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2012 Research Day Abstract Listing

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Research Day 2012

April 12, 2012

University Center

Highlighting and recognizing graduate and undergraduate student research throughout all disciplines at the University of Northern Colorado.

Listing of Research Abstracts for all Research Day Presenters

Listed by Primary Presenter Last Name.

**Sponsored and facilitated by the
Office of Undergraduate Research,
Center for Honors, Scholars & Leadership,
Graduate Student Association, and
the Graduate School**

Bringing
education
to life.

Adkisson, Marin**Ambient Noise Levels Present During School Hearing Screenings***Presenter(s): Adkisson, Marin**Mt. Evans, Longs Peak Ballrooms-- Session time: 10:30 - 11:30 in the Morning*

Audiology & speech-language sciences

Faculty Sponsor(s): Meinke, Deanna

Graduate Presentation

School hearing screenings are the primary method to identify hearing loss in school-age children. Hearing loss can impact a student's development, communication, health, and academic success. Excessive ambient noise is a long-standing problem for hearing screening programs.

The purpose of this study was to determine the ambient noise levels present during school hearing screenings and to evaluate whether these levels exceeded established standards and recommended guidelines for maximum permissible ambient noise levels. Weighted levels and octave bands were measured during school hearing screenings in both unoccupied and occupied conditions. Occupied rooms were measured at the beginning, middle, and end of the screening period. Nine school locations in the Northern Colorado area were included in data collection for a total of 36 sound pressure level measurements. Data analysis was completed using descriptive statistics and nonparametric statistics including: Mann-Whitney U test, Wilcoxon's matched-pairs signed ranks test, and Friedman's rank test for k correlated samples.

The results of this study revealed that ambient noise levels exceeded standards established by the American National Standards Institute (ANSI). The mean ambient noise measurements obtained in the unoccupied rooms were consistently lower than the mean measurements obtained in the occupied condition for all weighted levels and octave bands. Calculations were made to account for adjustments necessary when screening at a level of 20 dB HL and 25 dB HL. In the occupied condition, no locations were in compliance for a screening level of 20 dB HL. After making adjustments for a 25 dB HL screening level, all measurements, except 500 Hz, were in compliance for both the unoccupied and occupied conditions when using supra-aural earphones. This suggests that high ambient noise levels in the school hearing screening environment might compromise the validity of the screening program.

Alabdulwahab, Reem**Creating a connection between the United States and Saudi Arabia in the special education field***Presenter(s): Alabdulwahab, Reem; Alsulaiman, Maha; Alqafari, Shehana; Alsalman, Amani**Research Excellence Award Finalist**Mt. Evans, Longs Peak Ballrooms-- Session time: 10:30 - 11:30 in the Morning*

Special Education

Faculty Sponsor(s): Banerjee, Rashida

Graduate Presentation

Saudi doctoral students in the special education department at the University of Northern Colorado have a goal of establishing a strong linkage between the United States of America and Saudi Arabia in the field of special education. The aim of this project is to transfer the new trends and issues of special education in the USA to Saudi Arabia and to provide the most recent scientific research. Our effort is to address how the knowledge fits our Saudi culture. This website would support and enlighten the parents, educators, and other parties interested in special education. In order to implement this linkage we will be developing a partial space on a Saudi governmental special education website. This space would include five components:

- Most recent foreign studies and sources.
- Articles addressing how to implement recent strategies into Saudi culture.
- A guide for recent international seminars with briefings.
- International experts.
- A discussion board.

Our targeted audience would experience the importance of international communication, cooperation, and progress in services of special education field. Our presented project would be beneficial to promote the significance of sharing knowledge among different countries and cultures.

Aldava, Anna**Mexican American Female Icons: La Virgen de Guadalupe, La Llorona, and La Malinche—Traditional and Innovative Artistic Interpretations***Presenter(s): Lopez, Sofia; Hanna, Michelle; Maxey, Kelsey; Cummings, Kylee; Diaz, Daniela; Crenshaw, Brittany;**Flores-Soto, Julian; Flores, Ernesto; Aldava, Anna**Multiple Session Presentation - Sessions 15, 16**Columbine B-- Session time: 02:20 - 02:35 in the Afternoon*

Art & Design, Communication Studies, History, Interdisciplinary Studies, Mexican American Studies, Philosophy, Psychology, Sociology, Social Science

Faculty Sponsor(s): Canales, Genie

Undergraduate Presentation

In this presentation, each of four familias (groups of students) will exhibit an art project they created that was designed to acknowledge traditional artistic interpretations of the three major Mexican/Mexican American Female icons and to encourage innovative artistic interpretations. The three icons are La Virgen de Guadalupe, La Llorona, and Malinalli (or Doña Marina or La

Malinche). Each familia will explain traditional Mexican meanings of these icons as well as more recent Chicana Feminist interpretations.

Allen, Rebecca

Colorado Immigration Policies: Understanding the Impact of Current Policies on Children

Presenter(s): Allen, Rebecca

Mt. Evans, Longs Peak Ballrooms-- Session time: 10:30 - 11:30 in the Morning

Sociology

Faculty Sponsor(s): Henderson, Angela

Undergraduate Presentation

This study uses a policy analysis method to discover how Colorado immigration policy and enforcement has had an impact on children. This study will take a critical look at employment policies and their denial of adequate healthcare to immigrant families, regardless of the immigration status of the children. I will also take an in-depth look at how Immigration and Customs Enforcement raids have had an adverse affect on children's mental health. This study seeks to prove that proper mental and physical health care are not issues of citizen rights, but are concerns of human rights and what the proper means are for obtaining these rights for children with undocumented parents or who are undocumented themselves are.

AlQafari, Shehana

Collection of Curriculum-Based Assessment Training to Improve Quality Field Experience of UNC Special Education Teacher Candidates

Presenter(s): AlQafari, Shehana

Aspen B-- Session time: 09:00 - 09:15 in the Morning

Special Education

Faculty Sponsor(s): Pierce, Corey

Graduate Presentation

The purpose of this study is to determine whether training UNC special education teacher candidates and engaging them in the collection of curriculum-based assessment data with school-aged students results in a quality field experience that provides a valuable resource to local schools. This study qualifies for exempt status because it primarily involves UNC students and adult licensed teachers completing assessment training and online surveys. School-age students will be assessed by UNC teacher candidates. 10 UNC Special Education Teacher Candidates trained by the director of this study and by a member of the Weld RE-4 administration. Students placed in 5 elementary schools in Weld RE-4 School District. UNC special education teacher candidates administer predetermined and prescheduled curriculum-based assessments with 30 school-aged students, ranging from kindergarten to 5th grade.

UNC special education teacher candidates received training in administration of the AIMSweb R-CBM assessments. The scores submitted to the supervising teacher immediately upon completion of the assessment. UNC teacher candidates assessed their case load of students on a rotating basis with the normal assessment administrator at each school." Upon the completion of 10 weeks of data collection, the UNC special education teacher candidates (Appendix A) and the Weld RE-4 supervising teachers (Appendix B) completed a post-study survey. Data from this study will be analyzed using both quantitative and qualitative analysis techniques.

AlSuliman, Maha

Response to Intervention in schools: A qualitative study

Presenter(s): Jackson, Lewis; AlSuliman, Maha

Multiple Session Presentation - Sessions 4,5

Columbine B-- Session time: 10:00 - 10:15 in the Morning

Educational Studies, Special Education

Faculty Sponsor(s): Jackson, Lewis

Graduate Presentation

Response to Intervention (RTI) provides schools with a service model that encompasses all students, but may be especially helpful for struggling learners and students in special education. Yet, little is known about its daily operations. This qualitative study examined the assessments, interventions, and decision processes that occurred in one district committed to RTI, as perceived by primary administrators. Three elementary principals, one special education director and one RTI administrator answered questions about how services are provided at all three tiers of the RTI process. Our questions probed how interventions changed as tiers changed, how assessments intensified as a student moved up the tiers, and how general and special educators interacted at different tier levels. We analyzed the data using four broad themes, which were (a) school philosophy and RTI; (b) everyday intervention practices within and across tiers; (c) decision making criteria regarding tier-to-tier movement; and (d) collaboration processes between educators. Our findings included that the participants found benefit in having a system of education that focused on ALL students; that provided a better base form making decisions about special education placement; and that assured access to general education curriculum. The participants in this study were also unanimous in their view that progress monitoring and making data based decisions were especially positive features of an RTI model. In terms of limitations, we found that there were concerns expressed about how data are most optimally used for making educational decisions and measuring Adequate Yearly Progress (AYP); whether tier 2 is really a single tier or whether it should be divided into two (or more) different levels; the tensions that sometimes arise when teachers have different views of the roles of special and general education services; and issues regarding state funding and training for schools committed to using the RTI Model.

Alzayer, Rehab**Using Response to Intervention (RTI) to address behavioral problems that impede academic success***Presenter(s): Alzayer, Rehab**Mt. Evans, Longs Peak Ballrooms-- Session time: 01:30 - 02:30 in the Afternoon*

Special Education

Faculty Sponsor(s): Jackson, Lewis

Graduate Presentation

Students with behavioral problems exhibit problem behaviors such as being out of seat, off-task, disruptive, or aggressive which negatively affect their attention and ability to acquire early effective learning skills (Harris, Oakes, Lane, & Rutherford, 2009; Yu, Darch, & Rabren, 2002). Response To Intervention model (RTI) RTI for challenging behaviors was defined as a promising diagnostic tool that focuses on prevention, implementing evidence-based practices, and progress monitoring. Schools can use RTI to intervene early to address behavioral problems that are interfering with learning. By doing so, the process can help students succeed where faultier was likely, and prevent special education placement. (Hawken, Vincent, & Schumann, 2008).

Anderson, Stephenie**In-service High School Teachers' Understandings, Representations, and Pedagogical Content Knowledge of Complex Numbers***Presenter(s): Anderson, Stephenie**Mt. Evans, Longs Peak Ballrooms-- Session time: 10:30 - 11:30 in the Morning*

Educational Mathematics, Mathematics

Faculty Sponsor(s): Karakok, Gulden

Graduate Presentation

The mathematics education community recognizes the importance of the use of multiple representations in learning mathematics and problem solving. Studies have shown that some of the best problem solvers are the ones who use different representations based on what will allow them to most effectively and efficiently solve the problem. However, different representations are often neglected in current curriculum and students may be suffering because of it. Due to the nature of complex numbers, representations can be used in classrooms to enhance understanding of complex numbers while making connections among such representations. Currently, however, multiple representations are not being utilized in the teaching of complex numbers in many high school classrooms. Moreover, there has not been much research conducted in the realm of complex numbers and the understandings that teachers and students have. This study explores in-service high school mathematics teachers' understandings and representations of the complex number system and their pedagogical content knowledge of the use of multiple representations in the classes they teach after two sessions of a professional development on complex numbers. During each session in-service high school teachers worked on activities that introduces complex numbers and operations with them using different representations. Teachers are also asked to discuss possible ideas that they might implement in their lessons. These sessions are audio and video-recorded, and all written artifacts were collected to analyze teachers' engagements. Data analysis is still in progress and teachers' discourses are analyzed in this qualitative study.

Andrade, Supattra**Expanding World-Wide Knowledge of Transition and Vocational Resources Supports Adolescents with Disabilities, and Families***Presenter(s): Andrade, Supattra**Mt. Evans, Longs Peak Ballrooms-- Session time: 10:30 - 11:30 in the Morning*

Special Education

Faculty Sponsor(s): Jackson, Lewis

Graduate Presentation

The Individuals with Disabilities Education Act 2004 (IDEA) mandated that public schools must provide transition planning to all high school students who receive support for a special education program under the qualifications of IDEA (White & Weiner, 2004). Transition planning contributes to students with disabilities for supporting their successful transition from school to adult life in school, employment, and social living. Transition planning should include opportunities for parents to build a road map for their child's future. Parents are a huge support of successful transition planning, and provide necessary information about their child's needs. However, most research discovered that the majority of parents have met experiences of failure and are usually faced with high frustration during transition planning. The following preventions have been determined to negatively impact successful transition: (1) parents lack support from schools, social workers, and other professionals while going through the transition programs (Newsome, 2000); (2) the educators provide inadequate communication and knowledge about transition program services (Hetherington, 2010); (3) parents have dissatisfaction in the area of educators' attitudes that showed less support to students with disabilities; and (4) parents show the most concern about students' safety during employment training (Griffin, McMillan, and Hodapp, 2010). The purpose of the compilation of research in this study demonstrates transition and vocational resources that expand the knowledge of world-wide networks that advocate support for adolescents with disabilities, families, and educators. The study investigates transition and vocational resources in the states of Colorado, and uses content analyses to explore more detailed information of each resource. The advantage of this study is to close the gaps between secondary schools, parents, and the information that they receive. The results of this study are discussed by presenting transition and vocational resources in an easy to understand matrix.

Andrade, Supattra**Teaching Sexual Education and Preventing Sexual Abuse for Adolescents with Autism***Presenter(s): Andrade, Supattra; Suk-Erb, Wipanee; Locharoenrat, Weeramol*

Mt. Evans, Longs Peak Ballrooms-- Session time: 10:30 - 11:30 in the Morning

Special Education

Faculty Sponsor(s): Jackson, Lewis

Graduate Presentation

The deficient characteristics of language and social behavior in adolescents with autism spectrum disorders (ASD) can be linked to a poor understanding of sexuality and inappropriate expression of sexual feelings within social living (Travers & Tincani, 2010). In addition, adolescents with autism have a lack of ability to learn and understand unstructured social interactions and have difficulty in emotional or romantic relationships with other people. Therefore, it is important to provide sexual education in the curriculum of secondary education in order to express sexual interaction without unintentional behavior of adolescents with autism or prevent negative outcomes from social abuse. The purpose of this study focused on analyzing outcomes of other research based- evidence practices in the area of sexuality in adolescents with autism who lack the opportunity to learn sexuality in schools. The study found the techniques of various interventions for developing sexual education in secondary school and contribute to these students for expressing emotional and social interaction within appropriate way. Some examples of intervention include: (a) teaching students to increase their self-determination to make decisions based on sexual or physical distress; (b) teaching students to understand the social interactions of romantic relationships, marriage, appropriate responses to sexuality, and parenthood; (c) teaching students to prevent unwanted pregnancy; and (d) teaching students to support their personal health care (Travers & Tincani, 2010). The benefits of this study show how education supports the knowledge of sexuality and prevent sexual abuse among adolescents with autism who are moving toward adult status.

