Graduate Research & Arts Symposium

Friday, April 15th, 2016

Presented by the Graduate Student Council


Graduate
Research & Arts
Symposium
Friday, APRIL 15TH
ORAL PRESENTATIONS
1:30-4:30, Corbett Center 3rd Floor:
Senate Chambers & Senate Gallery
Light Refreshments Served
RECEPTION 5:00-8:00 PM
Stan Fulton Center, 3rd Floor Bistro
Free Food, Drinks, Poster Presentations,
Free Gift Card Raffle
Main meal starts at 5:30 PM
PosterMyWall.com

Overview of Events

Event	Time	Location
Oral Presentations	***1:30-4:30 PM***	**Corbett Center Senate Chambers & Senate Gallery**
Reception	***5:00-8:00 PM***	**Stan Fulton Center 3rd Floor Bistro**
Main Meal	***5:30 PM***	
Poster Presentations		
Session 1	***6:00-6:45 PM***	
Session 2	***7:00-7:45 PM***	
Prize Drawings *Must be present to win	***7:45 PM***	

Oral Presentations

Corbett Center 3rd Floor Senate Chambers & Senate

Time	Senate Chambers	
1:30	A Case Study of Developing Self-Efficacy in Writing Proof Frameworks *Ahmed Benkhalti, Annie Selden, & John Selden* We document the progression of one non-traditional student's proof-writing over a semester. Videotapes of this individual's one-on-one sessions working through the transition-to-proof course notes were analyzed. Proof construction was viewed a sequence of (mental, as well as physical) actions, and proof frameworks were used to initiate the writing of proofs. This student's early reluctance to use proof frameworks was documented, as well as her later acceptance of, and proficiency with, them. By the end of the first semester, she had developed considerable facility with the construction of moderately difficult proofs and had developed a sense of self-efficacy.	Mathematics
1:40	Online Course Design *Nouf Alsuwaida* This paper discusses the online course design as a form of distance learning. Also, it is highlight how the online communities are the social presence and Identity, collaborative learning, shared goals and resources, learning styles, policy and guidelines, communication and interaction. It includes pre-class information (orientation, syllabus, interaction, feedback, sequence, the role of technology, technological requirements standards and Rubrics. The course, with its clear plan and standards, will help the students learn the topics planned through interaction and self-evaluation. It will also stimulate research interests in students and help them explore the topics outside the course, paving the way for a better understanding of the topic. The course will also take into account the numerous hindrances to online learning and facilitate learning in an active environment where the students will be required to participate and improve their knowledge of the subject.	Curriculum & Instruction
1:50	Unveiling Stereotypes in Children's Books with Bilingual Elementary Students through Critical Discourse Analysis *Johanna Esquivel* This presentation will linguistically and visually examine the manifestations of language and power discourses in media by utilizing critical discourse analysis (CDA) as a tool to dismantle media misrepresentations intertwined within an ideological framework comprised of race, ethnicity, gender, and class. The aim of this study is twofold: first, to engage Mexican third grade bilingual students in critical	Curriculum & Instruction

	media literacy while learning their second language— English or Spanish. Second, to critically interpret the hidden messages in pictures and texts that instigate the reproduction stereotypes. The research took place with third grade bilingual students in an elementary school in the Southwest of the United States. "Film, television, newspapers…do not merely entertain us. They are also teaching machines that offer interpretations of the world and largely function to produce a public with limited political horizons" (Giroux, 2015). Children are influenced by "visual representation" (Hall, 1997) processes. Through "text, discourse practice and social practice" (Fairclough, 1992), discourse become a "mode of action" (Fairclough, 1992) or "human activity inextricably related to the use of language" (Bakhtin, 1986) that help us describe the world and to reconstruct new identities. Through read-alouds, and collaborative group work, bilingual children distinguished stereotypes while enhancing their second language.	
2:00	Research for What, if Not to Forge a Better World with Love for All? *Perla Barbosa & Debasmita Roychowdhury* Knowledge for What? by Robert Lynd (1939) questions the irrelevance of social science research for solving society's real problems. This same question applies as well today as it did 75 years ago. Social and educational research have become so embedded in the academic establishment that social responsiveness is no longer an indispensable objective of research projects. By and large, social relevance may be implied but in reality not pursued by researchers. Therefore, the purpose of this presentation is to demonstrate through argumentation three major points: 1) Conventional education research is increasingly irresponsive to human and social problems, and by extension love and a commitment to social justice are factors to be shunned rather than embraced in the research process; 2) Participatory Action Research (PAR) or Research as Praxis is a socially responsive paradigm of research grounded in grassroots participatory democracy and transformative action for the public good; 3) Based on these underlying principles, PAR projects deeply embrace love, respect, recognition, trust, and confidence in participants' capacity to understand their worlds, and work to improve life conditions both for themselves and in their public interest.	Curriculum and Instruction
2:10	Identity and Literacy in two Bilingual Classrooms *Adriana Goenaga Ruiz de Zuazu* Two participatory action research studies are presented that look at discourses in two bilingual classrooms of public elementary schools, one in Southwestern United States and the other one in northern Spain, both implementing a 50-50 model in Spanish and English. These studies were carried out with an emphasis on third-grade bilingual students' biliteracy and use of their two languages through literacy discussions. The theoretical grounding of these studies sits on Fairclough's (1992) discourse and social theory. Specifically, I analyze discourse and social practices occurring in the classroom that are reflective of the broader context. Additionally, it is essential to mention Gutiérrez's (2008)	Curriculum and Instruction

