21st Annual Research Forum 2019
February 23
University of Nevada, Las Vegas
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.
Dear students, colleagues, and guests:

Welcome to UNLV’s 21st Annual Graduate Research Forum! This wonderful event gives us the opportunity to come together as a university community in celebration of the incredible research happening right here on our campuses.

After more than 20 years at UNLV, I continue to be impressed and inspired by our students’ fresh viewpoints, innovative ideas, and creative approaches and solutions. This research forum offers the perfect opportunity to learn more about the impactful work of our faculty and fellow students, the moments that sparked their discoveries, and the challenges they overcame to get here. The results of their work may be on display, but the story of the journey behind each presentation is just as important. Please ask questions, engage in conversation, and share your feedback with our faculty and fellow students.

As you may know, UNLV recently was named a Carnegie R1 institution with “very high research activity,” a designation only the top three percent of our nation’s colleges and universities hold. With only 130 institutions on the list, this is the gold standard for research universities. We’re very proud to receive this prestigious status, and it is thanks to the efforts of our students, faculty, and staff. There isn’t a better place than this forum to absorb the phenomenal research and creative activities happening here!

Achieving Carnegie R1 is part of our overall Top Tier vision, which includes excelling in education, community impact, and scholarly activities. Carnegie R1 is just the first step. We’re well on our way to taking our place among the nation’s top universities thanks to the work of the dedicated individuals you’ll meet during this forum, along with many, many others.

Thank you for participating in this meaningful event and for your commitment to excellence in research at UNLV!
Strong research and creative activity form a cornerstone of all top tier universities, and the work on display at the 21st Annual Graduate & Professional Student Research Forum is evidence of our achievement as an R1 “very high research activity” institution in the Carnegie Classification of Institutions of Higher Education. This is the gold standard for university research classifications, and less than 3 percent of universities in the country achieve this designation.

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 each year to include UNLV students, and for the opportunity we have to learn from each other. Importantly, this research also has been informed by and made richer through collaborations with colleagues from various disciplines outside of my own.

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.
Hello and welcome to the 21st 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 were much smaller, and we had not yet been recognized as the Carnegie Research High institution. Today, UNLV is a thriving Minority Serving Institution and has just been recognized as a Carnegie "Very High Research Activity," also known as tier one or R1, university. This is a tremendous accomplishment for UNLV and one that has many years in the making!

One of the wonderful things about this tier one Carnegie status is affirmation that graduate education is a centrally important part of our campus community, and our graduate faculty and students have been, and continue to be, drivers of academic and scholarly excellence. Our Graduate and Professional Student Association is a strong, thriving, well-established voice for the more than 5,000 graduate and professional students enrolled in more than 155 graduate programs and certificates today, and I couldn't be more thankful for GPSA's partnership or more proud of your organization. Graduate education is thriving and it's a wonderful time to be an R1 Grad Rebel!

The evolution of human history is driven by the dual engines of inspiration and innovation. As thinkers, researchers, scholars, and creatives, graduate students are at the cusp of change. Indeed, you are 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.

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 master's degrees 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 -- and I couldn't be more proud of your determination, hard work, resiliency, innovation, and accomplishments. Today is a day to celebrate all of this and to foster communication and collaboration across disciplinary silos. It's an opportunity to encourage students to expand your own understanding and presentation skills 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 important, 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. What you do as a graduate or professional student is significant and important.

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

Sincerely yours,

Kathryn Hausbeck Korgan, Ph.D.
Dean, UNLV Graduate College
2019 Graduate & Professional Student Research Forum

SCHEDULE OF EVENTS

Friday, February 22, 2019

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

Saturday, February 23, 2019

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

Podium Sessions

Allied Health Sciences, Community Health
  Sciences, & Medicine Session:  
  10:00 – 11:45am  
  Room 222
  Education Session:  
  8:45 – 11:45am  
  Room 208B
  Humanities & Fine Arts Session:  
  9:30 – 11:45am  
  Room 211
  Science Session:  
  8:30 – 12:00pm  
  Room 207
  Science & Engineering Session:  
  10:15 – 11:45am  
  Room 218
  Social Science Session A:  
  8:45 – 12:00pm  
  Room 208C
  Social Science Session B:  
  8:30 – 12:00pm  
  Room 209
  Social Science & Hospitality Session:  
  9:15 – 11:45am  
  Room 213

Poster Sessions

Education Session:  
  9:00 – 11:45am  
  Ballroom
  Engineering Session:  
  9:15 – 10:30am  
  Ballroom
  Social Science Session A:  
  8:30 – 12:00pm  
  Ballroom
  Social Science Session B:  
  9:00 – 12:00pm  
  Ballroom
  Social Science & Hospitality Session:  
  10:30 – 11:45am  
  Ballroom
  Science Session:  
  10:30 – 11:45am  
  Ballroom
  Science and Health Science Session A:  
  9:00 – 12:00pm  
  Ballroom
  Science and Health Science Session B:  
  9:15 – 12:00pm  
  Ballroom

Luncheon and Awards Ceremony  
Noon – 2:00pm  
Ballroom
## TABLE OF CONTENTS

### Podium Sessions
- Science Podium Session – Room 207 .................................................................2
- Allied Health Sciences, Community Health Sciences, & Medicine Podium Session – Room 222 ..........9
- Science & Engineering Podium Session – Room 218 ...........................................14
- Social Science Podium Session A – Room 208C ................................................18
- Social Science Podium Session B – Room 209 ....................................................25
- Social Science & Hospitality Podium Session – Room 213 ..............................32
- Humanities & Fine Arts Podium Session – Room 211 .................................37
- Education Podium Session – Room 208B .......................................................42

### Poster Sessions
- Education Poster Session – Room 207 .............................................................50
- Social Science Poster Session A – Ballroom .................................................56
- Social Science Poster Session B – Ballroom ..................................................63
- Social Science Poster Session C – Ballroom ..................................................69
- Social Science & Hospitality Poster Session – Ballroom ................................75
- Science Poster Session – Ballroom .................................................................79
- Science & Health Science Poster Session A – Ballroom ...........................88
- Science & Health Science Poster Session B – Ballroom ..........................94

### Index
.................................................................100
PODIUM SESSIONS

GRADUATE & PROFESSIONAL STUDENT RESEARCH FORUM

2019
Science Podium Session – Room 207

PRESENTATIONS:

8:30 – 8:45 AM Nam Hoang, Department of Chemistry and Biochemistry
8:45 – 9:00 AM Christopher Yip, Department of Chemistry and Biochemistry
9:00 – 9:15 AM Shaimaa Abdelhaleem, Department of Geoscience
9:15 – 9:30 AM Sharang Chaudhry, Department of Mathematical Sciences
9:30 – 9:45 AM Daniel Sned, Department of Physics and Astronomy
9:45 – 10:00 AM Howard Yanxon, Department of Physics and Astronomy
10:00 – 10:30 AM Break
10:30 – 10:45 AM Cindy Kha, School of Life Sciences
10:45 – 11:00 AM Nancy Nou, School of Life Sciences
11:00 – 11:15 AM Tiffany Pereira, School of Life Sciences
11:15 – 11:30 AM Jillian Socca, School of Life Sciences
11:30 – 11:45 AM Ariel Friel, School of Life Sciences
11:45 – 12:00 PM Michael Isaacs, School of Life Sciences
Stop the Progression of Tumors: HIF1α and the Induction of Angiogenesis
Nam Hoang | Chemistry and Biochemistry

Blood vessels carry nutrients and oxygen to the cells for them to function and divide according to our body needs. However, in tumors, the orderly process is disrupted and cells begin to divide uncontrollably. While growing, tumors need a dedicated blood supply because they are consuming nutrients and oxygen at a rapid rate. Tumors can induce a process called angiogenesis, where a new blood vessel would grow from nearby blood vessels to provide the tumor cells with supplements for growth. In many cases, angiogenesis is a necessary step for a benign tumor to become malignant (cancerous) as it uses the blood vessel as a highway to spread to other organs in the body. Past research have found that tumor cells induce angiogenesis through a “master switch” called Hypoxia Induce Factor 1 Alpha (HIF1α). I propose that the destruction of this “master switch” will stop the induction of blood vessel growth and starve the tumor cells, effectively abolishing their ability to become malignant. Meanwhile, the manipulation of the “master switch” to induce blood vessel growth may greatly help those who have poor vascular system due to heart attacks. We hope our study of HIF1α and angiogenesis could be a stepping stone toward combating cancer and ischemic heart disease.

Characterization of Germination Inhibitors against Clostridium difficile R20291
Christopher Yip | Chemistry and Biochemistry

Clostridium difficile infections (CDI) are the leading cause of antibiotic-associated diarrhea worldwide. Exposure to taurocholate, a natural bile salt found in the mammalian 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 not fully understood, 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 the 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.
The Las Vegas Valley Fault System: A result of differential compaction or tectonic rupture?
Shaimaa Abdelhaleem, Wanda J. Taylor, Craig dePolo | Geoscience

The Las Vegas Valley floor is dissected by five major faults, together called the Las Vegas Valley fault system (LVVFS). The LVVFS has long been thought to be formed by land subsidence; however, the lack of correlation studies between the amount of subsidence and the fault scarp heights leaves the origin of the LVVFS controversial, because it is unclear whether the amount of subsidence is large enough to form the huge scarps (>12 m). An alternative case, tectonic rupture, needs to be considered to better explain the scarp heights. Whether the LVVFS formed by differential land subsidence or tectonic rupture will determine the size of potential earthquakes and seismic hazard in Las Vegas, and may require changing adopted policies like building codes and seismic hazard mitigation procedures. Land subsidence results from mechanical compaction of the basin-fill sediments upon rapid underground water pumping. This study evaluates the differential compaction in Las Vegas and its effect on the LVVFS. A compaction model for Las Vegas basin was constructed using neutron, gamma-ray, and resistivity logs from wells and thin-sections. Well logs showed very low porosity which may incorrectly be interpreted as high compaction. Thin-sections, on the other hand, showed signs of early cementation, which blocks compaction. After the decomposition calculations of the uppermost 1000 ft. of the basin-fill deposits, some fault offset remained. Consequently, the LVVFS was developed by tectonic rupture before the onset of groundwater pumping-related land subsidence.

Sampling Prudently using Inversion Spheres on the Simplex
Sharang Chaudhry, Daniel Lautzenheiser, Kaushik Ghosh | Mathematical Sciences

Constructing efficient proposal distributions for Bayesian sampling is a challenging task. The difficulty of the problem is exacerbated when the parameters of interest have constraints. In this work, it is proposed to use a transformation called inversion in a sphere to efficiently sample within a standard simplex (sum-to-one constraint). The essence of the procedure lies in creating an image of the simplex that is more amenable to sampling and makes the use of standard proposals more intuitive. The method’s performance is demonstrated with examples and applications.
Using Extended X-ray Absorption Fine Structure Spectroscopy to Probe Atomic Disorder in Tin (IV) Oxide
Daniel Sned | Physics and Astronomy

Electromagnetic waves are used in many forms to probe and initiate different physical phenomena. One of these phenomena is known as the photoelectric effect. If you shine visible light of very specific frequencies (known as the binding energy) on a metal, the weakest bound electrons in that metal are ejected off as a photoelectron. Electrons that are more strongly bound to the nucleus of an atom are called core electrons; these electrons have much higher binding energies and thus require much higher frequency electromagnetic radiation than visible light to excite them. X-rays are a form of very high frequency electromagnetic radiation, which allows them to excite core electrons from the nucleus and eject them as photoelectrons. These photoelectrons can then bounce off of atoms that are nearby and return to the atom that they were excited from. This in turn creates standing waves between a central atom and the atoms that are surrounding it. With this phenomenon, we can probe with high precision, the atomic configuration of a material, as well as the motion of the atoms. This technique is known as Extended X-ray Absorption Fine Structure (EXAFS) spectroscopy. This presentation will go more in depth on the photoelectron standing wave phenomenon and how I use EXAFS to try to understand how atoms are configured and disordered within Tin (IV) Oxide, which is a crucial material used in touchscreens, solar panels, and gas sensors. This understanding will allow for more accurate modeling and development of future technologies.

Predicting the Stability of Crystal Structures with Machine Learning Method
Howard Yanxon | Physics and Astronomy

Artificial Intelligence (AI) is one of the most dynamic field in research today. It is applied in many other disciplines such as, including but not limited to, finance, biology, physics, and materials science. In solid-state physics, the paradigm is shifted from trial-and-error experiments to intelligent screening and AI. The current state of the art in materials properties predictions is density functional theory (DFT). DFT is quantum mechanical modelling method to inspect the ground-state electronic structure of many-body systems. DFT can accurately predict materials properties, but it is computationally expensive. In contrast, force-field method is computationally cheap, but it is often inaccurate. Currently, there are proofs that AI can solve these decades-old problems. AI provides accuracy within the DFT error, and it is several orders of magnitude cheaper. In this presentation, I will talk about the AI approaches that has been examined and verified in our group.
An Eye on Animal Regeneration
Cindy Kha, Kelly Ai-Sun Tseng | Life Sciences

Over 42 million people are affected by vision loss and blindness in the United States. By 2050, the prevalence of people with these conditions is expected to double as a result of the aging population. Estimating to cost $51.4 billion, this imposes a great social and economic burden on society and individuals. Thus, developing regenerative therapies to repair eyes is critical to reduce the number of people with vision loss and blindness in order to enhance their quality of life and decrease associated cost. However, we first must understand how regeneration occurs in highly regenerative animals as this ability is limited in humans. Therefore, our lab uses an animal that has a robust capacity to regenerate called the African clawed frog, Xenopus laevis. Due to the similarities between the mature Xenopus and human eyes structures, this is an excellent model to study eye regeneration. Xenopus tadpoles are able to regenerate mature eye tissues, including the optic nerve, retina, and lens. Little is known, however, whether the developing eyes of young embryos can regenerate similarly to mature eyes in tadpoles. Here, we recently established a new model to study regeneration in developing eyes. After surgical removal, a regenerate eye is made by 5 days and is comparable to a normal eye. It contains all the expected structures, cell types, and is functional. This new model will serve as a foundation to understand how to manipulate stem cells and identify genes for continued advancements in eye regenerative therapies.

Genomics-guided cultivation of Candidatus Fervidibacter sacchari
Nancy Nou, Brian P. Hedlund | Life Sciences

Recent studies incorporating cultivation-independent techniques to assess microbial communities, namely metagenomics and single-cell genomics, have pushed the proposed number of bacterial phyla to over 100, compared to the 34 currently named in the LPSN. This discrepancy is largely due to so-called “candidate” taxa, or those groups whose existence is known only through DNA sequencing. Using hot spring sediment initially collected from Great Boiling Spring, Nevada, mixed laboratory cultures were continuously subcultured to enrich Candidatus Fervidibacter sacchari, a member of the candidate phylum Fervidibacteria found in only a few geothermal systems worldwide. Genome and carbohydrate-active enzyme annotations of a metagenome-assembled genome showed a high number of genes coding for glycoside hydrolases (GH), including 38 for GH109, 9 for GH5, and 6 for GH29, totaling 97 genes belonging to 36 unique GH families. Using this information, cellulose, casamino acids, formate, inositol, locust bean gum, xyloglucan, xylan, and a glucose/mannose/xylose mixture were used as substrates in laboratory enrichments. Quantitative PCR targeting the Fervidibacteria 16S rRNA gene showed that abundance was highest under aerobic conditions, fast (< 6 days) incubation times, and using polysaccharides as carbon source. After continuous transfers under the optimal conditions tested, fluorescence in situ hybridization of the laboratory cultures showed high enrichment of Ca. F. sacchari. Further isolation work, including dilution-to-extinction, in attempt to grow a pure culture will allow for physiological characterization and establishment of Fervidibacteria as an accepted bacterial phylum, adding a branch to the cultivated tree of life.
Long-term Monitoring of Seed Banks, Fertile Islands, And Rare Gypsum Communities in Eastern Mojave Desert
Tiffany Pereira | Life Sciences

In certain ecosystems, such as deserts, the majority of native plant species rely on soil seed banks for regrowth after unfavorable reproductive years. While soil seed banks are important ecologically, quantifying and accurately assessing soil seed banks in a simple and reliable way remains elusive. More specifically, the accuracy of two main methods of seed bank characterization (emergence and extraction), and the influence of microsites (fertile islands) on seed banks, are poorly understood for desert ecosystems. This knowledge gap is especially important given that human-caused and ecological disturbances are accelerating within this biome. As part of a 2007 soil seed bank study, ten permanent transects were established in Lake Mead, National Recreational Area, and Nevada. These sites provide a rare re-measurement opportunity to assess long-term change in soil seed banks, fertile islands, and plant communities of rare plant habitat of the eastern Mojave Desert. Furthermore, this special gypsum habitat supports two sensitive species protected by a conservation plan under the Endangered Species Act: sticky ringstem (Anulocalus leiosolenus) and Las Vegas bearpoppy (Arctomecon californica). Thus, our research seeks to understand the intricacies of desert soil seed banks in relation to aboveground vegetation change, while addressing the discrepancies between soil seed bank characterization methods.

Subcellular localization of VirB, a key transcriptional regulator of virulence genes in Shigella flexneri
Jillian Socea, Grant R. Bowman, Helen J. Wing | Life Sciences

Shigella species are the leading cause of diarrheal diseases worldwide and commonly display antibiotic resistance, leading the CDC to list this organism as a serious threat in the United States. The goal of our research is to characterize the mechanisms that control the expression of virulence genes in Shigella flexneri. We anticipate that these studies will reveal novel drug targets that can be exploited to control Shigella infections of the future. In Shigella, VirB transcriptionally up-regulates many genes on the large virulence plasmid by antagonizing H-NS, a histone-like nucleoid structuring protein that silences many genes. VirB is a unique transcription factor in that it’s most similar to ParB, a plasmid partitioning protein found in P1 bacteriophage. Studies of the ParB superfamily has revealed an intimate relationship between protein function and their subcellular localization. Based on the similarity between these two proteins, I set to determine if VirB displays a subcellular localization by fusing VirB with a fluorescent tag. Using fluorescence microscopy, discrete foci of this fusion protein was observed. Notably, localization of the fusion was lost when expressed in a virulence plasmid-cured strain or when a VirB-GFP fusion that cannot bind to DNA is imaged. These results suggest that localization may be essential for its role in H-NS antagonism. This work will enhance our current understanding of VirB through its evolutionary relatedness to ParB, and can provide insight into its key activities as a regulator of virulence gene expression in this group of human pathogens.
Desert Springs: A Microbial Perspective  
Ariel Friel | Life Sciences

The southern hydrographic Great Basin, one of the most arid regions in North America, has many naturally occurring springs, which are oases for aquatic biological diversity. Despite the uniqueness of desert springs, little research has been conducted to explore the microbial communities present in this habitat. To address this gap, planktonic and benthic microbial community samples were collected from more than 70 springs and microbial communities were surveyed using Illumina 16S rRNA gene amplicon sequencing (V4 region). This microbial census has revealed a staggering diversity of microorganisms, with 107,789 DNA sequence variants being recovered, representing over 70 bacterial and archaeal phyla. In most springs, planktonic and benthic communities appear to be distinct. On average, the most abundant phyla in planktonic communities are Proteobacteria, Bacteroidetes, Firmicutes, Verrucomicrobia, Omnitrophica, and Woesearchaeota, whereas the most abundant phyla in benthic communities are Proteobacteria, Bacteroidetes, Cyanobacteria, Chloroflexi, Actinobacteria, and Acidobacteria. High-elevation springs, regardless of host rock (carbonate or granite), have significantly (p-value = 0.001) more similar microbial community structure to each other than to low-elevation springs. Physicochemical parameters observed to significantly (p-value = 0.001) correlate with large-scale shifts in microbial community structure between low- and high-elevation springs include temperature, specific conductance, and various cations and anions, including Ca$^{2+}$, Na$^+$, Cl$^-$, and SO$_4^{2-}$. These results demonstrate that desert springs in the southern hydrographic Great Basin host incredible microbial diversity and that several factors may influence microbial community structure.

Why we don't walk slower... or faster...  
Michael Isaacs | Life Sciences

Conventionally, nearly all of the mechanical cost of human walking is attributed to the step-to-step transitions, while steps are considered zero cost. Intuition suggests that another mechanism can better explain how humans negotiate cost without considering flawed assumptions about how people walk. We investigate human walking by measuring the forces applied to the ground from each leg – this technique determines the contributions of steps and step transitions to the overall mechanical cost of walking. Our analysis is relatively simple and allows for high throughput with minimal assumptions about the organism walking over the force-sensing platforms. Using the recorded forces, we measure the mechanical cost by determining where the body is located from the forces applied to the ground from the legs. The relationship of the body position and the forces from the ground when people walk is understandably dynamic. We measure these dynamics 1000 times per second and can associate a relative mechanical cost for each of those measurements in real-time. We measured how dynamics change as people walk at different speeds from slow to fast. As people walk faster, they take longer steps and they bob up-and-down with higher amplitudes. Interestingly, the amount people bob up-and-down increases by about 45% during steps, but decreases by nearly 50% during step transitions as they walk at faster speeds. The flattening of the step transition as people walk faster allows the mechanical cost of the transition to remain the same whether people walk slowly or near their preferred walking speed.
Allied Health Sciences, Community Health Sciences, & Medicine Podium Session – Room 222

PRESENTATIONS:

10:00 – 10:15 AM  Allina Cummins, Department of Physical Therapy
10:15 – 10:30 AM  Shilpa Daulat, School of Medicine
10:30 – 10:45 AM  Jordyn Farewell, School of Medicine
10:45 – 11:00 AM  Gregory Schreck, School of Medicine
11:00 – 11:15 AM  Aaron Singer, School of Medicine
11:15 – 11:30 AM  Laura Wozniak, School of Medicine
11:30 – 11:45 AM  Amalie Alver, School of Medicine
Comparisons of Patellar Bone Mineral Density between Individuals with and Without Patellofemoral Pain
Allina Cummins | Physical Therapy

Background and Purpose: Patellofemoral pain (PFP) is a common problem that affects 25% of the general population. Individuals with PFP experience increased patellar strains compared to pain free controls, suggesting bone and cartilage micro-damage. Bone and cartilage damage is implicated in the development of knee Osteoarthritis (OA) and is a sign of joint degeneration. Bone remodeling begins in response to damage, and leads to increased bone mineral density (BMD) of the local subchondral bone. Thus increased BMD is proposed as a biomarker to detect early joint degeneration, and as a possible link between PFP and OA. While Dual X-Ray Absorptiometry (DXA) has been used to examine patella BMD in individuals with PFP, it does not provide detailed BMD profile for sub-regions (e.g., medial and lateral patella). Quantitative computed tomography (QCT) is deemed to be a more appropriate tool as it yields voxel-based BMD and can provide more regional details within an individual bone. Thus, the purpose of this study was to examine the BMD of the patella (medial, lateral, and total regions) in individual with and without PFP using QCT. Subjects: 10 individuals with PFP will be identified and recruited as well as 10 individuals of the same age, sex, activity level but without PFP for the control group. Methods: Quantitative Computed Tomography (QCT) images of these participants’ affected knees and controls’ knees will be obtained and analyzed to identify differences in medial, lateral, and total BMD.

Dynamic Hyperinflation in Children with and Without Obesity
Shilpa Daulat | Medicine

The primary purpose of this study is to investigate the correlation between dynamic hyperinflation and cardiorespiratory fitness in prepubescent obese children. Children with obesity tend to breathe at low lung volumes due to the mechanical effects of obesity on the chest wall and thus have reduced levels of functional residual capacity (FRC) at rest. We believe that limited expiratory reserve during exercise will force obese children to increase end expiratory lung volumes (EELV), leading to dynamic hyperinflation. We hypothesize that dynamic hyperinflation will be more prevalent in children with obesity compared to children without obesity. We further hypothesize that cardiorespiratory parameters such as onset and severity of dynamic hyperinflation will be associated with lower cardiorespiratory fitness. To test our hypothesis, a study has been designed with the following aims: Aim One: Examine differences in onset and severity of dynamic hyperinflation in children with obesity compared with children without obesity. We plan to analyze measurements of EELV during each stage of the maximal exercise test in prepubescent children with and without obesity. Aim Two: Examine associations between onset and severity of dynamic hyperinflation and cardiorespiratory function in children. We plan to analyze measurements of EELV and peak oxygen uptake (VO2) in prepubescent children with and without obesity. Through this research project, our goal is to expand the scientific literature on ventilatory constraints during exercise in children with obesity. Our results may inform the development of personalized exercise prescriptions based on each child’s individual respiratory parameters. This would allow obese children to exercise.
Integrating service learning into a four-year medical school curriculum
Jordyn Farewell, Aaron Singer, Amalie Alver, Danielle Arceo, Gregory Schreck, Laura Wozniak, Raina Rappel, Darlene Julian, Edward Simanton, Laura Culley | Medicine

The purpose of this curriculum component is to implement a service learning curriculum to develop future physicians with a comprehensive awareness of the challenges their community faces regarding health. Students develop a sense of duty and compassion for their community while engaging in individualized service activities. Student participation also encourages learning, self-growth, and independent thinking. Students and a mentor from the organization will work together to integrate community and population health with service learning experiences. Students will serve with the same organization all four years, giving them the opportunity to follow a population over time while deepening their compassion. Students will alternate 2 hours of service and 2 hours of didactic sessions presented by community organizations every week over the course of three semesters. Data on the impact of student perceptions towards underserved populations is being collected. This course allows students to integrate within their communities and learn the importance of serving others. Facilitating collaboration of service organizations through the medical school while students learn about available community resources. Limitations include time restraints on medical students. This is feasible to implement in any US medical school with collaboration from local service organization; difficulties would lie in finding organizations that are willing to adopt medical students into positions within their practices that align with the goals of this course.