Baca, Matthew

Manchuria: Platform for Japanese Imperialism in the 1930's

Presenter(s): Baca, Matthew

Columbine A-- Session time: 02:00 - 02:15 in the Afternoon

History

Faculty Sponsor(s): Fong, Adam

Undergraduate Presentation

This paper historically and analytically examines the Japanese involvement in the territory of Manchuria during the 1930's. The Japanese involvement proved to be for not only economic, but political and economic reasons, which furthered their imperialistic aims. Drawing upon a variety of primary sources from the period, it becomes clear that Japanese intervention in Manchuria was the first step towards conquering China. This paper thus contributes to the a more nuanced understanding of Japanese imperialism in the 20th century, and illuminates the complex causes and manifestations of imperialism.

Baker, Crystal

Three Meta-Analytic Studies: Gender, IQ, and Theory of Mind on the "Reading the Mind in the Eyes Test"

Presenter(s): Kirkland, Rena; Baker, Crystal; Johnson, Cynthia

Multiple Session Presentation - Sessions 12, 13

Spruce C-- Session time: 01:20 - 01:35 in the Afternoon

Educational Psychology, School Psychology

Faculty Sponsor(s): Peterson, Eric

Graduate Presentation

Our daily activities contain social interactions that involve gleaning information from others' faces. Notably, we vary in our ability to accurately infer what another person is thinking or feeling based on their facial cues. In an effort to measure this ability, Baron-Cohen and colleagues (1997, 2001) developed the Reading the Mind in the Eyes Test (Eyes Test). In this task, participants view photographs of pairs of eyes and make a forced-choice of the best descriptor word to match each set of eyes. Importantly, the Eyes Test is sufficiently sensitive to detect individual differences in healthy adults and thus has been used extensively in research investigating social cognitive abilities. Yet, several questions have remained unanswered regarding this task. For instance, are there true gender differences in performance on the Eyes Test? Other questions surround examining what underlying processes the Eyes Test is measuring. Such as, does IQ play a role in performance on the Eyes Test? Does the Eyes Test correlate with other widely-used social cognition measures?

These research questions were addressed in three separate meta-analyses we conducted on the Eyes Test. We found a significant gender effect in favor of females on the Eyes Test ($g = .177$), which corresponds to literature suggesting female superiority in nonverbal behavior. In addition, we found Eyes Test performance moderately correlates with measures of general ability ($r = .236$) as well as two measures of theory of mind ability ($r = .286, .289$). When considering what the Eyes Test is measuring, it is important to take into account that performance on the Eyes Test is confounded with general as well as theory of mind abilities. Collectively, these results provide a clearer picture of what the Eyes Test is measuring and raises some methodological implications for others using this task in their research.

Balderas, David

Political Issues In The Mexican American Community

Presenter(s): Balderas, David; Barron-Avila, Alejandra; Chavez, Erick; Correa, Norman; Dias, Daniel; Flores, Evangelina

Aspen A-- Session time: 11:00 - 11:15 in the Morning

Mexican American Studies

Faculty Sponsor(s): Falcon, Priscilla

Undergraduate Presentation

Today, the Mexican origin population is the fastest growing Latino and ethnic group within the United States. According to the U.S. Census Bureau statistics, there are 50.5 million Latinos in the United States, with Mexican origin populations making up 31 million or 68% of the total Latino population. The student presentations will examine the various ways politics plays out in the Mexican origin and Latino communities, from grassroots action and voter turnout to elected representatives and public policy issues.

Barraza, Sujeith

Film "The Mission" and Colonial Latin America

Presenter(s): Hernandez, Armando; Barraza, Sujeith; Barron-Avila, Alejandra

Spruce B-- Session time: 09:00 - 09:15 in the Morning

Spanish

Faculty Sponsor(s): Park, Jungwon

Undergraduate Presentation

This panel examines the colonial society in Latin America through the lens of the film "The Mission."

Bates, Desirae

Division I College Athletes' in "Country Club" Sports: Does Tennis and Golf Athletes' Social Capital Create a Sense of Entitlement? How Does this Translate Academically?

Presenter(s): Bates, Desirae

Mt. Evans, Longs Peak Ballrooms-- Session time: 01:30 - 02:30 in the Afternoon

Sociology

Faculty Sponsor(s): Henderson, Angela

Undergraduate Presentation

Pierre Bourdieu suggests that educational success entails a whole range of cultural behavior that aids privileged children in navigating higher education and may translate into higher academic performance in college. Based on the typical social class differences between collegiate athletes based on the sport they play, Bourdieu's perspective would hold true for higher-class sports, or "country club" sports like tennis and golf. The purpose of this present study is to examine whether or not differences exist in the academic performance of country club athletes with cultural capital advantages over their non-privileged counterparts in other sports. Data were gathered from a Division I university in the west, comparing men's and women's golf and men's and women's tennis to the remaining sports, utilizing qualitative survey data, grade point averages (GPAs) and graduation rates as dependent variables. Results are discussed in light of Bourdieu's theory of social and cultural capital.

Bayard, Kashia

Exploring the Outcomes and Perceptions of Traditional and Post-baccalaureate Audiology and Speech-Language Sciences Students

Presenter(s): Bayard, Kashia

Mt. Evans, Longs Peak Ballrooms-- Session time: 01:30 - 02:30 in the Afternoon

Audiology & speech-language sciences

Faculty Sponsor(s): Hanks, Julie

Undergraduate Presentation

The increase in the number of post-baccalaureate students returning to college for additional education provides a need to better understand this growing population. Studies on program outcomes for traditional and post-baccalaureate students have focused primarily in the medical and nursing fields. These studies lack detailed insight into the student's experiences and perceptions. Within the Audiology and Speech-Language Sciences fields there is also limited research on traditional and post-baccalaureate student outcomes and experiences. This mixed methods study will examine the outcomes and explore the experiences and perceptions of traditional and post-baccalaureate students in the Audiology and Speech-Language Sciences program at the University of Northern Colorado. During the first stage, student outcomes will be examined from a previously administered survey to determine differences between traditional and post-baccalaureate students. During stage two, participants from each student group will be interviewed to develop a greater understanding of each student's experiences and perceptions. Research suggests that traditional and post-baccalaureate students have different qualities such as learning preferences. Based on comparable studies, expected results may demonstrate varying group experiences and perceptions. The results may be significant in determining unique advising and building awareness of unique group needs. This may lead to increased understanding of each academic path and the advising that is given to each student.

Beasley, Amanda

Wasted Hospital Supplies: How much is it costing the medical unit at a northern Colorado hospital and what can be done to reduce the cost?

Presenter(s): Beasley, Amanda

Mt. Evans, Longs Peak Ballrooms-- Session time: 01:30 - 02:30 in the Afternoon

Nursing

Faculty Sponsor(s): Hummel, Faye

Graduate Presentation

Abstract

The cost of hospital supplies is the second leading expense to hospitals following the cost of labor in providing care to individuals (Carey, 2010). In 2011, at a northern Colorado hospital, approximately \$15,840.00 was spent on personal care items provided to the patient during their hospital stay, this amount does not include the extra supplies that were given to the patient by staff members. It is imperative that hospitals assess ways in which to reduce costs in order to maintain an adequate level of care while operating in a cost-efficient way. The purpose of this poster presentation is to demonstrate how the medical unit at a Northern Colorado Hospital experiences financial loss through personal care items for patients that have been unused and/or wasted. Cost information regarding the supplies was obtained by the director of materials management and approved by the medical unit manager. A form was sent to each clinical staff member via email regarding the research project. Sheets were provided to document the supplies left in patient rooms after they were discharged from the hospital. The data from the research project will be used to support and develop a new policy regarding an admission package containing the basic personal care supplies (Kleenex, lotion, mouthwash etc.) and to implement this practice to reduce costs on the medical unit. Results to be presented on April, 12, 2011.

Beeners, Kendra

How hiring a Nurse Practitioner versus a Sports Medicine Physician can save thousands in an Orthopedic office

Presenter(s): Beeners, Kendra

Mt. Evans, Longs Peak Ballrooms-- Session time: 01:30 - 02:30 in the Afternoon

Nursing

Faculty Sponsor(s): Hummel, Faye

Graduate Presentation

Nurse practitioners have assumed an increasing role as providers in the health care systems. There is an increase in demand for Nurse Practitioners in family practice, but specialty areas are saturated with Physicians. Specialized surgery centers, such as an Orthopedic office can save thousands of dollars a year by hiring a Nurse Practitioner versus a Sports Medicine physician. Data suggests that a Nurse Practitioner is just as efficient as a physician in many areas. This cost benefit analysis will break down the role of the NP and a Sports Medicine Physician in non-emergent cases. Salary which will include reimbursements and job duties will confirm the significance of having an NP in this designated specialty area.

Bennet, Rachel

Solar Power from Scratch: Building and Testing Dye-Sensitized Solar Cells

Presenter(s): Bennet, Rachel

Mt. Evans, Longs Peak Ballrooms-- Session time: 10:30 - 11:30 in the Morning

Physics

Faculty Sponsor(s): Sung, Ruwang

Undergraduate Presentation

With the concern about the rising cost and environmental impact of fossil fuel use, interest in clean, renewable energy has sparked in recent decades. The most abundant energy source available is the solar radiation which bathes our planet daily in life-giving light. Harnessing this resource in clean, efficient ways is one of many steps our society can take to better our quality of life. Solar cells have progressed from the large, clumsy panels seen on houses and airports to the tiny, thin sheets which power small calculators; and the third generation, dye-sensitized solar cells, uses organic components such as graphite and berry juice to replace the heavy metals and expensive silicon found in typical solar devices.

To build a dye-sensitized solar cell, one requires three things: a positive cathode (typically titanium dioxide), a negative anode (platinum or graphite), and an electrolyte such as potassium iodide. The titanium dioxide is white, and so will reflect sunlight unless it is stained with dye such as that from dark-colored berries. This dye increases the efficiency of the cell, and yields the term dye-sensitized solar cell.

The focus of this research project is to learn how such cells can be built easily in a small lab. The cells assembled by the student researchers can then be tested using a simple solar simulator built from an overhead projector to determine their maximum power point, which is related to the efficiency of the cell. A secondary goal of the project is to test the effect of the graphite layer thickness on the maximum power point—i.e., does more graphite mean a better cell? Answering such questions will lead to better solar cells and cleaner energy for our world.

Beverly, Daniel

Soil CO₂ Efflux in Salvage Logged versus Untreated Beetle-kill Forests

Presenter(s): Beverly, Daniel

Longs Peak Ballroom-- Session time: 1:40 in the Afternoon

Biological Sciences

Faculty Sponsor(s): Franklin, Scott

Graduate Presentation

The current mountain pine beetle outbreak and subsequent management of beetle-killed forest in the southern Rocky Mountains has impacted millions of hectares of lodgepole pine forest and will influence ecosystem processes for decades. Soil respiration is the largest carbon flux in forest ecosystems and is a product of microbial decomposition and vegetative root respiration. Pine beetle induced overstory mortality and forest management options (e.g. salvage logging) will influence organic matter inputs, soil moisture, temperature, and nutrient cycling. Our objective in this study is to compare soil CO₂ efflux in untreated stands with three salvage logging treatments. Salvage logging treatments occurred between 2007 and 2009. We predicted elevated levels of CO₂ efflux in the salvage logged plots, where we projected higher levels of temperature and moisture associated with the removal of overstory trees. We

measured soil CO₂ efflux monthly at four locations in northern Colorado during the summers of 2010 and 2011. Within each plot we quantified soil temperature and moisture at each measurement location. Repeated measures analysis of variance (ANOVA) assessed differences in time and treatment variables. There was no significant difference in soil CO₂ efflux between uncut and salvage logged stands. Variation of seasonal soil CO₂ efflux was significant with peak flux occurring in July. Soil temperature and moisture were significantly higher in the salvage logged treatments; both are strong regulators of soil CO₂ efflux. Stepwise linear regression indicated soil temperature, vegetation cover and soil moisture account for 38% of the variability in soil CO₂ efflux. Ecosystem processes occur slowly in subalpine forest, so it is possible that changes in the physical and biological factors controlling soil respiration will lead to treatment differences in the future. Early results suggest salvage treatments of infested forest will not significantly cause a rapid increase in soil respiration when compared to non-treated forest.

Blount, Ivan

Perspectives of the "Greeley Bible Plan" and religion on campus

Presenter(s): Blount, Ivan; Mahannah, Megan

Mt. Evans, Longs Peak Ballrooms-- Session time: 01:30 - 02:30 in the Afternoon

Higher Education & Student Affairs Leadership

Faculty Sponsor(s): Yakoboski, Tamara

Graduate Presentation

This research looks at the historical influence of religion at the University of Northern Colorado. We will review archived documents specifically addressing the "Greeley Bible Plan" as we convey the impact the University of Northern Colorado experienced. This research will explore the student, faculty, and administrator viewpoints or experiences during this phenomena in the university history. This was a moment significant in the University of Northern Colorado's history and we intend to understand the turn or events during the period.

Bodkin, Mary

Comparación y contraste entre La Celestina y El caballero de Olmedo

Presenter(s): Bodkin, Mary

Aspen C-- Session time: 11:40 - 11:55 in the Morning

Foreign Languages, Spanish

Faculty Sponsor(s): Garza, Efrain

Undergraduate Presentation

La Celestina y El caballero de Olmedo son obras muy famosas de la literatura española. Ambas comparten muchos aspectos similares, pero también presentan diferencias que las hacen únicas. Primero, las damas de las obras son muy similares; Melibea y Doña Inés son mujeres bonitas e inalcanzables que actúan con indiferencia hacia el amor que les muestran sus pretendientes. Además, Calisto y Alonso los hombres que se enamoran a primera vista de sus respectivas damas tienen algunos aspectos similares por no alcanza la felicidad deseada y por experimentar un final trágico. Ambos buscan la ayuda de una alcahueta, y esas figuras celestinescas tienen papeles muy similares. La participación de Celestina es más importante y más predominante que Fabia quien resulta sólo una reminiscencia de la primera. Las dos malas mujeres toman ventaja de las jóvenes ingenuas y las persuaden con sus malas influencias. Los criados de los personajes principales tienen sus propios papeles con similitudes y diferencias. Por otra parte, los temas son similares en ambas obras; el amor cortés, la alcahuetería y la muerte se repiten en ambas obras. Aunque la religión es un tema muy fuerte en La Celestina, no es así en El caballero de Olmedo. En general, ambas obras maestras de la literatura española, La Celestina y El caballero de Olmedo tienen muchas semejanzas y algunas diferencias.