	understanding of the construction of "third places" as the basis on encouraging students to use their entire linguistic repertoire to make meanings and to envision their place in a multilingual and multiliterate world. Consequently, translanguaging (García, 2009), was developed within the group discussions to make a message across, to make emphasis on an idea or to make a strong point, and to show empathy with others. The findings of the study are in relation to themes of language acquisition and identity, translanguaging practices, power relations and gender issues, and immigration issues.	
2:20	Sn to Sg Conversion at the U.S. Atlantic Margin *Andrea Gallegos* Sg is a large, potentially destructive seismic wave that travels through the crustal waveguide. The Sg wave can only be supported in thicker, continental crust and thus should not be generated by events in an oceanic setting, where the crust is < 10 km thick. However, a wave appearing to be Sg has been observed for oceanic events in regions such as Morocco and the east coast of the United States. These waves have been interpreted as Sn-to-Sg conversions. The Sn wave, which travels along the mantle lid, couples to the continental crust at the shelf and the subsequent reverberations constructively interfere, resulting in an Sg wave. We have observed these conversions for a M 5.2 event occurring ~1400 km off the Atlantic Coast on Dec. 23, 2013 using EarthScope's Transportable Array (TA) and the MAGIC array. We perform a travel time back-projection based on raypath geometry to determine the location of the conversion points for this event. Understanding Sn-to-Sg conversion can help us learn about the geometry of the continental shelf and inland crustal boundaries. Learning about this conversion is also needed to determine seismic hazard along coastal areas, where converted Sg waves can cause unexpected levels of damage.	Physics
2:30	Guar physiology and yield formation as influenced by planting date in Desert Southwest. *Sudhir Singla, Kulbhushan Grover, Sangu Angadi, Brian Schutte, & Dawn VanLeeuwen* Guar is a summer, annual, legume grown as an Industrial crop for its gum used in hydraulic fracturing, which projected the demand by oil industries. Guar can be grown in New Mexico due to similar climatic conditions that guar required. Study was conducted with objective of testing the yield of guar genotypes on various planting dates at two locations (Las Cruces and Clovis) in 2014 and 2015. 8 genotypes were tested under 4 planting dates at Las Cruces, while 4 genotypes were tested under 3 planting dates at Clovis. Mid-June planted guar had higher seed yield than Late-July planting; and both of July plantings, respectively at Las Cruces and Clovis. NMSU-15-G1 and Matador had higher seed yield at Las Cruces, but no difference was observed among genotypes at Clovis. Planting date and genotype showed significant interaction for seed yield at Las Cruces. NMSU-15-G1 produced maximum seed yield in Late-April and Mid-May plantings, while Matador	Plant and Environmental Sciences

	and Lewis had highest seed yields, respectively in Mid-June and Early-July plantings. Delayed planting had a negative effect on guar seed yield. Warm early season temperature provide broader planting window (Late-April to Mid-May) in southern NM, while June planting favors guar cultivation in eastern NM.	
2:40	Analysis of fluorescence decay kinetics of photoswitching proteins by flow cytometry *Wenyan Li & Jessica P. Houston* Photoswitching proteins (PSPs) are fairly new when compared to their ancestor Green Fluorescent protein. Accompanying structural change (e. g. deprotonation or protonation) after certain time of optical excitation, PSP can be either switched off or on, or shifts its absorption/emission peaks in the visible spectrum. This powerful specialty has been adopted by many epifluorescence microscopy related researches, for instance, high-resolution cell imaging. However, most, if not all, of these researches just explored PSP's property of fluorescence intensity alternation. In this work, we propose to use traditional laser-based flow cytometer and fluorescence lifetime enabled flow cytometer to firstly increase the speed of sample screening and secondly investigate PSP's fluorescence intensity and lifetime values in different excited kinetic stages, in other words, observing natural recurrence of the photoswitching process. Moreover, to take an advantage of the unstable convertible stages of the PSP, we also study how PSPs respond to microenvironment changes, such as pH fluctuation and cation flux influence. Our preliminary results show that PSP Dronpa and D6 had a similar average fluorescence lifetime around 2.2ns and their natural recurrence of the photoswitching process was detectable using flow cytometry.	Chemical & Material Engineering
2:50	Estimating density of American black bears in New Mexico using noninvasive genetic sampling-based spatial capture-recapture methods *Matthew Gould, Dr. James W. Cain III, Dr. Gary W. Roemer, Dr. William R. Gould, & Stewart G. Liley* Since 2004, the New Mexico Department of Game and Fish (NMDGF) has estimated the state's black bear population by coupling density estimates with the distribution of primary habitat. Recent sampling and analytical methods have prompted the NMDGF to update their density estimates for black bear populations. We established 5 study areas and sampled each population using two NGS methods - hair traps and bear rubs. We used a suite of microsatellite loci to determine the individual identification. We used these data to generate individual capture histories that we then used to estimate density in a spatially explicit capture-recapture framework. We set 554 hair traps and 117 bear rubs and collected 4,083 hair samples. We identified 725 (367 M; 358 F) individuals. Our density estimates varied within and among mountain ranges and are similar or higher than the density estimates previously used by NMDGF. Detection probability was low across all study areas, which affected the precision of our density	Biology

