* R20291

Christopher Yip | Chemistry and Biochemistry

Clostridium difficile infections (CDI) are the leading cause of hospital-acquired diarrhea worldwide. Under normal circumstances, bacteria found naturally in the gastrointestinal tract provide a barrier against *C. difficile* colonization by occupying nutrient-rich niches. However, upon antibiotic therapy, the protective barrier is lost as the microbial community becomes depleted – this then provides the opportunity for *C. difficile* to colonize the human gut. Exposure to taurocholate, a natural bile salt found in the gastrointestinal tract, causes *C. difficile* spores to begin their transition, a process known as germination, from metabolically dormant structures to toxin-producing cells. As germination is required for disease, this provides insight into novel strategies for preventing CDI. While the target for taurocholate is currently unknown, chemical probes can be utilized to determine structure-activity relationships. These structure-activity relationships allow for the rational development of potent drug candidates. CAmSA, a synthetic analog of taurocholate, was previously shown to be an effective inhibitor of *C. difficile* 630 germination, both in vitro and in vivo. CAmSA, however, shows no activity against R20291, a hypervirulent strain of *C. difficile*. In this study, a library of CAmSA analogs was synthesized and their efficacy of each analog against R20291 was determined. We report an analog that is 30 times more potent against R20291, as CAmSA was against 630. Several CAmSA analogs identified in this study account for some of the most potent anti-germinants reported so far against *C. difficile*.

Science Poster Session – Ballroom
11:00 – 11:15am

52. New Histone Demethylase LSD1 Inhibitor Selectively Targets Teratocarcinoma Cells by Downregulating Sox2 Expression

Nam Hoang, Xuan Zhang, Chunxiao Zhang, Van Vo, Feng Leng, Lovely Saxena, Feng Yin, Fei Lu, Guangrong Zheng, Pradip Bhowmik, Hui Zhang | Chemistry and Biochemistry

Cancer is one of the leading cause of death in the world. Cancer stem cells (CSCs) are cancer cells that possess the characteristics associated with normal stem cells. Such cells are hypothesized to persist in tumors and cause relapse. Therefore, development of specific therapies targeted at CSCs holds hope for improvement of survival among cancer patients. LSD1 is essential for survival in embryonic pluripotent stem cells as well as being upregulated in CSCs such as teratocarcinoma/teratocarcinoma. Our lab and our collaborators have developed a compound, CBB3001 (Figure 1), which potentially inhibited LSD1 activity in vitro and in vitro. In our studies, we found that CBB3001 selectively inhibited growth of PA-1 pluripotent human ovarian teratocarcinoma but not HCT-116, a non-pluripotent colorectal carcinoma. Additionally, our result showed that CBB3001 downregulate Sox2, a pluripotent stem cell protein that is essential in embryonic stem cells and teratocarcinoma/carcinoma. The studies strongly suggest CBB3001 act as a specific LSD1 inhibitor that selectively inhibits pluripotent cancer cells with stem cells properties.

Science Poster Session – Ballroom
11:15 – 11:30am

53. Eye Regeneration in Frog Tadpoles

Cindy X. Kha and Ai-Sun Tseng | Life Sciences

There are over 36 million Americans who suffered major eye diseases in 2014. These diseases are a major economic burden, costing over \$139 billion in expenses. For these reasons, research focused on eye repair and regeneration may help to alleviate the burden of cost and improve quality of life. To pursue this goal, we use the African clawed frog, *Xenopus laevis*, as our model organism as it is a highly regenerative species. The frog tadpole is able to regenerate mature eye tissues including the retina, optic nerve, pigmented epithelium, and the lens. However, it was not known whether embryos would have similar ability. We recently found that young embryos can regenerate eyes after surgical removal. We used this unexpected observation to establish a new model for understanding eye regeneration. After surgical removal, the regenerate eye is made within 5 days and is comparable to a normal eye. It contained all the expected eye cell types and structures. To identify mechanisms that control this process, we assessed the role of apoptosis (cell death), a mechanism that regulates limb regeneration. Treatment with apoptosis inhibitors reduced cell death in the eye and inhibited regeneration, demonstrating that this is a required mechanism. In summary, our studies have established a new model for studying developmental eye regeneration and identified a mechanism that is required for the process. This new model will serve as a foundation for isolating eye stem cells and identifying genes that can help to repair an injured eye.

54. The evolution of a dead zone in a circumplanetary disk

Cheng Chen, Rebecca Martin, Zhao-Huan Zhu | Physics and Astronomy

Studying the evolution of a circumplanetary disk can help us to understand the formation of Jupiter and the four Galilean satellites. With the grid-based hydrodynamic code, FARGO3D, we simulate the evolution of a circumplanetary disk with a dead zone, a region of low turbulence. Tidal torques from the sun constrain the size of the circumplanetary disk to about $0.4 R_H$. The dead zone provides a cold environment for icy satellite formation. However, as material builds up there, the temperature of the dead zone may reach the critical temperature required for the magnetorotational instability to drive turbulence. Part of the dead zone accretes on to the planet in an accretion outburst. We explore possible disk parameters that provide a suitable environment for satellite formation.

Engineering Poster Session – Ballroom



Presentations

- 9:00 – 9:15am (#55) Jessica DeBerardinis, Daniel Lidstone, Janet S. Dufek, Mohamed B. Trabia, Department of Mechanical Engineering
- 9:15 – 9:30am (#56) Matthew Pusko, David Zagaceta, Department of Mechanical Engineering
- 9:30 – 9:45am (#57) Abhusan Achhami, Ajay Kalra, Sajjad Ahmad, Department of Civil and Environmental Engineering and Construction
- 9:45 – 10:00am (#58) Monia Kazemeini, Department of Mechanical Engineering
- 10:30 – 10:45am (#59) Dale Karas, Astrid Miller, Jongmin Byun, Cilla Jose, Jaeyun Moon, Department of Mechanical Engineering
- 10:45 – 11:00am (#60) Sailuj Shakya, Ajay Kalra, Southern Illinois University, Carbondale, Sajjad Ahmad, Department of Civil and Environmental Engineering and Construction
- 11:00 – 11:15am (#61) Gaurang Mistry, Ajay Kalra, Southern Illinois University, Sajjad Ahmad, Department of Civil and Environmental Engineering and Construction
- 11:15 – 11:30am (#62) Sanjana Das, Biswajit Das, Department of Electrical and Computer Engineering
- 11:30 – 11:45am (#63) Sogol Pirbastami, Darrell W. Pepper, Ph.D, Department of Mechanical Engineering

55. Determining Gait Symmetry using Pressure-Measuring Insoles

Jessica DeBerardinis, Daniel Lidstone, Janet S. Dufek, Mohamed B. Trabia | Mechanical Engineering

Gait symmetry, or lack thereof, has been researched as a symptom of pathology and as an assessment of rehabilitation treatments. Pressure-measuring insoles are an attractive tool for symmetry analysis but have yet to be validated. Thus, the purpose of this experiment was to compare the impulse symmetry index quantified by pressure-measuring insoles (Medilogic) versus a force platform (Kistler). A total of 39 healthy, ambulatory adults (14M, 25F, 23.5 ± 3.24 yrs, 66.7 ± 17.5 kg, 1.64 ± 0.09 m) were recruited for this study and fitted with a pair of insoles. The insoles were placed inside thin socks and the participants were asked to perform the following tasks: lift feet off floor for 5 seconds; stand stationary for 15 seconds; sit and lift feet off floor for 5 seconds; stand and walk 5 meters over 2 sequential force platforms. The steps occurring on the force platforms were isolated and the data from both instruments were filtered and normalized. The insole data were also calibrated to the manufacturer's standard (64 N/cm² per 255 bits). The symmetry index was calculated for the impulse of each instrument's force-time curves. Symmetric gait was defined as having an index within $\pm 4\%$. It was found that the insoles underestimated the number of participants with symmetric gait (9 and 30 participants identified with symmetric gait by the insole and force platform, respectively) and that results varied between insole sizes, with average differences up to 36% between sizes. This indicates the insoles are not able to accurately measure gait symmetry and future research is warranted.