Bresowar, Gerald

What microsatellites tell us about two closely related endemic plant species in the Colorado Plateau

Presenter(s): Bresowar, Gerald

Longs Peak Ballroom-- Session time: 01:15 in the Afternoon

Biological Sciences

Faculty Sponsor(s): McGlaughlin, Mitchell

Graduate Presentation

The role of environmental variables in facilitating species radiations is an active area of research in population genetics. The plant genus *Cryptantha* subgenus *Oreocarya* (Boraginaceae) has as its center of diversity in the Colorado Plateau and Great Basin of the southwestern U.S. *Oreocarya* shows evidence of having undergone rapid species divergence in the recent evolutionary past. My research focuses on two sister species from this subgenus, *C. paradoxa* and *C. gypsophila*, both endemic to the Colorado Plateau. The latter species is a narrow endemic seemingly restricted to gypsum outcrops of the Paradox Formation, while the former is somewhat more widespread and generalist. Several populations of both *C. paradoxa* and *C. gypsophila* have been sampled, and genetic analysis using microsatellite markers will be discussed. The microsatellite data will allow for assessment of genetic similarity between and within populations, thus providing insight into population distinctiveness and diversity. Furthermore, the technique provides a tool for estimating degrees of recent gene flow between populations and species. Eventually this research will incorporate chloroplast, nuclear, and microsatellite genetic data, coupled with soil and geographic information, to infer the influence of these environmental factors in formation and maintenance of these species.

Bretfield, Mario

Annual and diurnal patterns in root sap flow of *Populus tremuloides*

Presenter(s): Bretfield, Mario

Longs Peak Ballroom-- Session time: 09:10 in the Morning

Biological Sciences

Faculty Sponsor(s): Franklin, Scott

Graduate Presentation

Quaking aspen (*Populus tremuloides* Michx.) stands provide a variety of crucial ecosystem services but have been declining in the western United States due to a decrease in wildfire and an increase in browsing. A recent phenomenon dubbed "Sudden Aspen Decline" has hastened this trend. Aspen produce mainly vegetatively by suckering from the parent root system, and clonal integration (the sharing of resources via roots) determines the number and survivorship of new individuals. Knowledge about the effects of clonal integration on ramet development will aid aspen management, especially in respect to aspen's response to the current mountain pine beetle epidemic. To better understand the mechanisms of clonal integration, we installed Dynamax sap-flow sensors on the roots between connected aspen ramets and monitored water flux throughout the 2011 growing season. Flow was measured unidirectionally towards the donor ramet (inflow), between both ramets, and away from the receiving ramet (outflow). We hypothesized that flow rates show annual fluctuations and correlate with leaf expansion and local weather conditions. At end of growing season, we severed all tap roots of the receiving ramet, and hypothesized that clonal integration would increase. Flow rates increased considerably with leaf-out and peaked after maximum leaf expansion until early to mid-August, when flow rates decreased steadily. Water distribution from donor to receiving ramet (i.e. clonal integration) was lower than expected (averaging around 60 g/h during peak season), compared to outflow at the distal root of the receiving ramet (avrg. 560 g/h) and inflow at the proximal root of the donor ramet (avrg. 400 g/h). Clonal integration doubled after severing roots of the receiving ramet (avrg. 120 g/hr), indicating a nurturing effect of the donor ramet. These results suggest that aspen become less dependent on neighbor ramets as they age but may still utilize neighbor ramet resources, especially when under stress.

Brevik, Taylor

Divergence of Sulfur-Flower Buckwheat using DNA Analyses

Presenter(s): Brevik, Taylor; McGlaughlin, Mitchell

Research Excellence Award Finalist

Mt. Evans Ballroom-- Session time: 03:00 - 04:00 in the Afternoon

Biological Sciences

Faculty Sponsor(s): McGlaughlin, Mitchell

Undergraduate Presentation

Eriogonum umbellatum Torr. (Polygonaceae), the sulfur-flower buckwheat, is among the most diverse plant species in North America with 40 different recognized varieties. Several of these recognized varieties are rare, 24 of which are termed vulnerable, imperiled, or critically imperiled by NatureServe (natureserve.org). *Eriogonum umbellatum* species can be found inhabiting 10 states and 2 Canadian providences in the mountainous west. Varieties display broad morphological, ecological, and geographic differences which make each taxonomically distinct. For this study, I am analyzing and comparing nuclear (ITS) DNA, inherited from both parents, and chloroplast DNA, inherited maternally, among five different varieties of *Eriogonum umbellatum* from several distinct populations residing in both Colorado and Oregon. Tissue samples were collected from several individuals from each population. The five varieties of interest include *E. umbellatum* var. *hausknechtii*, *E. umbellatum* var. *modocensis*, *E. umbellatum* var. *majus*, *E. umbellatum* var. *aureum*, and *E. umbellatum* var. *umbellatum*. Genetic analyses of these varieties using molecular markers should help to evaluate gene flow between populations and among varieties, mechanisms of differentiation, and evolutionary history. Understanding these will allow us to determine whether these varieties are monophyletic, share a common ancestor, or if they should be considered distinct evolutionary entities. Implications of this research could affect land management and conservation efforts, as well as our understanding of the mechanisms of evolutionary differentiation within diverse plant taxa.

Brinkman, Melissa

Back to the Basics: A Simple and Cost-effective Umbilical Cord Blood Collection Device

Presenter(s): Brinkman, Melissa

Mt. Evans, Longs Peak Ballrooms-- Session time: 01:30 - 02:30 in the Afternoon

Nursing

Faculty Sponsor(s): Hummel, Faye

Graduate Presentation

Abstract

Introduction: The Umbilicup, or a standard two ounce medicine cup, are used in the labor and delivery setting of a hospital to collect umbilical cord blood. The Umbilicup is a cord blood collection device used to obtain an umbilical cord blood sample, which is sent to a lab to test blood type and Rh factor. A standard two ounce medicine cup along with a vacutainer can be used for the same purpose.

Methods: A cost-benefit analysis was performed at a 16 bed labor and delivery unit in a leading hospital in northern Colorado to evaluate if changing from an Umbilicup to a standard two ounce medicine cup and vacutainer would contribute to a cost-savings.

Results: The analysis revealed that substituting a two ounce medicine cup along with a vacutainer for the Umbilicup could contribute to a cost-savings of \$8,796.06 per year.

Conclusion: It is advised that the northern Colorado labor and delivery unit replace the Umbilicup with a standard two ounce medicine cup and vacutainer due to the evaluated cost benefits.

Britt, Jamie

The Decoding of Symbols within the Courtroom

Presenter(s): Britt, Jamie

Aspen B-- Session time: 11:20 - 11:35 in the Morning

Communication Studies

Faculty Sponsor(s): Allen, Lin

Undergraduate Presentation

Communication Studies

Dr. Lin Allen, Department of Communication Studies

University of Northern Colorado

The Decoding of Symbols within the Courtroom

The problem surrounding courtroom communication in today's practice of law is the need for systematic analysis of symbolic encoding, decoding, and interpretation of symbols instrumental to the construction of case logic. The rationale for this study is to understand the steps necessary for court personnel to select and analyze symbols that will portray their case effectively. The intent for this research is to illustrate how symbols in the case selected form case logic; the researcher will decode symbols within *Roe v. Wade* by placing the symbols into cluster analysis and the dramatic pentad. The research will present the decoding of court transcripts and oral arguments from the respondent side of *Roe v. Wade*. Symbols are the instruments for encoding ideas; they are the foundation for human communication; thus, there is significant importance in the knowledge of words and images used to construct cases. The use of symbols within the courtroom primarily consists of symbolic words such as abortion, pregnancy, life, etc. within *Roe v. Wade*. The presented symbols will answer the RQ: What is the assumptive logic undergirding the encoding and interpretation of symbols by court personnel?

Brothe, Mariah

Themes of Immortality in Media and its Influence on Young Adults

Presenter(s): Brothe, Mariah

Mt. Evans, Longs Peak Ballrooms-- Session time: 01:30 - 02:30 in the Afternoon

Anthropology

Faculty Sponsor(s): McBeth, Sally

Undergraduate Presentation

My research is focused on the influence of media associated with themes of immortality on the age group of 18 to 22 year old students. I am interested in how and if a fear of death fuels a desire for this age group to take an interest in immortality. In turn, I question whether this interest in immortality leads to an increase in this age group's sense of invincibility. I intend to address this subject through an ethnographic approach. First, I will complete ethnographic work on a group of students from my chosen age group as they participate in the "party culture" at UNC. Then, I will invite these same students to participate in focus groups in a discussion-based platform. I will also supplement my original research with analytical research evaluating the particular components of immortality-themed media. I will combine the two kinds of research in a final ethnographic work that will provide an overview of this age group and the level of invincibility displayed. I will use a content analysis approach in order to summarize the data accumulated from my research. I believe that the research will help the participants to become more aware of the way that media influences them. Many other disciplines such as psychology and philosophy have researched immortality from their particular discipline; however, a lack of information exists in the field of cultural anthropology concerning immortality. Other scholars within the field of cultural anthropology will find value in my research based on the lack of information available on themes of immortality within media related to this age group. I believe that an anthropological approach will give way to a new definition of the way invincibility is affecting the United States' young adults.

Broughton, Brianne

Natural compounds as sources of new drugs: venoms and cancer

Presenter(s): Broughton, Brianne

Research Excellence Award Finalist

Mt. Evans Ballroom-- Session time: 03:00 - 04:00 in the Afternoon

Biological Sciences

Faculty Sponsor(s): Mackessy, Stephen

Undergraduate Presentation

Snake venoms contain various constituents that may be useful for medicinal purposes, and previous research has indicated that some snake venom components inhibit cancer cell proliferation by both general and specific mechanisms. Paradoxically, the creatures that many people fear may carry a possible treatment for an equally feared disease, cancer. The purpose of this study is to evaluate the effects of Ahaetulla snake venom and purified toxins on the proliferation of MCF-7 breast cancer cells. Our working hypothesis is that crude venom, as well as purified proteins, will inhibit cancer cell growth but show minimal effects on normal cells. Cells were cultured, subcultured, and then added to wells of a microtiter plate containing varying concentrations of Ahaetulla venom. After 24 hr incubation at 37 °C, cell proliferation in the presence and absence of venom was quantified (MTT assay). Initial results indicate that the venom contains potent anti-proliferative activities, an interesting observation in light of the fact that this potency does not correlate with overall venom toxicity, which is very low for mammals. This anti-proliferative effect was found to be contained in one component isolated by size exclusion fractionation of venom. We are currently purifying this venom protein(s) with the goal of obtaining a purified component(s) which will inhibit cancer cell proliferation but not affect normal cells. This research has the potential to discover novel compounds with specific anti-cancer properties, which in turn can assist in rational drug design.

Brown, Jessica

Physiological and Psychological Responses to a Longitudinal Rehabilitation Program

Presenter(s): Brown, Jessica

Mt. Evans, Longs Peak Ballrooms-- Session time: 01:30 - 02:30 in the Afternoon

Sport & Exercise Science

Faculty Sponsor(s): Schneider, Carole

Graduate Presentation

Physiological and psychological improvements have been well noted in cancer survivors after an exercise intervention. To date, little research has been done on the effects of a long-term exercise training program. PURPOSE: To assess the physiological and psychological responses to exercise training in cancer survivors over a 21 month exercise intervention. METHODS: Thirty-four cancer survivors, including 9 males and 24 females, participated in a cancer rehabilitation program consisting of 60 minute exercise training sessions, three days per week for 21 months. Each session included cardiovascular, muscular strength, muscular endurance, flexibility, and balance training. Physiological and psychological assessments which examined cardiorespiratory fitness, muscular endurance, depression, fatigue, and quality of life were conducted at the onset of the program (INTL), at three months (1ST), and every six months until four reassessments were completed (2ND, 3RD, and 4TH, respectively.) RESULTS: Significant improvements were observed in all measures ($p < 0.05$), except muscular endurance. Cardiovascular endurance improved 12.1% ($p = .002$) at onset (INTL to 1ST) and although additional improvement occurred, it was not significant. Likewise, total fatigue decreased -33.9% ($p < .0001$) from INTL to 1ST while subsequent improvements were not significant. Depression was shown to decrease -17.9% ($p = .043$) and -17.6% ($p = .025$) from INTL to 1ST and 3RD to 4TH, respectively. Although the main effects for muscular endurance yielded no significance, pairwise comparisons revealed a 32.9% improvement from INT to 1ST ($p = 0.011$). Total quality of life did not improve at onset, but a significant 10.1% increase ($p = .006$) occurred from 2ND to 3RD reassessments. CONCLUSION: A 21 month full-body exercise program has been shown to elicit improvements in physiological and psychological measures in cancer survivors. The greatest improvements occur during the first three months of training then plateau. This suggests that this exercise intervention is sufficient to return cancer survivor

Brown, Lowrey

The Importance of Riparian Habitat to Bats in the Urbanized Prairie

Presenter(s): Brown, Lowrey

Longs Peak Ballroom-- Session time: 01:30 in the Afternoon

Biological Sciences

Faculty Sponsor(s): Adams, Rick

Graduate Presentation

I plan to analyze patterns of habitat use by insectivorous bats in the Greeley area, an urban island in a once-prairie, now-agricultural habitat. Intact prairie and its agricultural replacement, offer bats few vertical landscape elements in which some species prefer to roost and little open water that both bats and some of their insect prey need. Urbanization brings structures and habitat rearrangements, notably artificial water features and proliferation of cultivated trees. Whereas urbanization generally has negative effects on biodiversity, in prairie habitat, urban provision of roosting opportunities (buildings, trees, etc.) and artificial water features could provide bats with the resources they need. Despite the seemingly bat-friendly features provided by Greeley's urbanization, the substitution of reservoirs and gazebos for rivers and native trees seems unlikely to afford conditions that favor sustainable reproductive populations, possibly even for synanthropic species. I would like to test the hypothesis that, in this arid prairie climate, there are significant differences between bat species richness and insect prey availability at water sources in urbanized areas versus water sources in less-urbanized areas. Further, I would like to explore, under these same conditions, if there are significant differences between bat species richness and insect prey availability at artificial water sources versus riparian water sources. This will be useful in assessing the importance of undeveloped riparian ecosystems in maintaining a diverse insectivorous bat community in Greeley. I will compare the species richness and activity of insectivorous bat species using sonar recordings, and insect availability using capture in blacklight traps. Study sites will include: urban and less-developed artificial water sources, and urban and less-developed riparian water sources. If urban riparian site availability is inadequate, I will use urban water sources such as irrigation canals or natural standing water sources. Statistical analyses will include multiple regression and multivariate analysis (Principal Components Analysis).