	estimates. This was likely caused by the failure of hair samples to produce a complete genotype due to environmental exposure. Despite this issue, we were able to produce a relatively precise density estimate, which NMDGF will use for responsible management and assured longevity of New Mexico's black bears.	
3:00	Developing a time-resolved flow cytometer for fluorescence lifetime measurements of near-infrared fluorescent proteins *Zhihua Yang, Daria M. Shcherbakova, Vladislav V. Verkhusha &, Jessica P. Houston* The fluorescent proteins (FPs) are very useful revolutionized biological imaging markers for special cellular studies and gene-expression assays. In recent years, near-infrared (NIR) fluorescent proteins have made great contributions to the deep tissue whole-body small animal imaging because of the minimized absorption in water, blood, melanin and hemoglobin whereby from 650 to 900 nm. A main challenge for the biological application of NIR FPs to deep tissue study is their relatively low brightness, so the ability to enrich these NIR FPs with a higher quantum yield will enable a wide range of functional measurement in vivo. The fluorescence lifetime of FPs is unique to the protein, and also might shift if the protein yields changes based on the direct proportional correlation between the fluorescence lifetime and quantum yield. In our lab, we are developing frequency-domain technology to measure the fluorescence lifetime using high-throughput flow cytometry. This technique can allow us to count and sort cells based on the measurement of the fluorescence lifetime. Hence we propose to screen fluorescence lifetime for cells expressing mutated near-infrared fluorescent protein variants (iRFPs) to allow us enrich these population expressing iRFPs with higher quantum yield by newly developed NIR time-resolved flow cytometry.	Chemical & Material Engineering
3:10	Towards quantifying multiple fluorescence lifetimes of conformational changes in integrins using multifrequency flow cytometry *Jesus Sambrano, Jr., Yelena Smagley, Alexandre Chigaev, Larry A. Sklar, & Jessica P. Houston* Recent hardware advances in time-resolved systems have allowed for more sensitive quantitative measurements. Frequency-domain flow cytometry uses radio-frequency (RF) modulation to modulate laser light and excite fluorescently-labeled cells into their excited state. Modulated fluorescence signal has an inherent delay with respect to the reference signal due to transient time (fluorescence lifetime) from the excited to ground state. This 'lag' is referred to as phase delay. Sinusoidal modulation typically displays one phase delay and equates to an average lifetime value. This limitation presents a problem where multiexponential kinetics may exist. Multifrequency cytometry uses square-wave modulation to resolve multiple phase delays between the reference signal and fluorescence signal. We use human U937-ΔST leukocytes that express our target integrin in our multifrequency flow cytometry study in	Chemical and Materials Engineering

	conjunction with an established FRET protocol. In our previous contribution, we measured our donor probe LDV-FITC average lifetime to be 4.2 +/- 0.3 nsec. Introduction of acceptor probe PKH-26 immediately quenched LDV-FITC to a lifetime of 2.4 +/- 0.5 nsec. Integrin activation (dequenching) measured a lifetime of 3.1 +/- 0.6 nsec. Evaluating lifetime heterogeneity among integrin conformations will assist us with our comprehension of cancers and diseases of hemapoietic origins and advance cancer therapies and drug development.	
3:20	Nep1, novel factor to control type II diabetes *Younji (Derrrick) Nam, Monica Scott, & Jennifer Curtiss* A few preliminary studies have found that proteins in the Neprilysin (NEP) family of membrane bound zinc metalloendopeptidases have a role in metabolism in humans; however, nothing is known about the mechanisms by which NEPs contribute to type II diabetes in the context of metabolic pathways. Drosophila melanogaster is a good model organism to study NEPs because they are easy to manipulate genetically, and share ~60% of identified genes with humans. Drosophila Neprilysin1 (Nep1) is an ortholog of humans NEPs. I have generated mutations in the Nep1 gene using a CRISPR-Cas9-based technique, and have shown that the Nep1 mutants store more lipids in fat body, which is functionally analogous to mammalian adipose tissues. Moreover, the mutants have an increased amount lipid in hemolymph, which indicates hyperlipidemia. It has been shown that obesity, hyperlipidemia, and type II diabetes are interconnected. Thus, I hypothesize that Nep1 controls type II diabetes via metabolic pathways in D. melanogaster. To determine the role of Nep1 in type II diabetes, I plan to introduce high-fat diet to observe diabetic phenotypes in flies, and measure the levels of energy sources and metabolic signals. In addition, I plan to investigate if modifications of Nep1 can reduce diabetic phenotypes.	Biology
3:30	Cytometric measurement of caspase-3 activation using Forster resonance energy transfer (FRET) between peptide-linked bioprobes *Kapil Nichani & Jessica P. Houston* Fluorescence lifetime measurements with flow cytometry provide high throughput and quantitative information about molecules within cells based on fluorescence intensity decay times. This time-resolved cytometry method is not commercially available but can be introduced onto any cytometry system, as our laboratory has done. Fluorescence lifetime measurements are helpful for a range of applications including the measurement of Forster Resonance Energy Transfer (FRET). In this contribution we screen large cell populations with our cytometry instrument in order to identify the induction of apoptosis (programmed cell death) by quantifying the activity of caspase-3 with a FRET assay. We take a FRET based bioprobe engineered with green fluorescent protein as well as a caspase-3 recognition sequence. Our modified GFP, which is the FRET donor is connected to an exogenous fluorophore (based on spectral properties: AlexaFluor® Dye, Thermo Fisher Scientific Inc.), which	Chemical Engineering