56. Durability analysis of a flexible thermoelectric composite material

Matthew Pusko, David Zagaceta | Mechanical Engineering

Thermoelectric materials are those with properties allowing the conversion of heat differences into usable electricity. The same materials can be used “in reverse” if electricity is supplied to the material from a power source, creating a cooling effect. New thermoelectric nano-architectures allow these materials to be both flexible and durable, allowing a novel approach to harnessing energy. Wearable devices can be created which can either utilize the body's heat to generate electricity or operate in reverse to be used for cooling applications. The Bismuth Telluride/Carbon nanotube composite under study is both flexible and durable allowing new applications for thermoelectric materials. The material will be subject to multiple cycle bending tests to measure any increases in electrical resistance due to wear, minimum crack onset angle testing to determine the maximum angle at which the material can be bent without cracking, and surface adhesion tests to determine the interfacial bonding strength between the material and the flexible substrate. These tests will be performed while varying the thickness of the thermoelectric film and the results will be discussed.

57. Dynamic Simulation of Lake Mead water levels under changing climatic conditions and varying demands

Abhusan Achhami, Ajay Kalra, Sajjad Ahmad | Civil and Environmental Engineering and Construction

Lake Mead's recent droughts has resulted in decline of water level at the Lake, calling for the need to consider the impacts of climate change and the varying water demand due to increasing population. This study evaluated the effect of climate change and varying water demands on Lake Mead storage and water levels. It estimates what the Lake storage and its water level would be in future by integrating the various dynamic variables such as metrological and socio-economic factors and by varying these parameters over a wide range. A system dynamics tool STELLA was used to develop the model, which under the varying inflows and outflows would simulate the historic, present, and future Lake Mead levels. System dynamics is a computer-aided approach used in studying complex systems by analyzing the interaction between various elements within that system. Climatic parameters that affect the water volume were integrated into the model using secondary data and model was calibrated. We were able to evaluate the range of water level changes that would be experienced by the Lake Mead by running different future scenarios where inflow to and outflow from the Lake were altered considering climate change and varying water demand depending on population growth. The model helped us develop cause-effect relationships of various climatic factors involved in the model. The results give the indication that the water levels in the Lake Mead could be maintained at a higher level under certain management scenarios.

58. Plug-and-Play Radiation Sensor Components for Unmanned Aerial System Platform

Monia Kazemeini | Mechanical Engineering

Mobile radiation sensing techniques for deployment and wide area search are important for nuclear security applications. Unmanned aerial systems (UAS) can be utilized as robotic platforms to carry radiation sensors. The suite of radiation sensors that can be easily attached to the robot in field conditions is required. We developed radiation sensors that are integrated into UAS as plug-and-play interchangeable components. The ambient temperature CZT sensor was designed for high-resolution gamma spectroscopy. The spectrum is analyzed automatically locating peaks and calculating their intensities. USB hardware connections were used for both sensors to bridge the sensors and the main controller using the UAS power source, and the Robot Operation System (ROS) was used for data communication. To streamline the process of bridging disparate components into a cohesive network, the collection of libraries describing the publisher/subscriber communication of ROS nodes was developed for these sensors. The sensor's design supports hot-plugging and does not require a system restart. The time and position data were added via ROS to measured intensities of gamma-ray peaks and neutron rates enabling the input for the UAS flight control to search for specific sources of radiation. This method can be used for source localization as well as for mapping the radiation area. The experimental testing of the developed sensors using neutron and gamma sources is discussed.

59. Copper-Oxide Spinel Absorber Coatings for High-Temperature Concentrated Solar Power Systems

Dale Karas, Astrid Miller, Jongmin Byun, Cilla Jose, Jaeyun Moon | Mechanical Engineering

Concentrated Solar Power (CSP) involves methods to focus the sun's energy onto large receiver systems that produce steam and activate turbines to generate electrical power. CSP implementation in solar-favorable geographic areas features marketability for large scale renewable energy production, as well as limit water usage and offer ecosystem protections that are not as minimal compared to conventional power generation technologies. In contrast to other solar power processes, CSP features storable energy at times of limited or null solar irradiance, higher energy conversion potential, and the ability to retrofit older nonrenewable-based power plants for a reduced environmental footprint. To ensure CSP implementation remains cost-competitive, the use of materials that survive higher operating temperatures (which allows for improved solar-thermal conversion efficiency) has been realized with the application of durable spectrally-selective solar absorber coatings on CSP receiver systems, energy loss through waste heat is reduced by using such material coatings that absorb energy in the ultraviolet and visible spectral regions while rejecting infrared emissivity. This work presents a special class of cuprous inorganic oxide nanomaterials used in the synthesis of high-temperature solar absorber coatings. Beyond microscopy and chemical identification analyses, custom computational routines for optical simulations are presented, demonstrating reliability of the synthesized coatings for various CSP operating scenarios. This research ultimately presents an avenue for the production of solar energy material technologies that minimize negative impacts on sensitive desert climates and help to reduce water usage for renewable power plants key motivations for sustainable solar power generation.

60. Analysis of Hydroelectric Energy Production from a Plant with Temporal Flow and Demand Variation

Sailuj Shakya, Ajay Kalra, Southern Illinois University, Carbondale, Sajjad Ahmad | Civil and Environmental Engineering and Construction

Hydro-electricity is a clean and sustainable source of energy and constitutes about 17 percent of the world electricity production. Regions like southeast Asia are facing electricity shortage and hydro-electricity has been preferred among other energy production options due to the availability of resources and its environmental benefits. The hydro-electric plant developers in these regions are facing a challenge to meet the variable electricity demand across the seasons with the available streamflow. This study developed a system dynamics model of a hydro-electric plant in Nepal with varying demand and flow conditions and investigated electricity production with various installed and storage capacities. The effect of market saturation on the plant was incorporated in the study and was found to reduce the electric production from the plant in the future. This study may help hydro-electric plant developers in the region to understand the effect of flow and demand variation in the electricity production and assist in design of efficient plants.

61. System Dynamics Modelling for financial management of Water Networks

Gaurang Mistry, Ajay Kalra, Southern Illinois University, Sajjad Ahmad | Civil and Environmental Engineering and Construction

A water supply consists of an array of sectors ranging from selection and source of water, transportation networks to treatment of water and finally ending at consumers. In the water supply system, distribution sector is considered as one of the most important component. With time, many metropolitan cities are facing economic problems with the rehabilitation of their water distribution system. Even with some of the rehabilitation measure taking place, there will be an increase in the failures of the network. Thus, water utilities should consider seeking strategies for water pricing and the system rehabilitation to prevent their existing system from deteriorating. The objective of this study was to understand how different management techniques could be implemented on a water distribution network for financial management of water infrastructure. Using simulation approach, a System Dynamics model was developed to study the impacts of various management strategies on the distribution network functionality and financial health over a 100-year time horizon. The model considers the interactions among three sectors; distribution network sector (existing water and waste water network differentiated by age), Finance Sector (user fee, profit/loss account, available cash account and debt) and the consumer demand sector (change in water demand due to population growth). The model also allows to explore various financial strategies that will be affordable for customers and will result in financial sustainability for utility. The model results exhibit that with increase in population and adaptation of rehabilitation measures, the utility achieves financial sustainability with a comparatively lower user fees.

62. Waterless cleaning for Solar Panels

Sanjana Das, Biswajit Das | Electrical and Computer Engineering

Clean energy technologies are the present focus for fulfilling the rising demand for energy across the globe. Whereas vast majorities of researchers are working on increasing the efficiency, far less investment and research have been dedicated to addressing the externalities that can be a setback for the technology deployment. One of the very important externalities among them is dust and airborne sedimentation on the solar panels over time. In order to clean the dust, most Photo Voltaic (PV) installations perform periodic water cleaning. However, as locations with higher annual solar flux are usually arid, water-less cleaning of solar panels will be of great value. While some water-less cleaning technologies currently exist, primarily based on NASA's lunar and mars expeditions, most of these techniques are expensive and not cost effective for large-scale PV power generation. We are currently using nanotechnology to develop a process for the water-free cleaning of solar panels, with specific focus on cost so that the technology will be cost-effective for large scale PV generation. The technology involves the use of arrays of transparent nanoparticles deposited on the solar panels using a low cost technique. The nanostructure arrays provide focused electric field to modify the electrical properties of the dust particles; the charged dust particles are then removed by electrostatic sweeping. We have identified Indium Tin Oxide (ITO) and ZnO as the transparent conductors and have successfully implemented arrays of their nanoparticles. The fabrication process parameters were varied to obtain nanoparticles of different dimensions and densities.