Buckley, Tara

Expectations and Beliefs about Career Services from Current UNC Students

Presenter(s): Murdock, Jennifer; Buckley, Tara; Oyer, Laura; Welch, Renee

Mt. Evans, Longs Peak Ballrooms-- Session time: 10:30 - 11:30 in the Morning

Counselor Education, Clinical Counseling, Counseling Psychology, Educational Leadership, Educational Psychology, Higher Education & Student Affairs Leadership, Psychology, School Counseling, School Psychology

Faculty Sponsor(s): Murdock, Jennifer

Graduate Presentation

The purpose of this qualitative instrumental case study was to explore the expectations and beliefs from current University of Northern Colorado (UNC) students about the UNC Career Services office. It was apparent fewer students utilized UNC Career Services. For example, attendance data indicated a decrease in the number of students attending recent UNC job and internship events. Although previous research emphasized a need for career services and resources, students in the studies reported being unaware these services existed. In the current study, researchers sought to explore the following questions: What do students know and believe about Career Services? What types of resources do students want and expect from Career Services? How can these services be provided effectively to students? How can Career Services effectively promote and market services and resources? Researchers chose an instrumental case study design and collected data through focus groups using a semi-structured interview format. Researchers analyzed the data using a thematic analysis. Anticipated results include the following themes: lack of knowledge about career resources and services, a need for career resources and services, better marketing and advertising of events and services, utilizing faculty as a liaison between the student and the office, and creating smaller networking events.

Bullard, Kristen**PfPK7: an antimalarial drug target***Presenter(s): Bullard, Kristen**Longs Peak Ballroom-- Session time: 11:45 in the Morning*

Biological Sciences

Faculty Sponsor(s): Keenan, Susan

Graduate Presentation

Malaria is a devastating disease caused by parasites from the genus *Plasmodium*. According to the World Health Organization's (WHO) World Malaria Report 2011, in 2010 there were 216 million reported cases of malaria, approximately 700,000 people died of malaria, and 86% of these deaths claimed the lives of children less than 5 years of age. *Plasmodium (P.) falciparum*, the most lethal human *Plasmodium* species, accounts for 90% of malaria-related deaths. The WHO has recommended that all uncomplicated cases of *P. falciparum* malaria be treated with Artemisinin Combination Therapy (ACT), which is the last line of human defense against drug-resistant malaria parasites. However, Artemisinin-resistant strains of *P. falciparum* are emerging in regions of Southeast Asia. This resistance has necessitated the identification of both suitable drug targets for antimalarial drug design and potential inhibitors of those targets. *Plasmodium falciparum* protein kinase 7 (PfPK7) is an orphan kinase that mediates cellular processes during parasite proliferation and has been identified as a potential target for antimalarial drug design. Parameters defined by structural data and IC50 determinations from a screen of 324 known kinase inhibitors against PfPK7 were used to inform a computational screen of 2500 small molecules. Small molecules that were determined to be structurally similar to small molecules with low IC50 values were tested to further elucidate the common characteristics shared between small molecules that successfully compete for ATP within the PfPK7 ATP binding site. In addition, necessary interactions that take place between these small molecules and residues within the ATP binding pocket are described. Identification of PfPK7 inhibitors may potentially add to the arsenal of drugs that affectively treat drug resistant strains of *P. falciparum*.

Bumgardner, Brenda**The Athlete and the L-word: Female Athlete Responses to the Lesbian Label***Presenter(s): Bumgardner, Brenda**Aspen C-- Session time: 09:40 - 09:55 in the Morning*

Sport & Exercise Science

Faculty Sponsor(s): Brustad, Robert

Graduate Presentation

Several sport scholars have suggested that a heterosexist and homonegative social climate exists in women's sport (Gill, Morrow, Collins, Lucey, & Schultz, 2006; Griffin, 1998; Krane & Barber, 2005; Messner & Solomon, 2007). Women in sport are still subject to stereotypes female athletes have faced for decades, such as being labeled a "lesbian". All female athletes regardless of sexual orientation can be stigmatized by stereotypes and these stereotypes can limit female athletes' social acceptance, trivialize their accomplishments, and foster inaccurate perceptions about female athletes (Kauer and Krane, 2006). To date, no research employing a social identity perspective and narrative data analysis approach has been done examining collegiate female athlete experiences with the lesbian label. The purpose of this research is to examine female athletes' perceptions of and responses to experiences with female athlete stereotypes during their collegiate careers. In the present study, 15 former college female athletes ranging in age from 25 to 35 years of age will engage in semi-structured interviews. Participants from a variety of different college sports will be represented. From the individual and collective stories gathered through in-depth interviews with both lesbian and heterosexual participants, narratives of actual events will be presented. The narratives will be examined through a social identity lens to: (a) identify the athletes' consciousness of female athlete stereotypes in sport; (b) examine their responses to these stereotypes; and (c) examine the consequences of their experiences with these stereotypes. General anticipated conclusions of the study are that each participant will report being conscious of female athlete stereotypes and that each will have had some experience with those stereotypes during their college career, either directly or indirectly. The intent of the study is to help create a unique and deeper understanding of the psychological and emotional components of these athletes' experiences.

Burakowski, Katharine**Factors Affecting Retention: A Division II Perspective***Presenter(s): Burakowski, Katharine**Mt. Evans, Longs Peak Ballrooms-- Session time: 01:30 - 02:30 in the Afternoon*

Sport & Exercise Science

Faculty Sponsor(s): Sharp, Linda

Graduate Presentation

Organizations suffer sometimes severe consequences of employee turnover including incurring costs associated with recruiting, screening and assimilating new talent, exit interviews, employment advertising, applicant testing, assessment, background checks, interviews, travel and relocation, and orientation and training (Frank et al., 2004; Walker, 2001). However, the retention of employees can lead to service and organizational excellence, growth, and financial developments (Studer, 2004). Researchers agree that retention of employees leads to consistency, profitability, and greater overall success (Buckingham & Vosburgh, 2001; Cascio, 2006; Frank et al., 2004; Waldman & Arora, 2004).

Few studies have investigated the retention and turnover of employees in sport settings, and even fewer have been concerned specifically with intercollegiate athletics (Cunningham & Sagas, 2002; Cunningham & Sagas, 2004a; Cunningham, Sagas & Ashley, 2001; Inglis, Danylchuck, & Pastore, 2000). Coaches are a significant resource for college athletics departments because they recruit

student-athletes, develop their athletic abilities, and coordinate individual athletes into the development of teams (Turner & Chelladurai, 2005).

The purpose of this phenomenological study was to examine how career aspirations influenced the retention or turnover of assistant sports coaches at the National Collegiate Athletic Association (NCAA) Division II level. This study addressed career aspirations and how they related to retention of assistant coaches. Eight Division II assistant coaches participated in this study.

Three themes emerged from the data analysis: Importance of a Challenging Environment (Competitive Environment, Growth Opportunities); Fit – Philosophical Alignment (Environment of Division II, Importance of Support and Trust, Administrator Investment); Fit – Work-Life Balance. These three themes encompass what the participants stated to be the reasons why they remain coaching at the Division II level and at their respective institutions. These themes are not the only fact

Cabbage, Stacy

Xenex versus C-Difficile

Presenter(s): Cabbage, Stacy

Mt. Evans, Longs Peak Ballrooms-- Session time: 01:30 - 02:30 in the Afternoon

Nursing

Faculty Sponsor(s): Hummel, Faye

Graduate Presentation

Xenex versus C-Difficile

Clostridium Difficile (C-Diff), an anaerobic spore, is the most common cause of severe antibiotic-associated diarrhea. C-Diff may lead to severe inflammation of the colon and in some cases may be fatal. A small number of healthy people naturally carry the bacteria in their large intestine. However, C-Diff is most commonly found in patients on antibiotic treatments in hospitals and other health care facilities. The C-Diff bacteria produce hardy spores that can persist in a room for weeks or even months. Most hospital cleaning products cannot effectively penetrate the spore's shell to eradicate the microorganisms from hospital surfaces. It has been shown 78% of C-Diff infected rooms tested positive for C-Diff after cleaning. This can increase the risk of a patient obtaining an unwanted C-Diff infection and prolonging a costly hospital stay.

Since 1877, ultraviolet rays (UV) have been shown to destroy the DNA and RNA of microorganisms and cause cellular death. By using UV light, the Xenex system has proven to be 20 times more effective than current chemical cleaners against C-Diff. The aim of this project is to decrease hospitals' C-Diff rates by 80% by incorporating the Xenex system in the fight against C-Diff. By decreasing C-Diff prevalence, hospitals will save thousands of dollars in otherwise costly extended hospital stays.

References

http://www.xenex.com/?page_id=95

http://www.xenex.com/?page_id=99

<http://www.mayoclinic.com/health/c-difficile/DS00736/DSECTION=causes>

Cabezas, Marian

Remote Monitoring Reduces Medical Expenses And Improves Care For Diabetes Patients.

Presenter(s): Cabezas, Marian

Mt. Evans, Longs Peak Ballrooms-- Session time: 01:30 - 02:30 in the Afternoon

Nursing

Faculty Sponsor(s): Hummel, Faye

Graduate Presentation

Diabetes is a chronic health condition affecting over 18.8 million (8.3%) Americans with an additional 7 million being undiagnosed. According to the American Diabetes Association, in 2007 health care costs of diabetes topped \$174 billion. In addition, persons diagnosed with diabetes typically have 2.3 times higher medical expenses than those without diabetes. Because many factors can contribute to increased blood sugar levels, medical management of diabetes needs to be individualized and timely to improve patient care. By utilizing remote monitoring, primary care providers can receive a patient's blood sugar data more timely thus reducing medical management costs and improving care. This study will compare the medical expenses of two patients with new onset diabetes and similar comorbidities. My goal is to show that by increasing the use of diabetes education and remote monitoring, a reduction of medical costs and an improvement of patient care can be achieved.

Campos, Karla

Bilingüismo: Una alternativa para el futuro

Presenter(s): Vargas, Carlos; Campos, Karla; Guerra, Eledora; Pina-Green, Martha; Sandoval, Irma; Nunez, Jose; Vazquez, Zoraya

Spruce C-- Session time: 11:00 - 11:15 in the Morning

Foreign Languages, Spanish

Faculty Sponsor(s): Garza, Efrain

Undergraduate Presentation

En estos tiempos donde la interacción de diversas culturas se presenta con más frecuencia es necesario poder dominar más de dos idiomas. El alto nivel de globalización que ha sucedido en las últimas décadas ha incrementado las relaciones entre los diversos países. Como resultado de lo anterior, el poder comunicarse en varios idiomas se ha vuelto de suma importancia. Una manera de ser exitoso tanto en los estudios como en la profesión que se elige es poder utilizar no únicamente el idioma oficial de país, sino también saber otros idiomas. Además la ventaja de ser bilingüe se extiende a la vida social. En esta región donde la comunidad es heterogénea, resulta imprescindible el poder comunicarse con personas que hablan diferentes idiomas. Entre los aspectos que más sobresalen en el aprendizaje de un segundo idioma se pueden mencionar el sector del comercio y transporte, el turismo, las relaciones públicas, la interpretación y traducción y el aspecto de la enseñanza principalmente. Una alternativa para el futuro es convertirse en un candidato a un puesto con habilidades bilingües que pueda desenvolverse en este campo exitosamente.

Carpenter, Dylan

The End of the Line or, the Beginning of New Sights

Presenter(s): Carpenter, Dylan

Aspen B-- Session time: 03:40 - 03:55 in the Afternoon

English

Faculty Sponsor(s): Zimmerman, Lisa

Undergraduate Presentation

Walking into a bookstore today to search for poetry is akin to a scavenger hunt. There are clues and signs pointing to the desired destination that require careful decoding, such as locating the local Shakespeare collection or the Odyssey. While the end location may cover quite a bit less real estate on the shelf than expected, the simple knowledge that there is still some bastion of literary creativity outside of novels with 72 font titles is encouraging. Poetry, though, has something else hidden in the white places on the page; it has some secret ingredient that many novels take hundreds of pages to develop, if at all. Poetry brings the writer to the fore, brings issues and memories and lovely imagery right to the window between the writer's mind and the reader. That each page does this, each line breathing its own life and flavor into the stanzas, is the incredible part. Poetry holds an extraordinary ability to allow authors to write towards some veiled, often previously unrealized goal in an effort to better grasp their own view of the world. The depth a person can attain with a few curtailed but fully realized and weighed lines of poetry is what drew me to the medium in the beginning. It is also this depth and acute vision of the world this project proposes to explore; the process consumes. The comparison and weighing and testing of man's different ideas, words, and concerns is explored here; how does one's voice form? What concerns the poet? How does that bleed onto the page. It may be drops; it may be torrents.

Carroll, Danya

Determinants of Health on the Navajo Nation: Collecting Data through Visual Means

Presenter(s): Carroll, Danya

Research Excellence Award Finalist

Council Room-- Session time: 01:40 - 01:55 in the Afternoon

Public Health

Faculty Sponsor(s): Sharp, Teresa

Graduate Presentation

Social determinants have lifelong implications on health that may limit the ability of individuals and communities to achieve optimum health. Identifying social determinants in underserved populations is a significant focus for public health professionals. The perspectives of remote-residing individuals on factors that impact health are crucial for the development and implementation of initiatives to reduce detrimental factors and enhance positive determinants of health for these communities. OBJECTIVE: To describe impeding and promoting factors that impact the health of Navajo people residing on the Navajo Reservation. The Navajo Reservation is the largest American Indian reservation in the United States. It is predominantly rural consisting of communities that are remotely widespread resulting in unique difficulties assessing and rectifying unfavorable social determinants of health. METHODS: Data were collected using photography on the Navajo Nation reservation. The SHOWeD method (used with PhotoVoice methodology) was used to analyze the photographs. By using these photographs, community concerns and strengths were visually documented. Use of data collection through visual means and the SHOWeD analysis process promotes critical thinking and empowers communities to take action. RESULTS: Social and environmental determinants such as gang activity, poverty (low socioeconomic status), alcoholism, and lack of formal education were identified as impeding factors of health. Excess consumption of high fat and processed foods typically associated with food deserts was also a detrimental health factor. Intergenerational cultural activities, education, and the availability of natural, traditional foods were health-promoting factors. CONCLUSION: Photographs showed images depicting both positive and negative determinants in Navajo communities. These images provide direction for future and more in-depth research and interventions for Navajos. Data suggest that culture, resiliency, and community engagement may have positive and protective influences on health.