EMT Training as a first phase of medical school
Gregory Schreck | Medicine

Objective/purpose UNLV’s Class of 2022 began school by completing an EMT basic course. This course served as an intro to patient assessment and treatment, a window into the workings of Southern Nevada’s unique medical landscape, and an opportunity for team building among the incoming class. Background UNLV is one of a few US medical schools to include an EMT training program in its curriculum. The EMT training was combined with an orientation and population health curriculum spread over six weeks, creating a unique introductory course to serve as the first block of medical school. Design Six-week course with combined medical school orientation, population health, and EMT training components. On ride alongs and in the classroom, students practiced BLS and ALS skills while gaining insight into the workings of Southern Nevada’s emergency medical system. In addition to EMT basic skills, first responders and emergency physicians trained students in intubation, suturing, and other clinical skills. Outcomes Students reported positive experiences from this unique introductory course. Local emergency service providers also reported positive experiences in collaborating with the local medical school and taking part in the education of future physicians. Strengths Students gained exposure to Southern Nevada’s unique medical landscape and robust emergency medical system. This prepares students to work effectively alongside first responders with an improved understanding of the emergency medical system. Students received high quality instruction from experienced first responders as well as physicians from a Level 1 Trauma Center.
**Wellness as an Integral Part of Medical Education**  
Aaron Singer | Medicine

Objective/purpose to teach self-care practices and provide stress-relieving activities necessary to produce students and future physicians with strong mental, physical, and spiritual health. Background/Framework Burnout, depression, and suicide have long plagued physicians as well as medical students. In light of this, the UNLV School of Medicine found it necessary to make wellness an essential component of their medical education. Design Students will be provided optional opportunities to participate in yoga, tai-chi, hip-hop dance, meditation, as well as many other wellness exercises. Multiple wellness activities will be offered throughout each week. These activities are intended to develop practices that contribute to improved comprehensive health. In addition, a silent space within the medical school shall be dedicated to meditation, self-reflection, as well as spiritual practice. Outcomes Data on the impact of wellness being integrated into the UNLV School of Medicine curriculum is currently being collected at this time. Strengths Students will develop wellness modalities to improve one’s wellness that can be used anywhere and at any time. These teachings are skills that can be used for the duration of the student’s life and may be taught to patients, as we develop into future physicians. Wellness activities are made deliberately optional as to not add unnecessary stress to medical students. Limitations Wellness education may take away from time initially dedicated to other aspects of medical education. Feasibility/Generalizability this is feasible to implement in any US medical school with collaboration from their curriculum directors.

**The Impact of an Integrative Medicine Course in a Four-Year Medical School Curriculum**  
Laura Wozniak | Medicine

Research suggests that patients have been increasingly using one or more forms of integrative medicine in the United States (Clarke et al., 2015). Physicians report discussing integrative medicine with patients, but many physicians feel uncomfortable with these treatments because they did not have the knowledge of their efficiency, safety, and purpose (Patel et al., 2017). Nationally, integrative medicine is offered as a certification or master degree in tandem with residency and fellowship programs. From the inception of the UNLV School of Medicine, integrative medicine has been interwoven throughout the four-year medical school curriculum. This includes problem-based learning cases that involve integrative medicine as well as didactic and experiential class time with different healing modalities. Acupuncture, traditional Chinese medicine, herbal medicine, nutrition, and massage therapy are among those that have been included. UNLV School of Medicine students were surveyed prior to entering the program regarding their thoughts on integrative medicine. Additional surveys will be collected and analyzed as the curriculum continues. This integrative curriculum helps foster an understanding of different modalities for medical students to then be able to create comprehensive, holistic plans of care with their patients. There is limited longitudinal evidence of the impact of this curriculum since it is a relatively novel addition to a medical school program.
Good, Better, How: A Novel Feedback Mechanism for Long-lasting Performance Improvement
Amalie Alver, Darlene Julian, Danielle Arceo, Jordyn Farewell, Raina Rappel, Gregory Schreck, Mark Guadagnoli, Edward Simanton, Medicine

Feedback is required for effective learning and is necessary in medical education and practice. However, many forms of feedback do not lead to constructive outcomes and personal growth. Good, Better, How (GBH) is a feedback mechanism that was developed by Dr. Mark Guadagnoli utilizing the Challenge Point Framework as a basis. It focuses on constructive feedback that allows for personal development and long-lasting performance improvements. The purpose of GBH is to provide an evidence-based, three-step template for productive student feedback that is formative and long-lasting. The GBH mechanism is a sequence of three questions. The first asks the learner to describe what is good about their behavior. This allows reinforcement for the behavior and encourages positive reflection. The second question asks what could have been better. This prevents automatic defensive responses and allows for personal growth. The third asks the learner how they can make the suggested improvements. This is helpful for keeping the learner accountable and ensuring realistic plans of action. Student satisfaction data has been collected for evaluation of the GBH mechanism at the UNLV School of Medicine. Users appreciate the brevity, ease of use, and the solutions-based approach to evaluations of students and faculty.
Science & Engineering Podium
Session – Room 218

PRESENTATIONS:

10:15 – 10:30 AM  Dakota Schwartz Department of Mechanical Engineering
10:30 – 10:45 AM  Amanda Vazquez Department of Mechanical Engineering
10:45 – 11:00 AM  Binay Dahal Department of Computer Science
11:00 – 11:15 AM  Phillip Uesbeck Department of Computer Science
11:15 – 11:30 AM  Sailuj Shakya Department of Civil and Environmental Engineering and Construction
11:30 – 11:45 AM  Kazi Tamaddun Department of Civil and Environmental Engineering and Construction
Third generation photovoltaics including perovskite materials, are essential to improving solar technology for widespread future use. Perovskites are a class of materials that are generally inexpensive and display a variety of optical properties depending on elemental composition. Perovskite solar cells have surpassed 23.3% power conversion efficiency, comparable to traditional silicon panels. However, these perovskites are fabricated using lead-based compounds. In order to address toxicity concerns and develop materials to maximize sunlight absorption in solar cells, this effort focuses on the development of lead-free perovskite materials using cesium, platinum, and iodine as perovskite components. A solution-based process is used to fabricate samples with variables including solutes, solvents, and solution deposition techniques. The resulting films are then imaged and tested in order to understand material properties and improve future processing methods. The ultimate goal of this research is to fully develop a cesium platinum iodide perovskite and manufacture stable photovoltaic devices. We have successfully fabricated test-devices capable of converting light to energy and have observed processing trends that lead to successful cesium platinum iodine perovskite materials. In this presentation, the relevancy of continuing photovoltaic research, the current state of perovskite materials, and the importance of investigating new perovskite materials will be discussed. The most recent details of cesium platinum iodine perovskites including best processing methods, film composition, and material imaging will be included.

Engineering faculty have advanced experiences with engineering that non-engineers do not have but what Nature of Engineering (NOE) concepts do engineering researchers hold? For K-12 engineering education, having an informed NOE understanding is an essential part of engineering literacy. Yet for the higher education engineering community, NOE is hardly ever discussed. Understanding engineering faculties’ NOE views can be a valuable contribution to current NOE research. Our project is part of a collaboration between a southwestern US higher education institute and a Vietnamese University. The cohort of Vietnamese engineering faculty is participating in training for research in environmental engineering for three months in the US. Vietnamese faculty is expected to improve their research skills at the end of the comprehensive professional development under the training of US environmental engineering researchers. Over the three months, Vietnamese faculty will search literature, learn lab skills and conduct a self-driven, lab-based research project in an environmental engineering lab. The purpose of our research is two-fold: Firstly, we will investigate what Vietnamese environmental engineering faculty say in response to the NOE instrument; Secondly, the purpose of our study is to explicate the impact of a collaboration between a US university and a Vietnamese university. More specifically, our research study will identify NOE views of Vietnamese engineering faculty prior to and post-training. While Nature of Engineering (NOE) views are increasingly growing stateside, it is important to look at the views of NOE globally equally. Giving Vietnamese faculty research skills, hands-on laboratory projects, and US engineering research mentors; we will examine…
Botnets are the powerful and effective way of performing malicious activities over the internet. Over the years, it has evolved into many forms. Earlier bots used static IP to communicate with their command and control server. This method stopped working as soon as that specific IP was identified and blocked. These days, domain fluxing botnets are mostly in practice. The idea is, using Dynamically Generation Algorithm (DGA) to generate domains and use it to connect with C&C server. Numerous researches have been done to detect DGA botnets. These includes deriving features based on alphanumeric distribution of DGA domains and performing classification on it. Other studies include network logs analysis, time series analysis etc. Most of these domain classification works rely upon the features developed and may not work well if the botmaster decides to generate domain with completely new features. We are concerned with developing algorithm that is resilient to feature change that also work well for domain generated by completely new algorithm that was not seen before. We generated 16 bit representation of domains using autoencoder and classified it as benign or DGA generated using supervised learning (with neural net and SVM). To make it work with previously unseen algorithm, we tweaked our method with mean activation of 16-bit domain representation. This helped improve classification accuracy for completely new set of domain generation algorithm by up to 16%.

Using more than one programming language in the same Software development project is common practice. Often, Additional languages might be introduced to projects to solve specific issues. While the practice is common, it is unclear whether it has an impact on developer productivity, which is an important factor in software development cost. Even small cost savings in a $407.3 billion industry can have large effects. In this paper, we present a pilot study investigating what happens when programmers switch between programming languages. The experiment is a repeated measures double-blind randomized controlled trial with 3 groups with various kinds of programming language switching in a database programming context. Results suggest that switching between languages which are very different from one another might negatively impact productivity and we provide a rigorous testing methodology that can be replicated and scaled up by us or others and a theoretical backing for why these effects might exist from the linguistics literature. As previous research about this practice can be described as sparse at best, our paper provides a first step into a methodic analysis of whether there is an issue and provide material for other researchers to do the same.
Estimation of Stage-Area-Storage Relationship of Reservoirs Using Remotely Sensed Data
Sailuj Shakya, Haroon Stephen, Sajjad Ahmad | Civil and Environmental Engineering and Construction

Relationships between water levels, surface areas and volumes of reservoirs and lakes are crucial for water management in the downstream area. But, lack of communication in transboundary water resources and lack of accessibility to remote lakes has affected the availability and estimation of these relationships. This study demonstrates the capability of remotely sensed data to estimate reservoir stage-area-storage relationship with a strategic procedure in area estimation. Water levels were derived from Hydroweb that is a satellite altimetry database. Areas were estimated from Landsat Surface Reflectance images by classifying Modified Normalized Difference Water Index (MNDWI) into binary image. MNDWI is a spectral index calculated using surface reflectance of green and mid-infrared bands. Finally, water surface heights from the lowest level and area were used to estimate volume assuming pyramidal shape and 2nd order polynomials were fitted to compute relationships. Stage-area-storage relationships were developed for Lake Mead (LM) and Lake Powell (LP), two largest reservoirs in US in a transboundary Colorado River. Accuracies of estimates were calculated using in-situ water level measurements and capacity tables from United States Bureau of Reclamation using Root Mean Square Differences (RMSD). The study estimated the areas of LM with a RMSD of 17.8 km\(^2\) and LP with 53.7 km\(^2\). The RMSD in volumes were 699 Million Cubic Meters (MCM) for LM and 1330 MCM for LP. The stage-area-volume estimation technique based on remotely sensed data could be an alternative for water managers to deduce Stage-area-storage relationship within operational range for transboundary water resources.

Water Demand Forecasting Using an Intelligent Model: A Study for the Las Vegas Valley
Kazi Tamaddun, Ajay Kalra, Sajjad Ahmad | Civil and Environmental Engineering and Construction

Las Vegas is one of the fastest growing metropolitan cities in the United States located in one of the country’s most arid regions. Meeting the increasing water demand with the limited water resources becomes a big challenge for the local water authorities. Intensification of the hydrologic cycle as a consequence of climate change and variability restricts the water availability. Both the long- and short-term changes in temperature and precipitation patterns in the contributing watersheds amplify the extent of the challenge for the water managers. To assist in water management, this study developed an intelligent forecasting model for future water demand scenarios for Las Vegas Valley. This model is based on artificial neural network (ANN) that uses historical demand, the growth of population, and change in temperature and precipitation patterns of multiple decades as the input model parameters. The model was tested against multiple learning algorithms. An iterative analysis was conducted to determine the optimum number of hidden neurons for the developed ANN model to increase the accuracy of the model. To capture the effects of temporal variation (frequency) of the model parameters, discrete wavelet transformation (DWT) was applied as a pre-processing technique to decompose the original time-series datasets into a set of lower to higher resolution sub-series. The results indicated that the inclusion of DWT increased the performance of the ANN model significantly. Both the point and gridded datasets (e.g., temperature and precipitation) were analyzed to check the validity of models. Multiple climate scenarios were also tested for the forecasted data to determine the sensitivity of demand against extreme climate conditions.
Social Science Podium Session A – Room 208C

Presentations:

8:45 – 9:00 AM  Ryan Wirt, Department of Psychology
9:00 – 9:15 AM  Alek Krumm, Department of Psychology
9:15 – 9:30 AM  Jessica Nave-Blodgett, Department of Psychology
9:30 – 9:45 AM  Breanne Yerkes, Department of Psychology
9:45 – 10:00 AM Vanessa Nuñez, Department of Sociology

10:00 – 10:30 AM  Break

10:30 – 10:45 AM  Jonathan Jimenez, Department of Sociology
10:45 – 11:00 AM  Bridget Longoria, Department of Sociology
11:00 – 11:15 AM  Josiah Kidwell, Department of Sociology
11:15 – 11:30 AM  Marta Soligo, Department of Sociology
11:30 – 11:45 AM  Erick Lopez, Department of Sociology
11:45 – 12:00 AM  Christa Clayton, Couple and Family Therapy
Alzheimer’s disease (AD) is a debilitating neurodegenerative disorder known to cause progressive cognitive and memory impairments. Despite considerable progress elucidation of the cause and the development of effective treatments are needed. Several risk factors have been identified, including diabetes mellitus (DM). DM is associated with altered insulin signaling as well as elevated blood glucose levels, or hyperglycemia. We have previously demonstrated that sustained hyperglycemia in an otherwise healthy animal induces learning and memory impairments, elevated ptau, and neuroinflammation, suggesting a mechanism for increased risk for AD. In this study, we examined how neural network activity was altered as a result of prolonged hyperglycemia. We trained subjects on a T-Maze delayed alternation, after subjects were proficient at the task, hyperglycemia was induced in a group of animals via multiple low dose injections of streptozotocin. We recorded local field’s potentials from the ACC and HC while animals performed the task. We found that hyperglycemic animals performed significantly worse on both short and long delay trials, indicating substantial impairments in spatial working memory. Next, we compared changes to theta and delta band oscillations. Data revealed that subjects in the hyperglycemic state had altered neural oscillatory activity, and disruptions in theta coherence between the HC and ACC. Our data indicate that the same hyperglycemic state that is associated with increased ptau and inflammation in the brain results in altered oscillatory activity consistent with genetic mouse models of AD.

Prior research suggests that hormones may play a significant role in the developmental of mental disorders. This is especially true for premenstrual disorders (PMDs): Changes in estrogen and progesterone during the menstrual cycle are thought to lead to the physical, emotional, and behavioral symptoms that some women experience in the week leading up to their menstrual period. Diagnosis of PMDs relies heavily on women’s self-report of symptoms. Many of those symptoms refer to private inner experiences, such as feeling depressed or irritable. Clinicians typically use questionnaires that ask women to retrospect about symptoms over their last several cycles. Such questionnaires are susceptible to memory errors and other biases. Therefore, it would be preferable to employ a method that can more carefully examine the link between inner experience and hormones. This presentation will summarize the early stages of a project intended to do just that. The project involves engaging eight women with severe premenstrual symptoms in descriptive experience sampling (DES). DES is a random beeper method designed to capture naturally-occurring inner experience. We are interested in whether there are experience-level changes around the time of major hormone changes, therefore, DES sampling will increase during ovulation and the premenstrual phase. To ensure we are sampling during relevant phases, we will measure changes in each participant’s cycle using daily saliva ovulation kits. Participants will sample their experience twice weekly for 3 cycles, or 24 times total, ultimately resulting in an idiographic profile of each person’s inner experience with comparisons between phases of menstruation.
Finding the Common Time: Similarities and Differences in the Temporal Aspects of Speech and Music Perception
Jessica E. Nave-Blodgett, Joel S. Snyder, & Erin E. Hannon | Psychology

Speech and music share many similarities. For listeners to comprehend speech and music, they must parse a continuous sound stream into meaningful units. Meter is a key temporal structure in music (and to some extent, speech) which governs the points in time when a listener would hear emphasis and tap or clap along. Is the process of perceiving the metrical organization of music analogous or homologous to segmenting speech? We designed a natural-language speech segmentation task and compared individuals’ performance across speech and music perception tasks. In the speech segmentation task, listeners identified target words embedded in spoken sentences in familiar (English) and unfamiliar (Turkish) languages. Participants performed multiple tasks: speech segmentation, a meter perception task using familiar (American) and unfamiliar (Turkish) music, and tapping to the beat of American and Turkish music. Speech segmentation accuracy was influenced by the target language and sentence language: participants performed poorer for unfamiliar target words regardless of sentence language, and poorer for all targets embedded in unfamiliar-language sentences. Participants had higher sensitivity to multiple levels of metrical structure in culturally familiar than unfamiliar music, took longer to begin tapping to culturally unfamiliar than familiar music, and tapped less accurately to culturally unfamiliar music.

Breanne Yerkes | Psychology

Individuals diagnosed with an autism spectrum disorder (ASD) display both superior low-level and deficient high-level auditory processing. For example, individuals with ASD show superior performance in pitch discrimination and identification tasks while displaying difficulties perceiving speech in noisy environments. The extent to which individuals with ASD rely on low-level and high-level information while completing complex auditory tasks remains unknown. In the current study, children with and without ASD aged 7-14 years completed an auditory change detection task and a speech-in-noise task. The change detection task separately manipulated low-level acoustic information and high-level semantic category information to investigate the extent to which individuals with ASD rely on these features to detect auditory changes. The speech-in-noise task included semantically high-probable and low-probable sentences to investigate whether children with ASD use semantic context during speech-in-noise perception. The overall meaning of high-probable sentences could be utilized to facilitate performance while the overall meaning of low-probable sentences could not. Preliminary results indicate that like typically developing controls, children with ASD rely more on high-level semantic category information when detecting auditory changes. Additionally, although children with ASD display overall poorer performance in the speech-in-noise task they do utilize semantic context similarly to typically developing controls.
Applying a Community-Based Participatory Research Approach to Working with Undocumented Students: Successes and Challenges
Vanessa Nunez | Sociology

Objective: The purpose of this presentation is to discuss the successes and challenges in employing a community-based participatory research approach to investigate access and barriers to resources for undocumented students at “Desert Rose University.” First, we propose CBPR as a challenge to traditional research orientations and paradigms which exclude members from marginalized communities from the production of knowledge in the academy. Next, we argue that much of the research on undocumented student access to higher education upholds traditional research paradigms in which an outside researcher guides the research questions, research design and methods, and outcomes. In addition, we will discuss how we applied CBPR principles to our research study and the ways in which community researchers and community members contributed to the production of knowledge. Finally, through a reflexive process we identify the challenges of CBPR in this study and examine possible ways to address these. Contributions: We offer CBPR approaches as a partial solution to the exclusion of marginalized communities, specifically undocumented students, from the production of knowledge. We emphasize the importance of community driven research studies for centering the voices of the students and the community as knowers and experts of their lived experiences.

Contested Adulthood: Transgender Youth and the Path to Adulthood
Jonathan Jimenez | Sociology

Most research on Tran’s people focuses on adults, while some work highlights Tran’s children experiences. Very little research examines Trans youth experiences along their path to adulthood. My research highlights the unique challenges Trans youth confront during their Transition to adulthood. Specifically, I examine the relationship between trans youth’s gender identity and existing models of adulthood, which privilege a heteronormative life course. I explain how binary gender logics complicate trans youth’s paths to adulthood. Drawing on in-depth interviews conducted with 25 trans youth, I describe how they reconceptualize their adulthood away from heteronormative models and utilize therapeutic narratives to center their gender identity as their personal marker of adulthood. All youth engage institutions that traditionally mark their transition to adulthood, such as entry into the workforce. Those institutions are hostile to trans people when they privilege gender binary logics. Consequently, trans youth do not give these institutions the same significance as cisgender youth. This difference raises important questions about differences in transition to adulthood experiences. Bringing into conversation scholarship on trans and life course, I offer new insights into the lives of trans youth, and intervene into life course studies by demonstrating the need to center the experiences of trans youth. Responding to the theoretical and empirical gap on trans youth transition to adulthood, this paper argues that navigating gendered social institutions leads to a distinct experience of transitioning to adulthood for transgender youth.
Ripping off the Band-Aid: Poverty through the Lens of Social Service Providers
Bridget Longoria | Sociology

This research focuses on understanding the relationship amongst cultural discourses, organizational framing, and the identity of social service recipients. Specifically, I highlight interactions between social service providers (SSP’s) and social service recipients (SSR’s) to understand how cultural beliefs, organizational goals, and individuals’ implicit and explicit anticipations of the situation come together in real time with real consequences. I conceptualize social service providers as institutions “composed of people who act, at times in concert and at times in conflict, with the immediate working context and within the larger environment” (Hallett and Ventresca 2006, 214). Actions in SSPs “occurs in a context of meaning that can be constraining as well as enabling” and is constituted by communication formats and framing rules that “serves to foster a negotiated order that modifies the impact of structural order on situations” (Altheide 1988). In my research, nonprofit social service provider offices are spaces where the negotiated order of deservingness is being concretized on a daily basis, through providers and clients’ self-presentations, identity work, and negotiations to resolve inconsistencies within discourse frames. Ultimately, I am interested in how these negotiations influence both clients’ abilities to access needed services and providers’ efficiency in providing them.

Sin City Religion: Exploring the Intersections of Entertainment Culture, Technology, and Religion
Josiah Kidwell | Sociology

In this project, I explore how technology shapes the religious experience at New Life Christian Church: a megachurch in Las Vegas. My research attempts to answer three research questions: 1) what types of technologies do staff in the megachurch use? 2) How does the staff use these technologies to shape their messages and organize services? 3) How does the audience respond? To these messages? To answer these questions, I used participant observation, interviews, and online analysis. First, I examined how technology transforms the traditional religious space by increasing characteristics of ephemerality and fragmentation. This initial section focuses on the technological transformation and disintegration of the religious spaces. Second, I explored the multiple technologies leaders use to encode their messages and how these devices influence the organization the worship services. I focused on leaders’ motivations for using technology and their implementation strategies. Finally, I examined how audience members interpret messages in this dynamic, technological, and immersive space and the role they assign it in their spirituality. Regarding individuals’ interpretations of the services, I focus on the centrality of technology as a tool the church uses to capture attention and to cultivate immersive religious experiences. This research contributes to the scholarship on technology in society and in hypermodern religion.
Italy far from Italy: Authenticity in Las Vegas
Marta Soligo | Sociology

This ethnography is part of a bigger research project that I am conducting in four Italian-themed attractions in Las Vegas: three integrated resorts, the Bellagio, the Venetian, and the Caesars Palace; and an open-air mall, MonteLago Village at Lake Las Vegas. I do so by comparing reproduction (both on and off the Strip) of Italian culture in Las Vegas, considered by many urban scholars to be the quintessential postmodern city, with the original places in Italy that they are supposed to represent. Are representations of Italian culture in Las Vegas authentic? In the conventional sense of the term, clearly, they are not. Europeans, especially Italian visitors to the city are surprised, even confused, to find that reproductions of some of their best-known places are factually inaccurate and/or situated in what are, for them, bizarre contexts. In his book on Las Vegas, David Dickens has coined the term “authentic inauthenticity”, derived from interviews he conducted with local residents, who repeatedly argued that “here in Las Vegas, our fakes are real”. The field of this ethnography is MonteLago Village, an Italian-themed open-air mall and tourist attraction that is part of a residential complex on the banks of Lake Las Vegas. MonteLago Village’s architects decided to recreate an environment that recalled a traditional Italian town, including colorful little stores, nice restaurants with a lake view, a replica of Florence’s Ponte Vecchio bridge, and elements such as a bell tower and Mediterranean-style fountains. Several restaurants in MonteLago Village are owned by people who were born and raised in Italy.