63. An Examination of Wall Shear Stresses in Curved Arterial Vessels using Bioresorbable Stents

Sogol Pirbastami, Darrell W. Pepper, Ph.D | Mechanical Engineering

Bioresorbable stents are providing temporary mechanical support to keep a narrowed or blocked coronary artery open and restore the blood flow and will be gradually degraded and resorbed after the healing and remodeling of arterial wall. This new generation of stents has lower rates of restenosis and in-stent thrombosis in comparison with permanently bare-metal stents. Since this new generation is still in the early stages of development, more study is needed on their mechanical properties, material, design and performance. Applying metal stents in very tortuous coronary sections can produce high shear stresses at the edges while also impacting the geometry of the vessel. Since bioresorbable stents are conformable, the stresses should be less on the arterial walls. In this study, an analysis on the mechanical characteristics of bare-metal stents (e.g., Co-Cr (L 605) and Stainless steel) and bioresorbable stents (PLLA) during expansion in curved segments is investigated using COMSOL. The purpose of this study was to examine the stresses on stents after expansion in the deployment process of the stent. COMSOL multiphysics utilizing the structural mechanics module was used to examine the pressure applied on the inner surface of the stent during expansion. The file containing information related to the plastic deformation during the expansion of a biomedical stent was examined from the COMSOL library and modified for the current study. A metal stent without conformability was analyzed. Wall shear stresses were found to be higher in the bare metal stents than in the bioresorbable stents, resulting in a straightening within the arterial wall.

**Science and Health Science
Poster Session A – Ballroom**



Presentations

- 9:00 – 9:15am (#64) Mathew Sunil Varre, M.S, Janet S. Dufek, PhD, Department of Kinesiology and Nutritional Studies
- 9:15 – 9:30am (#65) MacDonald, Grace A., Montes, Jeffrey, Tanner, Elizabeth A., Bodell, Nathaniel G., Manning, Jacob W., Navalta, James W., Department of Kinesiology and Nutritional Studies
- 9:30 – 9:45am (#66) Sidath Kapukotuwa and Francis A. Cucinotta, Department of Health Physics and Diagnostic Studies
- 9:45 – 10:00am (#67) Andrew Craig-Jones, Joshua Bailey, Kendell Galor, John A. Mercer, Department of Kinesiology and Nutritional Studies
- 10:30 – 10:45am (#68) E. Lee, T. T. Nguyen, K. Kingsley, E. Chung, School of Dental Medicine
- 10:45 – 11:00am (#69) Rutkoski, Holdunn; Kepka, Deanna; Pinzon, Lillia; Dixon, Barbara; Winkler, James, School of Dental Medicine
- 11:00 – 11:15am (#70) Stephanie Molina, Henry Hirschberg, and Steen Madsen, Department of Health Physics and Diagnostic Studies
- 11:15 – 11:30am (#71) Teryn Mendenhall, Louisa Heske, Karl Kingsley, School of Dental Medicine
- 11:30 – 11:45am (#72) Donica' Beckett, Melva Thompson-Robinson, DrPH, Timothy Bungum, DrPH, Carolee Dodge Francis, Ed.D, Marta Meana, Ph.D., Department of Environmental and Occupational Health
- 11:45 – 12:00pm (#73) Kelsi Sullivan, Department of Environmental and Environmental Health

64. Movement variability in children with autism

Mathew Sunil Varre, M.S, Janet S. Dufek, PhD |
Kinesiology and Nutrition Sciences

Research Summary: Autism spectrum disorder (ASD) is a developmental disorder which affects 1 in 45 children in the United States. The disorder is characterized by poor communication skills, language impairment, and behavioral deficits. Additionally, sensory and motor deficits are frequently witnessed in ASD individuals. Research studies have also confirmed the existence of varied gait patterns and asymmetries in ASD during walking. However, current literature does not adequately address the effects of visual perturbations on movement in ASD population. Early detection and treatment may reduce the effects of visual impairment on the movement. Therefore, we propose to investigate the differences in walking gait during visual distraction in children with autism compared to typically developing children. Specific goal: To investigate the differences in lower limb joint kinematics and kinetics in children with ASD compared to typically developing children during walking with visual distraction. Methodology: Subjects will be recruited through fliers, advertisements on social media, and autism support communities/centers in Las Vegas. High-speed motion cameras and force plate systems will be used to collect kinematic (movement) and kinetic (force) data of children during walking while a beam of light is used as a distraction on their path. Results: Data will be analyzed to obtain lower limb joint angles and forces acting during walking using traditional gait analysis techniques and continuous point-by-point analysis bilaterally for hip, knee and ankle joints. Conclusion: We expect children with ASD to have greater variability in gait during walking using visual perturbation in comparison with typically developing children.

65. A Mile Trail Run Can Predict Performance for a 5k Trail Race

MacDonald, Grace A., Montes, Jeffrey, Tanner, Elizabeth A., Bodell, Nathaniel G., Manning, Jacob W., Navalta, James W. | Kinesiology and Nutrition Sciences

Purpose: A common desire and strategy for many runners is to predict race time off of a shorter time trial. It is unknown whether these strategies apply to trail races. The purpose of this study was to determine if a 1-mile trail run could predict performance on a 5K trail race. It was hypothesized that a significant correlation would be present between a timed 1-mile run and 5K run time. Methods: Thirteen participants [Female: 3, Male: 10, Age:23±5 y, Height:175±9 cm, Mass:74±12 kg, BMI: 24±4] reported to the trailhead (Practice Loop, Three Peaks Recreation Area, Cedar City, UT) and completed a marked 1-mile and a 5K timed trail run one day apart in a counterbalanced order. Testing was completed between 1500 and 1700h on both days. Environmental measures of temperature (23.9°- 25.6° C; 75°-78° F), humidity (13%-15%), and wind speed (4-9 mph) varied throughout the testing days. Data were analyzed using a Pearson product moment correlation coefficient with significance accepted at the $p \leq 0.05$ level. Results: A significant correlation was observed between 1-mile time and 5K performance ($r=0.987$, $p=0.0001$, $R^2=0.974$). The equation to predict 5K time from the mile time trial was: 5K time (expressed as a decimal) = $4.2881 \cdot \text{mile time (expressed as a decimal)} - 4.5521$. The average running velocity during the 1-mile trail run was $3.94 \pm 0.9 \text{ m} \cdot \text{sec}^{-1}$, and $3.4 \pm 1.0 \text{ m} \cdot \text{sec}^{-1}$ for the 5K. Conclusion: Our results show that a 1-mile trail run time trial can be used to predict performance for a 5K trail race.

66. Using Rat data for the Modeling of Impaired Hippocampal Neurogenesis following Radiation Exposure

Sidath Kapukotuwa and Francis A. Cucinotta | Health Physics and Diagnostic Sciences

The birth of neuronal cells from neuronal stem cells is known as neurogenesis, and the granular cell layer of the dentate gyrus of hippocampus is one of the two regions in the brain this process occurs. Cognitive damages following radiation therapy for brain cancers in both children and adults have been linked to impairment of neurogenesis in the hippocampus. Studies followed using mice and rats as model animals have shown impairment in neurogenesis process following exposure to radiation. Obtaining experimental data for radiation-induced changes in neurogenesis in humans is very difficult. Therefore we are interested in the development of mathematical models to predict impaired neurogenesis using mammalian models such as mouse and rat. The patterns of neurogenesis impairment following radiation exposure can then be extrapolated with relevance to human physiology. A mathematical model was designed to represent the time, age and dose dependent changes occurring to several cell populations that participate in neurogenesis using non-linear differential equations (ODE). To model the alterations in hippocampal neurogenesis following radiation exposure, four neuronal stem cell populations were considered: neural stem cells, neuroblasts, immature neurons and glioblasts. Matlab Simulink was used to solve non-linear ODEs. With this model we were able to successfully produce data matching the experimental data for the dynamics of the rat hippocampal cell population under unirradiated and irradiated conditions. Development of these mathematical models may lead to help optimizing radiation therapy for cancer patients in the future.

67. Perturbing Stride Frequency Has No Effect on Muscle Activity

Andrew Craig-Jones, Joshua Bailey, Kendell Galor, John A. Mercer | Kinesiology and Nutrition

Running is a popular and widely used mode of exercise in the world today. Preferred stride frequency (PSF) is the stride frequency (SF) a runner selects for a given speed. Changes in SF may influence metabolic costs while running (Meardon & Derrick, 2009, MSSE, 41, 512-513), but it is not clear if muscle activity is minimized at PSF compared to running with other SFs. **PURPOSE:** To determine if muscle activity is minimized while running at PSF. **METHODS:** 10 healthy participants (24.7±3.8 years; M=7, F=3) ran on a treadmill at PSF-15%, PSF-10%, PSF-5%, PSF, PSF+5%, PSF+10%, PSF+15%. Conditions were randomized for each subject to account for task adaptation. Treadmill running speed was determined initially by each participant instructing the tester to increase or decrease the speed until felt like a speed representative of a 30-minute run. During preferred running condition, PSF was calculated by visually identifying the time to complete 20 strides. Target SFs were then calculated for all other conditions. Participants ran for 5-minutes at each condition with 1-minute rest between conditions. SF was controlled by having the participants match foot strikes to the beat of a metronome set to each desired SF for 15 sec of every minute. Data were collected 4 times throughout each trial for 30s every minute of the condition. The first collection was used for this analysis. EMG sample rate was 2000Hz from the Rectus Femoris (RF), Biceps Femoris (BF), Tibialis Anterior (TA), and Gastrocnemius (GA). Average and root mean squared (RMS) EMG data were analyzed via repeated-measures ANOVA ($\alpha=0.05$).