Carter, Richard

Calcification of the larynx and trachea during growth and development in the nasal-emitting echolocating bat

Artibeus jamaicensis

Presenter(s): Carter, Richard

Longs Peak Ballroom-- Session time: 08:45 in the Morning

Biological Sciences

Faculty Sponsor(s): Adams, Rick

Graduate Presentation

Calcification and ossification of the larynx in mammals is considered to be a phenomenon created by mechanical stimulus on the cartilage by muscle. Syringeal and tracheal ossification is a distinguishing feature of birds and is suggested to have evolved due to

vocalization. In bats, a single study on this topic found varying levels of ossification in the arytenoid, cricoid and thyroid cartilages between various species and presented no data regarding tracheal ossification. The author of that study proposes that ossification of the larynx is an adaptation to support the contraction of the cricothyroid muscles used to produce high frequency echolocation. We hypothesized that laryngeal calcification would occur during growth and development. We also hypothesized that tracheal and bronchial rings would not ossify ontogenetically like birds. We also hypothesized that ossification of the larynx would occur in relation to flight and echolocation development in juveniles. We euthanized individuals from our captive breeding colony from 1 day postpartum to adulthood (>104 days), after determining their flight stage. The trachea and larynx were removed and cleared and stained using Alcian blue for cartilage and Alizarin red for calcification. We found no laryngeal or tracheal calcification in bats younger than 18 days (pre-flight stages). Certain areas of the larynx began to calcify before others. These calcification centers appeared on the margins of the cricoid with simultaneous calcification on the ventral side of the tracheal rings closest to the larynx. Calcification centers of the cricoid grew outward from the dorsal and ventral sides until the entire cricoid became calcified. The age at which cricoid cartilage calcification began and ended was variable, beginning between 24 and 34 days (un-sustained and sustained flight stages) and ending before adulthood. Surprisingly tracheal ossification extended into the bronchi in adults. We suggest that ossification of these structures is a convergent adaptation between bats and birds to allow for respiration during powered flight.

Castro, Kyle

First Generation College Student Involvement and Social Identity Development

Presenter(s): Castro, Kyle; Myers, Kimberly

Mt. Evans, Longs Peak Ballrooms-- Session time: 01:30 - 02:30 in the Afternoon

Higher Education & Student Affairs Leadership

Faculty Sponsor(s): Couture, Rene

Graduate Presentation

This study examines the different intersecting identities among first generation college student leaders. Participants were asked about their social identities and how those manifested in their involvement and impacted their development. The participants were also asked to describe how being a first generation college student impacted those identities, involvements, and development. Researchers predict both first generation student status and social identity relate to types of involvement, and quality of experience.

Chen, Hsin-Chung

Predicting Sponsorship Effectiveness from Team Attachment Perspective: A Case Study of UNC Football

Presenter(s): Chen, Hsin-Chung; Reams, Lamar

Mt. Evans, Longs Peak Ballrooms-- Session time: 10:30 - 11:30 in the Morning

Sport & Exercise Science

Faculty Sponsor(s): Stotlar, David

Graduate Presentation

In 2009, college football sponsorship agreements were valued at an astounding \$572 million across the National Collegiate Athletic Association's three divisions (IEG, 2009). Noting the revenues and business relationships at stake among universities, sponsors, and fans, research into team attachment and how it relates to sponsorship effectiveness is critical to the success of future collegiate sport sponsorship agreements.

Team attachment has been said to represent an individual's psychological engagement with a sports team (Funk, 2008). Similarly, Tsiotsou and Alexandris (2009) found that team attachment significantly influences individual image of team associated sponsors, word of mouth, and purchase intentions. Thus, the purpose of the current study was to modify their sponsorship effectiveness scale to examine how college football team attachment contributes to sponsorship effectiveness at the Division I (FCS) level.

To collect the necessary data, the questionnaire was disseminated at two UNC football games by volunteer sampling. With a total of 207 respondents, LISREL 8.52 and SPSS 17.0 were used to analyze the data for descriptive statistics, confirmatory factor analysis (CFA), and structural equation modeling (SEM). The results of the study indicated that the sponsorship effectiveness scale possessed reliability and validity. After conducting SEM, the variables of team attachment, sponsor image, word of mouth, and purchase intentions fit the proposed model.

Pragmatically, the significance of team attachment cannot be understated in its role as an initial construct to begin the sponsorship process, and as a tool to increase sponsorship effectiveness. Considering the construct of sponsor image as a mediating variable to sponsorship effectiveness, greater care must be taken to boost a college football sponsor's image before they can anticipate an increase in positive word of mouth or an increase in purchase intentions. In closing, college sport marketers can utilize these results to construct marketing strategies for future college sponsorship a

Clark, Alena

Breastfeeding Research Panel #1

Presenter(s): Weber, Laurenda; Clark, Alena; Frantz, Helen

Aspen C-- Session time: 10:00 - 10:15 in the Morning

Dietetics

Faculty Sponsor(s): Clark, Alena

Undergraduate Presentation

Breastfeeding and the use of breastmilk have been shown to provide health, nutritional, immunological, developmental, psychological, social, economic and environmental benefits, which extend to the infant, mother and community. The United States Department of Health and Human Services and the American Academy of Pediatrics recommend that infants be breastfed exclusively for the first 6 months of life and the continuation of breastfeeding with appropriate solid foods for at least the first year. A new elective was added to the Dietetics Program curriculum called Breastfeeding: Benefits, Support and Promotion. Students in this course were required to complete a research paper on a specific breastfeeding topic. This panel presentation will discuss the most recent research regarding the role of breastfeeding in decreasing cancer risk and the effects of polycystic ovarian syndrome on breastfeeding duration.

Clark, Alena

Breastfeeding Research Panel #2

Presenter(s): Clark, Alena; Shrull, Lyndsey; McCann, Caitlin; Munn, Kelsey

Aspen C-- Session time: 01:00 - 01:15 in the Afternoon

Dietetics

Faculty Sponsor(s): Clark, Alena

Undergraduate Presentation

Breastfeeding and the use of breastmilk have been shown to provide health, nutritional, immunological, developmental, psychological, social, economic and environmental benefits, which extend to the infant, mother and community. The United States Department of Health and Human Services and the American Academy of Pediatrics recommend that infants be breastfed exclusively for the first 6 months of life and the continuation of breastfeeding with appropriate solid foods for at least the first year. A new elective was added to the Dietetics Program curriculum called Breastfeeding: Benefits, Support and Promotion. Students in this course were required to complete a research paper on a specific breastfeeding topic. This panel presentation will discuss the most recent research regarding immunology of breastmilk, breastfeeding in developing countries and how breastfeeding exposes infants to a wide variety of taste flavors.

Cleveland, Lacy

Students' perceptions of graphic organizers as a study aid in a general biology laboratory

Presenter(s): Cleveland, Lacy

Longs Peak Ballroom-- Session time: 10:15 in the Morning

Biological Sciences

Faculty Sponsor(s): Jurin, Richard

Graduate Presentation

The United States currently acts as a world leader in scientific innovation; however, secondary and post-secondary students are falling behind in science, technology, engineering, and math related fields. In order to remain a scientific world leader, instructors need tools to improve students' success in collegiate level sciences. Using a qualitative case-study approach, the data from this study provides instructors insight to students' perception of graphic organizers as a study-aid for a collegiate-entry-level general biology laboratory. Open-ended surveys (n=105) and semi-structured interviews (n=4) revealed students initially chose to use graphic organizers for laboratories they felt were difficult. Students continued to use them after seeing improved assessment scores. Students stated appreciation for the graphic organizers because they were better able to create a visual map of the biology content and to focus their studying. This study suggests graphic organizers may be one tool to improve student success in the general biology laboratory.

Conte, Mary

Diabetes Prevention a Cost-Benefit Analysis

Presenter(s): Conte, Mary

Mt. Evans, Longs Peak Ballrooms-- Session time: 01:30 - 02:30 in the Afternoon

Nursing

Faculty Sponsor(s): Hummel, Faye

Graduate Presentation

Diabetes is a public health epidemic, affecting 25.8 million Americans and costing 174 billion dollars annually. Valid research provides evidence that prediabetic individual can reduce their chance of developing type 2 diabetes by 58% with changes in lifestyle. The purpose of my poster will be to present the possible cost savings from utilizing a diabetes prevention collaborative practice team. The method involves collecting data on average costs to employ a team comprised of an Advanced Practice Nurse, Dietitian, and Exercise trainer, along with, calculating average costs of gym memberships, in comparison with treatment costs of type 2 diabetes. Using the cost data collected I will conduct a cost-benefit analysis. I predict that it costs less to prevent type 2 diabetes than it does to management and care of type 2 diabetes.

Craven, Katelin

Foraging Patterns By Bats in Forested, Edge, and Masticated Ponderosa Pine Forest in Boulder County, Colorado

Presenter(s): Craven, Katelin

Longs Peak Ballroom-- Session time: 10:45 in the Morning

Biological Sciences

Faculty Sponsor(s): Adams, Rick

Graduate Presentation

We investigated bat foraging patterns and insect activity within ponderosa pine woodlands of three stand types: forested, edge, and masticated. To record sonar calls, we arrayed three Pettersson D240x detectors with digital recorders, moving them among five pseudoreplication transects and collected insects in forested and masticated stands using black-light traps. Calls were analyzed to species using Sonobat 3.0 and total number of calls for 2010 and 2011 were pooled, as there was no significant difference in overall stand use between years ($P=0.14$, Wilcoxon Rank-Sum Test). Overall bat activity was highest in masticated stands (443 total calls recorded), with 275 calls in forested stands, and 139 on the edge. Dunn's test showed that activity was significantly different between use of masticated stands versus edge ($P=3.99$) and forested stands ($P=2.31$), but did not differ between use of forested stands and edge ($p=1.68$). We also present data on species-specific use patterns of stand types. In both years average insect biomass was lower in masticated than in forested habitat: 2010 = 276.8 mg (SD=380.9) in forested habitat, whereas masticated = 2.47 mg (SD=6.4); 2011 = 13.9 mg (SD=5.1) in forested stands and 8.7 mg (SD=6.5) in masticated stands. We found significantly more bat activity in masticated habitat and contrastingly significantly more insect biomass found in forested habitat, forest management treatments that promote habitat mosaics are best for supporting bat species diversity particularly in variable environmental conditions.

Dalgamoni, Tareq

Newman's Proof of the Prime Number Theorem

Presenter(s): Dalgamoni, Tareq

Aspen C-- Session time: 10:20 - 10:35 in the Morning

Educational Mathematics

Faculty Sponsor(s): Diaz, Ricardo

Graduate Presentation

Prime numbers are the building blocks in the study of number theory. Primes and their properties have been studied intensively in the mathematics literature. The distribution of primes and their infinitude attracted mathematicians for hundreds of years. In the eighteenth century, Gauss and other mathematicians (such as Legendre) shifted the interest from finding the n th prime number to the question about the approximation of the prime number counting function $p(x)$.

One of the most attractive theorems that mathematicians have studied from different points of view was the Prime Number Theorem (PNT). The PNT states that the number of primes less than or equal to a given real number x is asymptotic to $x/\log_2 x$ and it was first conjectured by Carl Friedrich Gauss.

In 1896, Jacques Hadamard and Charles de la Vallée-Poussin proved this conjecture independently. Their proofs both used complex analysis. In 1980, unsatisfied with the complexity of the existing analytical proofs of the PNT, Donald Newman provided a simple analytical proof of the theorem. The goal of this project is to present Newman's analytical short proof.

Dastidar, Dalia Ghosh

Insights into body condition of overwintering Prairie Rattlesnakes (*Crotalus viridis viridis*) in northeastern Colorado from a 9-year field-study

Presenter(s): Dastidar, Dalia Ghosh

Longs Peak Ballroom-- Session time: 08:30 in the Morning

Biological Sciences

Faculty Sponsor(s): Mackessy, Stephen

Graduate Presentation

The *Crotalus viridis* species complex has been the preferred subject of many behavioral and ecological studies, likely due to several qualities: 1) it is broadly distributed through much of the Great Plains and western half of the United States; 2) it shows a proclivity for denning communally whereby, a large number of snakes may be collected by researchers during spring and fall near the hibernacula; and 3) presence of researchers conducting productive studies on this group in the same regions. However, temporal variation in phenotypic attributes of Prairie Rattlesnakes based on long-term capture-mark-recapture (CMR) studies is poorly understood. From 2002-2011, in spring and fall, we captured Prairie Rattlesnakes from a communal hibernaculum in Weld Co., and snakes were extracted of venom, PIT tagged, measured and weighed before release at the den. Body condition (mass, adjusted for snout-vent length) of this population has been examined using an ANCOVA model to answer the question: is there any variation in relative mass between sexes following hibernation? The total number of captured snakes was 1080, but the current analysis is conducted on 805 captures and does not incorporate recaptures or gravid females. In this data set, 52.4% were males while 47.7% were females. The captured snakes ranged in snout-vent length (SVL) from 225 mm to 1160 mm ($M=573.56, SD=209.03$) and in mass from 6.90 gm. to 1255 gm. ($M=170.72, SD=156.03$). Season was found to be a significant factor influencing body condition at ($F(1,707) = 13.54, P<0.01$) and sex was also significant at ($F(1,707) = 32.76, P<0.01$). There was a decline in body condition following hibernation, and females showed a lower decline than males. This result may suggest that females emerge from hibernation with the capacity to allocate more energy into growth and/or reproduction as relative mass loss is an index of energy cost. A better understanding in physiological ecology of this species will provide better insight into population dynamics, and a long-term study like this will significantly contribute towards conservation of this species.