	acts as the acceptor in the FRET pair. A Caspase-3 recognition peptide linker site connects the FRET pair such that during the induction of apoptosis, caspase-3 is present and available for cleavage of the peptide. This assay permits us to determine quantities of caspase-3 through the measurement of FRET as well as loss of FRET.	
3:40	The Villains of the "Enola Gay": Collective Historical Memory and Japanese War Crimes *Irene Unpingco* This talk investigates and analyzes the shift of collective historical memory as it affects the collective cultural memory of the bombing of Japan. The best example of this shift was the presentation of a new exhibit for the "Enola Gay"—the aircraft that delivered the bomb to Hiroshima—at the Smithsonian Air and Space Museum in 1994, which was the cause of heated debate between World War Two veterans and the historians who created the exhibition. The Smithsonian had developed the exhibit as a lesson in the dangers of atomic weapons, with the rebuilt "Enola Gay" at the end of the exhibit. The veterans were incensed because the Japanese were portrayed as "victims" of a crime rather than enemies in war. This shift in collective historical memory is a testament to the work of films, books, and articles using the bombing primarily as a lesson in the madness of atomic weapons and their consequences. Portraying the bombing as a lesson on atomic atrocities, however, changed the role of the World War Two veterans from heroes to villains. Analyzing documentaries, films, interviews, and articles about the Smithsonian exhibition, demonstrates a shift in discourse and memory that can be traced and examined.	History
3:50	Electrochemically and Microscopically correlation of Metal Nanoparticle Collision events *Cesar Ortiz, & Cynthia G. Zoski* Metal nanoparticles are currently study to understand their physical and chemical properties. Such nanomaterials have wide applications under a vast variety of research areas like biological, medical and electrocatalysis. However, typical methods used to characterize them involve microscopy and light scattering techniques. These methods are excellent to observe their shape and optical properties, the disadvantage is that data analysis is based on an ensemble which reflects an average and inherently discriminates individual characteristics of nanoparticles. Recently, electrochemical methods have successfully proved to study soft and metal nanoparticles based on single events. In the present work, an electrochemical method based on electrocatlytic amplification (ECA) to study metal nanoparticles was used. Such method allows to detect single events on an ultramicroelectrode (UME). Moreover, to support the electrochemical information obtained from using ECA, atomic force microscopy (AFM) was used to physically observed how nanoparticles were attaching to the UME's surface and also to understand if they were following a sticking mechanism where once the nanoparticle makes electrical contact it stays and remain active or if it corresponds on a short	Chemistry and Biochemistry

	time response where the nanoparticle does not stick to the surface, the activity of metal nanoparticles was also investigated using electrochemical experiments.	
4:00	5 Stage Consultation Model - Capstone Integration Project *Luis J. Martinez* The purpose of this project is to develop a consultation model that will integrate the capstone projects from the Mechanical, Aerospace, Industrial and Electrical Engineering departments with the Aggie Innovation Space. This consultation model, along with the capstone liaison will guide these teams through the design process effectively focusing on meeting short-term deadlines. It will also give the teams the opportunity to evaluate the possibility of commercializing their project through StudioG at NMSU Arrowhead Center after successfully finishing their project. This consultation model that has been developed as part of the Capstone Integration project between the College of Engineering and the Aggie Innovation Space will allow students to interact with rapid prototyping technology, a topical expert from the Aggie Innovation Space giving the teams the opportunity to learn new skills and enhance the quality of their capstone project with the help of the personnel and resources available to all students at the Aggie Innovation Space.	Industrial Engineering Department
4:10	Evaluating display modalities using mixed reality games *HItesh Nidhi Sharma & Dr. Zachary O. Toups* Navigating or reading emails while walking have become common use of smartphones where users attend to a device and their surroundings simultaneously. New display modalities, such as smartwatches and smartglasses, allow users to perform such tasks too. At the same time, mixed reality (MR) games engage players simultaneously in the physical world and a virtual world. We investigate which display modality works best when users need to split their attention using an MR game, PhotoNav, where players navigate outdoors to reach certain destination using photographs. The display provides two photographs: one of the destination and one taken nearby, the vantage point of which will progress the user toward the destination. The game is designed such that players must use photographs to traverse the environment. This splits their attention between physical world and the interface. We test three display modalities: head-mounted, wrist-worn and handheld. Initial data show handheld performs best; we expect the data to provide valuable implications on future design of wearable computer interfaces.	Computer Science
4:20	Multiple chronic conditions in older adult patients along United States -Mexico border *Najah Al-shanableh* Little is known about the pattern of multiple chronic conditions and their occurrence in older adult patients, especially in the United States -Mexico border. Chronic conditions are more widespread among older adults,	Computer Science

	those who are 65 years old or more have an increased risk of developing multiple chronic conditions. The varying patterns of co-morbidity creates a challenge for healthcare providers; it affects the delivery of an efficient treatment and care coordination plans. This research aims to use data mining to predict the number of chronic conditions in admitted patients. We investigated multiple chronic conditions among the United States-Mexico border aged population and patterns of multimorbidity. Predict outcomes using data mining in older adults with multiple chronic conditions (MCC) who are living along the US-Mexico border is the first step of this study. Data mining can give rich results than statistical approach, and it can provide a greater depth and breadth. For this research we have used Arizona State Inpatient Databases (SID) which was obtained from Healthcare Cost and Utilization Project (HCUP).	
4:30	Rules, Roles, and Riffs: A Sociological Analysis of the Jam Session *Mark Miller* This thesis seeks to further the growing discipline of sociology of music by asking the following question; "How does jamming function as a means of social interaction between musicians?". Theoretically this research is strongly influenced by Gibson's "The Group Ethic in the Improvising Jazz Ensemble". (2010) By utilizing Gibson's research this study will seek to contribute to research in identity, rules, expectations, and divisions of labor between musicians. Specifically, this research will be examining the social interaction that occurs during the jam session. The conceptualization of the jam session differs from that used by Gibson and throughout sociology of music. This research will focus not on a genre specific, namely Jazz or Blues, jam session; rather a non-genre specific group of musicians engaging in the creation or practice of music. This research will utilize chain referral sampling to obtain a sample of 5 to 6 groups of musicians resulting in a sample of 15 to 30 participants. These groups will engage in two jam sessions, which will be observed. After the observational portion of this research, a focus group interview will be completed by each group. Short follow-up interviews with each musician will also be completed.	Sociology