68. Screening for B7 Or PDL-1 mRNA Expression Among Smokers

E. Lee, T. T. Nguyen, K. Kingsley, E. Chung | School of Dental Medicine

Objectives: The programmed death ligand (PDL-1) or B7 is a cell surface molecule (CD274) that is highly expressed in oral cancers and may be responsible, in part, for down-regulation of CD8 or cell-mediated immune activity against tumors. Primary objective of this study was to evaluate whether oral cells collected from smokers exhibit any differential expression in PDL-1 or B7 compared with non-smoking samples. **Methods:** Using an approved and established saliva collection protocol, saliva samples were collected from both smokers and non-smokers at a public dental school patient clinic over the course of four months (n=81). Cells were then isolated and RNA was successfully extracted from n=76/81 or 93.8% of these samples. The RNA was then screened for PDL-1/B7 mRNA expression using relative endpoint (RE) RT-PCR. **Results:** Although the demographic analysis of these sample populations were not significantly different, the results of this screening revealed that n=16/37 or 43.2% of samples obtained from smokers had elevated mRNA expression of PDL-1/B7. In comparison, only 5.1% or n=2/39 of samples obtained from non-smokers exhibited any expression of mRNA for PDL-1/B7. **Conclusions:** Although this pilot study was initially limited to a small subset of clinic patients, the results from this study strongly suggest that a significant difference may exist between smoking and non-smoking patients specific to the expression of this key immunomodulatory. Moreover, the paucity of evidence regarding mRNA expression of PDL-1/B7 among non-cancerous patients who smoke may further suggest this screening may be helpful to explain one mechanism that may enable oral tumors to evade immune detection prior to diagnosis and treatment.

69. Oral Health Students' Knowledge Levels Regarding HPV Related Oropharyngeal Cancer

Rutkoski, Holdunn; Kepka, Deanna; Pinzon, Lillia; Dixon, Barbara; Winkler, James | School of Dental Medicine

I worked on as study that developed, pilot tested, and implemented an assessment tool capable of analyzing senior dental hygiene, third year dental (DS3), and fourth year dental (DS4) students' (oral health students) knowledge levels regarding Human Papillomavirus (HPV) related oropharyngeal cancer (OPC) in the United States. To assess student HPV, HPV-OPC, HPV vaccination, and overall knowledge levels, 20 different dental program were recruited to implement a 57 item assessment tool over a two month period. Subsequently, results and research objectives were assessed. Out of the 15 participating programs, hundreds of oral health students completed the assessment tool. The majority of respondents were from California, DS3 class standing, female, aged 18 to 29 years old, white, of Christian faith, and had at least a bachelor's degree. Preliminary results suggest that oral health students have adequate knowledge levels regarding general HPV topics, but inadequate knowledge levels overall, concerning HPV-OPC, and HPV vaccinations. Despite public health's best efforts, the prevalence of HPV-OPC is increasing even though the rates of tobacco and alcohol related OPCs are decreasing. Assessing oral health student knowledge is important as they will be the ones diagnosing OPC in the future. The results of this study may help guide curriculum changes, change how new dental professionals interact with patients, and ultimately reduce the HPV-OPC burden.

70. Macrophage-Mediated Drug Delivery for the Treatment of Malignant Gliomas

Stephanie Molina, Henry Hirschberg, and Steen Madsen
| Health Physics and Diagnostic Sciences

This cell-mediated delivery technique aims to efficiently deliver therapeutically meaningful chemotherapeutic concentrations to the tumor microenvironment with limited carrier cytotoxicity. As the blood-brain barrier presents a major challenge in the treatment of brain cancers by impeding efficient delivery of chemotherapeutic drugs, an efficacious delivery system will be able to bypass this physiological barrier to effectively deliver its cargo. The potential use of monocyte/macrophage cells as a biomimetic drug delivery system for brain tumors can be attributed to their involvement in the innate immune response and tumor targeting while leaving other tissues relatively unaffected by the therapy. Furthermore, their ability to readily bypass a compromised blood-brain barrier has influenced their utilization as delivery vectors for brain tumor therapies. In this initial feasibility study, we aim to demonstrate the macrophages' (1) relatively high resistance to chemotherapeutics, along with their ability to (2) uptake and (3) release the drug for use in the treatment of malignant gliomas. Assuming the preliminary results are promising, incorporation of a light-based technique to enhance the chemotherapeutic biological activity, by limiting drug degradation within the tumor cells, will be applied.

71. Effects of HPV-16,18 on Normal Breast Tissue

Teryn Mendenhall, Louisa Heske, Karl Kingsley |
School of Dental Medicine

Objectives: Recently HPV-16 and 18 have been found in the oral cavity and have been significantly linked as causative agents of oral cancer. Research has also shown the effects of HPV on breast cancer cells with HPV-16 and 18 detected in breast tumors that matches the oral HPV of their partners. The carcinogenic effects of HPV on oral and breast tissues have been demonstrated; however, the effect of HPV on non-cancerous breast tissue cells has not yet been studied. Based upon this information, the objective of this study was to evaluate the effects of HPV on normal breast tissue. **Methods:** HPV16 and HPV18 strains were used to infect normal, non-cancerous breast tissue cell lines Bst-Hs578 and 18485 *in vitro*. Cellular growth and viability was evaluated to determine if HPV mediated any of these cellular phenotypes. Cells were plated into 96-well assay plates to measure proliferation. Viability was measured using a BioRad TC20 automated cell counter. **Results:** Bst-Hs578 plus HPV-16 resulted in 619% increase in proliferation compared to control cells (no HPV) and viability increased by nearly three-fold (18.2% vs. 54%). Bst-Hs578 plus HPV-18 resulted in 806% increase in growth compared to the control after one week of incubation with viability increasing by more than two-fold (18.2% vs. 40.2%). These experiments are now being conducted on 18485 and HGF-1 normal, non-cancerous cells. **Conclusions:** Although studies have demonstrated that HPV can modulate oral and breast cancer cells, no studies to date have demonstrated that HPV has the potential to mediate the growth or viability of normal, non-cancerous breast tissue.

72. Exploring PrEP Attitudes, Barriers and Facilitators of Use, Sexual Risk Behaviors and Communication Channel Preferences of Self-Reported Heterosexual Black Students Enrolled in Jefferson County, Texas Colleges

Donica' Beckett, Melva Thompson-Robinson, DrPH, Timothy Bungum, DrPH, Carolee Dodge Francis, Ed.D, Marta Meana, Ph.D. | Environmental and Occupational Health

Background: Jefferson County, Texas experiences a disproportionate rate of sexually transmitted infections in the state, specifically among Blacks, ages 18-24 (Texas Department of State Health Services, 2015). One biomedical means of preventing HIV among risk groups is through use of PrEP (Pre-Exposure Prophylaxis). PrEP is a method of daily medication used to help prevent a HIV-negative person from acquiring HIV. Attitudes, perceived barriers and facilitators of PrEP use among Black college students is unknown; and Black college students are most at risk for HIV infection. The project's purpose is to conduct formative research that explores attitudes, barriers and facilitators of PrEP use and its relation to sexual risk behaviors, and communication channel preferences for the dissemination of PrEP information among self-reported heterosexual Black women and men ages 18-24, who are enrolled in a Jefferson County, Texas college. Methods: From October 2016 to March 2017, 275 (80 men and 195 women) participants in total were recruited from three Jefferson County, Texas colleges to complete a web-based cross-sectional survey. They were recruited through informational tables and student organizations. The questionnaire was developed from the 2006 National College Health Assessment, 2003 National HIV Behavioral Surveillance Survey, and Pre-Exposure Prophylaxis for Prevention of HIV Survey. Results: Univariate and multivariate analysis demonstrated that PrEP attitudes as well as barriers and facilitators of PrEP use, do vary based on sexual risk behaviors. Conclusion: Understanding Black college students' awareness of, as well as barriers and facilitators of PrEP use is critical to the future of HIV prevention with this population.