Dauner, Brian**Quantitative NMR determination of Heat Exchanger Waste Fluid.***Presenter(s): Dauner, Brian**Mt. Evans, Longs Peak Ballrooms-- Session time: 10:30 - 11:30 in the Morning*

Chemistry

Faculty Sponsor(s): Pringle, David

Undergraduate Presentation

Nuclear Magnetic Resonance was used to determine the volume percentage of propylene glycol, ethylene glycol, and water in waste fluid. This method employs the magnetic properties of the hydrogen nucleus to quantify the components of an unknown fluid composition. Determination of the composition is vital to proper disposal of these fluids because ethylene glycol can pose a serious health risk. Proton NMR spectra were created with a deuterated water solvent. These spectra are Fourier transformed FID's provided by the TOPSPIN software package in combination with the Bruker 400 MHz instrument. Creation of a variety of known composition samples confirmed that the method is accurate and provided results within one percent of actual composition. Approximately 150 samples each representing a 55 gallon barrel were used to determine unknown percent compositions. Determination of the unknown compositions allowed for safe disposal of the waste fluid.

Davies, Melissa**Student-Athlete Recruitment at the Football Championship Subdivision: Do Apparel and Equipment Sponsorships Matter?***Presenter(s): Burakowski, Katharine; Davies, Melissa**Mt. Evans, Longs Peak Ballrooms-- Session time: 01:30 - 02:30 in the Afternoon*

Sport & Exercise Science

Faculty Sponsor(s): Schwartz, Jana

Undergraduate Presentation

As a result of economic crisis in the United States, college athletic departments are faced with the challenge of balancing a high level of competition with cost cutting measures (DeSchrive, 2009; Fort, 2010; Lapchick, 2010). The commercialization of college athletics has increased over recent years and with that so has the pressure on athletic departments to recruit top-notch student-athletes in an attempt to secure athletic achievement and notoriety. Identifying salient factors that influence student-athlete college selection has become germane to athletic administrators as a key component of the recruitment process.

There is substantial literature with regard to the factors that affect the college choice of general population students and student-athletes (See Gabert, Hale, & Montalvo, 1999; Judson, James, & Aurand, 2004; Letawsky, Schneider, Pedersen, & Palmer, 2003; Mathes & Gurney, 1985). The literature reflects a tendency to identify broad categorizations of decision-making factors (Letawsky, et al, 2003; Mathes & Gurney, 1985).

As the literature reflects a tendency to examine broad themes of decision-making factors, we sought to qualitatively investigate apparel and equipment sponsorships as it relates specifically to athletic recruitment. Sponsorship contracts, clauses, and perks have been readily documented in the media (Carty, 2007; Ott, 2009; Rovell, 2007) and reports indicated how sponsorship deals provided much needed financial support for college athletic departments, but the question remained as to whether or not the sponsorship deals impacted student-athlete recruitment. Through an unrelated research project, we obtained anecdotal evidence from student-athletes that apparel and/or equipment sponsorships may have an impact on the recruitment process. However, a lack of prior empirical research left this assumption unsubstantiated.

In this phenomenological study, we explored the relevance of apparel and equipment sponsorships as a salient factor in student-athlete decision-making at an NCAA Football Championship Subdivision (F

Denton, Alexandra**Does the Court System Affect the Victims More than they Should?***Presenter(s): Denton, Alexandra**Spruce A-- Session time: 03:00 - 03:15 in the Afternoon*

Criminal Justice, English

Faculty Sponsor(s): Brothe, Crystal

Undergraduate Presentation

The criminal justice system was designed to give everyone a chance to a fair trial, however, is this system too slow that it affects the victims in a bad way or does it help the victim come to closure? In other terms, do victims get hurt more the longer a case gets drawn out or, do they find more satisfaction in the conclusion of the case? The research will help answer these questions and more, as well as, providing ways the court system can help victims if there are any negative effects on the victims. The research will also briefly discuss if the Victims Rights are designed to protect their psychological needs.

Dibbs, Becky-Anne**Self-monitoring in statistics: The case of Paul***Presenter(s): Dibbs, Becky-Anne**Aspen C-- Session time: 02:00 - 02:15 in the Afternoon*

Applied Statistics & Research Methods, Educational Mathematics, Special Education, School Psychology

Faculty Sponsor(s): Lahman, Maria

Graduate Presentation

Self-monitoring for sense and accuracy is a vital part of mathematical problem solving that has been widely researched; however, since self-monitoring is an internal process the research in this area has focused on inferring self-monitoring from observable actions. The participant in this qualitative instrumental case study, Paul, suffered a traumatic brain injury that forced him to speak his self-monitoring when solving problems in his statistics course. Data on Paul's self-monitoring included twenty-four participant-observations of Paul in the classroom and tutoring sessions, interviews, and a document analysis of all six hundred pages of notes and problems generated by Paul in a summer session of an introductory statistics course. After this talk describing Paul's experiences, self-monitoring, and coping strategies throughout the statistics course, the researcher will discuss possible applications of Paul's self-monitoring and coping strategies for classroom use.

Dilka, Krystal

College Success for Students with Physical or Learning Challenges

Presenter(s): Dilka, Krystal; Sorensen, Mary; Lopez, Edward

Mt. Evans, Longs Peak Ballrooms-- Session time: 10:30 - 11:30 in the Morning

Higher Education & Student Affairs Leadership

Faculty Sponsor(s): Couture, Rene

Graduate Presentation

The purpose of this study is an interpretive qualitative approach to look at college experiences for students with physical or learning challenges. Participants interviewed were college students between the ages of 18-26 who had successfully completed at least 2 years of post-secondary education. Major themes include low self-determination and social interactions affecting their learning experience. We will use this information to better understand their perspective of college experiences and to receive recommendations regarding changes or programs that would benefit others in the cohort.

Dougherty, Alaina

PERCEPTIONS OF HIV/AIDS IN A LOCAL AND GLOBAL CONTEXT

Presenter(s): Dougherty, Alaina

Mt. Evans, Longs Peak Ballrooms-- Session time: 10:30 - 11:30 in the Morning

Anthropology

Faculty Sponsor(s): McBeth, Sally

Undergraduate Presentation

This presentation will focus on my on-going research on the perceptions of HIV/AIDS in a globalizing world. The source of the data is derived from two sources: an internship (ANT 492) and a directed study (ANT 422). The internship is with the Northern Colorado AIDS Project which focuses on HIV risk-reduction and prevention. Through the anthropological method of participant observation, I have been able to interact with people who are themselves HIV positive or who partake in high-risk activities.

The directed study combines a literature review on the topic with scholarly research. A portion of this research consists of a ten-question survey on the perception of HIV/AIDS which I have been administering to both students and faculty on the UNC campus. Students, faculty, and community members attending research day may also fill out a survey and will be able to review the correct answers. This portion of my poster presentation will be educational, and will also contribute to my on-going research.

An analysis of the results will ideally provide answers to the following questions:

- As a recognized global epidemic, how much information on HIV/AIDS is the educated public aware of?
- Which areas of understanding of HIV/AIDS are accurate and which areas are lacking in factual awareness?
- Should there be more education programs in the school system?

In addition to the survey results, the presentation will include a brief overview of HIV/AIDS; local, state, federal, and world statistics on HIV/AIDS; and a brief synopsis on Northern Colorado AIDS Project (NCAP) as a resource in Northern Colorado for those living with HIV.

Elliott, Katelyn

Focusing on Strengths in the Workplace

Presenter(s): Elliott, Katelyn

Multiple Session Presentation - Sessions 14, 15

Spruce C-- Session time: 02:00 - 02:15 in the Afternoon

Business Administration

Faculty Sponsor(s): Clinebell, Sharon

Undergraduate Presentation

This presentation is an insightful exploration into the utilization of personalities and strengths of employees in the work place as opposed to focusing on the negative traits of employees. This group will be analyzing the business practices of New Belgium Brewery and the way that they cater to employees strengths to maintain a positive and effective work environment.

Eulenstein, Mark**Laying the foundation needed for the production of an edible malaria vaccine***Presenter(s): Eulenstein, Mark**Mt. Evans Ballroom-- Session time: 03:00 - 04:00 in the Afternoon*

Biological Sciences

Faculty Sponsor(s): Keenan, Susan

Undergraduate Presentation

Half the world's population (3.3 billion people) lives in areas at risk of malaria transmission. This includes 109 countries and territories throughout the world. Unfortunately, the production of a vaccine against malaria has failed due the complex life cycle of the parasite and the resistance that has developed against all malaria drugs currently used. Traditional vaccines are expensive in storage and administration which has led scientists to alternative methods for a malaria vaccine. Edible vaccines are one of these alternative methods. The long term goal of this study is to address some of the steps needed before an edible malarial vaccine can be produced. Our study involves determining whether the sexual stage antigen pfs4845 from the Plasmodium (P.) falciparum genome can be expressed in the model system *A. thaliana*. If pfs4845 can be expressed in the novel plant system of *A. thaliana*, we will be one step closer to the development of edible malaria vaccine.

Fang, Wei**MULTICOLLINEARITY AND VARIABLE SELECTION PROCEDURES***Presenter(s): Fang, Wei**Aspen C-- Session time: 02:20 - 02:35 in the Afternoon*

Applied Statistics & Research Methods

Faculty Sponsor(s): Lalonde, Trent

Graduate Presentation

To avoid the problems of multicollinearity, we often build models by selecting variables. When we build models, general stepwise-type methods like forward, backward, and stepwise selection are often used to select variables. However, those methods are not always effective in that they are discrete processes in essence, which exhibit high variance, and so do not reduce the prediction error of the full model. Furthermore, if we want to have a sparse expression of the full model when the number of variables p is much larger than the sample size N , (say, $p = 1000$ and $N = 20$), the stepwise variable selection procedures may fail to select an appropriate model.

To handle these problems, the mechanism of ridge regression is extended to conduct variable selection procedures from a different perspective. More specifically, variables are selected in a continuous way as we are able to trace the evolution of coefficients as the penalty changes. When a certain coefficient evolves to zero, it will be discarded from the full model. These new variable selection procedures, LASSO and Elastic Net, are both effective and efficient. In this talk the advantages of these new procedures will be

exhibited using an application to the binary logistic regression model.

Keywords: multicollinearity, ridge regression, shrinkage, Lasso, elastic net, binary logistic regression model, coordinate descent.

Fernandez, Cyrus**Straight Out of Nowhere: A Heterosexual History of the Post War American Youth Through the Social Guidance Media Film***Presenter(s): Fernandez, Cyrus**Multiple Session Presentation - Sessions 1, 2**Spruce C-- Session time: 09:00 - 09:15 in the Morning*

History

Faculty Sponsor(s): Syrett, Nicholas

Graduate Presentation

The years following World War II, economic and social factors combined to produce an intense concern over the sexual development and behavior of young people. In the contexts where society was profoundly reshaped after war and times of severe economic crisis, heterosexuality and "normalcy" were understood to be synonymous and necessary for social and national stability. As a result, Post-war youths were the targets of a range of materials and practices aimed at turning young people into proper heterosexual subjects.

This work utilizes a feminist historical analysis to examine the vexed relationship between (hetero)sexual theory and youth culture in US television and film media. Sampling a variety of 1950-60 social guidance films, this paper examines the relationship of power between youth and heterosexuality which operates through particular frameworks that render and naturalize heterosexuality as a suitable and viable expression of an ideal life for the American youth. It is a strategic move which displaces the ontological assumption about the naturalness of the heterosexuality yet functions to re-emphasize the salience of the youth in reproducing sexualized bodies. Lastly, it calls to attention the particular heterocentricism surrounding the social development and representation of youth in films whose roots of knowledge run deep within knowledge production. Thus, deploying a feminist historical analysis engages in a post structuralist dialogue with film interrogating a time-specific, socially constructed notion of heterosexuality onto youths. While popular culture invests in the idea the youth are impressionable, needing guidance and social confirmation in matters of affection and sexuality, theories of embodiment locate the youth inevitably as a repository of heteronormative values.

Fix, Shanna**De Horacio Quiroga a Julio Cortázar***Presenter(s): Coatney, Emily; Fix, Shanna; Gonzalez Garcia, Alondra; Rivas, Angelica**Spruce A-- Session time: 01:40 - 01:55 in the Afternoon*

Spanish

Faculty Sponsor(s): Gonzalez, Ester

Undergraduate Presentation

This panel will have four presentations about short stories written by famous authors from Uruguay and Argentina. Horacio Quiroga is considered the most important short stories writer from South America, His Decálogo del buen cuentista was a guide for the Latin American authors through the XX century. Julio Cortázar was one of his more renowned followers.

Fix, Shanna**Film "The Mission" and Colonial Latin America (2)***Presenter(s): Wilson, Ashley; Miller, Bobbie; Fix, Shanna**Spruce A-- Session time: 01:00 - 01:15 in the Afternoon*

Spanish

Faculty Sponsor(s): Park, Jungwon

Undergraduate Presentation

This panel examines the colonial Latin American society through the lens of film "The Mission."

Frank, Michaela**Engaged Global Millennials: Preliminary Results on a Qualitative Analysis of a Global Millennial Generation***Presenter(s): Frank, Michaela**Research Excellence Award Finalist**Council Room-- Session time: 11:00 - 11:15 in the Morning*

Anthropology

Faculty Sponsor(s): Kimball, Michael

Undergraduate Presentation

Generational studies have primarily focused on American youth, which leaves out perceptions of youth from around the globe; Howe & Strauss, leading authors on the Millennial generation, define seven attributes of American youths: special (i.e. privileged), sheltered, confident, team-oriented, achieving, pressured, and conventional (2000, 44). These general characteristics of millennials that emerge from the literature are seemingly unfit for the recent images of engaged youth conjured up by world events such as the Arab Spring youth movement. The preliminary findings presented in this paper arise from semi-structured ethnographic interviews with six young people that have a strong tendency towards social and political engagement and fit the Millennial generation criteria (born between 1982-2003) within both domestic and international contexts. These interviews elicit participants' own experiences, which are complicating and even challenging widely held assumptions about the Millennial generation. The global dimension of the study will add to our understanding of engaged millennials who are acting as change agents by creating solidarity through shared experiences, ideas and actions, without the constraints of arbitrary lines of nationality. This study is part of a growing body of research on non-American millennials, youth engagement, and origins of social movements. In using a largely untapped source of perspectives from global youths, this project will contribute to future research on understanding social movements and the youth responsible for driving social change around the globe.