Authorship: The Relationship between Sociocultural Measures of Acculturation and Sugar-Sweetened Beverages among Latinos
Erick Lopez | Sociology

Purpose: Sugar-sweetened beverage (SSB) consumption is the leading source of added sugar in American diets and is linked to numerous chronic health conditions. Latinos comprise a substantial portion of the U.S. population and experience higher rates of diet-related chronic conditions compared to non-Latino Whites. Acculturation shapes multiple health behaviors, including SSB consumption. Past research has examined the relationship between objective measures of acculturation (i.e., years in the U.S., U.S.-born, language preference) and dietary behavior, but this is the first study to examine whether sociocultural measures of acculturation (i.e., familismo, ethnic identity, ethnic social relations, multi-dimensional language use scale, perceived discrimination) are associated with SSB consumption among Latinos. Methods: Using the 2008-2011 Hispanic Community Health Study/Study of Latinos, I used the zero-inflated negative binomial regression to assess the acculturation-SSB consumption relationship among adult Latinos in the U.S ages 18-75 years old. Results: Preliminary results suggest that the multi-dimensional language use scale is the only sociocultural variable associated with SSB consumption after adjusting for covariates. Additionally, years in the U.S. and U.S. born were both associated with SSB consumption after adjusting for covariates. Conclusion: This research can help inform how differential acculturation processes shape health behaviors among adult Latinos.
Implementing an Integrative Narrative and Experiential Therapy Grief Lens for Relationship Dissolution
Christa Clayton | Couple and Family Therapy

This conceptual research extends prior literature about addressing grief in therapy by focusing beyond the context of death and bereavement. From a systemic perspective, relationship loss is comparable to losing a part of oneself or facets of one’s identity. Taking a systemic perspective is a particularly effective way for clinicians and practitioners to see relationships in terms of attachment and interdependence. Because partners become attachment figures, relationship dissolution can be a traumatic event (Kansky & Allen, 2017). Often, post-relationship grief responses result in symptoms of anxiety, depression, insomnia, and changes in eating patterns, thereby impacting one’s quality of life, work/school performance, and relationships (Morris, Reiber, and Roamn, 2015). Thus, clinicians must address the grief process that follows relationship dissolution to avoid further traumatization, promote growth, and reduce daily impairment. Narrative and Experiential approaches to treatment are popular and efficacious in the field of couple and family therapy. They are effective for reducing psychological responses associated with this adjustment period, as they aim to normalize and validate clients’ emotions and reactions following the end of a relationship. Based upon existing literature, the presenter has tailored common interventions from these approaches to assist clients in processing their grief following relationship dissolution, thereby creating a new approach to treatment.
Social Science Podium Session B – Room 209

Presentations:

8:30 – 8:45 AM Matthew West, Department of Criminal Justice
8:45 – 9:00 AM Alexa Bejinariu, Department of Criminal Justice
9:00 – 9:15 AM Linsey Belisle, Department of Criminal Justice
9:15 – 9:30 AM Sinyong Choi, Department of Criminal Justice
9:30 – 9:45 AM Stacey Clouse, Department of Criminal Justice
9:45 – 10:00 AM Heather Gilmore, Department of Criminal Justice
10:00 – 10:30 AM Break
10:30 – 10:45 AM Logan Kennedy, Department of Criminal Justice
10:45 – 11:00 AM Ryan Radmall, Department of Criminal Justice
11:00 – 11:15 AM Shon Reed, Department of Criminal Justice
11:15 – 11:30 AM Kelly Stout, Department of Criminal Justice
11:30 – 11:45 AM Tereza Trejblova, Department of Criminal Justice
11:45 – 12:00 PM Jaclyn Keen, Department of Criminal Justice
Are Post-Gregg Death Sentences “Wantonly” and “Freakishly” Imposed? A Case Study in Nevada
Matthew West | Criminal Justice

Modern capital jurors follow sentencing guidelines by endorsing and weighing specific types of evidence—aggravators and mitigators—in making their death penalty decision. Aggravators make a defendant more deserving of the death penalty, while mitigators make a defendant less deserving of the death penalty. Using Nevada as a case study, I examined the aggravators and mitigators jurors endorsed in modern (post-Gregg) death sentence cases through the lens of “dual process” theories. Dual process theories generally suggest that people’s decisions are a product of intuitive and emotional processes, as well as of rational processes. Based on this perspective, I proposed that sentencing guidelines provide a rational decision-making framework for capital jurors, but that intuitive and emotional processes operate within this rational framework. In line with this perspective, results showed that jurors endorsed more aggravators than mitigators in the majority of death sentence cases, but also that some aggravators are assigned greater “weight” due to emotion and intuition. For instance, although jurors endorsed more mitigators than aggravators in many cases, they nevertheless rendered death sentences in these cases seemingly because of the presence of particularly egregious and emotional evidence (e.g., torture/mutilation of the victim). Implications for policy, practice, and future research will be discussed.

Keywords: domestic minor sex trafficking, commercial sexual exploitation of children, human trafficking
Exploring the Effectiveness of a Day Reporting Center: Results from a Randomized Controlled Trial
Linsey Belisle, Matthew P. West, William H. Sousa | Criminal Justice

Day reporting centers (DRC) have become a popular alternative to incarceration for probationers and parolees, there is limited research and mixed findings around their effectiveness. The current study evaluated the effectiveness of a DRC in a Southwestern state using a randomized controlled trial. Approximately 400 probationers and parolees were randomly assigned to either the DRC or a control group (traditional parole and probation). The two groups were compared on measures such as recidivism, success on supervision, drug tests, education, employment, and housing over a 1-year period. Final results will be presented followed by a discussion of the studies limitations and policy implications.

Illegal Gambling and Its Operation via the Darknet and Bitcoin: An Application of Routine Activity Theory
Sinyong Choi | Criminal Justice

The Darknet and Bitcoins have been widely utilized by those who wish to anonymously perform illegal activities in cyberspace. Restricted in many countries, the gambling websites utilizing Bitcoin payments allow online users to freely engage in illegal gambling activities with the absence of a formal capable guardian. Despite the urgency and limited knowledge available to law enforcement regarding this issue, there are a few empirical studies focusing on such illegal gambling websites. The current study attempts to examine the characteristics and the operations of the online gambling websites on both the Darknet and surface web which allow Bitcoin payments. The findings suggest that both websites on the Surface Web and Darknet have similar and distinctive features that attract and encourage online users to engage in extensive illegal gambling activities and potentially other illegal activities as well. The study concludes with policy recommendations to remedy the contemporary issues of online gambling.

Keywords: Bitcoin, Darknet, Cybercrime, Online gambling, and Tor.
Public Perceptions of Police Interventions
Stacey Clouse | Criminal Justice

Procedural justice and police legitimacy research suggests that perceptions of legitimacy are based on the credibility of police (Sunshine and Tyler, 2003). However, highly publicized incidents of police use of force serve to threaten that credibility. Media coverage of these incidents has increased the public’s sensitivity toward police-citizen interactions (Weitzer, 2002). Recent incidents of civil unrest suggest that we should more closely examine factors that influence public perceptions of police interventions. This study uses the RDFC Interaction Model (Madensen et al., 2012) to structure an examination of citizen reactions toward specific police interventions. The RDFC Interaction Model suggests that four dimensions of police-citizen encounters will affect the degree to which the public will find police actions as acceptable and voluntarily comply with officer directives. This study aims to determine if the RDFC interaction model can be used to measure support of specific police interactions in addition to attempting to identify individual characteristics that may account for that variation. The goal is to assist police departments in community outreach efforts when highly publicized use of force incidents occur.

Schools and Crime: An Empirical Analysis of School Safety Measures
Heather Gilmore | Criminal Justice

During the 2015-2016 academic year, more than three-fourths of public schools reported at least one violent, property, or other type of crimes on their campuses (Musu-Gillette et al., 2018). While most students do not experience victimization (Musu-Gillette et al., 2018), a large portion of schools do experience criminal activity – and victimization – on campus. The desire for improved school strategies on crime is warranted, particularly as student populations continue to grow, increasing to 56.6 million students (50.7 million students in public schools and 5.9 million in private schools, NCES, 2018). The focus, however, has remained primarily on a rare phenomenon – school shootings. The purpose of this study is to close the gaps in the literature and to examine the extent to which school security measures and different crimes (e.g. violent crimes and substance-related crimes) exist in schools, as well as to see which types of school-based security measures are the most associated with each type of school-based crime. This study will give a more complete look into school crime and crime solutions. This study uses data from the 2015-2016 School Survey on Crime and Safety data to examine the relationship between various prevention measures (i.e., target hardening, training of school personnel, mental health services, community-based resources) that have been implemented across schools to address these crimes and substance-related crimes and violent crimes. This provides a complete look at both the types of crimes in schools, as well as the measures being taken to address them.

Keywords: schools, security measures, target hardening
Murky Waters: A Comparative Analysis of Data Sources on Homicide by Law Enforcement
Logan Kennedy | Criminal Justice

Over the last decade, several controversial cases of officer-involved killings have sparked greater public scrutiny of these deadly force incidents, their legality, and the structural factors surrounding them. These officer-involved killings are legally justified when done in self-defense and the line of duty (e.g. protecting citizens from fleeing felons). Official data sources like the Uniform Crime Report (UCR) and Supplementary Homicide Report (SHR) have provided an incomplete assessment of this phenomenon over the last few decades. They are limited by voluntary reporting standards and incomplete data. In recent years, the Wall Street Journal and The Guardian have compiled additional sources for this topic through media reports. This project will compare the rates and trends of homicide by law enforcement across different data sources to examine the differences and similarities among them. Additionally, the demographic and situational factors in these incidents will also be compared across data sources. Findings from this analysis will contribute to current practices among law enforcement and offer insight into the mechanisms that enable and constrain violence in these situations.

Predicting Law Enforcement Officer Use of Force from Variables Measured by the 2013 Law Enforcement Management and Administrative Statistics (LEMAS) Survey Using a Multilevel Analysis
Ryan Radmall | Criminal Justice

Law enforcement requires comprehensive department-level hiring and training practices to reduce improper use of force. Many scholars advocate for the use of multilevel modeling when examining various agency-level phenomenon. However, multilevel modeling has not been used to examine the effect of department-level initiatives on use of force outcomes. The present study used multilevel modeling to examine multiple predictor variables on the number of police use of force incidents, in a federally-released report. Results indicate multilevel modeling has utility in partitioning variance nested at different levels beyond traditional methods. Implications, limitations, and directions for future research will be explored.
White Anger: A Multivariate Analysis of State and Regional Differences in White Supremacist Groups  
Shon Reed | Criminal Justice  

The transition towards a more conservative U.S. government has brought with it a rise in the number of white supremacist groups across the nation (Southern Poverty Law Center, 2018). While public demonstrations by these groups have always been a common practice, more recent demonstrations (such as the 2017 unite the Right Rally in Charlottesville, VA) have garnered increased attention by the media and the public alike. Due to the recent increase in activity by these organizations, there is a need to highlight unique state and regional characteristics that foster the growth of these groups. Using data from all 50 U.S. states, the current study highlights the factors (e.g., number of foreign born residents, unemployment, political ideology, etc.) that appear to predict the number of white supremacist groups in different areas.

Youth Identity Formation & Participation in High School Marching Band  
Kelly Stout | Criminal Justice  

Domestic minor sex trafficking (DMST) is something that people would like to pretend doesn’t happen in the United States, when in fact it is in our own backyards. A joint research team between the University of Nevada Las Vegas and Johns Hopkins University has been given the opportunity to give a voice to those who have experienced the horrors and violence associated with trafficking. This research has centered on interviewing survivors of human trafficking. Forty interviews were conducted with survivors between the ages of 18 and 24 who were no longer involved in the life. Interviews typically last about an hour and covered a variety of topics. Through these qualitative interviews there have been many common themes but one of the most prevalent themes has been that the child welfare system has failed to protect these children. Many of the survivors said that they were a part of the child welfare system but found the system more harmful than helpful. The child welfare system may be one of the first lines of defense for children at risk of becoming sexually exploited, but they must be able to identify these children and have effective interventions for this vulnerable population.
Dying and Misbehaving on Death Row: A Theoretical Rationale for Death Row Misconduct  
Tereza Trejbalova, Alexis Kennedy | Criminal Justice

Murderers’ misconduct is a staple topic in criminological research, with the findings suggesting that murderers tend to commit relatively non-serious misconduct. Although the majority of individuals on American death rows have committed murders, their stay in prison is defined by the sentence’s ultimate outcome, which is their execution. This paper presents a new framework to understand misbehavior in terms of reactions to impending execution. Several theoretical rationales, derived from existing research, are presented in this study in order to explain why and how misconduct on death row happens. First, a cluster of infractions committed towards the beginning of an individual’s death sentence may signify some struggles with adjusting to the idea of an execution. Second, a cluster of infractions committed towards the end of an individual’s death row stay may suggest that possible mental health issues were developed during their stay. Finally, if misconduct happens at random, preceding mental health issues may help to explain maladaptation. These explorations are discussed with regards to their policy implications that promote safety in correctional institutions, and their limitations are considered.

Rethinking Therapeutic Communities for Incarcerated Women: The Importance of Shifting to an Empowerment Community When Targeting Substance Abuse in Treatment  
Jaclyn Keen | Criminal Justice

Therapeutic Communities (TC) have long been the go-to method of substance abuse treatment programs within correctional institutions in the United States. Although, empirically validated, the modality of TCs can often be more of a burden than an asset to women offenders. Women offenders experience life in a completely different way than male offenders and what factors bring women into the criminal justice system, and eventually what factors keep them out, vary drastically from what is seen in gender-neutral research. Generally, justice-involved women are relational beings with long histories of abuse, neglect, victimization, and mental health concerns on top of substance addiction and the environment in which they are treated while incarcerated often fails to reflect these patterns. The current paper discusses what women really need in substance abuse treatment and how to shift the treatment environment to an empowerment community by focusing on being strength-based and building healthy connections and relationships, resiliency, and important life skills that will assist them out in the community upon release.
Social Science & Hospitality Podium Session – Room 213

PRESENTATIONS:

9:15 – 9:30 AM  William Willis, Department of Anthropology
9:30 – 9:45 AM  J. Dylan Person, Department of Anthropology
9:45 – 10:00 AM Joseph Curran, Department of Anthropology

10:00 – 10:30 AM  Break
10:30 – 10:45 AM  Shae Cox, Department of History
10:45 – 11:00 AM  Haifhor Erlingsson, Department of Political Science
11:00 – 11:15 AM  McKade Christensen, Department of Communications
11:15 – 11:30 AM  Eun Joo Kim, William F. Harrah College of Hospitality
11:30 – 11:45 AM  Esther Kim, William F. Harrah College of Hospitality
During the summer of 2018, the University of Nevada Las Vegas Shivwits Research Project conducted an archaeological survey and documentation project on the remote southern end of the Shivwits Plateau. This region has seen little anthropological research since it was first explored by archaeologists in the early to mid-20th century. Our study specifically focuses on settlement patterns and landscape usage in hopes of better understanding the role and function of small one to two room sites in the area. Traditionally these sites have been referred to in the survey literature as field houses; however, whether they are or not is unknown. While many of the locations for these small sites documented during this survey were in areas adjacent to land suitable for agriculture, many others were found in locations where agriculture would not have been optimal. Furthermore, evidences for specialized activities, such as hide processing and rituals, were found at several of these small sites. This paper will discuss the variation in the assemblages documented at these sites and discuss their implications for Virgin Branch Archaeology.
Filling the Void: Understanding Archaeological Survey Using Comparative Ethnography In the Grand Canyon
Joseph Curran, William Willis | Anthropology

This paper shares the results of recent fieldwork with the University of Nevada Las Vegas Shivwits Research Project (UNLVSRP). The research investigated the function of small specialized sites within regional exchange networks on the Shivwits Plateau. The results of the survey were compared with previous regional cultural studies to provide context for the variation in artifact distribution found within the study area. Further investigation included an archival analysis of primary and secondary sources from related groups such as the Quechan, Hualapai, and Paiute. Special attention was paid to habitation, leather production and cultural views on cosmology. The purpose of this research was to improve our understanding of the settlement patterns and landscape utilization of Virgin Branch Puebloan people in the prehistoric past. Drawing analogies to early ethnographies supplements the fieldwork and allows for better understanding of cultural contexts that archaeology alone cannot provide.

The Louisiana Research Collection
Shae Cox | History

This project, a portion of my dissertation, The Fabric of Civil War Society: The Effect of Uniforms and Flags, 1861 to the Present, seeks to examine how the remanufacturing of uniforms from Reconstruction to the 1920s assisted the South in remaking its identity and fashioning the overall memory of the Civil War. After the war, as veterans’ reunions began and women’s aid societies were formed, both veterans and the women’s groups quickly acknowledged the importance of the uniforms, flags, and badges as tangible connections to their memory and identity, both what was lost and what was gained. These groups reshaped southern memory of the war and their identities through material constructs by developing new ways of wearing heritage. By concentrating on symbolically charged wartime objects, presented by the South as ordinary because of their uses in ideological warfare, we understand their influence on the construction of memories, identity, and sectionalism. The alterations to postwar memory created by replacement uniforms, making soldiers looked resplendent instead of dirty or downtrodden after much wear and tear, affected how those involved remembered the Civil War and how we remember it today. The Louisiana Research Collection contains both Civil War and Reconstruction materials that benefited this dissertation because they cover papers from veterans' organizations and women’s organizations such as the United Daughters of the Confederacy as well as photograph albums of Civil War reunions, newspaper clippings, and diaries. These items provide physical evidence of accepted Confederate “heritage” infiltrating our everyday society.
Haftor Erlingsson | Political Science

Abstract: This study examines the subnational flow in foreign direct investment to Mexican states, with a focus on the finished vehicle industry. Although prior studies have examined FDI in the manufacturing sector across Mexican states, the literature on the automobile industry -- dynamic sector -- has been scant. We attempt to fill this gap in the literature. Utilizing a framework derived from the theory of asset specificity, the framework examines the influence of human capital and labor conditions, infrastructure, subnational policies, and security on the location and investment decisions made by multinational automobile firms. The data set covers 31 states and the Federal district for the period of 2004 to 2014, and models are estimated with pooled regression with panel-corrected standard errors and corrections for autocorrelation. The paper makes three distinctive contributions to the literature. First, labor and human resource conditions in Mexican states exhibit a consistent effect on FDI flows in the automobile industry. Second, FDI concentrates in states that have better infrastructure and proximity to preexisting tier-one suppliers. Third, after controlling for other influences, murder and homicide rates, subnational taxes, and movements in the real exchange rate had no impact on FDI flows.

A Functional Analysis of the 2016 American Presidential Debates
McKade Christensen | Communications

Presidential debates provide a national platform for candidates to put forth their message to the American public, debate with other candidates onstage and gain the approval of voters. Widely considered to be an unusual election year, the 2016 presidential race necessitates rigorous academic research. This study applies the Functional theory of Political Campaign Discourse to examine the rhetoric of the 2016 American Presidential debates. The purpose of this research was to see whether or not the 2016 presidential candidates’ rhetoric used during debates conformed to previous election cycle’s debates. The use of The Functional Theory of Political Campaign Discourse allowed the researcher to identify the patterns of political debate rhetoric and analyze the communication functions used by each Presidential candidate. A content analysis of the 2016 debates’ rhetoric was performed on a random sample of half of the total debates that occurred during the election. The sample included debates from both the Democratic and Republican primaries, as well as one from the general election. Limitations of the current research and possible routes for future research are discussed.
Travelers may face the situation to make an impromptu booking decision when a hotel has an insufficient supply. Online travel agencies, such as Expedia and Booking.com utilized the scarcity strategy to attract travelers to make an urgent purchase decision by emphasizing the limited opportunity to obtain. The scarcity tactic is frequently used for boosting instant sales volume by highlighting the phenomenon that the value of the commodity is increased when the availability of the resource is limited. This study conducted experiments for investigating the effect of scarcity strategy that travelers perceive based on the information a hotel deal with limited availability and for exploring the post-evaluation that travelers experience after the purchase related to the instant decision. The study tested the effect of the scarcity message using the number of room left and the competition information showing the number of other buyers. This study revealed cognitive dissonance travelers experienced after deciding a travel product depending on the condition of the hotel. This study contributes to provide how effectively different scarcity information deliver to travelers to convince to book and to suggest a long-term strategy based on post-evaluation of their decision.

Although cross-selling emphasizes the importance of understanding customers’ needs, the majority of research on add-on item focuses on merchandisers. To provide insights into how consumers make a purchasing decision for add-on item, this study determines the critical factors that influence a consumer’s add-on purchasing decision. Specifically, this study examined the effect of discount, cognitive relatedness of add-on item, and thinking style on consumers’ purchasing decisions for add-on item. A 2 (discount: discount vs. no discount) x 3 (product type: direct, indirect, unrelated) x 2 (thinking style: analytic vs. holistic) quasi-experimental design was used. The findings suggest that analytic thinkers are more likely to purchase direct and unrelated add-on items over indirect add-on item when there is a discount. Discount and add-on product type was not significant for holistic thinkers. This research extends the mental accounting by linking it to unexpected gain. Operators need to focus on selling add-on items that are directly related to the hotel stay such as room upgrade and early check-in. The add-on revenue can be maximized by including out-of-hotel activities such as city tour, theme park ticket, and show ticket.
Humanities & Fine Arts Podium
Session – Room 211

Presentations:

9:30 – 9:45 AM  Andrew Killion, College of Fine Arts - Theatre
9:45 – 10:00 AM  Joe Milan, Department of English
10:00 – 10:15 AM  Ryan Molloy, Department of English
10:15 – 10:30 AM  Gary Lindenburg, Department of English
10:30 – 10:45 AM  Break
10:45 – 11:00 AM  Jenessa Kenway, Department of English
11:00 – 11:15 AM  Leisa Loan, Department of English
11:15 – 11:30 AM  Kate Shapiro, Department of English
11:30 – 11:45 AM  Frank Johnson, Department of English
Lighting Design in Virtual Reality
Andrew Killion | Theatre

Over last semester and this semester, Andrew Killion has delved into the world of computer-generated environments. He has utilized these generated worlds through Virtual Reality to create a world in which theatre can be designed and simulated without the need of a physical performance venue. Through a computer program created by himself, he combines real-time rendering into the world of Virtual Reality. Through this transformation the design becomes a truly creative process. His research has looked at how it affects the industry and the benefits that such a system in place would bring to the creative environment that is the arts. Why is this needed in the industry and why the cost benefit is worth it to theatres from the community to Broadway? Why Virtual Reality can be used to help the creative process and not be a hindrance. Andrew was able to ascertain that this new form of designing could be a way in which the future will dictate as a necessity. From schools to the professional lighting industry, Virtual Reality enhances the design process, and if implemented correctly could free creativity.

Professionalization of Creative Writing Student and Academic
Joe Milan | English

Studying creative writing, we students focus intensely on the craft of writing: how do we develop compelling story arcs? How do we make believable characters that will haunt readers’ memories and dreams? How do we make our words sing and a scenes linger? What truly compels readers to finish one page and to turn to the next with hunger of wanting to know what’s next? Yet, in all this attention of building our abilities to write well, students are of left in quiet, unspoken wonder as to how do we go beyond the classrooms of writing programs and make something of a professional of ourselves with our art? From social media to websites, from the far flung conferences all around the world, I’ve been in pursuit of this very question. This is what I have been using funding from GPSA to do: figure out what does professional ‘next step’ look like for academic artists like myself. This presentation is the culmination of years of study, and what I’ve learned as far as a PhD soon to graduate from UNLV.
Searching for Luis Antonio de Villena
Ryan Molloy | English

In this presentation, I will discuss my travels throughout Spain and Catalonia, in which I stayed with a variety of hosts and roommates, bettering my understanding of the Spanish and Catalanian, and working my way through translating the works of Spanish writer, Luis Antonio De Villena, eventually coming into contact with him.