73. Presentation: The Society for the Analysis of African American Public Health Issues (SAAPHI) Annual Meeting, November 4, 2017

Kelsi Sullivan | Environmental and Occupational Health

The health and safety of food items is important to protect consumers. The United States has federal regulations to ensure that consumers across America are being provided food choices that are safe, and minimize risk of infectious disease and/or gastrointestinal issues. The marijuana industry is at a particularly interesting time in its history because states have the autonomy to legalize and therefore, there is no overarching regulatory body that can recommend, oversee, and verify the health and safety of marijuana edible products. Among the 23 states that have legalized either medical and/or recreational marijuana, few measures have been implemented directly involving food safety. Many states have yet to decide how to best regulate the various stages of marijuana edible production and distribution and what jurisdiction should oversee such regulations. Specifically, this includes regulations pertaining to: growing, extraction, infusion, handling, storage, packaging, labeling, and transportation. These types of food safety regulations are important because: 1) immunocompromised individuals are the primary consumer of medical marijuana edibles, 2) the effects of marijuana on children has yet to be determined, but studies suggest it to be detrimental to cognitive growth and development, 3) marijuana edibles have a delayed effect, leading individuals to consume more than necessary in order to get a 'high', 4) as states continue to legalize medical and/or recreational marijuana, it is important that they can readily seek recommendations and guidance information for food safety regulations provided by states that have already implemented such regulations, and 5) states need access to information from states that ensures the enactment of culturally appropriate regulations.

**Science and Health Science Poster
Session B – Ballroom**



Presentations

8:45 – 9:00am	(#74) Ching Shen, School of Dental Medicine
9:00 – 9:15am	(#75) Sejin Bae, Hyungbin Lee, Byeonguk Kang, Harrison Luu, Eric Mullins, Karl Kingsley, School of Dental Medicine
9:15 – 9:30am	(#76) Alyssa Ariyoshi, Esteban Chaidez , Gerald Fox, Sean Truong, Theresa Hoang, School of Dental Medicine
9:30 – 9:45am	(#77) Sean Fitzgibbons, Marcia Ditmyer, and Katherine M. Howard, School of Dental Medicine
9:45 – 10:00am	(#78) Mary Shoff, School of Dental Medicine
10:30 – 10:45am	(#79) Lidio Lima de Albuquerque , K. M. Fischer, S. Jalene , M. R. Landers, B. Poston, Department of Kinesiology and Nutrition Sciences
10:45 – 11:00am	(#80) Charli Aguilar, Andi Woita, Jeffery Montes, Nathaniel Bodell, Elizabeth A., Department of Kinesiology and Nutrition Sciences
11:00 – 11:15am	(#81) Wylie Tang, Karl Kingsley, and Robin Reinke, School of Dental Medicine
11:15 – 11:30am	(#82) Byeonguk Kang, Sejin Bae, Hyungbin Lee, Harrison Luu, Karl Kingsley, School of Dental Medicine
11:30 – 11:45am	(#83) Nathaniel G. Bodell, Andrew Craig-Jones, Jeffery Montes, James, Department of Kinesiology and Nutrition Sciences

74. Prevalence of *Aggregatibacter actinomycetemcomitans* among clinical Orthodontic saliva samples

Ching Shen | School of Dental Medicine

Previous studies have demonstrated Orthodontic therapy can negatively impact oral health, with commonly observed deterioration in gingival and periodontal health. A recent molecular survey of periodontal pathogens among Orthodontic patients revealed differential results for *Porphyromonas gingivalis* (PG), *Treponema denticola* (TD) and *Fusobacterium nucleatum* (FN), although this pilot study did not examine other important bridge species such as *Aggregatibacter actinomycetemcomitans* (AA), previously known as *Actinobacillus*. Based upon this information, the goal of this study was to evaluate the prevalence of AA among Orthodontic and non-Orthodontic patients from a public dental school clinic. Using an approved sampling protocol, saliva samples were obtained from Orthodontic (n=39) and non-Orthodontic (n=45) patients. DNA was successfully isolated from 96.4% (n=81/84) patient samples. Relative endpoint polymerase chain reaction (RE-PCR) was used to subsequently screen these samples for the presence and relative abundance of AA. These results demonstrated that 56.4% of the Orthodontic samples harbored significantly higher levels of AA compared with 25% of the control, non-Orthodontic samples ($p < 0.05$). In addition, the proportion of Orthodontic samples with elevated levels of FN (another important periodontal bridge species) was only 27.7%. These findings strongly suggest that molecular screening for AA may provide greater diagnostic benefit and improved oral health accuracy than other bridge species, such as FN. Moreover, these results also suggest that longitudinal studies may reveal critical time points that clearly delineate the transition following Orthodontic bracket placement between oral health and the onset of clinical disease, such as gingivitis and periodontitis.

75. Dental Pulp Stem Cell (DPSC) Temporomandibular joint (TMJ)

Sejin Bae, Hyungbin Lee, Byeonguk Kang, Harrison Luu, Eric Mullins, Karl Kingsley | School of Dental Medicine

Temporomandibular joint (TMJ) connects the mandibular condyle to the temporal bone of the skull. TMJ disorder is a term embracing a variety of conditions of the joint. TMJ dislocation is the interlocking of the mandibular condyle most frequently in the anterosuperior position of the articular eminence. Articular eminence, which dictates the path of translational condylar movement, can be deformed or flattened - major predisposing factors for patients with anterior luxation, presenting with pain, discomfort, difficulty in phonation and mastication. Solutions to revamp the structure are necessary with recent evidence suggesting the possibility that dental pulp stem cells (DPSC) could potentially remodel the problematic articular eminence to revitalize patients. Using an approved protocol and previously isolated DPSC isolates a total of n=10 multipotent DPSC were identified for inclusion in this study. Analysis of viability, doubling time (proliferation) and DPSC biomarker expression were confirmed through in vitro cell culture and RT-PCR analysis. Experimental treatment of DPSC was facilitated using vascular endothelial growth factor (VEGF), mineralized trioxide aggregates (MTA), and bone morphogenic protein (BMP-2). These experiments revealed that administration of VEGF significantly increased viability among three DPSC isolates (dpSC-5423, dpSC-11750, dpSC-11836) from an average of 37.8% to 57.3%. In addition, growth and proliferation (measured in 96-well assays) was significantly increased between 14% and 53%. RNA extracted from DPSC in the experimental assays differs also significantly from the control assays in expression of alkaline phosphatase (ALP) and dentin sialophosphoprotein (DSPP) – two biomarkers for differentiation. Based upon these results, it may be possible to direct DPSC differentiation in vitro with VEGF.

76. Clinical Efficacy of Student Experiences with CEREC Milled Crowns

Alyssa Ariyoshi, Esteban Chaidez , Gerald Fox, Sean Truong, Theresa Hoang | School of Dental Medicine

The introduction of CAD/CAM systems in dentistry has strongly impacted the efficiency and accuracy of dental restorations performed by dental providers. CEREC machines were implemented into the student clinics after 2012 at UNLV School of Dental Medicine and trends from 2012 to 2016 were recorded based on types of crowns placed. The purpose of this study is to determine if the implementation of CEREC will increase the production and success rate of all-ceramic crowns. Patient charts provided by the school's internal private network known as aXium, were analyzed for three types of crowns: all-ceramic, ceramometal, and full-metal. The corresponding treatment notes provided information on the type of crown and any remakes. The use of CEREC after 2012 to 2016 resulted in an increase in the total percentage of all-ceramic crowns (17.9% to 34.7%) and total number of in-house crowns. Although the positive trend suggests promising use for CEREC, there was no significant difference in success rates between 2012 and 2016 even after the integration of CEREC (80.9% and 80.7%). Future studies will attempt to clarify the lack of increase in success rates from 2012 to 2016. There could be a possibility that the dental school is inefficient in educating students how to prepare crowns or to properly use CEREC machines. With the future heading towards digital dentistry, improving student success rates with CEREC will be critical.