Time	Senate Gallery	
1:30	Revolution Postponed: Methodological Diversity in the *American Political Science Review* *Diana I. Bolsinger* What gets published in the American Political Science Review (APSR) helps shape individual careers and the direction of political science as a field. Empirical surveys of APSR articles by methodology published from 1991 through 2000 and 2005 through 2015 show the dominance of articles based on quantitative methodologies has grown from 53 percent of articles published in 1991 through 2000 to 60.6 percent of those published between 2005 and 2014. Paradoxically, this trend developed in the wake of "Perestroika" demands in the early 2000s for greater methodological heterogeneity in the field and the APSR. This study uses the number of citations received by each article, controlling for the number of years in publication, to illustrate that quantitatively-based studies are far more popular with the APSR's audience. This popularity of quantitative research, in turn, shapes authors' decisions whether to submit their research to the APSR. The resulting cycle reinforces the dominance of quantitative research.	Department of Government
1:40	Let's Get Typical: How Categorical Typicality Affects Search Performance. *Arryn Robbins* What information do people use to guide search when they lack precise details about the appearance of their target? In this study, we employed categorical (word-cued) search and eye tracking, to examine how category typicality influences search performance. We found that typical category members were fixated and identified more quickly than atypical categories. This finding held when the participant was cued at the superordinate level (finding "clothing" among non-clothing items) or the basic level (finding a "shirt" among other clothing items). This suggests that categorical target templates may be constructed by piecing together features from the most typical category member(s).	Psychology
1:50	Exploring the nature of mental representations in hybrid visual and memory search *Jessica Madrid, Corbin A. Cunningham, Arryn Robbins, Hayward J. Godwin, Jeremy M. Wolfe, & Michael C. Hout* When people search for a target in a visual scene filled with distractors, they must utilize mental "templates" for those targets. Research looking at how people search through memory and a visual scene simultaneously has demonstrated that people can successfully find hundreds of distinct targets. However, little is known about how targets are represented internally in this type of search. To address this question, we split	Psychology

	participants into two conditions. In the "categorical" condition, participants searched for targets from two distinct categories. In order to determine if people can search more effectively when they are more familiar with their target, we varied the number of exemplars in each category. A small category was defined by five exemplars; a large category, by 25 exemplars. In the "mixed" condition, targets were drawn from 30 different categories. Five were assigned to a "small" artificial category and 25 to a "large" category. When searching for any one of the 30 targets, observers were quicker to respond to targets from the larger category. This effect was absent with the artificial categories. This work demonstrates that, when searching for a set of items within a given category, the utility of a prototype is dependent on the number of items used to form that prototype.	
2:00	Theory of Planned Behavior Based Online Condom Use Intervention *Tara M. Young & Michael J. Marks* The prevalence of STIs, unwanted pregnancies, and other sexual health related problems is a consistent and concerning issue (Kost, 2013; Kumar & Gupta, 2014; Singh, Sedgn, Hussain, & Eilers, 2013). Properly and consistently utilizing condoms during sexual encounters greatly reduces these consequences (U.S. Department of Health and Human Services, 1986). Three Studies utilize the Theory of Planned Behavior in a ground-up approach to determine which factors most strongly predict condom use intentions. Attitudes was the domain of the Theory of Planned Behavior that most strongly impacted condom use behavioral intentions for 200 participants ($\beta = .51$). Subsequently, 200 participants responded to open-ended questions about the advantages and disadvantages of condom use to determine what specifically drives or deters condom use. Reduction of pregnancy and STIs were listed as the most advantageous factors of condom use, while reduction of pleasure and intimacy and the time it takes to put on a condom were listed as the most disadvantageous factors of condom use. An intervention to increase condom use is then proposed around the previously identified items. Results from the intervention are discussed. This research helps to better understand what drives condom use and what factors are successful in increasing the use of condoms in order to reduce rates of STIs and unwanted pregnancies.	Psychology
2:10	The Incredulous Homunculus: The Folly of Accepting Information at Face Value *Hunter Myüz & David Trafimow* This project is designed to determine whether or not credulity is a domain-general trait that is stable across dimensions and situations, or a domain-specific trait. This will be novel research aimed at examining whether or not being credulous about one belief makes that individual more likely to be credulous in other unrelated situations as well, and whether religiosity and endorsement of irrational beliefs are more common in those individuals who score high in credulity. Additionally, the reliability of this trait, and stability across domains will be examined. Results TBD.	Psychology

2:20	Using Laser Induced Breakdown Spectroscopy to Study Cultural Interaction and identity within the Mimbres Gila Forks Region *Garrett Leitermann* My current M.A. thesis research intends to use Laser Induced Breakdown Spectroscopy (LIBS) to conduct rare -earth element analysis studies on ceramics within an archaeology context. LIBS can be used as a means to source and compare different samples of ceramic clay, temper, and slip. LIBS will be used in answering questions about cultural interaction, trade relations, cultural identity at Twin Pines, a fifty room Classic Mimbres pueblo located within the relatively poorly understood Gila Forks region. LIBS will be primarily used to provide insight into how the Mimbres people at Twin Pines interacted with their contemporary Mogollon neighbors to the north. The current Twin Pines ceramic assemblage has an unusually high ratio of contemporary Reserve utility ware in relation to Mimbres utility ware, with the Reserve sherds representing well over half of the corrugated sherds. This abnormality may be indicative of two possible scenarios: This high ratio may reflect intense levels of cultural interaction between Mimbres and Reserve traditions in regards to traded ceramics or if it could possibly be indicative of on site manufacturing by Mimbres people who may have adopted the styles and techniques of their Mogollon neighbors.	Anthropology
2:30	Co-Creative Processes of Indigenous Representation within Museums *Hailey Jung* My intended research will take place as part of an internship that will examine the methods of Indigenous cultural and identity representation within museum institutions, either on a local tribal level or a national level depending on the internship I am able to do. Within this topic, I will explore how and if methods of collaboration and co-creation with Indigenous communities are employed in museum practice to create accurate and appropriate representation within museums while establishing a contact space for mutually beneficial learning and research opportunities. This internship will include research on the collections of a museum to develop an understanding of how that museum is working to engage in dialogue with the affiliated Indigenous communities to create a space for contact and collaborative work concerning representation through collection exhibition. This internship will take place over summer 2016 with potential for extension. This research will contribute to the growing and changing field of museum operation, especially those housing Indigenous collections. Researching the potential for collaborative efforts through work that is already being done can expand the possibilities for collaborative research and co-creative work to ensure an accurate representation of Indigenous identity within museums.	Anthropology