Frazier, Cherise**College Academic Success: Prior Motivations and Perceptions of Parents***Presenter(s): Frazier, Cherise**Mt. Evans, Longs Peak Ballrooms-- Session time: 01:30 - 02:30 in the Afternoon*

Psychology

Faculty Sponsor(s): Pugh, Kevin

Undergraduate Presentation

What makes a student succeed or fail in college? Based on Self-Determination Theory (SDT), this study proposes that students are more likely to succeed in higher education when they are autonomously motivated. The study tests two hypotheses. College students who have parents who foster their autonomy will be more successful and college student who choose to attend college for autonomous reasons will be more successful. For this study, success is defined as being in the honors program and lack of success as being on academic probation. Surveys were given to approximately 100 participants involved in either the honors program or academic probation. Scales from SDT were adapted to assess participants' motivations for attending college, including perceived parental styles and internal/external motivations. The anticipated results will show students whose parents fostered their autonomy are more successful in college and honor students are more autonomously motivated than students on academic probation.

Fuhr, David**Eng 624 Middle English Panel***Presenter(s): Fuhr, David; Harley, Benjamin; Kolder, Sandra**Multiple Session Presentation - Sessions 17, 18, 19*

Columbine B-- Session time: 03:00 - 03:15 in the Afternoon

English

Faculty Sponsor(s): Lindstadt, Abigayil

Graduate Presentation

Written in the period 1200-1485, between Old English and Modern English, Middle English as a language allows for a wide variety of interpretations in both language and theme due to the fact that its relative syntactical freedom allows for rhetorical arrangements no longer possible in Modern English. Focusing on a variety of Middle English romances and ballads (such as the tales of Robin Hood and King Arthur), this panel will explore issues relevant to medieval aristocratic and bourgeoisie audiences using the frameworks of feminism, new historicism, ecocriticism, Marxism, and liminality.

Gandara, Anthony

Composition of venoms from two sympatric species of montane rattlesnakes: species differences and potential sources of venom variation

Presenter(s): Gandara, Anthony

Longs Peak Ballroom-- Session time: 01:00 in the Afternoon

Biological Sciences

Faculty Sponsor(s): Mackessy, Steve

Graduate Presentation

Rattlesnake venoms commonly vary in composition as a function of several factors including phylogeny, age, and population. One of the most stimulating and controversial questions regarding venom variation is, what is the driving force in venom evolution? Three competing hypotheses, which are not necessarily mutually exclusive, include: (1) venom varies as a function of geographical distance, (2) venom variation is associated with phylogenetic relationships among groups, and (3) variation in venom is directly linked to variation in diet. Herein we report information on the venom composition from two sympatrically occurring species of montane rattlesnakes, *Crotalus lepidus* and *Crotalus willardi*, with the goal of elucidating the source of variation. Populations of both species have been isolated on sky-island habitats throughout the southwestern USA and northern Mexico. Venom samples from four subspecies/populations each of *Crotalus lepidus* and *Crotalus willardi* were used in this study. Venom profiles were created using SDS-PAGE and individual venom chromatograms were constructed using reversed-phase HPLC. The activity of six common rattlesnake venom enzymes were measured and analyzed between and among species. Electrophoretic analysis revealed that venoms from *C. lepidus* differed between the northern and southern populations. PI metalloproteinases with a molecular mass of ~23 kDa were present in southern populations and noticeably absent in northern populations. Principal component analysis (PCA) of enzyme activity revealed strong population variation in venoms of *C. lepidus*. On the other hand, PCA and electrophoretic analyses of the venoms from *C. willardi* showed no significant variation. Our data reveal that two sympatrically occurring species show different patterns in venom composition. In the case of *C. lepidus*, venom variation is associated with the phylogenetic relationship among populations and is shown to vary geographically. Venom from *C. willardi* shows little geographic variation. A comprehensive diet study from both species is needed to understand this observed phenomenon better.

Garcia, Violeta

Field Research Experiences and Middle School Girls: Supporting Ecological Literacy and Improving Science Perceptions

Presenter(s): Garcia, Violeta

Longs Peak Ballroom-- Session time: 09:25 in the Morning

Biological Sciences

Faculty Sponsor(s): Jurin, Richard

Graduate Presentation

Middle school girls from diverse backgrounds that participated in field research experiences in ecology had an increase in ecological literacy and demonstrated enhanced attitudes and perceptions towards science. It is not known how the experiences of girls doing ecologically based research impacts their content knowledge in conjunction with their attitudes and perceptions of science. Knowing this will support educators in helping students understand key ideas in ecology to incorporate findings in formal and non-formal biology education. Over three summers, a total of 81 girls, mean 25 participants per year, ages 10-14, spent one week designing, implementing and evaluating STEM projects related to ecology with the guidance of a facilitator. Sixty percent of the participants were from backgrounds typically underrepresented in the sciences. Qualitative analysis of journals, interviews, content knowledge assessments and researcher observations makes clear this field ecology opportunity provided a transformative experience for girls to conduct place-based inquiry investigations pertaining to the local watershed and improved their decision-making abilities for environmental issues locally and globally. This experience highlighted that science became more accessible to the participants and served as a venue for self-empowerment concluding with the notion that science is something they can do if they so chose. Exposure to field ecology research enhanced middle school girls' attitudes and perceptions towards science, and increased their ecological literacy and decision-making abilities; however, increased facilitator training may have led to greater gains in content knowledge, ecological literacy, and leadership skills for the participants.

Gasteiger, Joseph

Optical Tweezers

Presenter(s): Day, Travis; Gasteiger, Joseph

Mt. Evans, Longs Peak Ballrooms-- Session time: 10:30 - 11:30 in the Morning

Physics

Faculty Sponsor(s): Sung, Ruwang

Undergraduate Presentation

Optical tweezers are based on a strongly focused laser beam which allows contact free holding and manipulating of objects by means of forces arising from the scattering and reflection of light. Optical tweezers devices use the force of laser radiation pressure to trap tiny particles and act similar to a simple harmonic oscillator. Using various techniques, these trapped particles can then be maneuvered freely and the forces on these objects can be measured. Optical trapping, manipulation, and observation of micrometric silica particles dispersed in 4-Cyano-4'-pentylbiphenyl (5CB) crystal is the broad goal of this project.

The tweezers, based upon a design by D. C. Appleyard et al. for undergraduate work, was adapted by Thorlabs and created for ease of use and a wide variety of applications. This tweezer design, like many other devise, is based on an inverse light microscope for both convenience and multiple beam incorporation. The heart of the optical trap is the near infrared (975 nm) fiber-coupled source laser. All system components are mounted on a breadboard to save space, increase portability, and promote stability by minimizing optical path distances. A fully functioning trap should be able to track and trap a moving particle.

These optical tweezers will be tested by manipulating micron-size silicon beads. By exploiting the potential of this simple and versatile device, we will show experimentally that optical tweezers have linear and circular polarization that can break the radial symmetry of the initial molecular organization inside a radial nematic droplet.

The ability to manipulate single molecules with nanometer precision and to measure forces on these molecules with piconewton accuracy using optical tweezers has opened up several important new areas of study in material science and biophysics. This research will help undergraduate scientists gain a wealth of knowledge about quantitative research methods.

Gathere Wanjiru, Jennifer

Review of the cost-effectiveness of admitting patients to observation units in a hospital setting

Presenter(s): Gathere Wanjiru, Jennifer

Mt. Evans, Longs Peak Ballrooms-- Session time: 01:30 - 02:30 in the Afternoon

Nursing

Faculty Sponsor(s): Hummel, Faye

Graduate Presentation

In a cost-benefit analysis of the admissions of observation-status patients in hospitals, I propose that it is more cost effective to the institution to admit these patients to an observation unit, rather than the inpatient floor. Factors such as shorter hospital stays, improved management of patient care, higher patient satisfaction, and lower overall costs of care will contribute to the cost effectiveness. In order to review the efficacy of this proposal, I will be reviewing and comparing costs and pay outcomes of patients admitted to a 10-bed observation unit and inpatient units in a 300-bed community hospital in a suburban area. The anticipated outcome will be increased reimbursements to hospitals for an observation admission in an observation unit. In order to fulfill this outcome, the proposed policy change would be that all observation patients be required to be admitted to the observation unit while beds are available before allowed admission to the inpatient units.

Gibson, Noah

Time course of doxorubicin and dysfunction in the rat aorta

Presenter(s): Gibson, Noah

Columbine A-- Session time: 09:40 - 09:55 in the Morning

Sport & Exercise Science

Faculty Sponsor(s): Gibson, Noah

Graduate Presentation

Doxorubicin (DOX) is a highly effective anthracycline antibiotic used to treat a wide array of cancers. Its use is limited due to dose-dependent acute and chronic cardiovascular toxicity. However, little is known about the mechanisms of DOX induced vascular dysfunction. The purpose of this study was to determine if DOX accumulates in vascular tissue and contributes to the onset and progression of vascular dysfunction over time. Male Sprague-Dawley rats were randomly assigned to receive 15 mg DOX/kg of body mass or saline (SAL); DOX rats were further randomized to be sacrificed 1, 3 or 5 days post treatment. Isolated aortic rings were used to examine vascular function, and aortic DOX accumulation was quantified using high performance liquid chromatography. While DOX did in fact accumulate in vascular tissue (204±89 ng DOX/g LV) within 24 hours, there was no significant difference in accumulation over time (183±107 ng DOX/g LV at 3 days; 156±60 ng DOX/g LV at 5 days). There were significant differences between SAL and DOX groups ($p < 0.05$) in vasoconstriction, endothelium-dependent and -independent vasodilation, however there were no functional differences over time with DOX treatment. Our results show that there is early-onset, sustained vascular dysfunction during the 5 days following DOX treatment, which is accompanied by a sustained accumulation of DOX in vascular tissue.

Gines, Julian

Film "The Mission" and Colonial Latin America (4)

Presenter(s): Vargas, Carlos; Gines, Julian

Aspen C-- Session time: 03:00 - 03:15 in the Afternoon

Spanish

Faculty Sponsor(s): Park, Jungwon

Undergraduate Presentation

This panel examines the colonial Latin American society through the lens of film "The Mission."

Goldfarb, Lindsey

From Prince of Wallachia to Prince of Darkness: An In-Depth Analysis of the Identity of Vlad Dracula

Presenter(s): Goldfarb, Lindsey

Research Excellence Award Finalist

Council Room-- Session time: 12:00 - 12:15 in the Afternoon

History

Faculty Sponsor(s): Wieben, Corinne

Undergraduate Presentation

I have used both primary and secondary sources to analyze the life and depictions of the character of Vlad Dracula, Prince of Wallachia (1447 – 1476) and the infamous inspiration for Bram Stoker's iconic vampire novel Dracula. Through my examination of these sources I have proven that Vlad Dracula cultivated a hybrid identity, neither fully Western Christian European nor Muslim Turk, which left him on the outside of societal boundaries, leading to his depiction as a monster. This hybrid identity helped Vlad Dracula's critics to demonize him, and inspired his infamous status. The most critical factor in the formation of this hybrid and monstrous identity was the atmosphere in which Vlad Dracula lived. Using anthropological and historical theory on borderlands, I have constructed a depiction of Wallachia during the time of Vlad Dracula's rule, as an area of intense conflict. The principality of Wallachia was in a delicate situation, stuck between Christian West and Turkish East, and struggling to maintain allegiance to the weakened Eastern Orthodox church. Using these sources, I have found that the presence of permeable borders, both politically and culturally, played a critical role in Dracula's reign and eventual downfall. I have also employed literary theory on monstrosity, primarily the work of Jeffrey Jerome Cohen, to illuminate how the hybrid identity which was adopted by Vlad Dracula, led to his depiction as a monster. Through the events of Vlad Dracula's life, including his family relations and various times spent in captivity, he cultivated a hybrid identity; neither entirely European nor Turkish, but rather a mix of both. This hybrid identity allowed Vlad Dracula to manipulate his delicate situation within the borderland of Wallachia. Vlad Dracula's hybrid identity, which allowed him to employ conflicting identity markers at different times, left him outside of all societal boundaries.

Gomez, Juan

Cinematic interpretation of Juárez Murders

Presenter(s): Gomez, Juan; Hernandez, Armando; Barraza, Sujeith

Aspen C-- Session time: 03:20 - 03:35 in the Afternoon

Spanish

Faculty Sponsor(s): Park, Jungwon

Undergraduate Presentation

This panel analyzes the film "Bordertown" to examine the tragic missing of women in the Mexican border city, La Ciudad Juárez.

Gonzales, Christopher

An Exploration of High and Low Level Processes in Understanding Others' Minds

Presenter(s): Gonzales, Christopher

Research Excellence Award Finalist

Council Room-- Session time: 10:40 - 10:55 in the Morning

Psychology, Social Science

Faculty Sponsor(s): Peterson, Eric

Undergraduate Presentation

Imagine watching a scene play out between your two friends, Sally and Ann. Sally looks back and forth between Ann and someone else; then makes an angry face and walks away. In an instant, you are able to glean a sense of Sally's emotional state. You generate a theory about her belief and her plan for action: She looks mad and is going to make a scene!

The ability to generate these rich theories about others' minds stands with language and a few other cognitive capacities as a unique achievement of the human brain. As this topic of research has burgeoned over the past forty years, the central questions driving the field have evolved. There is a new push beyond the classical theory-of-mind tasks which emphasize a single critical litmus test: the capacity to think about what another person is thinking. New research is starting to show that there are actually multiple levels of processing for this ability, high level (explicit) processes which are cognitively flexible but resource intensive and low level (implicit) processes which are rigid but cognitively efficient.

In the current study, we developed a battery of seven tests that measure these different processes as well as ability in emotion processing, working memory and non-verbal communication. We are currently recruiting UNC undergraduates participating in the Psychology Study Pool and expect a sample size around fifty with an average age between nineteen and twenty-one. We expect one explicit task will be similar to the other explicit task. Similarly, we anticipate a higher performance correlation within the implicit tasks. However, it remains unclear if there is any predictive value from performance in one category in relation to the other. Further exploration into these correlations would still be relatively novel in the field.