“A Bara by Any Other Word”: Japanese Juliet in Translation
Gary Lindenburg | English

The leading question I am exploring in my dissertation is “why is Romeo and Juliet particularly popular in modern Japan?” I have been intrigued with the topic since first attending a performance of Romeo and Juliette, a musical performed by the all-female Takarazuka Revue. It caught my attention because it highlighted cultural and patriarchal norms that seemed out of place coming from the female cast. My guiding questions are centered on how performances and adaptations use the existing themes in the play to reinforce or attack certain customs and attitudes in modern Japan. What comes to the fore in all of the versions I have experienced is that Juliet is really the center of the play and it is the “battle for the soul,” as it were, of young Japanese women that is at stake. Far from being a general warning against suicide or hasty love, the adaptations are designed with didactic purpose; they can either promote the dangerous beauty of extending one’s free will or they can serve as warnings for putting oneself before family and community. I argue that Romeo and Juliet is currently enjoying a surge in popularity as this binary is the central conflict within the culture. Women choosing careers and waiting for marriage are seen on one side as the cause of male suicides and the declining birthrate, while oppressive traditions of misogyny and still-common arranged marriages are seen on the other as a mechanism to control and “tame” women.
The Visual Genealogy of Margaret Fuller
Jenessa Kenway | English

My research into Margaret Fuller broadens the discussion of feminism and female creativity and opens new opportunities for discussing the visual arts in conjunction with transcendentalism. Critics such as Kathleen Lawrence have suggested that Margaret Fuller’s style of Transcendentalism (as opposed to Emerson’s or Thoreau’s) was primarily aesthetic. But, so far scholars have largely viewed Fuller’s aesthetic sensibilities in terms of literary works. This gap in the scholarship indicates there is a need to link the discussion of Fuller with specific works of visual art to construct her visual genealogy. In my essay, I define Fuller’s aesthetic criteria and use her early Dial essays to establish her interest in female creativity. I matched that criteria against female artists living during Fuller’s time, aided by names mentioned in her European dispatches, with whom she would have had opportunity to come into contact with, to form a collection of art that could be used to expand the discussion of feminine visual transcendentalism. The conversation about Fuller’s “aesthetic transcendentalism” begun by Lawrence will benefit from exploration of additional female visual artists. I located artists such as Jane Stuart, Herminia Borchard Dassel, Margaret Gillies, Properzia de Rossi, and others and demonstrated striking links with Fuller, which suggests the field of visual transcendentalism has a rich and underexplored vein of images and figures to excavate. With the traces she left, more can be done to piece together a more complete record and understanding of Fuller’s aesthetic “femality” and further the study of feminine visual transcendentalism.

The Poetry of Antonia Pozzi: An Analysis of Censorship in Translation
Leisa Loan | English

For my research project I will be travelling to Varese, Italy to both translate and conduct research on the Italian poet Antonia Pozzi. To do this, I will be spending time at the University of Insubria where Pozzi’s archives are housed. Through my preliminary research on Pozzi, I have discovered that after she died most of her poetry was posthumously published by her father. In this publishing process he took severe liberties when editing her work in an attempt to censor his daughter’s writing to protect his family’s reputation from what he deemed inappropriate in her poetry. Due to this, much of the poetry of Antonia Pozzi that has been translated into English does not reflect the original intentionality of the poet and has been largely stripped of its sensuality, emotional core, and its integrally feminine qualities. By engaging with Pozzi’s archived materials directly (which includes not only her poetry, but also her personal diaries, letters, and photographs) I intend to look closely at the large and small ways her work was censored and research how translation and censorship can alter poetic intention, and how these processes specifically impact the work and presence of female writers.
Translation & Writing in Russia and Georgia
Kate Shapiro | English

I traveled to the Russia to complete the international component of my MFA degree in Fiction in the Department of English. As a part of my course of study I am completing a translation of a story from Russian to English by Valery Panyushkin. I additionally traveled to Tblisi, Georgia in order to work on my creative thesis with novelist Sana Krasikov and multi-genre writer Jenny Zhang at the Summer Literary Seminar (SLS). I won the first prize in Fiction for SLS which included tuition for the program and that my short story “The Language of a Perfect Woman” will be published in Fence Magazine this year. In general, my travels fulfilled my MFA program requirements and helped me greatly in completing my coursework.

Hip-Hop Diaspora: Dope in Different Continents
Frank Johnson | English

Hip-Hop is a perhaps the only contemporary embodiment of the commitment within Black art to the liberation of black bodies, the creation of safe space for marginalized peoples, and the assertion of agency on the part of those people. Hip-hop began with Kool Herc’s Block Parties & which weren’t unlike the Jazz clubs in Harlem, or the song houses on plantations, in that they were all places where Black folks could be safe, and sing, and lament their frustrations, and plan their escape. I believe that hip-hop speaks to people everywhere because you can’t go anywhere and not find a group of people who have been forced into a terrible position and have found a way to make it beautiful and to be happy and to be free. For these reasons, I went to Paris, Morocco, Mauritania, Senegal, Ethiopia, and South Africa. My thinking was that I could go to these predominantly French speaking countries and study hip-hop as a diasporic cultural phenomenon.
Education Podium Session – Room 208B

PRESENTATIONS:

8:45 – 9:00 AM Malayka Neith Cornejo, Department of Teaching & Learning
9:00 – 9:15 AM Ezgi Yesilyurt, Department of Teaching & Learning
9:15 – 9:30 AM Chengcheng Li, Department of Teaching & Learning
9:30 – 9:45 AM Andromeda Hightower, Department of Teaching & Learning
9:45 – 10:00 AM Erdogan Kaya, Department of Teaching & Learning
10:00 – 10:30 AM Break
10:30 – 10:45 AM Michelle Arroyo, Department of Teaching & Learning
10:45 – 11:00 AM Marcela Rodriguez, Department of Teaching & Learning
11:00 – 11:15 AM Rosnidar Arshad, Department of Teaching & Learning
11:15 – 11:30 AM Sarah Wells, Educational Psychology & Higher Education
11:30 – 11:45 AM Ana Paula Loures dos Santos, Educational Psychology & Higher Education
11:45 – 12:00 PM LaToyia Burdiss, Educational Psychology & Higher Education
Higher education is a contested space for students and faculty from historically marginalized and mineralized groups (Solórzano, 1998), with women of color (WOC) particularly situated within racially inequitable systems (Crenshaw, 1991; Solórzano et al., 2000) which persistently push back against their presence in academia and contribution to knowledge production. This study centers on four key objectives: (a) to explore the experiences of women of color (WOC) in academia; (b) to describe racial and gender micro-aggressions and emotional violence experienced by WOC in graduate programs; (c) to understand how problem-posing, counter-narratives, and crossing borders into third/fourth spaces encourages WOC to resist, persist, and heal; and (d) to explore how the racialized and gendered experiences of WOC can lead to both collaboration & innovation in minority serving institutions. Utilizing critical participatory action research and the use of testimonies, this qualitative study seeks to explore how women of color build solidarity and create counter-spaces (Anzaldúa, 1987; Bhabha 1994; Freire, 1970; Yosso & Lopez, 2010) that validate their presence in academia while being each other’s keeper. Preliminary findings include strategies to confront hostile campus climates and ensure student social-emotional wellness throughout their graduate studies. This research is significant to reclaim the voices and agency of WOC to forge meaningful spaces for women of color in academia, while encouraging equitable institutional practices to strengthen WOC retention, program completion, and hold space for new knowledge production. 

The purpose of this study is to examine pre-service teachers’ perceived approaches to teaching evolution. The participants were 65 pre-service teachers in a teacher education program at a large urban public university in the Southwest United States. We developed the Approaches to Teaching Evolution Scale (ATES) to explore their teaching approaches. The ATES instrument was designed on a 5-point Likert type scale ranging from strongly disagree (1) to strongly agree (5). The instrument includes 30 questions which address two dimensions: teaching controversy and evolution content. The descriptive analysis revealed that approaches to teaching evolution apparently varied among pre-service teachers. For instance, although more than half of the pre-service teachers agreed or strongly agreed that they would not adopt the avoid ant approaches, more than half of the teachers declared that they would focus only on students’ learning but not on their acceptance of it. As for addressing social controversy with regard to evolutionary theory in classroom settings, this study indicated that nearly half of the pre-service teachers seemed to refer to discuss the controversy within the social context and from different vantage points as well. This study is a first attempt to develop a quantitative measure of approaches to teaching evolution. The ATES instrument could be useful in identifying teachers’ approaches to teaching evolution and provide a further understanding of their potential classroom implementations regarding evolution education.
Preservice Teachers Identity Construction through Reflective Practice
Chengcheng Li | Teaching & Learning

Teacher identities can be constructed and transformed through reflective practice, which can be further enriched by emerging identities as ‘reflective practitioners’ (Darling-Hammond & Bransford, 2005). Preservice teachers with limited professional knowledge and teaching experience may have difficulties in the reflective practice. Therefore, it is important that preservice teachers have learning opportunities to learn to reflect and identify themselves as reflective professionals. This research will use a case study with the theoretical frameworks of Representations of Practice (Grossman, Compton, Igra, Ronfeldt, Shahan, & Williamson, 2009) and Critical Discourse Analysis (Rogers, 2004) to explore the impact of reflective practice during practicum on preservice teachers’ identity construction. Participants will be purposefully selected from an urban 4-year undergraduate level teacher education program at a large university in the southwestern United States. They are preservice teachers who will be enrolled in classroom management for elementary education aligned with their initial field experience. Data will be collected through preservice teachers’ reflections on both classroom observations and interviews for their mentors based on classroom observations, as well as individual interviews for each preservice teacher. The reflections and individual interviews will be analyzed with the frameworks, and the results will indicate the influence of reflective practice on preservice teachers’ identity construction and provide insights for teacher education practice.

Examining the Impact of a Computational Thinking Intervention on Pre-service Elementary Science Teachers’ Computational Thinking Teaching Efficacy Beliefs, Interest and Confidence
Andromeda Hightower | Teaching & Learning

Traditional lecture-based and problem-solving coaching models have played a long and influential role in the methods employed by coaches in different disciplines, with teaching among them. The area of coaching research for preservice and alternative route teachers has steadily grown since then, with increasing attention given to exploring and defining the various qualities of effective coaching. However, the influence of traditional coaching models is still found in coaching sessions conducted between teacher educators and their teachers, even as our knowledge of alternative models increases. Two distinguishing features in these alternative models are in their unique approaches to feedback and reflection opportunities. In this presentation, I intend to illustrate some examples from the literature of these alternatives and their feedback/reflection methods, as well as how these methods can be applied to a variety of coaching situations and fields. I conclude that careful consideration should be given to the quality of feedback and reflection in different coaching methods, so that a variety of potential tools may be employed depending on each cache’s circumstance.
Examining the Impact of a Computational Thinking Intervention on Pre-service Elementary Science Teachers’ Computational Thinking Teaching Efficacy Beliefs, Interest and Confidence

Erdogan Kaya | Teaching & Learning

Science, Technology, Engineering, and Math (STEM) and Computer Science (CS) are the driving forces of the United States prosperity. While there is a high demand to close the gap in STEM+CS jobs, it is still belittled in K-12, especially in elementary. Some of the reasons for that, elementary teachers lack self-confidence in STEM+CS and there is limited number of teacher training. Here, Integrating Computational Thinking (CT) in elementary science classrooms comes into prominence. International Society for Technology in Education (ISTE), Computer Science Teachers Association (CSTA) and Next Generation Science Standards (NGSS) emphasize that CT learning is an important part of the elementary curriculum. It can be translated that elementary science teachers should have the self-efficacy, interest, and confidence to integrate CT into their teaching. It is not an easy task to expect such a demand from pre-service elementary science teachers (PST) unless necessary training is provided. It leads us to modify our elementary science teaching methods course to integrate CT to improve PST self-efficacy beliefs, interest, and confidence in CT in elementary science teaching and learning. The goal of our research is to investigate the changes in PSTs’ CT teaching efficacy beliefs, CT Interest, and CT confidence after participating in three week CT training as part of an undergraduate elementary science teaching methods course. We have found that our undergraduate level science teaching methods course improved PSTs’ CT self-efficacy, interest, and confidence.

Alternatives to Didactic Coaching Models: A Focus on Feedback and Reflection

Michelle Arroyo | Teaching & Learning

Traditional lecture-based and problem-solving coaching models have played a long and influential role in the methods employed by coaches in different disciplines, with teaching among them. The area of coaching research for preservice and alternative route teachers has steadily grown since then, with increasing attention given to exploring and defining the various qualities of effective coaching. However, the influence of traditional coaching models is still found in coaching sessions conducted between teacher educators and their teachers, even as our knowledge of alternative models increases. Two distinguishing features in these alternative models are in their unique approaches to feedback and reflection opportunities. In this presentation, I intend to illustrate some examples from the literature of these alternatives and their feedback/reflection methods, as well as how these methods can be applied to a variety of coaching situations and fields. I conclude that careful consideration should be given to the quality of feedback and reflection in different coaching methods, so that a variety of potential tools may be employed depending on each cache’s circumstance.
Coping with Racial Battle Fatigue: A Critical Dialogue on “Agitating” Historically White Spaces
Marcela Rodriguez, Lashaun Limbrick, Silvina Jover | Teaching & Learning

This presentation will share reflections from critical dialogues hosted at a nationally recognized education conference with faculty, students, and activists. The session sought to engage students, teachers, and scholars in critical dialogue about how the experiences of People of Color in simply being, working, and studying are inevitably received as “agitating” historically white spaces. Academics and activists of color found themselves navigating the world as “outsiders,” perceived of as inciting conflict, sometimes simply by their mere presence, and especially when raising issues on racial equity. The work of academics and activists of color in Historically White spaces unfortunately leads to racial battle fatigue, which take an emotional, physical, and psychological toll that goes unacknowledged and unsupported by historically White institutions. This session will explore this “agitation,” including what it looks and feels like, and the challenges and opportunities it presents. Accordingly, in this session we invited participants: 1) to engage in critical dialogue on our collective experiences in navigating historically white spaces (HWS); 2) we shared resources for operating in these spaces; and, 3) set self-care goals for sustaining ourselves in social justice work. This presentation will offer recommendations for supporting the progression and retention of faculty and students of color in Historically White spaces and coping with racial battle fatigue.

Feasibility of Equitable and Culturally Responsive Learning Assessment: A Global Education Perspective
Rosnidar Arshad | Teaching & Learning

Summative assessments and high-stake tests have been the main mode of assessment of learning globally. The inter-connected nature of world systems demands that learners be able to display measured skills in an internationally accepted way. This presentation studies the feasibility of a global collaborative effort to develop an assessment system that may equitably measure the acquiring and effective application of knowledge that is sensitive to cultural differences. It surfaces discrepancies between the achievements by high-performing countries in international standardized tests such as the Program for International Student Assessment (PISA) and measurable real-life contributions such as the Nobel Laureate awards (Nobel Media, 2017; PISA, 2015). Spotlights are directed on current international initiatives in implementing equitable and culturally responsive learning assessment methods such as the Youth Participatory Action Research (YPAR) in the United States of America (Cammarota & Fine, 2008), The New Basics Project in Queensland, Australia (Luke et al., 2000), and the Student-Centered Democracy Approach in Finland (Sahlberg, 2007). The study centers on the principles of progressive educational philosophers such as John Dewey (1938) and Paulo Freire (1993) against the banking and regurgitating approach in teaching, learning, and assessment. It also scrutinizes the learning process (Arnove, Torres, & Franz, 2013, p. 114-115) and sociopolitical impact on accuracy of culturally responsive learning assessment. The feasibility of embracing each method is measured based on validity, authenticity, and accuracy. It also analyzes shortcomings of socio-politically unsupported initiatives and surfaces areas of further research that needs to be pursued.
Evaluating the utility of a mindfulness based intervention in the elementary school classroom: a theorized path analysis
Sarah Wells | Educational Psychology/Higher Ed

The benefits of mindfulness are continually championed across a variety of disciplines and by all kinds of individuals, groups and institutions. The study to be conducted is designed to evaluate the utility of mindfulness training in the elementary setting in two main phases (1) measuring the impact of mindfulness classes (MBI) on academic achievement and (2) identifying a pathway of effect. There is little current evidence to indicate a translation of mindfulness programming to achievement in the K-12 setting and a lack of theory committed explicitly to explaining what a direct mindfulness-achievement effect might look like. This study serves to build a promising foundation for helping close this gap in the existing literature and determining whether mindfulness, adapted to fit universal populations in a K-12 educational setting, could result in observed emotional and cognitive benefits and indeed translate to improved academic performance at the Elementary level. This two-phase study will address the following research questions: 1. what utility does mindfulness have for the K-12 classroom? 2. If mindfulness training in the classroom improves academic performance, through what mechanisms does it do so?

The Influence of Affect in Help-Seeking Behaviors and Performance in an Intelligent Tutoring System
Ana Paula Loures dos Santos, Matthew L. Bernacki, Kathleen Bradshaw-Sellers | Educational Psychology/Higher Ed

This study investigates the association between help-seeking behaviors (Hints, Hints perStep, Hints with Steps Requests, and Hint to Error), affect (Boredom, Confusion, Frustration, Happiness, and Engagement), and performance in seventh and eighth grade students using The Cognitive Tutor Bridge to Algebra as a self-regulated learning environment. Analyses focused on correlations between students’ help-seeking behaviors and their affect in units 4 and 14. Affect was also used to predict help-seeking behaviors in next units (i.e., 5 and 15). Moreover, we examined how associations between help-seeking behaviors and performance differed as a function of affect. A pattern emerged where Boredom increased tendency toward help seeking, while Frustration led to help avoidance. Key-words: affect, academic emotions, help-seeking, performance, self-regulated learning.
How Regular Evaluation Develops Student Employees
LaToya Burdiss | Educational Psychology/Higher Ed

This presentation has two learning objectives: for participants to be able to articulate the benefits of regular evaluations for student employees and to understand the complementary strength of completing student, self, and supervisor evaluations. When looking at the history of UNLV Campus Recreational Services, we found that we began with students feeling like their employment was “just a job”. When our leadership team began to take into account the demographics of our students, find what they were seeking, and build upon aspects that employers are seeking, we found a change in our workplace climate. This presentation shares Campus Rec’s story.
POSTER SESSIONS

GRADUATE & PROFESSIONAL STUDENT RESEARCH FORUM
2019
Education Poster Session – Room 207

PRESENTATIONS:

9:00 - 9:15 AM #1 Juanita Jasso Hinojosa, Educational Psychology & Higher Education

9:15 - 9:30 AM #2 Zvetomira Svetleff, Educational Psychology & Higher Education

9:30 - 9:45 AM #3 Michelle Zochowski, Educational Psychology & Higher Education

9:45 - 10:00 AM #4 Hillary Butrico, Teaching & Learning

10:00 – 10:30 AM Break

10:30 - 10:45 AM #5 Brittani Lee, Teaching & Learning

10:45 - 11:00 AM #6 Jacqueline Eddy, Counselor Education, School Psychology, and Human Services

11:00 - 11:15 AM #7 Wynn Tashman, Counselor Education, School Psychology, and Human Services

11:15 - 11:30 AM #8 Heather Thompson, Counselor Education, School Psychology, and Human Services

11:30 - 11:45 AM #9 Monique Matute-Chavarria, Early Childhood, Multilingual, and Special Education
Empirical research shows that Students of Color continue to be underrepresented in institutions of higher education and in particular the fields of Science, Technology, Engineering and Mathematics (STEM). This qualitative study employs an assets-based approach and explores the development of academic family amongst 20 Students of Color pursuing STEM degrees at four Northeastern universities. Utilizing Community Cultural Wealth (CCW) as a conceptual framework to analyze over 920 minutes of audio recorded interviews, this poster presentation will share the common themes found through a preliminary analysis. Implications of this study can further our understanding of how to support Students of Color pursuing STEM degrees through culturally responsive approaches that acknowledge and cultivate the cultural capital of Students of Color.

Drawing on social cognitive perspectives, the present study examined an integrative model of the interplay among math self-efficacy, interests, aspirations, and achievement among early and middle adolescents. Based on short-term longitudinal data from approximately 400 students, analyses using fully latent structural equation analyses, establishing requisite levels of longitudinal invariance, revealed that (a) math self-efficacy positively predicted math achievement using both class grades and standardized test score operationalization; (b) prior math achievement positively predicted basal levels of math self-efficacy but not changes in self-efficacy; (c) math interest and intentions were reciprocally linked over time; and (d) prior math interest positively predicted subsequent math self-efficacy whereas the opposite was not true. Notably, all effects were observed while accounting for prior variance in outcomes as well as the effects of known covariates. The current findings contribute to understandings of the motivational processes involved in math achievement and choosing educational pathways, and suggest that multidimensional interventions may be most profitable if both achievement and selection outcomes are at stake.
3. Decreasing the Mental Health Impact of Bullying by Increasing Resilience
Michelle Zochowski | Educational Psychology & Higher Education

A systematic literature review was conducted to understand what is known about the mental health impact of bullying and the effect of resilience on mental health outcomes. Articles for the systematic and comprehensive literature review were located using the university library catalog, Google Scholar, and journal databases such as PsychINFO. Search terms such as “bullying”, “mental health” or “mental illness”, and “resilience” were used in combination to locate articles within these databases. Inclusion criteria were articles that were peer-reviewed, written in English, and relevant to the topic of mental health impact resulting from bullying and resilience. A total of ten articles were identified for review. An updated review will be conducted by January 2019 to be included for this presentation. The preliminary results of this literature review suggest that there is a significant impact on mental health as a result of bullying, specifically increased anxiety and depression. Articles discussing these mental health effects have proposed that increasing resilience may improve outcomes and research shows that increased resilience is a protective factor for depression and anxiety. However, there has been little research illustrating the connection between increased resilience and decreased mental health effects in students that are involved in bullying. Future research directions will be discussed based on the literature review findings. Ultimately finding the connection between these factors could lead to improved bullying intervention programs that focus on increasing resilience and in turn decrease poor mental health outcomes. Implications for practice will be discussed.

4. Suffering & Grit
Hillary Butrico | Teaching & Learning

Abstract. The discussion surrounding the character trait of “grit” has come to the forefront of educators in the last decade and been a topic amongst debate for many individuals within the education field. Duckworth’s research focused on why some people achieve more and others less? (Duckworth, 2016). While much of the research surrounding grit has focused on the detection of grit, little has been formed around how grit came to be valued as a non-cognitive disposition. As we begin to look closer at grit today we take a mixed method approach. This review will begin to unravel how grit has developed as a way to justify social and economic inequality and how history has played a part in this structure by looking closely at the history of the term and how our society began to view the definition in terms of suffering. This article takes into account Angela Duckworth’s testing at West Point with cadets using the grit scale as well as well as narrative/case study on an individual’s personal experience in which grit and suffering have a correlation in relation to individual success.
5. Kinesthetic Strategies and the Effects on Phonemic Segmentation
Brittani Lee | Teaching & Learning

This study investigated the effect on the use of kinesthetic strategies in relationship to Phonemic segmentation. Kindergarten students were tested using various phonological Awareness methods and were selected based on their difficulty hearing sounds in words. Results indicated that there was a positive effect on a child’s reading ability.

Keywords: Kinesthetic strategies, phonemes, phonemic segmentation, phonemic awareness, ESGI

6. Building a Social Justice Program Culture through Student Initiatives
Jacqueline Eddy | Counselor Education, School Psychology, and Human Services

Social justice has become a focal issue, most recently evidenced by its adoption as a NASP core value in 2017. As a result, training programs around the country will begin to implement social justice training into their frameworks. It is then necessary to review and evaluate examples of programs that have done so successfully to ensure appropriate implementation and to provide a template for other training programs. Within a three-year period, the University of Nevada, Las Vegas has been able to make substantive changes in curriculum, mentoring, and advocacy within the community. As a collaborative effort, students have had a pivotal role in shifting the program culture by utilizing the student organization, Student Affiliates in School Psychology (SASP), to promote these values and work with faculty and advisors to promote better student and advisor relationships, community connection, and student empowerment.
7. LGBT-Inclusive Graduate Education: Examination of the National Landscape in Graduate Training Programs for School Psychology
Wynn Tashman, Heather M. Thompson Samuel Y. Song | Counselor Education, School Psychology, and Human Services

Schools are the primary social setting in which lesbian, gay, bisexual, and transgender (LGBT) youth are at-risk of experiencing victimization. However, the school setting could alternatively serve as a supportive environment, where LGBT youth receive crucial educational support and interventions to address their experiences of adversity. Many school psychologists would be willing to address such issues, but have reported being inadequately prepared and unsure of how to help. The present lack of graduate training specific to LGBT issues suggests future school psychologists will continue to enter professional practice and research careers, unprepared to confront their own cultural biases. Trainers of school psychologists are uniquely positioned to fill this gap by providing cultural competency training to graduate students on LGBT youth populations. School psychology training programs can utilize several components throughout curriculum, research and training experiences, as well as program recruitment and evaluation to enhance multicultural competencies among graduate students. By presenting findings from this national review of LGBT-inclusive graduate training programs in school psychology—and discussing implications for the field’s future, this poster is anticipated to spur interest in the design and implementation of innovative graduate training programs with LGBT cultural competency as a crucial component for pre-service school psychologists.