77. Salivary Levels of Selenomonas noxia in Nevada Adolescents

Sean Fitzgibbons, Marcia Ditmyer, and Katherine M. Howard | School of Dental Medicine

Objective: Recent published research demonstrated a correlation between salivary Selenomonas noxia levels and body mass index in an adult patient population. Because obesity contributes to the severity of numerous chronic health conditions and can be associated with poor oral health, we investigated the levels of S. noxia in a sampling of Nevada adolescents and examined if any correlations to body-mass- index (BMI) or Decayed, Missing, Filled Teeth (DMFT) scores existed. Experimental Methods: A convenience sample consisting of 118 ninth grade students were recruited into the research study. Oral health indices were calculated based upon DMFT and BMI-for- age data was collected using the BioMeasure Youth System TM . Salivary levels of S. noxia were determined by real-time PCR. Total salivary bacterial burden was determined by real-time PCR with universal primers to bacterial 16S rRNA. Results: A total of 118 participants were enrolled in the study. BMI-for-age ranged from 17 to 45, and 17.6% of the participants were classified as overweight (BMI>25, n=17) or obese (BMI>30, n=4). DMFT scores ranged from 0 to 21. Salivary DNA was successfully isolated from 108 of the 118 participants (91.5%) and S. noxia was detected in 84% of the samples (Range 0-0.36 ng/ml saliva). Total bacterial salivary burden ranged from 0.89-234 ng/ml saliva. No correlation between S. noxia levels or S. noxia levels as a percent of total bacteria and BMI-for- age or DMFT scores was detected. Conclusions: Our results demonstrate the feasibility of examining S. noxia levels in DNA isolated from salivary samples.

78. Loss of Exosome miRNA Expression in OSCC Stem Cells

Mary Shoff | School of Dental Medicine

Objectives: Oral squamous cell carcinomas (OSCC) secrete exosomes into the surrounding extracellular environment to promote the horizontal transfer of bioactive molecules including microRNA (miRNA). The primary objective of this study was to explore potential differences in miRNA content between OSCC and OSCC stem cells. **Methods:** The OSCC cell lines SCC-15, SCC-4, and CAL27 were used in these studies. The corresponding OSCC stem cells that demonstrated phenotypic adhesion independent tumor spheres (AiTS) were manually isolated. All cells were cultured in DMEM containing 10% exosome-free fetal bovine serum. Exosomes were isolated using Total Exosome Isolation reagent (Invitrogen) and RNA was purified using Total Exosome RNA isolation kit (Invitrogen). Exosome miRNA content was evaluated using miRNA Advanced Taqman Assays for mir-21, -155, -133, -34, -31, -32, and -365. The fold change of miRNA content was calculated using the comparative CT ($\Delta\Delta CT$) method using mir-16 as an endogenous control. **Results:** Exosomes were successfully isolated from all cell lines and examined for miRNA content. None of the cells examined contained any mir-31, -32, or 133a. The SCC-15 stem cells lost greater than 95% of mir-21 and 50% of mir-34 content compared to SCC-15 cells. A 45% increase in mir-155 was also detected in these cells. SCC-4 stem cells lost 70% of mir-21 and 100% of mir-34 content compared to the SCC-4 cells. CAL27 stem cells also lost 100% of mir-21 content but showed no change in mir-34 levels. In addition, the CAL27 gained expression of mir-365.

79. The Influence of Cerebellar Transcranial Direct Stimulation on Motor Skill Acquisition in a Complex Visuomotor Task in Parkinson's Disease

Lidio Lima de Albuquerque , K. M. Fischer, S. Jalene ,
M. R. Landers, B. Poston | Kinesiology and Nutrition

Cerebellar transcranial direct current stimulation (c-tDCS) is a non-invasive brain stimulation technique that can improve motor performance in hand and arm tasks in young and old adults. However, the ability of c-tDCS to enhance motor performance in Parkinson's disease (PD) is unknown. Therefore, the purpose was to determine the influence of c-tDCS on motor skill acquisition in a complex visuomotor tracking task in PD. The study was a double-blind, sham- controlled, between-subjects experimental design. Twenty individuals with PD were allocated to either a c-tDCS group or a SHAM stimulation group and each subject completed a single one hour experimental session. Subjects performed a maximal voluntary isometric (MVC) precision grip task and a submaximal visuomotor precision grip task (PGT; practice task) with their most affected hand while on their medications. The PGT involved matching a target sine wave (1 Hz; target force range: 5-35% of MVC) for trials lasting 30 seconds. For the PGT, a baseline block of 5 trials was performed followed by a practice block of 10 trials. The 10 trials were completed over a time course of 25 minutes, which corresponded to the c-tDCS or SHAM stimulation application periods. Anodal c-tDCS or SHAM stimulation was applied over the cerebellum ipsilateral to the primarily affected hand using stimulation parameters that have been proven effective in healthy populations (anode 3 cm to the right of theinion, cathode over the ipsilateral buccinator muscle, 2 mA current strength, 25 minutes stimulation duration) during the PGT practice trials.

80. Influence Of Body Fat Percentage And Sex On Mechanical Efficiency Of Rock Climbing

Charli Aguilar, Andi Woita, Jeffery Montes, Nathaniel Bodell, Elizabeth A. Tanner | Kinesiology and Nutrition Sciences

The purpose of this study was to investigate the relationship between mechanical efficiency (ME) and body fat percentage (BF%) in rock climbers. The secondary aspect was to compare ME between male and female rock climbers. Years of experience and frequency of climbing was analyzed to correct for variability. Methods: 10 experienced rock climbers (7 males, 3 females) mean age of 25 \pm 5.8 years volunteered to participate in the study. Each participant climbed up a 30 ft. indoor vertical rock climbing wall at a self-selected pace. VO₂ was analyzed at rest and during the climb using a portable COSMED device. BF% was measured using bioelectrical impedance (BIA) and years of climbing and climbing frequency was self-reported. Participants were separated in two groups based on whether they fell above or below the median BF%. Males and female participants were also analyzed by group. Correlation and independent t-tests were ran using Microsoft Excel 2016. Results: A negative correlation ($r = -0.37$) was found between ME and body fat percentage. No significant difference in ME was seen between groups ($p = 0.086$). No significance was found between ME and years or frequency of climbing. There was no significant difference in ME between males and females although the difference in BF% was significant ($p = 0.00698$). Conclusion: Individuals with higher BF% tend to have lower ME but this difference is not significant. Previous studies have shown that training state has the largest effects ME. Therefore, self-reported years of experience and frequency of climbing may not be an accurate estimator for training status.

81. Impact of Collaborative Leadership in Dental School Team Clinics

Wylie Tang, Karl Kingsley, and Robin Reinke | School of Dental Medicine

Objective: We determined the relationship of team leader qualities focused on collaborative leadership, and related to perceived individual ability to critique team performance in dental school team clinics. Methods: This study used a voluntary 12-question survey, distributed via email to students of the UNLV School of Dental Medicine (N=311) after completion of the Spring 2017 semester. Responses were stratified by team, class year, and sex, and analyzed for statistical differences (ANOVA, $p < 0.05$) and post hoc two-tailed T tests ($p < 0.05$). The quantitative distribution of answers (1-7 scale) for each question was also evaluated using a correlation analysis. Results: Team leader collaborative qualities, which included openness for communication, cooperative decision making, and well defined goals, were found to have a significant positive relationship with students' willingness to both raise concerns and make suggestions ($n = 87, 28\%$). However, differences in voice behavior assessment by students across the teams were found to be independent of class year and no differences were found in responses between sexes. Conclusions: These results suggested that in order to maintain proper reporting and a high standard of care, dental schools should encourage team leaders to enhance their capacity to be collaborative in the school clinic setting. The study also highlighted potential deficiencies in some dental school teams, reflected by the significant disparities in evaluation of voice behavior and collaborativeness between teams.

82. Dental Pulp Stem Cell Potential For Alveolar Bone Tissue Engineering

Byeonguk Kang, Sejin Bae, Hyungbin Lee, Harrison Luu, Karl Kingsley | School of Dental Medicine

Objective: Cleft lip and palate (CLP) are common craniofacial birth defects, which require multidisciplinary efforts for successful treatment. Alveolar bone grafting is the current gold standard to treat osseous maxillary alveolar bone defect, but autogenous iliac crest bone grafting can cause significant morbidity at the donation site. New studies have suggested tissue engineering to generate alveolar bone using dental pulp stem cells (DPSC) may reduce the associated morbidity and adverse side effects. Based upon this information, the primary goal of this study was to investigate the osteogenic potential of DPSC. **Method:** Using 31 previously isolated DPSC lines, 12 pluripotent DPSC were selected for this study based upon viability and growth potential. Differentiation was attempted using previously validated mesenchymal stem cell stimulants, including bone morphogenic protein (BMP-2), vascular endothelial growth factor (VEGF) and mineralized trioxide aggregates (MTA). **Results:** The experimental results revealed three DPSC isolate dpSC-11750, dpSC-11418, and dpSC-3882 demonstrated significant increases in growth following treatment with BMP-2 in each week of a three-week trial. In addition, viability also increased from an average of 37% to 52% during the course of treatment. The analysis of cell morphology demonstrated changes associated with differentiation, while mRNA extracted from these isolates demonstrated differential expression of alkaline phosphatase (ALP) and dentin sialophosphoprotein (DSPP). **Conclusions:** These results clearly suggest that some (but not all) DPSC isolates can be induced towards an osteogenic state of differentiation given minimal in vitro stimulus.