2:40	Fighting for Quality of Life *Megan Stamey McAlvain* There is limited research analyzing graduate medical education training in the area of treating older adult end of life patients. One factor that has been understudied is the extent to which patients' perceptions of quality of life are taken into consideration in end of life care decision making. This paper uses qualitative data to examine the ways in which family medicine residents understand quality of life for older adults in the context of end of life care. I argue that one key aspect to improve training is to expand resident understanding of quality of life.	Anthropology
2:50	The Importance of Oral Traditions with Traditional Cultural Properties. *Cortney J. Platero* This paper will address the use of oral history and traditions when in consideration with the use of Traditional Cultural Properties. Utilizing these traditions and hand me down stories that lend credibility to accessing a Traditional Cultural Property and why it is valuable to the communities and the need to preserve these sites. Everywhere in the United States and many communities are affected by outside forces coming into these sacred spaces for building purposes or advancement of the ever growing population. What does the systems considered Traditional Cultural Property and how are legalities pressured to either enforce or discard the nominations. To begin the evaluations of a Traditional Cultural Property one has to begin somewhere and that would be to start with background investigations through the use of imploring ethnography, research of local traditions, and conducting interviews with the people of these communities. Preliminarily this paper is in the beginning stages of research and with great hopes will produce better ways preserving oral traditions and oral histories can be addressed with Traditional Cultural Properties. In conclusion, this paper will address the possibilities if there are other venues to explore better ways to address preservation issues for all future generations.	Anthropology
3:00	Examining Evidence of Obsidian Exchange Systems through Analysis of Ritualized Projectile Points *Robbie Murie* Obsidian exchange in the Southwest has been overshadowed by the presence of the adorned pottery types found here. The purpose of this paper was to suggest the use of ritualized obsidian projectile points in the American Southwest. There are techniques to analyze the points in order to make a determination of their use, as well as ethnographic accounts of ritual uses for these points throughout American history. The results showed that there are plenty of resources to suggest that the use of projectile points went beyond hunting and war, but no concrete method of identifying whether a point was used for ritual purposes was found.	Anthropology

	Methods of observations paired with ethnographic accounts, as well as X-Ray Florescence analysis and Neutron Activation Analysis seem to be the best technique to categorize ritual obsidian.	
3:10	Discomfort Before Comfort: Examining Racial Dialogue amongst Interracial Groups *Megan M. Miller* Despite its constant presence amongst all individuals, the topic of race is filled with negative connotations. Over the years America has made constant strides towards racial equality. However, society has used historical tension and taboo as a barrier in preventing discussion about race. As a result many Americans do not discuss race, and often of those who do are individuals the same race. In this paper, I argue that society views racial discussion as a 'social distress' similar to that of grief or trauma. I also argue that individuals use coping methods (such as avoidance, colorblindness, desensitization, humor, and open-dialogue) to attempt to interact with friends, family, coworkers etc. of different races. The literature utilized relates to the works of Elisabeth Kubler Ross & David Kessler's Five Stages of Grief, as well as other literature pertaining to coping techniques as well as historical racial tension. The interviewer will be conducting a series of focus groups with individuals of differing races but similar social-circles. These focus groups will be presented a series of open-ended questions pertaining to their methods of addressing racial dialogue within groups. Answers will be analyzed and theme coded.	Sociology
3:20	Scary Gender: Gender as Portrayed in Horror Film Originals versus Remade versions *Michelle B. Combs* Gender roles and norms have evolved over the last fifty years and the research in progress presented here hopes to show that these differences can be teased out by examining thirteen horror film originals and their most recent remade versions. Theoretically, the work has not yet found its foothold in the Sociological world. However, using a pilot study of four sets of films, themes have started to emerge, and these include such categories as the depiction of violence, alluded to violence, the use of animals, how fear is depicted and heroism, along with some of the more standard horror film cliché categories, such as nudity and sexual activity. The research will be done using qualitative content analysis of thirteen horror film original films dating back to 1960, with the correlating remakes, some as recent as 2013.	Sociology
3:30	From Hashtag to Action: The Physical and Virtual Spaces of #BlackLivesMatter *Kathryn Stroud* The research will focus on the physical and virtual spaces occupied by the #BlackLivesMatter (#BLM) movement. The movement, which started as a	Sociology