8. Building a Social Justice Program Culture through Student Initiatives
Heather Thompson | Counselor Education, School Psychology, and Human Services

Social justice has become a focal issue, most recently evidenced by its adoption as a NASP core value in 2017. As a result, training programs around the country will begin to implement social justice training into their frameworks. It is then necessary to review and evaluate examples of programs that have done so successfully to ensure appropriate implementation and to provide a template for other training programs. Within a three-year period, the University of Nevada, Las Vegas has been able to make substantive changes in curriculum, mentoring, and advocacy within the community. As a collaborative effort, students have had a pivotal role in shifting the program culture by utilizing the student organization, Student Affiliates in School Psychology (SASP), to promote these values and work with faculty and advisors to promote better student and advisor relationships, community connection, and student empowerment.
This presentation addresses Black male’s disproportionate representation in special education and typical Black male behaviors that are perceived as problem behaviors. This session will present a framework that may be used to reduce the disproportionate representation in school suspension and special education. It will also address how to mitigate this problem, including encouraging teachers to implement culturally relevant strategies that are specific to meet the needs of Black males. Black male students need advocacy in schools to combat the high rates of suspension and create systemic procedures that are culturally relevant to their background. The presentation will provide participants (1) the opportunity to brainstorm culturally relevant practices that can be incorporated into their classrooms when teaching behavioral skills, and 2) the knowledge regarding how to implement a culturally relevant FBA to decrease the suspension, expulsion, push out, and school-to-prison pipeline rates. The outcomes of this presentation include: (a) identifying typical Black male behaviors that contribute to their disproportionate representation; (b) discussing culturally relevant pedagogy; (c) implementing culturally relevant strategies in the classroom; (d) reflecting on and determining how to implement a culturally relevant FBA; and (e) creating a safe and engaging classroom environment.
Presentations:

8:30 - 8:45 AM #10 Laura Benedict, Anthropology
8:45 - 9:00 AM #11 Lyndsey Craig, Anthropology
9:00 - 9:15 AM #12 Aislin Edalgo, Anthropology
9:15 - 9:30 AM #13 Daniel Perez, Anthropology
9:30 - 9:45 AM #14 Carrieann Cahall, Anthropology
9:45 - 10:00 AM #15 Dmytro Gnativ, Music

10:00 – 10:30 AM Break
10:30 - 10:45 AM #16 Diana Simpson, Anthropology
10:45 - 11:00 AM #17 Alice Hastings, English
11:00 - 11:15 AM #18 Brianne Taormina, English
11:15 - 11:30 AM #19 Doris Morgan Rueda, History
11:30 - 11:45 AM #20 Jonathan Mehanna, Political Science
11:45 - 12:00 PM #21 Rafael Oganesyan, Political Science
The archaeology of the California Wash in southern Nevada, north of Las Vegas, is not yet well understood, particularly when compared to contemporaneous occupations. Previous excavations at three sites located in the Dry Lake Range along the Wash resulted in the recovery of a number of artifacts, including lithics, ceramics, and faunal remains that enhance our understanding of Prehistoric and Protohistoric occupations of the California Wash. Excavations in the 1970s, in preparation for the construction of the Navajo-McCullough Transmission Line, yielded faunal remains from three rockshelter sites. Dates indicate a middle Pueblo II occupation at two sites, 26CK1081 and 26CK1112, as well as dates extending into the Paiute occupations. Early analyses indicate that these sites were likely used as processing areas for agave and yucca. In addition, 26CK1112, has a Late Archaic occupation. Analysis of extant collections, curated at the Las Vegas Natural History Museum’s Southern Nevada Federal Repository, allows researchers to apply modern analytical methods to older data in order to gain a better understanding of past subsistence practices. This poster presents the results of our analysis and discusses the implications for understanding Late Archaic and Puebloan occupations in southern Nevada.

The literature on pubic hair removal (PHR) practices primarily focuses on women in Western societies and attributes recent increases in PHR to product marketing, pornography, and pop culture. Here, we explore PHR and retention practices outside the cultural West through content coding of societies in the Human Relations Area Files’ database, eHRAF World Cultures. Thirty-one societies noted distinct PHR or retention practices. Descriptive data on 72 societies provided additional context to the perception of pubic hair and reasons for its removal or retention. Results indicate that women practice PHR more commonly than men cross-culturally and practices are often tied to concerns about hygiene and sexual activity. Findings show that some features of PHR cross-culturally resemble those of the cultural West in which these practices have been best characterized, though these practices cannot be attributed to the same suite of factors such as exposure to pornography or product marketing. We interpret these findings within cross-cultural and evolutionary perspectives.
12. Politics at Humboldt State University; Effects of the election of President Trump on the political culture of Humboldt State University
Aislin Edalgo | Anthropology

This research examined the effects of the election of President Trump on the political culture of Humboldt State University. This research evaluated how both the individual community members of HSU and the political culture of the university were affected by the election of President Trump. This research was conducted at Humboldt State University from January of 2017 to May of 2018. Both university students and instructors were participants in this project, for which the methods utilized included observation, participant observation, interviewing, surveying and artifact analysis. It was found that a significant portion of the HSU community had a negative reaction to the election of President Trump in the short term after the election and that over the long term there was a selection for politically liberal speech acts and selection against politically non-liberal speech acts at the university. It is currently unclear if these two findings are causally linked or correlated with one another.

13. Use-Wear Analysis on Ground Stone from To’tsa Site AZ A: 14:283
Daniel Perez | Anthropology

Investigations on four archaeological sites in the upland Virgin Branch Puebloan cultural region, from 2012 through 2014, were conducted as part of the Shivwits Research Project under the direction of Karen Harry (University of Nevada, Las Vegas). The To’tsa site, investigated through surface collection in 2012 and excavations in 2013 and 2014, provides the site framework for this poster. From a total of nine discovered features at the To’tsa site, eight features and six test units were excavated. Among the excavation findings, 65 ground stone artifacts and 166 manuports were collected from the To’tsa site over the course of two excavation seasons. While many ground stone artifacts were collected from the To’tsa site, this poster focuses exclusively on the objects classified as manos and handstones during initial post-field work analysis. This poster presents and discusses both a consideration of the initial classification of these artifacts as manos and handstones as well as results of a use-wear analysis on the 30 manos and handstones collected from excavations conducted at the To’tsa site in 2013 and 2014.
14. Floating Head Touching Earth: creative writing and international focus
Carrieann Cahall | Anthropology

My MFA thesis manuscript is a collection of short stories that observes themes of historical and intergenerational trauma, mental health, and identity through speculative and fabulist literary fiction. Per the requirements of my degree plan, I traveled abroad for seven weeks throughout Thailand and Laos to conduct relevant research and experience cultural immersion for the benefit of my writing. While abroad, I worked on writing and revising stories in my thesis, as well as continued practicing my language acquisition. On this trip, I was also able to meet and network with a Laotian writer, Dok Ked, whose work I selected for the translation requirement of my degree. The international focus track of the Creative Writing MFA allowed me to further develop my craft and professional development with a hands-on and interactive approach.

15. American Institute of Musical Studies
Dmytro Gnativ | Music

The project American Institute of Musical Studies (AIMS summer festival) was helpful in many ways: • Meet musicians. It was my first summer festival. Six-week program was great and long experience. It was helpful to meet three different conductors: Lukas Beikircher – Düsseldorf; Marzio Conti – Oviedo, Spain (well known flute player in the past); Marius Stieghorst – Paris. They were all different in the way of conducting, explanations and interpretation. That was great experience to learn how to be flexible with each of them. • Summer festival is also very helpful in terms of connections. I meet lots of current students from all around US, teachers, flute players who already work in orchestras or are freelancers. It is important to my future career especially because I’m international student. • We played lots of opera repertoire. Opera music is quite different from symphony and require more attention, more flexibility, more listening than it is usually in symphony. • Besides opera repertoire we also played famous Orchestra repertoire like Sibelius Symphony 5, Dvorak Symphony 9 and Ravel - Bolero. In last two piece I was lucky to play first flute. As a conclusion, AIMS is highly competitive, hard to get festival with an amazingly friendly environment inside. Six weeks program was full of tremendous work that gave me highly valuable experience for future growth.
Assisted death, defined as assisting or participating in the death of another individual with some level of benevolent intent, has been a major source of debate within the modern medical and legal fields for decades. However, comparatively little research has been conducted on the history and prehistory of assisted death around the world. This is likely due to the similarities such practices share with numerous other forms of violence, including warfare, sacrifice, and murder, within the archaeological record. Even in modern forensic and medical cases, the boundaries between ‘mercy’ and ‘murder’ can be impossible to fully delineate. This study presents a case of probable mercy killing of a prehistoric Native American individual from North Alabama, demonstrating that a comparative, holistic approach to the analysis of human skeletal remains does allow for the consideration and identification of assisted death in the past. By providing a general introduction to ‘assisted death’, it is hoped that future analysis or reanalysis of certain cases of prehistoric or historic violence will be considered in relation to these behaviors by archaeologists and bioarchaeologists. Since the legality and morality of assisted death continues to be a polarizing topic within the modern world, the perspectives gained from an examination of assisted death in the past can provide new and unique insights into how human group have dealt with the seemingly contradictory intersection of violence and care inherent in the act of assisting in, or allowing, the death of another person.
18. Generation 1.5 Spanish Speakers in First Year Composition Classrooms
Brianne Taormina, Di Gennaro, Kristen, Roberge, Mark Morgan | English

The term Generation 1.5, though originally coined to describe Southeast Asian refugee children in the 60s and 70s, has been expanded to cover any student “in-between” immigrant English learners and native English speakers in recent years (Roberge). In doing so, we begin to lose sight of the specific needs of students based on the language they speak at home. Little research is specifically focused on native Spanish speakers and their place in academia. Researcher Kristen di Gennaro calls for scholars to “further our understanding of the differences between Generation 1.5 and other L2 learners” by providing “more detail in addition to their educational and cultural background.” This furthering of research is what I intend to do. Spanish speakers are a large and growing population of students that have thus far been under examined in the university classroom, despite their enrollment numbers. The experience of native Spanish speakers in a university English classroom is very different than the experience of other ELL students, and the research about Generation 1.5 should reflect this. I wish to study Gen 1.5 Spanish speakers experience in university classrooms, to better understand their sense of place to better provide the education they need to succeed in the university.

19. They Aren’t Girls, These Are Monsters: Representations of Gender and Criminality in the Violent Years
Doris Morgan Rueda | History

The 1956 Ed Woods written film “The Violent Years” presents scholars with an opportunity to revisit the juvenile delinquent film genre of the Cold War. While many have focused on “Rebel without a Cause” and its emphasis on traditional gender roles and family structures, “The Violent Years” offers a new understanding of the intersection of gender expression and criminality. The film’s main character and leader of its titular gang, Paula Parkins, can be read as a male presenting and male self-identifying character whose aggressive masculinity becomes toxic and violent towards the people around her. The film condemns Paula/Paul as a man and presents one of her victims, Shirley, as the ultimate hero. Shirley’s self-assured femininity defends her from Paula/Paul’s rampage of sexual and physical violence. “The Violent Years” situates toxic masculinity, in all its forms, as both culprit for violence and criminality, while heralding modern femininity as the only escape and answer.
Jonathan Mehanna | Political Science

Theoretical models of voter behavior emphasize the role of issues in the electorate’s vote function (Campbell et al. 1960; Lewis-Beck et al. 2008). However, the process by which issues are politicized remains largely understudied. We analyze the politicization of issues in Sub-Saharan Africa by modeling how the mention of socio-political and socio-economic issues in incumbent party manifestos and party electoral platforms impacts how voters evaluate the incumbent party. In doing so, we move from the theoretical to the practical. That is, we demonstrate that African incumbent parties can manipulate the political message and politicize certain issues by including them in their party platforms. With cross-national data from fourteen African countries we find that incumbent parties influence the politicization of socio-political and socio-economic issues. One central implication from our work is that incumbent parties in sub-Saharan Africa can activate certain issues within the electorate’s vote function and in doing so can prolong their time in office.

Rafael Oganesyan | Political Science

Voter behavior studies assess the impact of sociological and psychological characteristics of an individual’s vote function. An overwhelming majority of these studies occur during non-revolutionary periods, where a large set of vote determinants are stable from one election to the next. Using two waves of the Armenian Election Study (ArmES), one which occurred prior to the Velvet Revolution and the other after the successful transition, I analyze the change in economic perceptions and political behavior among a panel of Armenian voters.
Social Science Poster Session B – Ballroom

**PRESENTATIONS:**

- 9:00 - 9:15 AM #22 Austin Boren, Psychology
- 9:15 - 9:30 AM #23 Nicholas Carfagno, Psychology
- 9:30 - 9:45 AM #24 Yen-Ling Chen, Psychology
- 9:45 - 10:00 AM #25 Andrea Fink-Armold, Psychology
- 10:00 – 10:30 AM **Break**
- 10:30 - 10:45 AM #26 Mirae Fornander, Psychology
- 10:45 - 11:00 AM #27 Marina Galante, Psychology
- 11:00 - 11:15 AM #28 Breanna Garcia, Psychology
- 11:15 - 11:30 AM #29 Elena Gavrilova, Psychology
- 11:30 - 11:45 AM #30 Julia Hussey, Psychology
- 11:45 - 12:00 PM #31 Jennifer John Buck, Psychology
22. Impaired GABAergic signaling at the axon initial segment results in altered sleep architecture, bursting activity, and homeostatic sleep
Austin Boren | Psychology

Sleep, a brain-wide process occupying as much as 1/3 of a neurotypical human’s life is central for the control and timing of homeostatic processes. Sleep dysregulation is primary in disorders such as hypersomnia, insomnia, and circadian rhythm disorders while contributing to symptomology of psychiatric and neurodevelopmental disorders. Given this, discovering receptors and their subcellular locations contributing to sleep dysregulation will allow for precise and targeted treatment in primary and secondary sleep disorders. Here we examine sleep in a mouse model (Gabra2-1) with reduced GABAergic signaling at the axon initial segment (AIS) using behavioral, EEG, and sleep deprivation studies. These data suggests that the GABA receptor containing the α2 subunit found enriched along the AIS contribute to emerging networks in young Gabra2-1 and sleep stability and circadian rhythmicity in adult Gabra2-1.

23. Emotional Intelligences, General Intelligence, and Personality
Nicholas Carfagno | Psychology

Emotional intelligence (EI) represents one’s experience with their own emotions and awareness of others’; it has been shown to be a predictor of life satisfaction, academic performance, and career adaptability, among other variables (Coetzee & Harry, 2014; Fernandez, Salamonson, & Griffiths, 2012; Urquijo, Extremera, & Villa, 2016). Despite its apparent utility, dominant researchers of the field disagree in regards to both definition and method of measurement. Until a relative consensus is formed, it is difficult to determine a practical utility for measuring EI. This project will address the relationship between two of the most researched forms of EI: ability emotional intelligence and trait EI. The ability EI model views emotional intelligence as a “mental ability” that must be tested, and the trait emotional intelligence model believes that EI is a facet of personality that can be assessed through self-report (Cherniss, 2010). This project will compare the different theories and methods of measure of emotional intelligence; the ability. Specifically I will contrast the factor structures of the ability model of EI, measured by the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT), and the trait model of EI, measured by the Trait Emotional Intelligence Questionnaire (TEIQue). I will also administer personality measures and general intelligence measures to determine if personality or general intelligence moderates the potential relationship between emotional intelligences (and how personality and general intelligence correlates with each emotional intelligence).
24. Identifying Risk Factors for Youth Hospitalization in Crisis Settings
Yen-Ling Chen, Megan Freeman, and Andrew Freeman | Psychology

Psychiatric hospitalization is a critical treatment decision. While most individuals with mental illness are never hospitalized, clinicians in crisis settings make this decision daily. However, much of the evidence predicting hospitalization is from retrospective billing data and in which the time course of risk factors is not clear. Therefore, the current study aims to prospectively predict youth hospitalization in crisis from data available at the time of decision time. Mobile crisis response team (MCRT) provides immediate and intensive community-based mental health services for youth in crisis at risk of psychiatric hospitalization. MCRT conducts a standardized evaluation at initial response to inform treatment decisions. Some youth were hospitalized (15%, n=408), while most (85%, n=2343) receive intensive community-based services. Secondary analyses of MCRT electronic health records focused on previously identified risk factors for psychiatric hospitalization, including age, gender, ethnicity, psychiatric diagnosis, relational problems, abuse and neglect, and housing/economic problems. The data consisted of MCRT responses to youth (N=2,751, 56% female, ages 3.5-19.5 years, M=14.05 years, SD=2.75 years) between 2014–2017. Approximately 63% of youth were Caucasian (n=1,740), 22% were African-American (n=596), 3% were Asian-American (n=96), and 3% were Pacific Islander (n=87). A risk index was created by unit including summing previously identified risk factors (presence=1, absence=0) all potential risk factors for youth hospitalization. The presence of each risk factor contributes to 1 point and the absence of risk factor was scored 0 point. Hospitalized youth who was hospitalized (M=3.14, SD=1.1) had significantly higher total risk scores than community stabilized youth who was not hospitalized (M=2.89, SD=.98).

25. Beliefs about Sexual Harassment Prevalence Differ Based on Harassment Type and Workplace Characteristics
Andrea Fink-Armold | Psychology

Workplace sexual harassment (SH) is a pervasive and enduring problem in the United States and is associated with a slew of negative psychological and job-related outcomes. However, beliefs and realities of SH often do not align, which may limit the efficacy of interventions and policies geared towards alleviating this problem. The present studies sought to identify factors that affect beliefs about the prevalence of SH. In study 1 (n = 298 working adults), participants were asked to report how prevalent they believe three subtypes of workplace SH are. The results show that women believe verbal and quid pro quo SH occur significantly more frequently than men do, but there are no sex-based differences in beliefs about physical SH. Overall participants believe that quid pro quo SH is most prevalent, followed by verbal, then physical. In study 2 (n = 216 undergraduate students), participants were asked to report how prevalent they believe SH is in one of four specific workplaces: high-prestige feminine sex-typed, high-prestige masculine sex-typed, low-prestige feminine sex-typed, or low-prestige masculine sex-typed. Perceptions of the prevalence of quid pro quo SH were not affected by workplace prestige or sex-type, but perceptions of verbal and physical SH were: when evaluating high prestige workplaces, participants reported that SH is significantly more prevalent in feminine sex-typed workplaces than masculine sex-typed workplaces. When evaluating low prestige workplaces, participants reported that SH in significantly more prevalent in male sex-typed workplaces.
Defining Problematic School Absenteeism: Identifying Youth at Risk
Mirae Fornander | Psychology

Approximately 93 million school days were missed by American students during the 2013-2014 academic year leading school absenteeism to be identified as an educational crisis in 2016 (National Center for Education Statistics, 2016). Youth with problematic absenteeism are at a higher risk than their peers for numerous negative effects to their health, functioning, and achievement. Despite these well-documented consequences, there is a lack of an agreed upon definition of problematic school absenteeism leading to complicated, and often counteracting, early identification systems and an inability to access effective treatment (Maynard et al., 2015). My research aims to support a precise definition of problematic absenteeism to inform early identification systems for youth at the highest risk of developing problematic absenteeism. Participants included 378 students and their families from clinic and community settings. Classification and Regression Tree (CART) procedures were utilized to identify subgroups of youth at the highest risk of developing problematic absenteeism based on several risk factors. Multiple definitions of problematic absenteeism (i.e., 1%, 3%, 5%, and 10% of full days missed) were used to compare the models and identify the best definition. Results identified family organization and youth depression, separation anxiety, and social anxiety to be the most relevant risk factors among the models. Results also supported the utilization of the 1% of full school days missed cutoff to identify youth in need of early intervention services and the 3% of full school days missed cutoff to identify youth in need of targeted intervention services.

The relevance of thoughts and emotions that are specific to sport in predicting anxiety and depression in student athletes
Marina Galante | Psychology

Depression and anxiety are the second and third most prevalent mental health difficulties affecting student-athletes. Mental health disorders are very costly to treat, and athletes notoriously reject mental health interventions. This study will assist in understanding the extent to which sport-relevant thoughts and emotions impact depression and anxiety in student-athletes. Two-hundred and twenty-eight NCAA athletes competing at the Division, I, II, or III level were administered the Sport Interference Checklist (SIC), Test of Performance Strategies (TOPS), Generalized Anxiety Disorder-7 (GAD-7), and Patient Health Questionnaire (PHQ-9). Four linear regression analyses will be conducted. In the first two regressions, training subscales of TOPS Emotional Control, TOPS Self-talk, and SIC Dysfunctional Thoughts and Stress will be used as independent variables to determine their ability to predict GAD-7 and PHQ-9 scores (dependent variables). In the next two regression analyses, competition subscales of TOPS Emotional Control, TOPS Self-talk, and SIC Dysfunctional Thoughts and Stress will be used as independent variables to predict GAD-7 and PHQ-9 scores (dependent variables). It is hypothesized that results will support the conclusion that dysfunctional thoughts, stressors and emotions that are relevant to sport participation will significantly predict symptoms of anxiety and depression. These results will assist in determining how thoughts and emotions pertaining to sport may be associated with reductions in depression and anxiety. Such findings would suggest targeting dysfunctional thoughts and emotions that are pertinent to sport may have far reaching positive effects in overall mental health.
28. Mood Symptoms to Aggression: Irritability as a Mediator
Breanna Garcia | Psychology

Objectives: Individuals with mood disorders report more aggressive behavior than healthy controls (Dervic et al., 2015; Fite et al., 2009). One potential explanation is the presence of irritability in both unipolar and bipolar disorder. Irritability is an affective state that places an individual at risk for aggression (Caprara et al., 2007).

Many ill effects of mood symptoms occur even with subthreshold presentations. The purpose of this study is to test whether irritability mediates the relationship between depressive and manic symptoms with self-reported aggressive behavior.

Methods: Participants (N=685) were recruited from UNLV. Participants were 20.26 years (4.19), primarily female (64%) and 29% were Hispanic/Latino. The General Behavior Inventory measured depressive and manic symptoms. Aggression was measured through the Buss-Perry Aggression Questionnaire. The Irritability Questionnaire measured irritability.

Results: Irritability explained the relationship between depressive symptoms and physical aggression (ab=.06, [.03,.09]), verbal aggression (ab=.07, [.05,.08]), anger (ab=.08, [.06,.11]), hostility (ab=.13, [.10,.15]), and total aggression (ab=.36, [.28,.45]). Irritability did not explain the relationship between manic symptoms and physical aggression (ab=.01, [-.03,.06]), but did explain the relationship between manic symptoms and verbal aggression (ab=.06, [.03,.10]), anger (ab=.09, [.06,.14]), hostility (ab=.10, [.06,.14]), and total aggression (ab=.14, [.06,.14]).

Conclusions: Mood symptoms were significantly associated with self-reported aggressive behavior. Even at subthreshold levels of depression and mania, mood symptoms are associated with increases in self-reported aggression. Individual differences in heightened arousal due to the presence of irritability appear to partially explain the link between depression and aggression as well as mania and most forms of aggression.
30. Concussion rate differences across football positions
Julia Hussey, Winnie W.Y. Ng, Daniel E. Witoslawski, Thomas F. Kinsora, Staci R. Ross, and Daniel N. Allen | Psychology

Objective: Sport concussion occurs most frequently in football; however, research evaluating positions’ effect on concussion rate is scarce (Urban et al., 2013). The purpose of this study was to evaluate concussion rates by position in football players using the Immediate Post-Concussion Assessment and Cognitive Testing (ImPACT). Methods: Participants included 1,263 football players (M age =15.2; M education = 9.6; 100% male; concussed n=646) from the state of Nevada who were assessed pre- or post-concussion from 2008 to 2012. Football positions were split into the following categories: offensive line, defensive line, running back, linebacker, defensive back, tight end, wide receivers, quarterbacks, and multiple positions (Baugh et al., 2015). Chi-square test of homogeneity was performed to evaluate the difference in concussion rates across football positions. Results: A statistically significant difference in concussion rate across positions was observed ($\chi^2 =24.49; p< .01$). Post hoc analysis involved pairwise comparisons using the z-test of two proportions with a Bonferroni correction. The tight end concussion rate was significantly lower than athletes in the offensive line, defensive line, running back, linebacker, defensive back, tight end, wide receivers, quarterbacks, and multiple positions (Baugh et al., 2015). Concussion rates across positions (excluding tight ends) ranged from 40.5% to 57.3%. Conclusions: Results indicate that tight ends experienced significantly lower concussion rates relative to other football positions which were not significantly different from each other. Among the remaining football positions, concussion rates which prompted further assessment were about 50%. Given this high proportion of concussions, further investigation is needed to inform prevention efforts for football concussion.