83. Does False Feedback Alter Performance in an Anaerobic Maximal Test Among Healthy Young Adults?

Nathaniel G. Bodell, Andrew Craig-Jones, Jeffery Montes, James Navalta | Kinesiology and Nutrition Sciences

Introduction: It has been observed that extrinsic factors, such as music or verbal encouragement, can influence performance while exercising. It has yet to be determined if this effect is present in supra-maximal efforts. The purpose of this investigation was to determine whether positive feedback (PF) or negative feedback (NF) prior to a maximal anaerobic exercise test improves or degrades performance. **Methods:** 23 college aged adults were recruited for a two-day exercise protocol and were randomly divided into a PF or NF group. **Day one:** participants were oriented with the Wattbike Pro cycle ergometer and underwent a 30-second anaerobic test of power (in line with a Wingate test of power). **Day two:** Participants had a 24 hour 2 week window in which they could perform the second trial. Prior to the second trial participants were informed they performed better (PF) or worse (NF) than a hypothetical average prior to their second 30-second anaerobic test of power. **Results:** Both PF and NF groups observed a significant improvement in peak power ($p=0.03$, $p=0.02$ respectively), and average power ($p=0.042$, $p=0.035$ respectively). Additionally, there was a significant improvement in power/mass ratio among the NF group ($p=0.026$). There was no difference in peak or average power between groups among the day 2 trial ($p=0.95$, $p=0.18$, respectively). **Conclusion:** PF or NF prior to a maximal anaerobic test of power improved peak and average power. It is theorized that the improvement among the PF group corresponded to an increase in self-efficacy; while the improvement among the NF group was related to a desire to perform at or above the fabricated average.

**Science and Health Science
Poster Session C – Ballroom**



Presentations

- 8:45 – 9:00am (#84) Jenna Chang, Shelby Nakamura, Katherine Hertlein, School of Medicine
- 9:00 – 9:15am (#85) A. Riegel, C. Kemper, S. Nayak, and B. Chrzan, School of Dental Medicine
- 9:15 – 9:30am (#86) Daniela Leon, Kara M. Langin, School of Medicine
- 9:30 – 9:45am (#87) Daniel Lidstone, Jessica Deberardinis, Anthony Ghanemm, Janet S Dufek, Mohamed Trabia, Department of Kinesiology and Nutrition Sciences
- 9:45 – 10:00am (#88) Hyungbin Lee, Sejin Bae, Byeonguk Kang, Harrison Luu, Eric Mullins, Karl Kingsley, School of Dental Medicine
- 10:30 – 10:45am (#89) Steven Lam, Karl Kingsley, School of Dental Medicine
- 10:45 – 11:00am (#90) Monica Arebalos, Faun Botor, Edward Simanton PhD, Marwa Maki, School of Medicine
- 11:00 – 11:15am (#91) Takehiro Iwatsuki, Lee-Kuen Chua, Reza Abdollahipour, Gabriele Wulf, Department of Kinesiology and Nutrition Sciences
- 11:15 – 11:30am (#92) Priscilla Arguello, Kara Langin, School of Medicine
- 11:30 – 11:45am (#93) Elsea, Paige; Richardson, Jaelyn; Nayak, Satyaprasad; Chrzan, Brian, School of Dental Medicine

84. Influence of Partner Surveillance in Infidelity Treatment

Jenna Chang, Shelby Nakamura, Katherine Hertlein | School of Medicine

As technology has become more prominent in the daily lives of people in society, it has enabled them to be connected to significant others continuously throughout the day. However, technology can also create greater accessibility to others outside of the relationship creating a higher vulnerability to infidelity. As infidelity continues to become increasingly prevalent, couples are struggling to rebuild trust in these relationships. Through technology the betrayed partner is able to surveil their significant other's behavior in various manners, which can include obsessive checking due to the belief that there is a continuation of the affair. When the betrayed partner does not find evidence of infidelity they may believe the involved partner has become increasingly skillful at hiding their affair. This type of obsessive surveillance can interfere with couple therapy, and become a road block in the way of healing. The purpose of this presentation is to provide treatment options for clinicians who are working with couples engaging in surveillance behaviors after an affair with interventions that both validate the feelings of the betrayed partner and also keep healthy boundaries in the relationship.

85. Interleukin-1 β (-31) Gene Polymorphism in Patients Exhibiting Short Tooth Roots

A. Riegel, C. Kemper, S. Nayak, and B. Chrzan | School of Dental Medicine, Educational & Clinical Studies

Objectives: IL-1 β has been characterized as a potent bone resorptive cytokine and implicated as a key component of the complex pathways leading to tooth root resorption. IL-1 β -31 C/T, a TATA-box single-nucleotide polymorphism, has been reported to alter the amount of IL-1 β expression. Alterations in the expression of IL-1 β may result in an individual's predisposition to root resorption during orthodontic treatment. In the absence of genetic markers, pretreatment radiographic evidence of short roots is the only indication of a predisposition to resorption during orthodontic treatment. The objective of this study was to assess the frequency of the alleles and genotypes of the IL-1 β -31 gene polymorphism in patients exhibiting short roots with no history of orthodontic treatment. **Methods:** A total of 27 subjects were categorized as exhibiting short roots (16) or normal roots (11), based upon the root morphology of incisors and mandibular premolars evident on 3D CBCT pre-treatment scans. Genomic DNA was isolated from buccal swab samples. PCR amplification of a region encompassing the -31 site was performed, followed by AluI digest. PCR products and digested fragments were separated by agarose gel electrophoresis. **Results:** The fragments of 137 bp and 102 bp corresponded to -31 T and a single 239 bp fragment corresponded to -31 C. The allelic distribution showed no predominance in either short root or normal subjects. The heterozygote genotype (CT) was the most frequent, both for short root (7 of 16) and normal subjects (4 of 11); however, without statistical significance.

86. Cultural Implications of Mental Health Treatment in China

Daniela Leon, Kara M. Langin |School of Medicine

A current challenge in the mental health field is treatment accommodating to mainly dominant culture. Due to the incredible diversity of Las Vegas, it is important to provide other cultures with appropriate treatment. The Couple and Family Therapy (CFT) program at University of Nevada, Las Vegas (UNLV) believes it is necessary to be a culturally competent therapist. In order to become culturally competent, a group of CFT graduate students attended a two-week professional intercultural exchange program in China. Dr. John Miller, who is a clinical supervisor and a professor of social work in Shanghai, led the program. The objective of the trip was to learn about relevant issues present in Chinese individuals, couples and families, as well as to gain knowledge about therapeutic interventions used by mental health professionals. During the intercultural exchange program, the CFT students attended lectures on “Marriage and the Family” at Fudan University and a 3-day supervision workshop describing clinical cases in Shanghai. Students also met with a psychiatric hospital and were educated on additional treatment options for Chinese mental health issues. The observations made on the trip included a shift in acceptance for therapy, significant Western influences on treatment, and a collectivist view on clinical issues in China. The knowledge will allow CFT student therapist to modify interventions for individuals, couples, and families who align more with the Chinese culture.

87. Characterization of Plantar Contact Area Error from Pressure-Measuring Insoles is Reduced Using an Adaptive Sensor Threshold Method

Daniel Lidstone, Jessica Deberardinis, Anthony Ghanemm, Janet S Dufek, Mohamed Trabia |
Kinesiology and Nutrition Sciences

Pressure-measuring insoles have the potential to quantify plantar contact area (PCA) during locomotion. However, lack of full understanding of these insoles can lead to inaccurate estimation of the PCA they produce. The purpose of this study was to present a novel approach to reduce PCA error of pressure-measuring insoles using an adaptive-threshold method. Methods: A sample of 6 healthy, ambulatory, young adults (age = 27 ± 5.7 years, mass = 87.0 ± 11.6 kg, height = 1.73 ± 0.1 m) participated in the study. All participants wore size 43 (Euro) insoles, which best fitted their feet. Each participant performed ten walking trials on a custom-built elevated walkway. Participants wore a pressure-measuring insole on the left foot. High resolution reference footprints from the right bare foot were imaged using a custom-built podoscope device. Optical pedography combined with digital image processing algorithms were used to measure the PCA of the reference footprints over the entire stance phase of walking. PCA error of pressure-measuring insoles, with respect to the optical pedography method, were calculated using two threshold criteria: 1) a fixed threshold (5 kPa), and 2) an adaptive threshold that used a small percentage (0.2%) of the maximum load on the insole. Error ratios (ER) between each threshold method and the reference footprints were calculated. Results: The adaptive threshold of 0.2% of the maximum load placed on the insole yielded (ER = 0.91 ± 0.13) while the fixed threshold overestimated the PCA by over 30% (ER = 1.33 ± 0.20). Conclusion: The proposed adaptive threshold method proved to be more effective at reducing PCA error than the fixed threshold method.