	hashtag on social media, was created to fight against police brutality and racism in the United States. It has since emerged as what some scholars have called the new civil rights movement. In this presentation, I will examine how #BLM utilized online and physical spaces, relying on data from interviews and social media posts before and after the riots began in Ferguson, Missouri, after the death of Michael Brown. Through this data, I will illustrate that the #BLM movement relied on the virtual community created through the hashtag and the physical community established through the riots and protests.	
3:40	Party of One: Legitimizing Single Life through Narrative *Kristen Bernhardt* This is a small-scale qualitative study designed to understand the lived experiences of the "agentically single," those who may or may not be in relationships but have no ambitions toward marriage or other forms of life enmeshment. They value autonomy and independence, but of course also value intimate relationships. The theoretical framework of postmodernist thought and feminist interpretation will allow me to interpret each participant's experiences in a unique way and to identify heteronormative and mononormative barriers to authenticity. I hope to use what I find out to improve the lives of single-identified people, including solo polyamorists and relationship anarchists, so that future generations know they are not alone and can learn from the resistance strategies of single people in a couples-centric world.	Sociology
3:50	Earning an "F+" and an "E" for Effort: Redcrosse Knight's Success through Failure *Cameo Contreras* Despite appearances, Redcrosse Knight's suicide attempt in Despair's Cave leads to a spiritual triumph. In Book I Canto IX of Spenser's The Faerie Queene, Despair tempts Redcrosse not only to abandon all hope of ever receiving God's love, but also to fear God's just punishment. Scholarship interprets Redcrosse's decision to slay himself as a fall into Despair's temptations. However, there is evidence that Redcrosse acts out of love and submission rather than hopelessness and fear. This paper examines how the anxieties and conflicts of late 16th century Protestantism are woven into Canto IX. As a faithful knight and Protestant, Redcrosse is subject to this spiritual turmoil of the Reformation. The Reformation's theological conflicts and uncertainty of salvation build a spiritual impasse; Redcrosse's suicide attempt was his best response to it. This paper traces Redcrosse's redemption by comparing his actions to previous knights, revealing the literal and allegorical conflicts in his relationship with Una, and seeing his "keene" knife as representative of his motivation: an unceasing love of God and a submission to justice. These Christian virtues, not despair, are foremost in his mind at the moment of the attempt.	English

4:00	Anyone Might Enter: Redefining Masculinity in The Vampire Tapestry Through Experiences of Victimhood *Ashley McGuire* In my presentation I will perform a close-reading of The Vampire Tapestry by Suzy McKee-Charnas, a novel about a respected anthropologist professor and vampire, Dr. Weyland, who emerges from a deep sleep every fifty years, remembering vague shreds of his former lives, requiring him to create a new persona each time he awakes. In order to adapt to society in 1980, Weyland must reevaluate his notions of masculinity. First, he must reconsider the idea that to express masculinity is to exhibit violence and to take by force. Additionally, he must reevaluate the idea that masculinity prohibits intimacy between men. Weyland can only understand his role as the oppressor by experiencing the role of his two victims: women and gay men. My presentation will examine the former first, and show how Charnas' female characters experience empowerment at Weyland's expense. Then, I will demonstrate Weyland's anxieties concerning homosexual desire, and show how the male victim, Irv, is not empowered by his interactions with Weyland. In the concluding section I will explore Weyland's role as both a teacher and student and unpack how cultural adaptation necessitates Weyland's redefinition of masculinity, and a willingness to be open to intimacy from both men and women.	English
4:10	Femaleness as Monster in It Follows *Jenna Bialostosky* The reception of the recent horror film It Follows (2015) has been overwhelmingly positive, including but not limited to assertions of its "unique" and "feminist" narrative(s). Within a feminist theoretical framework, however, the film is aberrantly misogynistic, and tightly aligns with clichéd elements of horror such as punishing women for acting upon their sexual desire. My essay simultaneously argues that It Follows places the crux of horror on femaleness and femininity (and thus, establishing women as the true monsters of the film), while deconstructing how and why critics universally posit the film's supposed feminism.	English
4:20	A Creative Co-Option: Parody, Humor, and Play in Wendy Red Star's White Squaw Series *Michelle Lanteri* In her recycling of E.J. Hunter's White Squaw (1983-1992) pulp fiction series, Wendy Red Star, an Apsáalooke (Crow) Irish-American artist, ironically recasts herself as the centerpiece of the books' covers—in place of "White Squaw," the original female protagonist of this "historical romance series." In her revisionist White Squaw (2014) artworks, Red Star renounces the romanticized image of the originally-cast, Oglala Sioux-Irish "White Squaw" character, and creates a critical space of parody, humor, and play. Through her irreverent and comical performances, recorded as digital photographs and inserted into the paperbacks' cover designs, Red	Art

	Star effectively reclaims and reinvents the White Squaw book covers that depict a fictional, nineteenth century American West. My paper delineates how Red Star's White Squaw artworks confront audiences with darkly humored, trickster-like performances that engender meaningful social commentaries about race representation in popular culture. In my presentation, I will use semiotic and feminist approaches to discuss how Red Star—through her appropriation of the White Squaw book covers—utilizes photographic self-portraiture and parodic performances to subvert Hunter's original functions for his/her already-parodied and voyeuristically objectified protagonist, "White Squaw."	
4:30	The Vulture Survey: Analyzing the Evolution of MgII Absorbers *Nigel Mathes, Christopher W. Churchill, & Michael T. Murphy* We present a detailed measurement of the redshift number density of MgII absorbers as measured in archival VLT/UVES and Keck/HIRES spectra. This survey examines 602 individual, high resolution quasar spectra, allowing for detections of MgII absorbers dating back over 8 billion years. We observe that the distribution of weak, low equivalent width absorbers is best fit by a power law, implying a self-similar distribution of MgII absorbing gas in galaxy halos. The distribution of strong, high equivalent widthabsorbers, however, is best fit by an exponential function. These strong absorbers also evolve over time. Specifically, we observe more high equivalent width MgII systems around redshift z = 2, implying a distribution of halo gas strongly influenced by star formation driven winds.	Astronomy