31. Memories of Math: Narrative Predictors of Math Outcomes and Future Math Plans
Jennifer John Buck | Psychology

Although women are increasingly well represented in the life sciences, they continue to be underrepresented in math-intensive fields of study (NSF, 2016). The current study takes an innovative approach to understanding this gender disparity by focusing on emerging adults’ life story narratives concerning math. A total of 373 undergraduates (66% women) completed quantitative measures assessing math anxiety, math utility value, and math ability beliefs (Hopko et al., 2003; Eccles & Wigfield, 2002). They also wrote narratives about a turning point they had with math and their anticipated future plans with math. Four themes emerged in the turning point narratives: (1) math redemption, (2) math contamination, (3) always positive, and (4) always negative. As well, three themes emerged in the future plans narratives: (1) enthusiastically pursuing math, (2) begrudgingly pursuing math, and (3) avoiding math altogether. Results indicated that participants who wrote negative narratives were significantly more likely to indicate that they would avoid math in the future ($X^2 (6, N=133) =40.039, p< .001, V=.388$). Additionally, participants who wrote positive narratives reported significantly higher math utility value and math ability beliefs than participants who wrote other types of narratives (p&lt; .001). Finally, participants who wrote about enthusiastically pursuing math in the future reported significantly lower math anxiety (p=.001) and significantly higher math ability beliefs and math utility value than other participants (p=.001). These results suggest that how emerging adults frame their life stories with math can predict differential math outcomes and future math plans.
Social Science Poster Session C – Ballroom

PRESENTATIONS:

9:00 - 9:15 AM  #32 Cody Kaneshiro, Psychology
9:15 - 9:30 AM  #33 Kirsty Kulhanek, Psychology
9:30 - 9:45 AM  #34 Amanda Leisgang, Psychology
9:45 - 10:00 AM #35 Aileen Lovitt, Psychology
10:00 – 10:30 AM Break
10:30 - 10:45 AM #36 Karli Nave, Psychology
10:45 - 11:00 AM #37 Samantha Sherwood, Psychology
11:00 - 11:15 AM #38 Megan Shope, Psychology
11:15 - 11:30 AM #39 Carrie Underwood, Psychology
11:30 - 11:45 AM #40 Laura Werner, Psychology
11:45 - 12:00 PM #41 Neema Langa, Psychology
32. Can First-Person Methods Reliably Apprehend Inner Experience? Lessons from Eyewitness Testimony  
Cody Kaneshiro | Psychology

Psychologists are interested in inner experiences (e.g., inner speech, visual imagery) because inner experiences are ubiquitous characteristics of humans; however, given the private nature of inner experience, their measurement is problematic. Some believe first-person reports are necessary; others contend such reports are like all eyewitness reports—unreliable—and should be banished from psychological science. Eyewitness testimony research provides many examples of how first-person reports are distorted by memory errors and cognitive biases. We consider these issues and discuss how descriptive experience sampling (DES) incorporates those lessons to minimize the influence of each, thereby offering an alternative method for first-person descriptions of inner experience. DES tasks participants with using a random beeper in their natural environment in which participants are asked to attend to whatever inner experience(s) (e.g., thoughts, feelings) happen to be ongoing at the moment of the beep. The participant jots down notes immediately after the beep and then—within 24 hours—engages with the investigator(s) in an “expositional interview” that is intended to describe the experience as it was occurring at the last undisturbed moment before the beep. This sampling/expositional-interview sequence is “iterated” (repeated across several days, each with incrementally increased skill). Some examples: (a) Eyewitness research has shown that eyewitnesses may have substantial biases that affect their testimony; DES uses the iterative process to build skills to avoid such biases (“bracketing presuppositions”). (b) Post-event misinformation has been shown to create false memory; DES interview skill reduces mis-information, and so forth.

33. Children’s Looking Toward Familiar and Unfamiliar Face Types  
Kirsty Kulhanek, Jennifer Rennels | Psychology

Infants typically have disproportionate experience with female over male faces, as well as own-race over other-race faces (Rennels & Davis, 2008). Infants also prefer to look at female over male faces (Quinn et al., 2002) and show difficulty processing male and other-race faces by 9-10 months of age (Kelly et al., 2007; Quinn et al. 2008). This disproportionate experience with female faces continues into childhood (Kayl, 2012) and thus may influence attention toward faces beyond infancy. The purpose of the current study was to explore whether race- and gender-based looking preferences are present in childhood. Children with predominant experience with European American female faces aged 3-4 (N = 23) and 7-8 years (N = 25) participated. Each child saw four female-male adult face pairs—two pairs were European American and two pairs were African American. Children looked more toward female faces when the face pair matched the race of their primary caregiver than toward female faces when the face pair did not match the race of their primary caregiver. Additionally, 3-year-olds tended to look more toward female faces than 7-year-olds. Thus, like infants, 3-year-olds appear to prefer familiar face types. However, these preferences appear to diminish by 7 years of age. Experience with faces appears to continue to influence children’s looking behavior and interest in faces beyond infancy, which may have implications for social processing in childhood.
34. GABA specific changes in a mouse model of Alzheimer’s disease
Amanda Leisgang | Psychology

Alzheimer’s disease (AD) is neurodegenerative disease that is clinically described as the progression of learning and memory deficiencies. Pathologically, AD is characterized by the presence of three core features, beta-amyloid plaques (Aβ), neurofibrillary tangles (NFT), and chronic neuroinflammation. Several mechanisms have been proposed that are responsible for impaired learning and memory, neuroinflammation, and progressive neuronal loss including alterations in several transmitter systems. Gamma amino butyric acid (GABA), the principle inhibitory neurotransmitter in the brain, has been demonstrated to be necessary in learning and memory. As learning and memory deficits have been reported in clinical populations and animal models of AD, a more careful examination of GABAergic changes in AD progression is needed. To investigate changes in GABA as it is related to AD progression, we evaluated several markers of GABAergic signaling in combination with behavioral measures and pathological markers of AD at distinct time points (4, 6, and 9 months of age) in the APP/PS1 mouse model of AD versus wild-type controls. Our data indicate that at the time point that we observe learning and memory deficits and presence of AB plaques in the APP/PS1 model, protein levels of GABA receptor subunits was significantly reduced in the hippocampus. These data indicate that while there may be a reduction in GABA receptors, there is an increase in mechanisms associated with GABA transport and production. These data support the need for further investigation of specific GABAergic changes in the progression of AD.

35. The Impact of Positive Assessments on Interpersonal Behavior
Aileen Lovitt | Psychology

Prior stereotype and prejudice literature have found a relation between positive stereotype endorsement and explicit prejudice, suggesting that positive beliefs have destructive impact on negative attitudes toward different groups (Glick et al., 2000; Czopp & Monteith, 2006). However, these studies have only tapped into conscious attitudes about groups that participants are able and willing to disclose. Measuring the relationship between positive stereotype endorsement and implicit attitudes would give insight into unconscious racial bias. Moreover, some literature suggests that implicit bias may also be more predictive of discrimination than explicit prejudice (Greenwald, Poehlman, Uhlmann, & Banaji, 2009). The present study aims to measure the effect positive and negative racial stereotypes have on both explicit and implicit racial attitudes. Positive stereotype endorsement is expected to add predictive power to regression models regressing negative stereotypes on implicit attitudes and explicit discrimination.
36. Steady State-Evoked Potentials Reflect Context-Induced Perception of Musical Beat in an Ambiguous Rhythm
Karli Nave, Erin Hannon, Joel S. Snyder | Psychology

Synchronous movement to music and other rhythmic stimuli is effortless, yet relatively little is understood about the mechanisms underlying this ability. While top-down processes presumably influence listener perception of musical beat (periodic pulse), it has been difficult to disentangle stimulus-driven from listener-driven processes. We used electroencephalography (EEG) to investigate whether steady state-evoked potentials (SSEPs, the electro cortical activity from a population of neurons resonating at the frequency of a periodic stimulus) reflect beat perception when the physical information in the stimulus is ambiguous and supports two possible beat patterns. Participants listened to a musical excerpt that strongly supported a particular beat pattern (context phase), followed by an ambiguous rhythm consistent with either beat pattern (ambiguous phase). During the final probe phase, listeners indicated whether a superimposed drum matched the beat of the ambiguous rhythm. Accurate performance required that participants perceive the beat in the musical excerpt and also maintain that perception throughout the ambiguous rhythm, despite having no surface evidence to reinforce that perception exclusively. Participants perceived probes that matched the beat of the context as better fitting the beat of the ambiguous rhythm. Accurate performance required that participants perceive the beat in the musical excerpt and also maintain that perception throughout the ambiguous rhythm, despite having no surface evidence to reinforce that perception exclusively. Participants perceived probes that matched the beat of the context as better fitting the ambiguous rhythm, compared to probes that did not match the context. SSEPs during the ambiguous phase had higher amplitudes at frequencies corresponding to the beat of the preceding context. Finally, trial-by-trial analyses revealed that the amplitude of the beat-related SSEPs was predictive of whether or not subjects correctly perceived the beat. These findings support the idea that SSEPs reflect perception of musical rhythm and not just stimulus encoding of temporal features.

37. Sleep Chronotype, Mood, and Irritability
Samantha Sherwood | Psychology

Sleep chronotype (i.e., whether an individual is a morning or evening person) is associated with a variety of outcomes. In particular, eveningness chronotype increases risk for depression (Antypa et al., 2016). Depression and (hypo)mania are also commonly associated with irritability (Van Meter et al., 2016). However, findings regarding the relationship between chronotype and irritability have been mixed. Given the associations between chronotype and mood, and between mood and irritability, this study aimed to evaluate the relationship between chronotype and irritability while controlling for mood symptoms. Method Participants were 1259 adults ages 18-46 (65% female; 32% Hispanic/Latino). Sleep chronotype was assessed using the Composite Morningness Scale, and classified as morningness (n=80, 6%), intermediate (n=1079, 86%), or eveningness (n=100, 8%). Depression and (hypo)mania symptoms were assessed using the 7 up/7 Down Inventory. Irritability was assessed using the Irritability Questionnaire, which yields total irritability, frequency, and intensity scores. Results Eveningness chronotype significantly predicted overall irritability (r^2 =.04, p<.001), frequency (r^2 =.02, p<.001), and intensity, r^2 =.04, p<.001. After controlling for mood symptoms, chronotype continued to predict overall irritability scores (p=.003). Chronotype was also associated with the frequency (p=.035) and intensity (p<.001) of irritability after controlling for mood symptoms. Discussion After accounting for mood symptoms, eveningness chronotype was significantly associated with greater overall irritability, intensity, and frequency. Individuals with an eveningness chronotype may be at greater risk of developing high levels of irritability than individuals with a morningness or intermediate chronotype. Additional research is needed to assess whether having a more extreme chronotype might predict irritability.
38. An Exploration of Associations between Cognitive Inflexibility and Disordered Eating Symptoms
Megan Shope | Psychology

Neuropsychological research has revealed impairments in cognitive flexibility (i.e., ability to mentally ‘shift’ or be flexible) in women with eating disorders, even after recovery, and in their unaffected biological family members. This pattern is consistent with the notion that cognitive inflexibility may be an endophenotype underlying AN or BN. However, prior studies have relied on case-control comparisons, and the extent to which deficits in cognitive flexibility are linked with component disordered eating symptoms is unknown. Moreover, AN and BN are heterogeneous disorders comprised of multiple types of distinct symptoms (e.g., restricting, binge eating) and disentangling the specific symptoms associated with neurocognitive features could enhance etiologic models. This study examined the extent to which cognitive rigidity is associated with disordered eating symptoms, assessed dimensionally across a spectrum of severity, in 208 female college students. Cognitive rigidity and disordered eating symptoms were assessed via well-validated self-report measures that could be completed briefly. Cognitive rigidity was positively associated with cognitive dietary restraint (e.g., counting calories; trying to exclude foods) and binge eating (e.g., overeating; loss of control over eating), but not behavioral restricting (e.g., skipping meals; eating little). Thus, cognitive rigidity may contribute to a propensity to engage in cognitive rules/attempts towards restriction and binge eating – two features that cut-across eating disorder diagnoses. The presence of effects using dimensional conceptualizations of cognitive inflexibility and eating disorder symptoms also suggests that assessing individual differences in cognitive rigidity may be useful in identifying individuals at high risk for an eating disorder.

39. Mr. and Mr. or Mrs. and Mrs.: Surname Preferences in Same-Sex Relationships
Carrie Underwood | Psychology

The norm of a woman adopting her partner’s surname after marriage is widely endorsed, but little is known about norms regarding surname preferences of individuals in same-sex relationships. Furthermore, current research examining marriage-related practices in same-sex relationships has not kept pace with same-sex couples’ legal-recognition. As prior research has been limited by small sample sizes, we extended prior research by exploring marital surname preferences and corresponding rationales in a large, sociodemographically diverse sample of adults in same-sex relationships. Participants (n = 179) in same-sex relationships responded to an open-ended prompt regarding their surname preferences. The most common response was that some type of surname change was possible, which revealed more openness to sharing a surname as compared to prior research. Qualitative analyses revealed the most common rationale for surname preferences centered on “doing/being family.” Results indicate that there may be a shift in surname preferences of individuals in same-sex relationships.
40. Forgetting Distractors: Evidence of inhibition and decay in working memory depends on test type
Laura Werner, C.M. Parks | Psychology

Research on forgetting irrelevant information in working memory has supported two conflicting theories, inhibition (Oberauer & Lewandowsky, 2016) and decay (Dagry et al., 2017). However, these conflicting results may be due to the fact that different methods were used to assess each model. We combined those methods to create a distractor span task that allows for a direct comparison of the models. Participants processed words that were to be remembered (targets) and others that were to be forgotten (distractors); the amount of free time after each distractor varied, with total trial time held constant across conditions. There were more distractor intrusions on a recognition test when less free time was available, supporting an inhibition model. However, there was no difference between conditions on a free recall test, supporting a decay model. Thus, task demands at retrieval play a particularly important role in the evaluation of these models.

41. Focusing Upstream: Inequities in Cervical Cancer Screening in Malawi
Neema Langa, Tirth Bhatta | Psychology

Countries in sub-Saharan Africa (SSA) like Malawi have been experiencing a rapid increase in the burden of chronic diseases like cervical cancer. By the year 2030, non-communicable diseases like cervical cancer are projected to be leading causes of death in SSA. The utilization of cervical cancer screening services is a necessary step in reducing the likelihood of cervical cancer. Previous attempts to the understanding of factors influencing the utilization of such services have predominantly focused on downstream factors such as women lifestyles and behaviors. A lack of attention to upstream factors has limited our understanding of structural factors that contribute to inequities in cervical cancer screening. Drawing from the World Health Survey (n= 2,831) administered in Malawi in 2003, we used the fundamental cause theory to examine the influence of socioeconomic status (e.g., education and wealth) on pelvic examinations and Pap smear tests. Findings suggested that the number of years of education and wealth had a statistically significant positive effect on influencing the pelvic examinations while only wealth and not number of years of education had the statistically significant and the positive influence on the Pap smear tests. Our study highlights the critical need to simultaneously give women the power to own and inherit households’ assets and to increase public funding to promote their education. Such structural changes are necessary to increase health care utilization and consequently, health and well-being among women in developing countries.
Presentations:

10:30 - 10:45 AM #42 Denise H R Molintas, William F. Harrah College of Hospitality

10:45 - 11:00 AM #43 Claudia Chiang-Lopez, Communication Studies

11:00 - 11:15 AM #44 Amber Stephens, Communication Studies

11:15 - 11:30 AM #45 Cassandra Boyer, Criminal Justice

11:30 - 11:45 AM #46 Tanya Dudinskaya, Criminal Justice
42. Understanding Group Hate in Collaborative Learning: A Case Study of a Four-Year Undergraduate Hospitality Program
Denise H R Molintas | Hospitality

The study examines the process-orientation of creating collaborative learning groups within the setting of an undergraduate hospitality program. A single case embedded design study will investigate the phenomenon of ‘group-hate’ or the disdain for group learning processes in the unit of analysis of a collaborative learning group. Data will be collected through in-depth interviews of professors, and focus groups and surveys of students from all levels (1-4). The results will provide strategies for effective collaborative learning that affect the development of competencies fundamental for success in the hospitality industry.

Keywords: Collaborative learning, process-orientation, group-hate

43. I am Polyam: Emerging adult’s expressions of polyamorous identities
Claudia Chiang-Lopez | Communication Studies

Polyamory, a practice of Consensual-Nonmonogamy, involves relationships in which individuals are free to maintain multiple emotional, romantic, and/or sexually intimate, and long term (Klesse, 2006), extradyadic partners (Matsick et al., 2014). Fewer of today’s emerging adults are strictly adhering to traditional hetero-monogamous pairings (Coontz, 2005) and are instead customizing their relationships to best fulfill their specific desires, needs, and goals. Recent data suggests that higher numbers of today’s youths are not only identifying as a nontraditional gender (CNN, 2018) but are also more accepting of and willing to participate in CNM relationships than previous generations (Moore, 2016).

Using a qualitative content analysis design, this study examined a publicly posted blog series titled Poly Pocket, in which queer, polyamorous, emerging adults (N = 16) openly communicated their polyamorous identities and their unique romantic configurations. Specifically, this study examined how polyamory intersects with other elements of identity, and how it functions within one’s understanding of themselves. Qualitative data were coded using a directed content analysis design (Hsieh & Shannon, 2005), and semantic and latent themes assessed via thematic analysis (Braun & Clarke, 2006). Responses were categorized into five codes that were not mutually exclusive. Coding revealed themes regarding the intersectionality of identity, autonomy/freedom, social anarchy, relational awareness, and identity concern. This type of study is important for better understanding how additional variables, such as racial identity, gender identity, and sexual orientation intersect with one’s romantic/sexual practices to influence how they choose to label and practice their sexual/relational identities.
44. Polyamorous identities: The intersection of identity and relational intimacy
Amber Stephens, Claudia Chiang-Lopez | Communication Studies

More individuals today are customizing their relationships to best fulfill their specific desires, needs, and goals. Folks reject traditional binary genders, and are more accepting of, and willing to participate in, consensual non-monogamous relationships than previous generations. Polyamory is a relationship practice in which partners are free to maintain multiple emotional, romantic, and/or sexually intimate, long-term partners. Polyamory has been depicted as an intimate relational practice, a philosophy, a relationship orientation and love style, a sexual orientation, and an identity. Individuals often forge their identities in relation to their relationships and the conscious choices of how they wish to live. This qualitative case study examined how polyamory intersects with other elements of identity, and how it functions within one’s understanding of themselves.

45. Perspectives on Eco-Terrorism
Cassandra Boyer | Criminal Justice

While the perception of environmental and animal rights groups as extremist, high-risk domestic terrorism threats by law enforcement agencies and the government has been well documented (Amster, 2006; Carson, LaFree, & Dugan, 2012; Freilich, Chermak, & Simone, 2009; Glasser, 2011; McCoy, 2007; Salter, 2011; Smith, 2008; Sorenson, 2009), less has been said about the views of these groups among members of the public. To address this gap in the literature, the current research will survey college students taking an introductory criminal justice course to learn about their perceptions on: 1) the legality of actions that animal rights activist take; 2) perceptions on how direct actions taken by animal rights groups are classified; and 3) whether there are discernible differences in the way students view comparable instances of direct actions taken by social movements. Students were also surveyed on their views regarding eco-terrorism laws, ag-gag laws, and laws pertaining to Green movements in general (environmental and animal rights groups). This presentation will elaborate on the findings of this exploratory research.
U.S. police departments have dramatically increased the use of body worn cameras (BWC) in police work. These devices are designed to record officers’ activities, communications, and other interactions with members of the public. Previous research has examined general patterns of public support for BWC usage, the perceived advantages of this technology, and its disadvantages. However, extant research has not fully explored the nature and magnitude of stability and change in the socio-demographic correlates of public support for BWC usage in policing activities over time.

Using a multi-wave national online sample of over 3000 U.S. adults, the current study explores these sources of change and stability in BWC attitudes. Over three-fourths of the national survey respondents supported the use of body cameras in various police activities (e.g., routine stops, crowd management, interviewing crime victims, crime scene investigation), but these pro-BWC attitudes dissipated somewhat over consecutive 4-month periods from June 2017 to June 2018. For each survey wave, public support for BWC was highest among White adults and those who held the strongest beliefs about police legitimacy. Black respondents had the lowest level of support for police use of body cameras and were also less likely than Whites and Hispanics to believe that BWC use reduces police use of force or provides an accurate account of these incidents. The paper also describes other socio-demographic differences in public attitudes about this technology and the implications of these findings for improving our understanding the sources of receptivity and resistance to BWC usage in police work.
Science Poster Session – Ballroom

PRESENTATIONS:

10:30 - 10:45 AM #47 Sabrina Barakat, Chemistry and Biochemistry
10:45 - 11:00 AM #48 Jacqueline Phan, Chemistry and Biochemistry
11:00 - 11:15 AM #49 Sarah Wood, Chemistry and Biochemistry
11:15 - 11:30 AM #50 Joy Immak, Life Sciences
11:30 - 11:45 AM #51 Dengxun Lai, Life Sciences
47. How organic chemists’ understandings of resonance progress over time: A pilot study
Sabrina Barakat | Chemistry and Biochemistry

Researchers have identified resonance as a chemistry topic students struggle with. A molecule has resonance when it can be represented by two or more structures that differ only in their arrangement of electrons. Resonance is a fundamental concept that organic chemists apply to make predictions about which products will form. Because resonance is an important tool for practicing organic chemists, it is important for organic chemistry students to learn about resonance and practice using it. Little is specifically known about individuals’ perceptions of the concept of resonance—or of how these perceptions change as individuals progress from novice to expert. To gain an idea of how individuals’ understandings of resonance evolve, we interviewed students and instructors in general and organic chemistry. Data from this study suggests that general chemistry students have a weak understanding of resonance while organic chemistry students have a more sophisticated understanding. However, it was not until the instructor level that the concept of resonance was thoroughly depicted. The results of this study were applied to a developmental scheme, which suggested that general chemistry students may not be intellectually ready to grasp the importance of resonance and may need more time to understand the multiple aspects and purposes of resonance in their organic chemistry courses.

48. A Potential Solution to a Poopy Problem: Bile Salt Analogs as Prophylactics Against Clostridioides [Clostridium] difficile Infection
Jacqueline Phan | Chemistry and Biochemistry

Clostridioides [Clostridium] difficile infection (CDI) is responsible for the majority of nosocomial antibiotic-associated diarrhea. With rises in both hospital- and community-acquired CDI incidences due to the emergence of hypervirulent strains, CDI recurrences can reach up to 25%. Thus, standard treatments are rendered less effective, making new methods of prevention more critical. Since C. difficile spore germination is a necessary step for CDI establishment, methods that target this process could serve for infection prophylaxis. C. difficile spore germination is promoted by the bile salt taurocholate. Previously, CamSA, a synthetic bile salt analog of taurocholate, was found to be a more potent germination inhibitor than the endogenously-present inhibitor chenodeoxycholate when tested against strain 630. CamSA also protected mice challenged with strain 630 spores. In the present study, a bile salt analog called SKS-VI-07C, was found to be a stronger germination inhibitor than CamSA against strain 630 spores. SKS-VI-07C was also shown to be an effective anti-germinant against seven other strains representing different C. difficile ribotypes, including hypervirulent strain R20291. Germination inhibition assays demonstrated that SKS-VI-07C inhibited spore germination in each tested C. difficile strains at concentration below 50 μM. In addition, SKS-VI-07C was capable of reducing, delaying, or preventing CDI symptoms in mice infected with each C. difficile strain. The results of this study illustrate the general patterns of disease and inhibitory abilities of bile salt analogs. From these explorations, bile salt analogs may have the potential to serve in the prophylactic treatment of CDI in antibiotic-treated patients.
49. Reasoning used by general and organic chemistry students to categorize a compound as an acid or a base
Sarah Wood | Chemistry and Biochemistry

Acid–base chemistry is a topic that is introduced in general chemistry courses and which is considered fundamental to mechanistic thinking in organic chemistry courses. However, research indicates that students often struggle with understanding acid–base chemistry concepts. We are specifically interested in the reasoning that general chemistry and organic chemistry students employ to categorize a given compound as an acid or a base and how that reasoning differs between the two groups of students, particularly since the coverage of acid–base concepts tends to be different in general versus organic chemistry courses. For the current study, we interviewed second semester general and organic chemistry students about their understandings of acids and bases. We then presented them with a set of cards on which the Lewis structures and formulas of various molecules were written, asked them to categorize each molecule as an acid or a base, and then asked them to explain their reasoning. We also asked the students to compare the relative acidity and basicity of selected pairs of molecules. In this poster, we highlight (1) the reasoning that general and organic chemistry students used to categorize acids and bases, (2) the reasoning that these students used to determine relative acidity and basicity of Compounds, and (3) how the reasoning differed between general and organic chemistry students.