88. Dental Pulp Stem Cell (DPSC) Potential For Bone Grafting

Hyunbin Lee, Sejin Bae, Byeonguk Kang, Harrison Luu, Eric Mullins, Karl Kingsley | School of Dental Medicine

Patients with a good prognosis of implants or dentures requires sufficient bone, therefore patients with severe bone loss require bone graft treatment in order to have implants or full dentures. Bone grafting has many drawbacks, such as longer healing time and invasive surgery. Based upon this information, the goal of this project was to differentiate dental pulp stem cells (DPSC) into osteoblasts, which could ultimately be used to implant stem cells with biodegradable scaffold on the maxilla or mandible – thereby replacing or enhancing bone graft treatment for future patients. A repository of DPSC was identified for use in this study, which included at least n=8 DPSC isolates with rapid doubling times and high viability – indicators of pluripotency. In vitro assays were designed in 96- well plates over the course of three weeks, utilizing different osteogenic growth factors such as mineral trioxide aggregate or MTA, vascular endothelial growth factor or VEGF and bone morphogenic protein or BMP. Viability and growth were measured, as well as changes to cellular morphology and mRNA expression. The results demonstrated that only one DPSC isolate (dpSC-11750) responded to all three treatments (BMP, MTA, VEGF). More specifically, growth and proliferation increased between 25% and 90%, while viability increased from 12% at baseline to a range of 25 to 46%. Analysis of mRNA isolated from dpSC-11750 demonstrated production of both alkaline phosphatase (ALP) and dentin sialophosphoprotein (DSPP) among the experimental treatment groups but not within controls.

89. Molecular Screening for the Periodontal Pathogen *Slackia exigua*.

Steven Lam, Karl Kingsley | School of Dental Medicine

The periodontal pathogen *Slackia exigua*, previously known as *Eubacterium exigum* is a Gram-positive anaerobic organism that has been associated with periodontal and other oral disease. Recent evidence has suggested *S. exigua* may be one of the sentinel organisms that may signal the onset or progression of periodontitis and other oral disease states. Based upon this evidence, the objective of this project was to collect and screen clinical saliva samples for *S. exigua*. Using an approved protocol, saliva was collected from clinic patients with some indication of oral disease (periodontal or other). These samples were processed to isolate human and bacterial DNA yielding a recovery rate of 97.5% (n=39/40). These samples were then screened for *S. exigua* using relative endpoint polymerase chain reaction (RE-PCR). These results demonstrated that 64.1% harbored significant levels of *S. exigua* DNA. In addition, screening for other sentinel species such as *Aggregatibacter actinomycetemcomitans* revealed significant levels in a lower percentage of clinic samples (56.4%) of samples. These differential results suggest *S. exigua* may be more appropriate as a screening tool for oral disease than more well-known organisms, such as *Aggregatibacter*. In addition, the higher proportion of patients with significant levels may indicate this organism and method may provide greater specificity, sensitivity or both to identify patients with oral disease.

Science and Health Science Poster Session C – Ballroom
10:45 – 11:00am

**90. Medical Students & Population Health:
Community Exploration and Health Assessment
Through Participatory Community Learning**

Monica Arebalos, Faun Botor, Edward Simanton PhD,
Marwa Maki | School of Medicine

Background - “Participatory community learning equips students with public health skills and enhanced understanding of communities. It offers a way to teach public health, while emphasizing the extensive role and societal responsibilities of doctors” (Essa-Hadad et. Al, 2015). UNLV SOM is dedicated to community engagement; students participate in community exploration in the first six weeks of medical school, to provide a foundation for continued community engagement throughout their careers. Objective/Purpose - As part of the Population Health Course, students: Utilize public health data, statistics, surveys, and observation of environmental factors. Utilize interview responses of community stakeholders and health assessment tools. Formulate the basis for clinical questioning and application of evidence-based medicine to provide quality healthcare to individuals and populations. (Culley et. al, 2017)

Science and Health Science Poster Session C – Ballroom
11:00 – 11:15am

**91. Random Practice Promotes An External Focus
And Leads To More Effective Motor Learning**

Takehiro Iwatsuki, Lee-Kuen Chua, Reza
Abdollahipour, Gabriele Wulf | Kinesiology and
Nutrition Sciences

Does random versus blocked practice promote different attentional foci, which may contribute to different learning outcomes? The repetitive nature of blocked practice conditions may promote a non-optimal internal focus on body movements. In contrast, random practice may facilitate an external focus on the intended movement outcome, given the constantly changing conditions (e.g., target distance). In the present study, 33 participants (M = 24.15 years, SD = 4.72) were randomly assigned to one of two groups (random vs. blocked practice). Participants performed an overarm throwing task with their non-dominant arm. There were 3 different target distances (2.0, 2.8, 3.6 m). The practice phase included a total of 60 trials (3 blocks of 20 trials). The blocked group performed one block of trials from each distance, with the order of distances counterbalanced across different sub-groups. The random group was assigned a different distance on each trial. Participants were requested to make verbal report regarding their focus of attention throughout the practice phase. Their verbal reports were classified as either an external focus, internal focus, or other focus. Two days later, a retention test (3.6 m) and a transfer test (4.4 m) were conducted. Results indicated that the random group used more external foci and had higher retention and transfer scores than did the blocked group. These findings suggest that learner’s attentional focus can differ as a function of the practice schedule, perhaps leading to different motor learning outcomes.

92. The Birds and the Bees

Priscilla Arguello, Kara Langin | School of Medicine

Although sex may be seen as a controversial topic to discuss with children, in many countries sexual education is an important subject for children to learn. Elementary school aged children need to learn the fitting names for their body parts, differences in appropriate and inappropriate touch, and changes in their bodies to come. Children are naturally curious of this subject but often times are uncomfortable asking their parents and thus may obtain inaccurate information from their peers or the media. The purpose of this workshop is to help parents create a safe, healthy and age appropriate learning environment on the topic of sexual education. Adolescents that participate in all-inclusive sexual education programs at a young age are less likely to contract an STI, less likely to become unintentionally pregnant, and also wait longer to become sexually active compared to their peers that did not receive any sexual education. Parents that learn how to have open conversations with their children about sex may notice an improvement in communicating with their children. The consequences of not talking to their children about sex are potentially immense; therefore the sooner parents become comfortable with the subject of sex, the sooner they can educate their children.

93. Association of the Interleukin-1 β (-511) Gene Polymorphism with Short Tooth Roots

Elsea, Paige; Richardson, Jaclyn; Nayak, Satyaprasad; Chrzan, Brian | School of Dental Medicine

The bone resorptive cytokine IL-1 β has been implicated as a key component of the complex pathways leading to tooth root resorption. The single-nucleotide polymorphism in the IL-1 β gene promoter at -511 has been reported to alter the amount of IL-1 β production. A model is proposed where alterations in the level of IL-1 β expression may result in an individual's predisposition to root resorption during orthodontic treatment. Without potential genetic markers, pre-treatment radiographic evidence of short roots is the only indication of a predisposition to resorption during orthodontic treatment. Objectives: To assess the frequency of the alleles and genotypes of the IL-1 β -511 gene polymorphism in patients exhibiting short roots with no history of orthodontic treatment. Methods: A total of 27 subjects were categorized as exhibiting short roots (16) or normal roots (11), based upon the root morphology of incisors and mandibular premolars evident on 3D CBCT pre-treatment scans. Genomic DNA was obtained from buccal swab samples. PCR amplification of a region encompassing the -511 site was performed, followed by *Ava*I digest. PCR products and digested fragments were separated by agarose gel electrophoresis. Results: The fragments of 92 bp and 63 bp corresponded to -511 C and a single 155 bp fragment corresponded to -511 T. The allelic distribution showed no predominance in either short root or normal subjects. The heterozygote genotype (CT) was the most frequent, both for short root (7 of 16) and normal subjects (4 of 11); however, without statistical significance.

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