Poster Presentations

Stan Fulton Center 3rd Floor Bistro

Poster #	6:00-6:45 PM	
1	Determining Ages of Giant Stars with APOGEE *Diane Feuillet, Jo Bovy, Jon Holtzman, Leo Girardi, Nick MacDonald, Steve Majewski, & David Nidever*	Astronomy
3	Satellite and isolated dwarf galaxies around Milky Way like galaxies *Kenz Arraki, Anatoly Klypin, Daniel Ceverino, Sebastian Trujillo-Gomez, & Joel Primack*	Astronomy
5	Extinction Mapping with LEGUS *Lauren Kahre, Rene Walterbos, Elena Sabbi, Dave Thilker, & Leonardo Ubeda*	Astronomy
7	Label-free detection of tumor cells by autofluorescence intensity and lifetime measurements using flow cytometry *Kaylin Beeman, Kevin D. Houston, Maryann Castillo, Candice Ben, & Jessica P. Houston*	Chemical Engineering
9	A Black Feminist De/Re/Construction of Nutrition in Head Start Programs in the United States *Ruiz Guerrero Margarita*	College of Education, Curriculum and Instruction, Early Childhood Education
11	Pseudo-tree Construction Heuristics for DCOPs with Non-uniform Communication Times *Atena Mtabakhi*	Computer Science
13	Learning through Technology in Student-Centered Approach *Roshani Rajbanshi*	Curriculum and Instruction
15	Ultra-structural Characterization of Triple Negative Breast Cancer Cells *Manasi P. Jogalekar & Elba E. Serrano*	Molecular Biology
17	Equivalent Task Interference From Multiple Prospective Memory Targets Versus Responses *Adam Underwood & Melissa Guynn*	Psychology
19	Cutting Through the MADness: Investigatin gVisual Search Efficiency in Dynamic Displays *Collin Scarince & Michael C. Hout*	Psychology
21	Gender Role Violations and the Sexual Double Standard *Yuliana Zaikman, Michael J. Marks, Tara M. Young, & Jacqueline A. Zeiber*	Psychology

23	Retention Strategies with Hispanic Undergraduate Students *Ana C Lopez, & Dr. Loretta Salas*	Special Education & Communication Disorders
25	Do not sell my little bull/ No vendan mi torito. Children's reflection on border crossings *Ma.Eugenia Hernandez Sanchez*	Education, Curriculum and Instruction
27	Selection progress for Fusarium Basal Rot resistance in onions *Subhankar Mandal & Christopher S. Cramer*	Plant and Environmental Sciences
29	Ideology in Children's Literature *Maria Elena C Salazar*	Curriculum and Instruction
31	Sidelobe reductions in random noise and deterministic signals *Ehtesham Shareef, Muhammad Dawood & Jim Boehm*	Electrical and Computer Engineering

Poster #	7:00-7:45 PM	
2	"Good to Eat:" Combining Anthropology and Public Health to Assess Multi-Generational Perceptions of Traditional Foodways *Jacquelyn Heuer*	Anthropology
4	The Mitigating Role of Forest Cover Gain and Loss on the Impact of Natural Disasters *Charis Ahrens & Dr. Steven Archambault*	Economics
6	QuickTaxon: an online tool retrieving selected taxonomic ranks for bacterial species. *Dong Pei, Yifan Hao, Qixu Gong, & Jiannong Xu*	Biology
8	Zinc dependent Transcription profile by RNA Seq in Paracoccus denitrificans *Durga Neupane, Durga P. Neupane, Melody Handali, Anitha Sundararajan, & Erik T Yukl*	Chemistry and Biochemistry
10	Cysteine-dependent role of Vibrio cholerae H-NOX *Roma Mukhopadhyay & Dr. Erik T Yukl*	Chemistry and Biochemistry
12	Building, Calibrating, and Validating Large-Scale High-Fidelity Microscopic Traffic Simulation Model: Manual Approach *Dusan Jolovic, Jason So, Mariija Ostojic, & Aleksandar Stevanovic*	Civil Engineering
14	Behavior Comparison of Prestressed Channel Girders from High Performance Concrete and Locally Developed Ultra-High Performance Concrete *Mark P. Manning, Brad D. Weldon, Michael J. McGinnis, David V. Jauregui, & Craig M. Newtson*	Civil Engineering
16	Comparison of two pedagogical methodologies in general chemistry laboratories: An evaluation of behaviors and interactions *Lucia B. Chacon-Diaz, Dr. H. Prentice Baptiste, Dr. Cecilia Hernandez, & Dr. Antonio Lara*	Curriculum and Instruction
18	Drawing the Line: Landscaping Inequality through School Attendance Boundaries and Neighborhood Composition in Southern New Mexico *Erica Surova & Sandra Way*	Sociology

20	Impact of Technology on Post-Secondary Classroom Culture: A Critical Literature Review *Susan Bontly, Samar Khalil, Cynthia Gomez, & Tahani Mansour*	Curriculum and Instructions
22	Mapping Classroom Experiences through the Eyes of ENLACE Students: The Development of Science Literate Identities *Paulo A. Oemig*	Curriculum and Instruction
24	Is 2-oxoglutaramate, derived from glutamine in a reaction catalyzed by glutamine phenylpyruvate transaminase, the signal involved in linking N-assimilation pathway with pathways related to growth *Harmanpreet Kaur & Dr. Champa Gopalan*	Plant and environmental science
26	The role of Sucrose phosphate synthase (SPS), a key enzyme in sucrose synthesis, in plant growth and development in nodulated alfalfa plants *Shanta Padhi & Dr. Champa Gopalan*	Plant and Environmental Science
28	Inhibition of Chemokine Receptor Four (CXCR4) Signaling During Early Gestation Impacts Embryo Survival in Sheep *Kelsey Quinn , K. K. Kane, S. Z Prosser, & R.L. Ashley*	Animal and Range Science
30	Botanically-derived oils can kill the Turkestan cockroach, Blatta lateralis (Blattodea: Blattidae) *Sudip Gaire, Alvaro Romero, Mary O'Connell, & F. Omar Holguín*	Entomology, Plant Pathology and Weed Science
32	Identifying genomic evidence of selection in a pesky beast: the invasive monk parakeet (Myiopsitta monachus) *Grace Smith Vidaurre, Andrew Veale, Michael Russello, & Tim Wright*	Biology