50. Multiple Regulatory Inputs Control Type Three Secretion In The Bacterial Pathogen Shigella Flexneri
Joy Immak, Helen J. Wing | Life Sciences

The type three secretion apparatus (T3SA) and the secreted effectors are utilized by Shigella and other bacterial pathogens to invade human colonic epithelium. In Shigella, production of the T3SA and its first wave of effectors are regulated by VirB, which alleviates transcriptional silencing mediated by the histone-like nucleoid-structuring protein (H-NS). At this stage, VirB up-regulates genes required for the transcriptional activator, MxiE, and co-activator, IpgC. However, prior to host cell contact, MxiE is sequestered by the anti-activator OspD1. Upon contact, the first wave of effectors, including OspD1, are secreted allowing MxiE and IpgC to activate genes required for the second wave? Previously, I found two remote VirB-binding sites and a putative MxiE-binding site at the ospD1 locus in silico. Therefore, I hypothesized that the ospD1 promoter was up-regulated by both VirB and MxiE. My data show the first observation of two VirB-binding sites independently contributing to the VirB-dependent regulation of a promoter (i.e. ospD1 promoter). Additionally, I found that H-NS-mediated silencing of the ospD1 promoter required sequences between -1150 to -850 relative to ospD1. Surprisingly, my data also show the first observation of MxiE negatively regulating a promoter (i.e. ospD1 promoter). However, ospD1 promoter activity was not altered when the putative MxiE binding-site was mutated, suggesting that MxiE-dependent regulation of ospD1 is indirect. Nevertheless, this observation is biologically intuitive as OspD1 sequesters MxiE; thus, negative regulation of ospD1 by MxiE may prolong secretion of second wave effectors. My future work will further investigate how MxiE indirectly represses the ospD1 promoter.
Life at high temperature remains mysterious. One kind of microbes “Aigarchaeota” has been found in almost every thermal environments, such as hot springs, marine hydrothermal vents, and deep subsurface thermal environments. However, the difficulty of cultivating this group limits the study of its diversity, physiology, and ecological functions. The rapid advancement in the use of culture-independent approaches can help investigations of this group. In our study, we collected genomes (metagenome-assembled genomes and single-amplified genomes) belonging to Aigarchaeota and conducted bioinformatic analyses. The phylogenetic tree based on 122 archaeal concatenated proteins shows that Aigarchaeota contains at least 9 genera (threshold 65% average amino acid identity), 4 families (threshold 45% average amino acid identity), and 18 Aigaechaeota species. Our study provides the first genome-based phylogenetic tree of Aigarchaeota and sheds light to its ecological functions, which updates our knowledge of life in extreme environments.
### Engineering Poster Session – Ballroom

<table>
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<tr>
<th>Time</th>
<th>Presentation Details</th>
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<tbody>
<tr>
<td>9:15 - 9:30 AM</td>
<td>#52 Najia Yasmeen, Architecture</td>
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<td>9:30 - 9:45 AM</td>
<td>#53 Abhusan Achhami, Civil and Environmental Engineering and Construction</td>
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<td>9:45 - 10:00 AM</td>
<td>#54 Natalie Pinon, Civil and Environmental Engineering and Construction</td>
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<td>10:00 – 10:30 AM</td>
<td>Break</td>
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<td>10:30 - 10:45 AM</td>
<td>#55 Brian Page, Computer Science</td>
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<td>10:45 - 11:00 AM</td>
<td>#56 Lina Chato, Electrical and Computer Engineering</td>
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<td>11:00 - 11:15 AM</td>
<td>#57 Jessica DeBeradinis, Mechanical Engineering</td>
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<td>11:15 - 11:30 AM</td>
<td>#58 Monia Kazemeini, Mechanical Engineering</td>
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<td>11:30 - 11:45 AM</td>
<td>#59 Choonghan Lee, Mechanical Engineering</td>
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52. WISER: Water-Smart Infrastructure and its Socio-Economic Ramifications
Najia Yasmeen | Architecture

Water, as the unifying element of nature, is the most delicate resource. Water conservation is indispensable to sustain the growing urban area throughout the world. With the exploding world population, people are experiencing water stress, a shortage or deficiency of water resources. Technical feasibility allows us socially and economically to generate a design-centric, self-sufficient water salvation infrastructure in the desert region. Water-Smart infrastructure sustains, preserves and purifies water with the increasingly integrated smart ecosystem. By using a balancing strategy of natural resources, water can be harvested from air. Resources like sun and wind are widely available and unlimited as a resource. By proper use of these renewable energy sources, we can collect water even in the most drought-affected places where water shortage is a significant setback. The desert climate is hot and arid, but it still contains adequate water in the air to gather. By harvesting atmospheric water, the water stress can come down a significant amount. By using solar energy to collect water from the atmosphere, the harvested water, similar to rainwater and can be used for daily use or can be purified to use as potable water. Ex. While technically feasible, water preservation and generation infrastructure are significantly underutilized due to misperceptions of cost and need. Architecture that incorporates water salvation through hospitality design principles will see higher returns on investment than those through traditional (or non-experiential, i.e., no guest interaction) applications.

53. Estimation of irrigation water demand of crops in Gujranwala district of Pakistan using remote sensing
Abhusan Achhami, Sajjad Ahmad, Haroon Stephen | Civil and Environmental Engineering and Construction

The estimation of crop water requirement (CWR) is an important aspect in efficient usage of water, especially in regions where water is scarce. This study estimates the change in agricultural land of major crops in Gujranwala district due to urbanization using remote sensing. The irrigation water demand (IWD) and irrigation cost are computed for the study years of 1992, 1995, 2000, 2008, 2014, and 2016. Wheat and rice are studied as they are the major crops grown in the district. Remote sensing image classification was used to prepare the land use maps and estimate cropping area. Evapotranspiration-based CWR was estimated using ET o calculator from FAO and crop coefficient (K c) of each crop. Finally, using the water pricing for the province, change in irrigation cost due to variation in IWD is computed. The results show that the urban area has doubled from 20 to 40 thousand hectares between 1992 and 2016 with the areas sown under wheat and rice decreased by 10% and 19%, respectively. The CWR value for 2016 was 381 and 605 mm/season for wheat and rice, respectively. IWD for wheat and rice decreased from 0.83 and 1.47 million acre-feet/year (MAF) to 0.70 and 1.03 MAF between 1992 and 2016. Similarly, the total cost of water for wheat and rice varied from 0.65 and 1.69 million USD to 0.33 and 0.84 million USD between 1992 and 2016. Use of remotely sensed image displayed the spatiotemporal distribution of urban expansion as well as of wheat and rice within the district.

Keywords: irrigation water requirement, crop water requirement, cropping area, wheat, rice.
54. Using Ultrasound to Degrade Antibiotics in Hospital Wastewater  
Natalie Pinon | Civil and Environmental Engineering and Construction

It is said by the Centers for Disease Control and Prevention that antibiotic resistance is one of the major public health challenges we face today. Predominantly, antibiotic resistance is growing because wastewater treatment processes are not able to completely break down antibiotics. As bacteria are exposed to such antibiotics they become immune and develop resistance. To prevent this from occurring, antibiotics need to be removed from waste streams. I have proposed a way to improve the process of breaking down antibiotics by advanced oxidation. The optimized process will allow for the maximization of hydroxyl radicals, which are the driving force in contaminant breakdown. When these radicals are generated in sufficient quantities, removal efficiency increases. The maximization of hydroxyl radicals will be done by using ultrasound while adding hydrogen peroxide and saturating gases. Parameters such as: the concentration of hydrogen peroxide, amplitude, saturating gas, and irradiation method will be varied to find the best conditions for hydroxyl radical optimization. It is expected that that there will be a big reduction of antibiotic concentrations because advanced oxidation processes are known to be efficient at removing antibiotics. The goal is to use the found hydroxyl radical optimization process and apply it as a pretreatment to water sources which are high in concentration, such as hospital effluent. Using a process which maximizes the formation of hydroxyl radicals to pretreat highly concentrated wastewater would provide safer wastewater, surface waters, and drinking water which are all locations where antibiotic resistant bacteria are present.

55. The effects of object detail on cybersickness in virtual environments  
Brian Page | Computer Science

As virtual reality technology continues to develop and become more widely adopted, open questions still remain as to the best practices in developing applications and user experiences. Many individuals are susceptible to a wide range of discomforting physical symptoms when fully emerged in a virtual environment. These detrimental effects are collectively referred to as cybersickness. Generally, these symptoms are considered to be caused by a disassociation with the sensations experienced by the visual processing centers of the brain with information obtained from the senses related to orientation, balance, and motion of the body. This research project seeks to determine if the level of detail of objects in a virtual environment is a factor in how quickly and severely cybersickness symptoms develop. Objects that contain more sides, shapes, textures, and shadows require more processing by the visual centers of the brain. We seek to determine if this additional mental work is a factor in symptom development. Several sets of nearly identical simulations are in development, with variable object complexity in each simulation being the only variable. This research project is in its preliminary stages and has yet to receive IRB approval for human testing.
56. Wavelet Transform to Improve Accuracy of a Prediction Model for Overall Survival Time of Brain Tumor Patients Based on MRI Images
Lina Chato | Electrical and Computer Engineering

In this poster, denoising wavelet transform (DWT) method is proposed to improve the accuracy of a prediction model for overall survival time of brain tumor patients using Magnetic Resonance Imaging (MRI) images based on classification approach. The BraTS dataset is used in this work. The histogram features are extracted from MRI images to train a prediction model using machine learning methods. As the dataset consists of only 163 samples, various machine learning methods have been used to develop an accurate prediction model.

In general, the MRI imaging system corrupted the MRI information with noise. The results show that the two-dimension denoising wavelet transform method slightly improved the accuracy of a prediction model based on histogram features. The best accuracy is achieved by daubechies 4 level 4 (db4-L4) with a 10 folds cross validation linear support vector Machine (SVM) when including patients’ age information. However, daubechies 2 level 1 and 3 (db2-L1, db2-L3) with a 10 folds cross validation simple tree produce an improved accuracy when the patients’ age does not combined with histogram features vector. When a 10% hold out validation method is used, the daubechies 2 level 3 (db2-L3) with simple tree Achieves 66.7% accuracy.

57. Elliptical Estimation of Plantar Contact Areas during Walking
Jessica DeBeradinis | Mechanical Engineering

Plantar contact area (CA) has been used to examine the effectiveness of interventions to address injury risk and to classify foot structure. Recently, it has been shown that these insoles can measure the CA accurately. However, insoles pixelate the contact area and do not reflect the true shape of the contact area. Ellipses have been used in contact models but have not been verified to be accurate measures of contact area. It is proposed that ellipses fitted to CA measured by the insoles can better represent the shape of the CA of the foot. A single participant (21 yrs, 57 kg, 1.63 m) who wore a Medilogic® insole size of 39-40 (Euro) gave institutionally- approved written consent (IRB #772154) to participate. The data were collected and processed for 10 trials using a previously described protocol to provide CA from images and insoles. The contact area of the insole was sorted into anatomical regions: heel, midfoot posterior, midfoot anterior, metatarsals 1-2, metatarsals 3-5, toes 3-5, toe 2, and toe 1. Several cases were examined when processing the elliptical CA: isolated sensors, rectangular contact area, irregularly shaped, and long shaped. Quantitative CA measurements at midstance and the impulse of the curve were measured. Qualitative fit of the ellipses was also examined. The CA measured using an elliptical fit to the insole sensors resulted in areas that were relatively accurate. Further experimentation is needed to examine the results at heel strike and toe-off and to assess if these results are consistent across multiple participants.
Gamma ray and neutron measurements are important at nuclear facilities. To enable remote sensing, robotic platforms are used to carry the radiation detectors. In a radiation environment, robots will be exposed to high doses which limits the platform’s operational time. Electronic components are affected the most and must be shielded. The tradeoff between shielding and capabilities of the robot can be made to achieve specific tasks during a required time period. The PhantomX hexapod was studied as a platform for the use of a CZT detector and a video camera in neutron and gamma fluxes. The stochastic radiation transport code FLUKA was used to calculate damage rates in electronic components of the system. The compact packaging of these components and the shielding design were determined to reduce radiation damage under dose conditions while keeping the optimal payload.

Teacher identities can be constructed and transformed through reflective practice, which can be further enriched by emerging identities as ‘reflective practitioners’ (Darling-Hammond & Bransford, 2005). Preservice teachers with limited professional knowledge and teaching experience may have difficulties in the reflective practice. Therefore, it is important that preservice teachers have learning opportunities to learn to reflect and identify themselves as reflective professionals. This research will use a case study with the theoretical frameworks of Representations of Practice (Grossman, Compton, Igra, Ronfeldt, Shahan, & Williamson, 2009) and Critical Discourse Analysis (Rogers, 2004) to explore the impact of reflective practice during practicum on preservice teachers’ identity construction. Participants will be purposefully selected from an urban 4-year undergraduate level teacher education program at a large university in the southwestern United States. They are preservice teachers who will be enrolled in classroom management for elementary education aligned with their initial field experience. Data will be collected through preservice teachers’ reflections on both classroom observations and interviews for their mentors based on classroom observations, as well as individual interviews for each preservice teacher. The reflections and individual interviews will be analyzed with the frameworks, and the results will indicate the influence of reflective practice on preservice teachers’ identity construction and provide insights for teacher education practice.
Science & Health Science Poster
Session A – Ballroom

PRESENTATIONS:

9:00 - 9:15 AM  #60 Karen Callahan, Environmental and Occupational Health
9:15 - 9:30 AM  #61 Philip Danquah, Environmental and Occupational Health
9:30 - 9:45 AM  #62 Saruna Ghimire, Environmental and Occupational Health
9:45 - 10:00 AM #63 John Olawepo, Environmental and Occupational Health

10:00 – 10:30 AM Break

10:30 - 10:45 AM #64 Jason Avedesian, Kinesiology
10:45 - 11:00 AM #65 Kevin Choe, Kinesiology
11:00 - 11:15 AM #66 Lee-Kuen Chua, Kinesiology
11:15 - 11:30 AM #67 Cordero Roche, Kinesiology
11:30 - 11:45 AM #68 Mathew Sunil Varre, Kinesiology
11:45 - 12:00 PM #69 Hui-Ting Shih, Physical Therapy
60. Colorectal Cancer Survival in the Mountain West State of Nevada
Karen Callahan | Environmental and Occupational Health

Background: No study to date has characterized the colorectal cancer (CRC) survival burden in the rapidly growing Mountain West state of Nevada (NV). The current study aims to characterize CRC survival in Nevada, using Nevada Central Cancer Registry data augmented with linkages to the National Death Index.

Methods: 5-year cause-specific overall and stage-specific survival was calculated and stratified by region of NV (Northwestern, Southern, and Rural). Treatment according to Guidelines (TAG) was assessed for AJCC Stage I-III tumors by examination of receipt of radiation, chemotherapy and surgery by stage in accordance with national guidelines. To identify factors impacting survival, multivariate Cox proportional hazards regression models were constructed, adjusting for relevant covariates.

Results: 12,413 cases of CRC diagnosed in NV between 2003-2013 were identified. 77% were non-Hispanic white, 39% younger than age 65, and 66% from Southern Nevada. Of the 8480 tumors diagnosed in AJCC Stages I-III, only 36% received TAG; 39% did not, and 26% did not have complete treatment information. Overall 5-year CRC survival in NV was 56% among males and 60% among females, significantly lower than 65% and 67% survival in the SEER-18 catchment area for the same period. All racial/ethnic groups in NV had significantly lower survival than their counterparts nationally except Asian and Filipino women. Notably, Northwestern Nevada had approximately equivalent survival to national levels. For tumors diagnosed in AJCC stages I-III, Southern and Rural Nevadans were at 20% and 37% significantly higher risk of death from CRC, respectively, compared to their counterparts in Northwestern Nevada. Adjusting for receipt of TAG, the risk of death was attenuated but still 14% and 28% higher. Conclusions: Efforts to identify and remediate the causes of the disproportionately low survival among CRC patients in populous Southern Nevada as well as the rural areas are urgently required.

Philip Danquah | Environmental and Occupational Health

Introduction: The objective of this research is to address the variations in the injection route of administration among racial groups who are injection drug users in the United States and how that contributes to their vulnerability to HIV/AIDS behaviors and hospital admissions. Data Collection: Responses were collected from 96 urban areas among injection drug users in the United States. The dataset: The Community Vulnerability and Responses to Drug-User-Related HIV/AIDS, 1990-2013 [96 Metropolitan Statistical Areas, United States] (ICPSR 36575) 1 was used. Methods: A comparative trend analysis assessed the various route of administration among four racial groups (Blacks, Latinos, Whites, and other races), who are injection drug users, in the United States. Utilizing a stepwise model building procedure in SPSS version 24, ANOVA test calculated the various coefficients and means using four linear regression models that were compared. Results: Whites were statistically significantly associated with injection as a tertiary route of administration for heroin, crack, or cocaine (β=0.004, P<0.05, P=0.002, 95% CI: 0.001 -0.006) than Blacks, Latinos, and other races. All racial groups were observed with statistical significance for injection as a primary route of administration (P<0.05, P=0.000), but Whites who are injection drug users were more likely to have been prescribed hospital admissions for utilizing both tertiary and primary injection route of administration (P<0.05, P=0.000) than any other racial group in the United States. Conclusion: It’s imperative to understand the true likelihood of injection route of administration among racial groups that is crucial for attaining successes in HIV prevention.
62. The Association between Telomere Length, 21 Nutrients and a Healthy Eating Index
Saruna Ghimire | Environmental and Occupational Health

Preservation of telomere length, a biomarker of aging, is hypothesized as one pathway by which proper nutrition can delay/prevent the development of chronic disease. The current study aimed to comprehensively examine a large variety of nutrients for their potential to preserve telomere length. Additionally, the association between telomere length and healthy eating was examined. Methods: Cross-sectional data on 6645 non-pregnant adults were included from the National Health and Nutrition Examination Survey, 1999-2002. Nutrient intake measures were energy-adjusted using the residual method to minimize measurement error in dietary estimates. The Healthy Eating index score (range: 0-100) was compiled per Dietary Guidelines for Americans 2001. Results: In a linear regression model, adjusted for demographics, health-related behaviors and C-reactive protein, intake of potassium (β= 0.1104347; 95%CI: 0.0240812, 0.1967882), Vitamin B2 (β= 0.0901791; 95%CI: 0.0053695, 0.1749888), Vitamin B6 (β= 0.0724068; 95%CI: 0.0081196, 0.136694), total fat score (β= 0.0122125; 95%CI: 0.0028288, 0.0215962), and the overall healthy eating index score (β= 0.0040716; 95%CI: 0.0009278, 0.0072154) were positively associated with telomere length. In sensitivity analyses, we found that compared to those who met the recommended dietary intake levels, individuals with less than the recommended intake of Vitamin B2 (β= -0.1141968; 95%CI: -0.2092438, -0.0191497) and Vitamin B6 (β= -0.0949459; 95%CI: -0.1699573, -0.0199345) had shorter telomeres. Conclusions: Our findings suggest that certain nutrients as well as healthy eating in general are associated with preservation of telomere length. Health gains associated with telomere preservation could potentially be achieved relatively easily through nutritional supplementation and promotion of healthy diets.

63. The use of social marketing campaigns to increase HIV testing uptake: A systematic review
John Olawepo | Environmental and Occupational Health

Social marketing campaigns have been increasingly used in HIV prevention efforts to address barriers to HIV testing. The purpose of this review was to evaluate the social marketing campaigns in the past ten years (2008–2017) that have targeted HIV testing as an outcome, and synthesize the results to determine what works. The search was conducted using PubMed, Scopus, PsycINFO, EMBASE, and ABI/Inform, with the Effective Public Health Practice Project tool used to assess the quality of the studies. The search generated 373 articles, of which 13 articles met the inclusion criteria. These articles were from nine countries, twelve of which were in high income countries. Sixty-nine percent (n = 9) of the campaigns targeted MSM, gay men, or MSMW, 23% (n = 3) targeted the general population, while 8% (n= 1) focused on African-American women. The study designs for evaluating the campaigns were predominantly cross-sectional, with 4 of the articles combining two or three study designs. Overall, 38% (n = 5) of the campaigns had an increase in HIV testing outcomes, 23% (n = 3) reported no change in HIV testing outcomes, and the remaining 38% (n = 5) of the studies reported mixed outcomes. This review displayed that social marketing campaigns intended to increase HIV testing uptake were effective in some context. Social marketing practitioners will need to come up with a standardized way of communicating the results of campaign exposure and impact so as to enhance comparison among the multitude of campaigns.
64. Variability as a function of neuroplasticity: implications for motor learning and performance
Jason Avedesian | Kinesiology

“Variability as a function of neuroplasticity: implications for motor learning and performance” explores how movement variability can be enhanced by motivational and attentional focus in a clinical setting. Specifically, we discuss the role of functional variability as it relates to autonomy supported language, positive feedback, and external focus of attention. From this presentation, we hope our audience is able to learn the following concepts: functional variability is a function of instruction, motivational and attentional factors directly affect movement quality, and movement pattern variability is functional for adaptation to changing constraints. We also discuss the associated biomechanical research on functional movement variability that has been conducted in relation to injury risk and performance during sport and clinical settings. Specifics include how instructional cuing can mitigate injury risk to the lower extremity, specifically the anterior cruciate ligament, and future research directions to better understand how motor learning principals may affect movement output in sport. It is commonplace for researchers in motor learning and biomechanics to not collaborate, even though the two fields are directly related. Our presentation will help build the necessary connections between motor learning and biomechanics to establish better practices for researchers, practitioners, and clinicians.

65. An analysis of squat mechanics between individuals with high and low strength levels
Kevin Choe | Kinesiology

The purpose of this study was to compare frontal plane squat mechanics between strong and weak individuals during the BS. METHODS: Twenty-eight individuals (17 males and 11 females, 23.42±3.34 yrs., 1.72±0.09 m, 73.20±11.41 kg) who consistently performed the BS were recruited for this study, and were categorized into strong (n=14, 23.00±0.08yrs, 1.69±0.09m, 71.97±11.80kg) and weak (n=14, 23.86±3.86yrs, 1.76±0.08m, 74.43±11.32kg) groups using a median split of BS 1-repetition-maximum (1RM) normalized to body mass. Dimensional assessment of squatting mechanics were performed during 2 sets of 3 repetitions of the BS at 70% and 85% 1RM in a random order. The average of the second repetitions of each set was used for analysis. Dependent variables included the peak knee abduction angle and external moment, and peak hip adduction angle and external moment. 2 (group) x 2 (load) mixed model ANOVA was used to compare peak external knee abduction moments and angles, and peak external hip adduction moments and angles at 70% and 85% 1RM. RESULTS: Group x load interactions were not significant for peak knee abduction angles (F 1,26 =1.05, p=0.31) and moments (F 1,26 =0.61, p=0.44), or for peak hip adduction angles (F 1,26 =0.87, p=0.61) and moments (F 1,26 =0.11, p=0.79). There were also no main effects. Results suggest that strong and weak individuals have similar frontal plane hip and knee mechanics during the BS at 70% and 85% 1RM. However, these loads were relatively similar, and loads greater than 85% 1RM are frequently used in exercise programs. Differences may also become evident during repetitions closer to failure.
66. Onward and upward: Optimizing motor performance
Lee-Kuen Chua | Kinesiology

In the OPTIMAL theory of motor learning (Wulf & Lewthwaite, 2016), three factors are postulated to facilitate motor performance and learning: Enhanced expectancies (EE) for performance, autonomy support (AS), and an external focus (EF) of attention. We examined whether EE, AS, and EF would have immediate performance benefits and whether implementing these factors consecutively would lead to incremental performance increases. Participants were assigned to the optimized or control groups and performed a maximal jump. After the first trial block (baseline), optimized group participants were provided different conditions on each of the following 3 blocks: (a) Positive social-comparative feedback (EE); (b) choice of figure on the ground from which to jump (AS); and (c) instructions to focus on a marker on their waist (EF). The order of conditions was counterbalanced. Control group participants performed all 4 blocks under the same (control) condition. The optimized group outperformed the control group on Blocks 2–4. Moreover, their jump height increased with each addition of another variable, whereas it did not change across blocks in the control group. Thus, EE, AS, and EF had additive or incremental benefits for performance. The findings corroborate the importance of key variables in the OPTIMAL theory for motor performance.

Cordero Roche, Leland Barker, John A. Mercer | Kinesiology

Aquatic exercise is used by a wide variety of people from rehabilitation to plyometrics. PURPOSE: The aim of this study was to examine the influence of water submersion on lower extremity electromyography (EMG) signals during plyometrics. METHODS: A single subject (male, height: 170-cm, weight: 81.8-kg) completed all conditions. The subject completed two plyometric exercises (countermovement jump, drop jump) during the two environmental conditions (on land and water). Electromyography (EMG) signals were recorded from four muscles (rectus femoris (RF), bicep femoris (BF), gastrocnemius (GA) and tibialis anterior (TA)) were measured during countermovement and drop jumps while on land and in water. The subject when ready performed three countermovement jumps and three drop jumps from 12-inch platform on land and in shallow water. The water level in the pool was about navel high. RESULTS: Muscle activity was not different for the muscles measured between land or water for either countermovement jump and drop jumps. While comparing countermovement jumps and depth jumps between water and land the time to maximum flexion was not different. CONCLUSION: No difference in muscle activity found when performing countermovement jump and depth jumps in water or land. No change in maximum knee flexion was observed also. The findings seem to indicate that movement were done in a similar manner on land and in water.
68. Estimating Walking Speed Using a Single Camera in the Plane of Progression
Mathew Sunil Varre, Jessica DeBerardinis, Daniel E. Lidstone, Ashley Trotter, Mohame Trabia, Janet S. Dufek | Kinesiology

Walking speed is frequently measured by clinicians and physicians to assess and identify differences between pathological and non-pathological gait. Current measurement techniques include stop watch and tape measure, automated timers, accelerometry, and two and three-dimensional motion analysis techniques. We demonstrated a novel measurement technique that can be used in a constrained setting to estimate the walking speed of individuals with good reliability. The aim of the study was to demonstrate a novel approach to determine walking speed using a single camera aligned with the plane of progression of walking. The camera was first calibrated to the capture space by recording high definition (HD) video of a checkerboard with black and white squares. Still images of checkerboard in multiple orientations were used to calibrate the camera. The calibrated camera was then used to record HD videos of fifty participants (23 males and 27 females; 59.5 ± 12.2 years; 76.5 ± 25.6 kg) while they performed 5 consecutive walking trials on a 10 m long walkway. Pixels points of heel contact at 3m and 7m were used as first and last steps respectively. A custom algorithm was written to automate the pixel mapping to real world units and to calculate the walking speed for each trial. We observed a mean walking speed of 0.91 ± 0.19 m/s for all the participants. The measurements were found to have excellent test-retest reliability. The technique described will be beneficial to measure walking speed in clinical settings with constrained spaces.

69. Effect of Age and Body Mass Index on Mobility in Middle to Older Age Adults with and Without Lower Limb Amputation
Hui-Ting Shih | Physical Therapy

Age and BMI are critical to functional mobility, influencing both daily activities and endurance. The general trend is that with older age and higher BMI, both amputees and non-amputees demonstrate degraded functional mobility. However, the rate of mobility decline and onset of increased fall risk have not been compared between the amputee and non-amputee populations. Participants: Twenty middle-aged to older individuals with amputation and 243 age-similar adults participated.

Methods: Their age, BMI and Timed up-and-go (TUG) performance were recorded. We regressed TUG time on age and BMI for both groups in order to identify significant models and predictors of functional mobility.

Results: In amputees and non-amputees, significant regression models with age and BMI were found. Age and BMI were significant predictors of TUG. The cut-off points of TUG in screening high fall risk ranges from 7.94 to 31.9 seconds across a wide variety of clinical populations. Given the high fall risk in amputees, using 8 seconds as the threshold and a BMI range from 25 to 35 kg/m^2, a person with lower limb loss would be under the risk of falling around ages 34 to 53. At the age of 65, people with lower limb loss will likely have elevated risk to fall regardless of their BMI. Conclusion: In middle-aged to older people with and without amputation, age and BMI are significant predictors of TUG performance. Comparatively, the onset of fall risk in amputees is much earlier than age-matched or BMI-matched cohorts.
Science & Health Science Poster
Session B – Ballroom

PRESENTATIONS:

9:15 - 9:30 AM  #70 Jeffery Coon, School of Dental Medicine
9:30 - 9:45 AM  #71 Bryan Morrison, School of Dental Medicine
9:45 - 10:00 AM #71 Jordan Ringer, School of Dental Medicine
10:30 - 10:45 AM #72 Danielle Arceo, School of Medicine
10:45 - 11:00 AM #73 Monica Arebalos, School of Medicine
11:00 - 11:15 AM #74 William Fang, School of Medicine
11:15 - 11:30 AM #75 Lauren Hollifield, School of Medicine
11:30 - 11:45 AM #76 Darlene Julian, School of Medicine
11:45 - 12:00 PM #77 Raina Rappel, School of Medicine
70. MiR-365 (microRNA) Effects on Oral Squamous Cell Carcinoma Phenotypes.
Jeffery Coon | School of Dental Medicine

Background: miR-365 is a long non-coding RNA that regulates transcription and has been demonstrated to promote oncogenesis and metastasis in some cancers, while suppressing these effects in others. For instance, miR-365 promotes growth and metastasis in both liver and skin cancers, but may function to suppress these effects in some lung, bone, brain and breast cancers. Virtually no information is known about the presence or function of miR-365 in oral cancers. Objective: Based upon this information, the primary goal of this project was to evaluate the expression of miR-365 in existing oral cancer cell lines. Methods: RNA was extracted from five commercially available oral cancer cell lines (SCC4, SCC9, SCC15, SCC25, and CAL27) and the RNA was screened by PCR using primers specific for miR-365, as well as primers specific for matrix metalloproteinase (MMP-2), extracellular matrix (ECM) components and the glycolytic pathway enzyme glyceraldehyde-3-phosphate dehydrogenase (GAPDH). Normal (non-cancerous) human gingival fibroblasts (HGF-1) were also screened. Results: miR-365 was not expressed in the normal gingival fibroblasts, but was differentially expressed in all five oral cancer cell lines. In addition, expression of MMP-2 correlated with the expression of miR-365 – as were growth rates and cellular viability. However, the expression of extracellular matrix proteins Laminin-5 and Fibronectin was not correlated. Based upon these observations, PCR was utilized to generate large amounts of mir-365 RNA and DNA, which was transfected into all cell lines. Differential results were observed, although both miR-365 RNA and DNA were sufficient to increase growth in most oral cancer cell lines. Conclusions: These results suggest that miR-365 may contribute to the metastasis of oral cancers as mRNA expression of miR-365 appears to correlate with MMP2 expression, growth and viability – while transfection of miR-365 RNA or DNA enhanced these cancerous phenotypes. Future research will investigate these mechanisms and pathways.

71. Hyaluronic Acid May Synergistically Suppress Oral Squamous Cell Carcinoma Growth
Bryan Morrison, Jordan Ringer, Karl Kingsley | School of Dental Medicine

Background: Previous studies have demonstrated the glycosaminoglycan Hyaluronic Acid (HA) capable of mediating oral tumor growth. Some clinical evidence has suggested reduced HA expression predicts poor cancer prognosis and that HA-chemotherapy conjugates may function synergistically to inhibit oral tumor growth. Other studies have found conflicting results that suggest enhanced CD44-HA-mediated growth and proliferation. Objective: Due to the lack of clarity regarding HA function, the primary goal of this study was to investigate the effects of HA using well-characterized oral cancer cell lines. Methods: Using four commercially available oral squamous cell carcinoma lines (and a normal non-cancerous control) 96-well growth and viability assays were conducted using HA (alone and in combination with chemotherapeutic agents Paclitaxel and PD98059). Results: Differential results were observed in each of the cell lines evaluated. For example, the addition of HA reduced SCC9 growth and viability nearly 19%, while the combination of HA-PD98059 exerted an even greater effect (67.5%) than PD98059 alone (-55%). Similar results were observed with SCC25, with HA inducing decreased growth and viability (-18%), with a magnified effect observed using the combination of HA- Paclitaxel (-37%) - which was greater than the effect of Paclitaxel alone (-31%). However, the effects of HA in the other cell lines (CAL27, SCC15) were not similar and were not statistically significant. Conclusion: Although much remains to be elucidated, these findings suggest that HA may, in fact, exert both pro- and anti-tumor growth and viability effects in oral squamous cell carcinomas. Using these well-characterized oral cancer cell lines will help researchers to determine the biological pathways, mechanisms and biomarkers that underlie these phenomena. These future studies will allow oral healthcare researchers and clinicians to more accurately assess and treat oral cancers with the most efficient and effective means of treatment.
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Objective: Due to the lack of clarity regarding HA function, the primary goal of this study was to investigate the effects of HA using well-characterized oral cancer cell lines.

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Results: Differential results were observed in each of the cell lines evaluated. For example, the addition of HA reduced SCC9 growth and viability nearly 19%, while the combination of HA-Paclitaxel exerted an even greater effect (67.5%) than PD98059 alone (-55%). Similar results were observed with SCC25, with HA inducing decreased growth and viability (-18%), with a magnified effect observed using the combination of HA- Paclitaxel (-37%) - which was greater than the effect of Paclitaxel alone (-31%). However, the effects of HA in the other cell lines (CAL27, SCC15) were not similar and were not statistically significant.

Conclusion: Although much remains to be elucidated, these findings suggest that HA may, in fact, exert both pro- and anti-tumor growth and viability effects in oral squamous cell carcinomas. Using these well-characterized oral cancer cell lines will help researchers to determine the biological pathways, mechanisms and biomarkers that underlie these phenomena. These future studies will allow oral healthcare researchers and clinicians to more accurately assess and treat oral cancers with the most efficient and effective means of treatment.

72. Healthy Interpersonal Relationships for Students and Loved Ones through Medical School-Facilitated Programs and Resources
Danielle Arceo | School of Medicine

A 2016 meta-analysis (Rotenstein) estimated that 27.2% of medical students experienced depressive symptoms, and 11.1% experienced suicidal ideation throughout their medical tutelage. Research has consistently indicated a strong connection between mental health and interpersonal relationships (Markowitz, 2012). Because of the stressors and potential relational strains involved with the medical school experience, from its inception, the UNLV School of Medicine purposed to emphasize relationships in its environment. UNLV-SOM specifically hired relationship-minded faculty and is incorporating relationship-oriented elements into its curriculum to help students build and maintain their personal support networks. To this end, workshops such as the Relationships in Medicine Seminar and tools including the MyMDtoBe system are offered to students to help facilitate support for them and their loved ones throughout their education. The workshops and tools offer practical relational guidance for navigating medical school stressors. Additionally, UNLV-SOM ensures that all incoming faculty are familiar with the same relationship-oriented values to implement in the relationships they build with each other and with students. Data is being collected at this time.
Incoming first year medical students begin their medical education with an Immersion course that combines an emergency technician course with a population health course. The purpose of the population health section is to introduce students to public health, the Las Vegas Community, and the disadvantaged and underserved populations they will be serving. By placing the students directly in select neighborhoods, it encourages engagement of both the students into the community but also community members and organizations into the UNLV School of Medicine. While participating in community learning, students begin to formulate the basis for clinical questioning and application of evidence-based medicine to provide quality healthcare to individuals and populations.

Parkinson’s disease affects approximately one million Americans and 10 million people worldwide. A devastating disease that damages neurons in the brain, current medications for Parkinson’s have only been proven to treat symptoms, not cure the actual disease. This means that eventually in a patient’s lifetime, the current medications will stop working for them. In a unique approach to the problem, a fat burner is currently being explored as an alternative drug for Parkinson’s. This specific fat burner releases energy from the body as heat, essentially making cells in the body work overtime. However, if given too much, the body cannot adapt to such a high workload and the drug could be lethal. Interestingly, this fat burner theoretically can stimulate specific pathways in the brain that help build neurons stronger (the same ones affected in Parkinson’s), possibly even recover damaged neurons. Our goal was to see if certain fat burner derivatives had any effect on mice models with Parkinson’s, as well as determine if a specific dose was optimal to recovery. The drug was given preemptively to mice models before Parkinson’s was simulated. Mice were monitored for approximately a month. Results showed the prodrug significantly improved functional movement in the mice and reduced the loss of neurons. Specifically, a low dose was most effective. Future direction can be directed towards researching how these neurons regenerate and what would be the best timeline to induce the drug regimen.
75. Acute Popliteal Thrombus Following Total Knee Arthroplasty: A Case Report
Lauren Hollifield, MS, Julius Oni, MD  | School of Medicine

The most common complications following total knee arthroplasty (TKA) include infection, dislocation/fracture, and deep venous thrombosis (DVT). Albeit rare (0.057%), a thrombus associated with TKA may occur in the popliteal artery. In the following case, we report the youngest documented patient (38 years old) to develop an acute popliteal artery thrombus following primary TKA. 

Case Presentation: The patient presented for a primary right TKA. Past medical history was positive for a previous tibial plateau fracture with open reduction internal fixation, two knee arthroscopies, subsequent removal of hardware, and an elevated BMI (37.53). A right TKA was performed successfully, and there were no obvious intraoperative complications. Two hours post-operatively, the right foot was poikilothermic and lacking a dorsalis pedis pulse. Comp Top angiogram and venous duplex confirmed a thrombus in the popliteal artery. Thrombectomy was promptly performed by vascular surgery, and the limb was promptly revascularized.

Discussion: Thromboembolic events involving the popliteal artery following TKA are rare. Standard practice is to evaluate pre-operative arterial status and to ensure patient optimization for surgery. Previous vascular injury or peripheral arterial disease, strong risk factors, were not identified in this patient. Prior surgery and obesity may have increased this patient’s risk of acute thrombus formation. Conclusion: Due to the lack of significant past medical history putting this patient at risk, further research should focus on prior trauma, age, and BMI as risk factors, specifically in patients undergoing TKA. The benefits of TKA significantly outweigh the risks; however, complications with TKA remain realistic.

76. Mindfulness in Medicine: Medical Students Putting Mind-Body Medicine into Practice
Darlene Julian | School of Medicine

The Mind Body Group builds medical students into well-rounded doctors who are balanced physically, mentally, emotionally, and spiritually. Teaching students about wholesome self-care translates over into their roles as physicians, where they will become the teachers and share their knowledge with the communities they serve. The Mind Body Group focuses on teaching students self-care through didactic and experiential sessions. This small group provides emotional support while teaching students the science and practice of different mindfulness techniques. A wellness mentor instructs didactic and experiential sessions on sitting meditation, biofeedback, soft belly breathing, guided imagery, mindful eating, moving meditation, autogenic training, and spirituality. Each session begins and ends with meditation and suggestions for home practice. The outcomes are for medical students to gain a deeper connection and understanding of themselves, and have better tools to handle stress in their lives. These skills help develop students into well-rounded physicians, who can be authentic and present in life and with patients. The eight-week duration encourages students to integrate mindfulness into a long-term practice. A strength of this design is that the mentor selects students who show interest and dedication to self-development, and have agreed to be consistent in their attendance. The bonds between medical students are strengthened by students recognizing common struggles and providing mutual support for each other. The group is not mandatory, and the design includes mindfulness techniques that are easily integrated into any medical student’s life, no matter the student’s age, race, religion, gender, or spiritual belief system.
To implement a novel medical school orientation program that is preferred by students and faculty, compared to traditional orientation programs. Background Most medical schools have a 2-3 day orientation program for incoming first year students. UNLV SOM implemented a unique, once-per-week orientation program incorporated into a six-week introductory block. Design five themed sessions, once per week over five weeks. Many trainings (e.g., HIPAA, OSHA) are completed online by students prior to orientation to maximize the use of class time. Outcomes The orientation program was the highest rated portion of the six-week introductory block, rated 5.0 out of 5.0 by students. Faculty also reported positive feedback, including increased ease of implementation compared to traditional 2-3 day programs. Strengths We propose that a once per week orientation program is less overwhelming and more engaging for students, improving their retention and understanding of the material presented. Limitations include students not completing orientation until the fifth week of school, so there may be aspects of the medical school environment that are not necessarily known to students until the end of the orientation block. Feasibility/Generalizability This can be implemented at any medical school with no added cost, and may be generalized to other professional/graduate programs. This provides an opportunity to present more material to students, so additional participation from faculty may be required.
INDEX

Graduate & Professional Student Research Forum
2019
<table>
<thead>
<tr>
<th>Name</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abdelhaleem, Shaimaa</td>
<td>4</td>
</tr>
<tr>
<td>Achhami, Abhusan</td>
<td>84</td>
</tr>
<tr>
<td>Alver, Amalie</td>
<td>13</td>
</tr>
<tr>
<td>Arceo, Danielle</td>
<td>96</td>
</tr>
<tr>
<td>Arebalos, Monica</td>
<td>97</td>
</tr>
<tr>
<td>Arroyo, Michelle</td>
<td>45</td>
</tr>
<tr>
<td>Arshad, Rosnidar</td>
<td>46</td>
</tr>
<tr>
<td>Avedesian, Jason</td>
<td>91</td>
</tr>
<tr>
<td>Barakat, Sabrina</td>
<td>80</td>
</tr>
<tr>
<td>Bejinariu, Alexa</td>
<td>26</td>
</tr>
<tr>
<td>Belisle, Linsey</td>
<td>27</td>
</tr>
<tr>
<td>Benedict, Laura</td>
<td>57</td>
</tr>
<tr>
<td>Boren, Austin</td>
<td>64</td>
</tr>
<tr>
<td>Boyer, Cassandra</td>
<td>77</td>
</tr>
<tr>
<td>Buck, Jennifer John</td>
<td>68</td>
</tr>
<tr>
<td>Burdiss, LaToya</td>
<td>48</td>
</tr>
<tr>
<td>Butrico, Hillary</td>
<td>52</td>
</tr>
<tr>
<td>Cahall, Carrieanne</td>
<td>59</td>
</tr>
<tr>
<td>Callahan, Karen</td>
<td>89</td>
</tr>
<tr>
<td>Carfagno, Nicholas</td>
<td>64</td>
</tr>
<tr>
<td>Chato, Lina</td>
<td>86</td>
</tr>
<tr>
<td>Chaudhry, Sharang</td>
<td>4</td>
</tr>
<tr>
<td>Chen, Yen-Ling</td>
<td>65</td>
</tr>
<tr>
<td>Chiang-Lopez, Claudia</td>
<td>76</td>
</tr>
<tr>
<td>Choe, Kevin</td>
<td>91</td>
</tr>
<tr>
<td>Choi, Sinyong</td>
<td>27</td>
</tr>
<tr>
<td>Christensen, McKade</td>
<td>35</td>
</tr>
<tr>
<td>Chua, Lee-Kuen</td>
<td>92</td>
</tr>
<tr>
<td>Clayton, Christa</td>
<td>24</td>
</tr>
<tr>
<td>Clouse, Stacey</td>
<td>28</td>
</tr>
<tr>
<td>Coon, Jeffery</td>
<td>95</td>
</tr>
<tr>
<td>Cox, Shae</td>
<td>34</td>
</tr>
<tr>
<td>Craig, Lyndsey</td>
<td>57</td>
</tr>
<tr>
<td>Cummins, Allina</td>
<td>10</td>
</tr>
<tr>
<td>Curran, Joseph</td>
<td>34</td>
</tr>
<tr>
<td>Dahal, Binay</td>
<td>16</td>
</tr>
<tr>
<td>Danquah, Philip</td>
<td>89</td>
</tr>
<tr>
<td>Daulat, Shilpa</td>
<td>10</td>
</tr>
<tr>
<td>DeBeradinis, Jessica</td>
<td>86</td>
</tr>
<tr>
<td>dos Santos, Ana Paula Loures</td>
<td>47</td>
</tr>
<tr>
<td>Dudinskaya, Tanya</td>
<td>78</td>
</tr>
<tr>
<td>Edalgo, Aislin</td>
<td>58</td>
</tr>
<tr>
<td>Eddy, Jacqueline</td>
<td>53</td>
</tr>
<tr>
<td>Erlingsson, Haftor</td>
<td>35</td>
</tr>
<tr>
<td>Fang, William</td>
<td>97</td>
</tr>
<tr>
<td>Farewell, Jordyn</td>
<td>11</td>
</tr>
<tr>
<td>Fink-Arnold, Andrea</td>
<td>65</td>
</tr>
<tr>
<td>Fornander, Mirae</td>
<td>66</td>
</tr>
<tr>
<td>Friel, Ariel</td>
<td>8</td>
</tr>
<tr>
<td>Galante, Marina</td>
<td>66</td>
</tr>
<tr>
<td>Garcia, Breanna</td>
<td>67</td>
</tr>
<tr>
<td>Gavrilova, Elena</td>
<td>67</td>
</tr>
<tr>
<td>Ghimire, Saruna</td>
<td>90</td>
</tr>
<tr>
<td>Gilmore, Heather</td>
<td>28</td>
</tr>
<tr>
<td>Gnativ, Dmytro</td>
<td>59</td>
</tr>
<tr>
<td>Hastings, Alice</td>
<td>60</td>
</tr>
<tr>
<td>Hightower, Andromeda</td>
<td>44</td>
</tr>
<tr>
<td>Hinojosa, Juanita Jasso</td>
<td>51</td>
</tr>
<tr>
<td>Hoang, Nam</td>
<td>3</td>
</tr>
<tr>
<td>Hollifield, Lauren</td>
<td>98</td>
</tr>
<tr>
<td>Hussey, Julia</td>
<td>68</td>
</tr>
<tr>
<td>Immak, Joy</td>
<td>81</td>
</tr>
<tr>
<td>Isaacs, Michael</td>
<td>8</td>
</tr>
<tr>
<td>Jimenez, Jonathan</td>
<td>21</td>
</tr>
<tr>
<td>Johnson, Frank</td>
<td>41</td>
</tr>
<tr>
<td>Julian, Darlene</td>
<td>98</td>
</tr>
<tr>
<td>Kaneshiro, Cody</td>
<td>70</td>
</tr>
<tr>
<td>Kaya, Erdogan</td>
<td>45</td>
</tr>
<tr>
<td>Kazemeini, Monia</td>
<td>87</td>
</tr>
<tr>
<td>Keen, Jaclyn</td>
<td>31</td>
</tr>
<tr>
<td>Kennedy, Logan</td>
<td>29</td>
</tr>
<tr>
<td>Kenway, Jenessa</td>
<td>40</td>
</tr>
<tr>
<td>Kha, Cindy</td>
<td>6</td>
</tr>
<tr>
<td>Kidwell, Josiah</td>
<td>22</td>
</tr>
<tr>
<td>Killion, Andrew</td>
<td>38</td>
</tr>
<tr>
<td>Kim, Esther</td>
<td>36</td>
</tr>
<tr>
<td>Kim, Eun Joo</td>
<td>36</td>
</tr>
<tr>
<td>Krumm, Alek</td>
<td>19</td>
</tr>
<tr>
<td>Kulhanek, Kirsty</td>
<td>70</td>
</tr>
<tr>
<td>Lai, Dengxun</td>
<td>82</td>
</tr>
<tr>
<td>Langa, Neema</td>
<td>74</td>
</tr>
<tr>
<td>Lee, Brittani</td>
<td>53</td>
</tr>
<tr>
<td>Lee, Choonghan</td>
<td>87</td>
</tr>
<tr>
<td>Leisgang, Amanda</td>
<td>71</td>
</tr>
<tr>
<td>Li, Chengcheng</td>
<td>44</td>
</tr>
<tr>
<td>Lindenburg, Gary</td>
<td>39</td>
</tr>
<tr>
<td>Loan, Leisa</td>
<td>40</td>
</tr>
<tr>
<td>Longoria, Bridget</td>
<td>22</td>
</tr>
</tbody>
</table>
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