Goss, Melissa

Mathematical Experts' Tools and Reasoning Techniques in Constructing Proofs

Presenter(s): Goss, Melissa; King, Jeffrey

Spruce B-- Session time: 11:20 - 11:35 in the Morning

Educational Mathematics

Faculty Sponsor(s): Karakok, Gulden

Graduate Presentation

The goals on teaching proof are to “help students develop an understanding of proof that is consistent with that shared and practiced by mathematicians of today” (Harel and Sowder, 2007, p. 47). For this reason, a better understanding the nature of professional research mathematicians processes for constructing and writing proof is needed. Specifically, this research presents a study that seeks to describe the tools and reasoning techniques used by mathematicians to construct and write proof and in what ways these tools may vary based on mathematical topic. Task based clinical interviews were conducted with 4 research mathematicians in varying fields of study and they were asked to construct 3 proofs. The interviews were audio-and video-recorded and transcribed. Qualitative data analysis methods are being implemented to explore the mathematicians’ processes. This presentation will present the preliminary results describing the process of proof construction, the tools used in proof construction, how and why such tools were used, and how tool use differed across content area spe

Graham, Peter**Lateral Mobility of Prostaglandin F2a Receptors on the Plasma Membrane of Bovine Luteal Cells***Presenter(s): Graham, Peter**Research Excellence Award Finalist**Longs Peak Ballroom-- Session time: 01:50 in the Afternoon*

Biological Sciences

Faculty Sponsor(s): Burns, Patrick D.; Tatum, Josh C.; Schenk, Adrian C.; Nozykowski, John P.; Zhang, Dongmei; and Roess, Deborah A.

Graduate Presentation

Prostaglandin (PG) F2a is the endogenous luteolysin in domestic farm animals that is synthesized by the uterus and corpus luteum (CL) which causes regression of the CL in the non-pregnant female. It has been postulated that luteal FP receptors bind with PGF2a and anchor to lipid microdomains to initiate a G-protein signaling cascade that inhibits progesterone synthesis and induces apoptosis. The objective of the current study was to evaluate FP interactions with lipid microdomains when receptors were in the unbound and bound state. Bovine corpora lutea were obtained from a local slaughterhouse and digested using collagenase. Mixed luteal cells were incubated in T-25 culture flasks containing Hams F-12 culture medium supplemented with 5% fetal calf serum, insulin (5 mg/ml), transferrin (5 mg/ml), selenium (5 ng/ml), 100 U/ml penicillin, 0.1 mg/ml streptomycin, and 0.25 mg/ml amphotericin B (pH 7.34) in an atmosphere of 95% air, 5% CO₂ at 37°C. The cells were then transferred to 35mm microscopy culture dishes and allowed to adhere to cover slips. After adhesion, cells were then cultured for approximately 18 h in serum free medium. Cells were incubated with FP receptor polyclonal antibody (5 mg/ml) conjugated with biotin for 5 min. Cells were washed and subsequently incubated with streptavidin 605 QDot (0.1 nM) for 5 min. Cells were washed and individual FP receptors were monitored using an epifluorescent microscope at 0, 1, 5, and 10 min post-treatment with 1000 nM PGF2a. There was no change in ratio of random and confined diffusions patterns of FP receptors following PGF2a treatment ($P > 0.10$). However, PGF2a treatment did result ($P = 0.08$) in a decrease in the mean diffusion coefficient of FP receptors. Although the mean diffusion coefficient did not differ between 0 and 1 min post-PGF2a treatment ($P > 0.10$), the mean diffusion coefficient was reduced at 5 ($P < 0.05$) and 10 ($P = 0.08$) min post-treatment when compared to 0 min. This may indicate FP receptors associate with lipid microdomains during PGF2a stimulation in bovine luteal cells.

Graham, Peter**Lateral Mobility of Prostaglandin F2a Receptors on the Plasma Membrane of Bovine Luteal Cells***Presenter(s): Graham, Peter**Research Excellence Award Finalist**Council Room-- Session time: 01:00 - 01:15 in the Afternoon*

Biological Sciences

Faculty Sponsor(s): Burns, Patrick D.; Tatum, Josh C.; Schenk, Adrian C.; Nozykowski, John P.; Zhang, Dongmei; and Roess, Deborah A.

Graduate Presentation

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0.08) min post-treatment when compared to 0 min. This may indicate FP receptors associate with lipid microdomains during PGF2a stimulation in bovine luteal cells.

Greufe, Stephanie

Effects of Calorie Restriction and Voluntary Exercise on Doxorubicin-Induced Cardiac Dysfunction

Presenter(s): Greufe, Stephanie

Spruce A-- Session time: 11:00 - 11:15 in the Morning

Sport & Exercise Science

Faculty Sponsor(s): Hayward, Reid

Graduate Presentation

Calorie restriction is the only non-genetic means to life extension. One of the most widely accepted theories explaining this extension is a decrease in damage caused by oxidative stress. Oxidative stress has been shown to contribute to cardiac dysfunction in those treated with doxorubicin and this dysfunction can be attenuated with exercise training. **PURPOSE:** The purpose of this study was to determine the effect of calorie restriction on doxorubicin-induced cardiac dysfunction and the combined effects of calorie restriction and voluntary exercise on doxorubicin-induced cardiac dysfunction. **METHODS:** Female Sprague-Dawley rats were given 24 hour access to a running wheel (WR) or remained sedentary (SED) for 4 months. During those 4 months animals were divided into 2 groups, those fed ad libitum (AL) and those restricted to 60% of the intake of the ad libitum animals (CR). At the completion of the 4 month treatment animals were injected with either doxorubicin (15 mg/kg; DOX) or saline (0.9% NaCl; SAL). Five days post injection cardiac function was measured with the working heart model and HPLC was used to quantify the accumulation of DOX in left ventricular tissue. **RESULTS:** Left ventricular developed pressure (LVDP), end systolic pressure (ESP) and LV maximal rate of pressure development (dp/dt max) were significantly increased in the CR.SED.DOX group when compared to AL.SED.DOX. LVDP, ESP, dp/dt max and dp/dt min were significantly higher in the CR.WR.DOX group compared to the AL.SED.DOX group. In addition, the CR.WR.DOX group showed significantly higher LVDP, ESP and dp/dt min compared to the AL.WR.DOX group. DOX accumulation in the heart was significant 5-fold decrease in the CR.WR.DOX group compared to the AL.SED.DOX group. **CONCLUSION:** Separately, both calorie restriction and voluntary exercise protected against DOX-induced cardiac dysfunction, and the combination of calorie restriction and voluntary exercise provides further protection beyond that of either one alone.

Gross, Ashley

Antioxidants and Anti-Inflammatory Drugs as a Treatment for Parkinson's Disease

Presenter(s): Gross, Ashley

Mt. Evans Ballroom-- Session time: 03:00 - 04:00 in the Afternoon

Biological Sciences

Faculty Sponsor(s): Thomas, Mark

Undergraduate Presentation

Parkinson's disease is a devastating neurological disorder disrupting voluntary movement and cognitive functioning. The primary cause of the disorder results from the death of dopamine-producing cells in the brainstem area known as the substantia nigra (SN). Several indicators of this cell death have been observed such as oxidative stress, mitochondria dysfunction, and protein folding errors. Therefore models of Parkinson's disease that induce cell death in the substantia nigra are a very promising line of research. MPTP, 1-methyl-4-phenyl-1,2,3,6-tetrahydropyridine, is a neurotoxin that has proven to be an effective Parkinson's Disease model in rodents, specifically c57BL/6 mice. Studies have shown MPTP to produce, in mice, nearly all the symptoms displayed in the human idiopathic disease, such as tremor, rigidity, akinesia, and abnormal gait. These symptoms are caused, mainly, by the destruction of SN dopaminergic cells and the resulting decrease in dopamine levels in the striatum. Antioxidants (AOs) have the ability to remove radical oxygen species from the brain and have therefore been chosen as a possible treatment for Parkinson's Disease. These radical oxygen species have been shown to increase the symptoms and further progress the neurological damage caused by this disease. Another compounding condition in Parkinson's Disease is inflammation of neuronal cells in the brain. Anti-inflammatory drugs (AIDs) will decrease inflammation, and have been proposed as a treatment for Parkinson's Disease as well. Many studies show effective use of these drugs when used individually, but we propose to use these drugs in concert. In this study we propose to test the hypothesis that concurrent treatment with AOs and AIDs will significantly decrease MPTP-induced dopaminergic cell loss in the SN. Mice (6-8 weeks old) will be treated with MPTP, MPTP+AO+AID, or vehicle alone (controls). SN dopaminergic neuronal loss will be assessed using an immunohistochemical assay to identify dopamine neurons.

Grush, Anariza

An Innovative Weight Based Pyxis System: A Cost Effective Solution for Accurately Charging and Tracking Hospital Supplies.

Presenter(s): Grush, Anariza

Mt. Evans, Longs Peak Ballrooms-- Session time: 01:30 - 02:30 in the Afternoon

Art & Design, Human Services, Nursing Education, Nursing

Faculty Sponsor(s): Hummel, Faye

Graduate Presentation

Purpose: An Intensive Care Unit (ICU) plays a significant role within the framework of a hospital as well as being an exceptionally expensive resource while medical supply costs continue to increase at a distressing pace. Accurately determining consumable medical supply costs within the unit, in particular, as it relates to the individual patient, severity of their illness, and length of stay has been an infinite challenge for our ICU department at Platte Valley Medical Center (PVMC). Evaluating the present systems in place, a bold proposal to take existing technology available and develop an enterprising and innovative, weight-bearing

Pyxis system to gauge accurately, account for properly, and to charge expressly those consumable medical supplies to the individual patient.

Scope and Sources: Approaching the problem, the initial hurdle was to do a comprehensive cost analysis identifying the deficiencies within our existing system. Collection of this data was approached utilizing the Systems Research Organizing Model (SROM) to help define our methodology of data collection. Our focus concerned the areas of distribution, tracking, and charging of consumables to the individual patient. Next, was to research the technology needed to build a machine “in theory” to collectively address these problems, integrate and test it within the existing system, then implement its use.

Conclusions: With increasing financial demands being placed on both hospital and patient, efficient use of consumables and accurate costing procedures within the ICU are vital. Hypothetically, initiating this type of weight bearing Pyxis would adequately demonstrate a more cost-effective procedure for medical consumables while having the implication for a broader use within our hospital system.

Key words: innovative, weight-bearing, distribution, tracking, charging, cost-effective

Hammer, Kenneth

Examining the role of receptor tyrosine kinase (RTK) intracellular signaling pathways in *Drosophila* testis stem cells

Presenter(s): Hammer, Kenneth

Longs Peak Ballroom-- Session time: 02:40 in the Afternoon

Biological Sciences

Faculty Sponsor(s): Leatherman, Judith

Graduate Presentation

Adult stem cells reside in a tissue-specific region, known as the “niche”, which controls their ability to differentiate or remain as stem cells. The *Drosophila* testis provides a model for the study of the self-renewal and differentiation of adult stem cells involved in spermatogenesis. This niche is composed of two types of stem cells, germline stem cells (GSCs), which produce sperm, and cyst stem cells (CySCs), which produce cyst cells that guide the germ cells through differentiation. The fates of these cells are determined by complex cell-cell interactions. While much research has been conducted using this model, the molecular mechanisms that trigger the choice toward differentiation are not well understood. One differentiation-promoting pathway in the cyst cells is activation of the receptor tyrosine kinase EGFR. Paradoxically, however, this pathway is also required for self-renewal, and phosphoERK accumulates in both CySCs and their differentiating daughters. We examined additional intracellular pathways activated by receptor tyrosine kinases, and found that Jun kinase signaling (in contrast to Erk) is activated in differentiating cyst cells, but not CySCs, suggesting a possible role for this pathway in promoting differentiation that needs to be further explored.

Hannah, Amanda

An investigation of the effect of kinase inhibitors against mosquito borne flaviviruses replication

Presenter(s): Hannah, Amanda

Longs Peak Ballroom-- Session time: 09:00 in the Morning

Biological Sciences

Faculty Sponsor(s): Keenan, Susan

Graduate Presentation

Mosquito-borne flavivirus infection causes serious morbidity and mortality worldwide annually, but there are currently no effective antiviral chemotherapeutics available for human use. Therefore, it is critical that new therapeutics to virus-specific targets be developed. Our goal is to identify host kinases that are co-opted by flaviviruses for viral replication. We have evaluated the effects of a broad array of kinase inhibitors on the replication of a dengue virus replicon stably expressed in a BHK (baby hamster kidney) cell line. Fourteen kinase inhibitors with at least two-fold efficacy in inhibition as compared to cytotoxicity were identified. A Cdk/Crk inhibitor and the Cdk2/9 inhibitor demonstrated high replication inhibition with relatively low cytotoxicity and these inhibitors will be further analyzed in human cells lines to determine their mechanisms of action. More than two billion people live with the risk of dengue virus infection. Each year there is an estimated 50-100 million cases of DEN resulting in approximately 20,000 deaths. The hope of this investigation is to use the kinase inhibitors to identify novel targets for inhibition of dengue virus replication.

Heiker, Laura

Bat community composition in relation to habitat fragmentation in southwestern China and the southern Rocky Mountains, Colorado

Presenter(s): Heiker, Laura

Longs Peak Ballroom-- Session time: 09:50 in the Morning

Biological Sciences

Faculty Sponsor(s): Adams, Rick

Graduate Presentation

The area along the eastern Himalayas, encompassing the province of Sichuan in China, is a global hotspot for biodiversity. However, China has been closed off to scientific study and collaboration with the western world until only thirty years ago, so little information exists about the status of its native species today. Given China’s biological significance and the country’s ongoing industrial expansion, more data desperately is needed about the country’s native wildlife populations and associated threats. Habitat destruction and fragmentation, in particular, may harm biodiversity via genetic isolation, loss of resources, greater exposure to predation and human disturbance, and even species extinction. No work concerning the impact of fragmentation on bat

community composition has been conducted in China. Yet such information would provide a snapshot of the health of China's bat communities, allow predictions for how those communities will respond to further disturbance, and guide local management decisions. In collaboration with Sichuan University, I will begin research in the summer of 2012 with the following goals: 1) assess the degree and quality of human habitat fragmentation in and around Chengdu, China, 2) evaluate bat community composition between less fragmented and more fragmented sites, and 3) determine which patch characteristics best explain bat species' presence, abundance, evenness, and diversity. In a comparison study, I also will conduct research in the eastern Rocky Mountains adjacent to Boulder, Colorado, another high-elevation area with high regional species diversity. Field sampling will involve characterizing landscape attributes and vegetation with remote sensing (GIS) and on-ground measurements. To characterize bat communities, I will set up sonar recording stations in fragmented and non-fragmented sites. While these sound recordings can be used to identify species, mist-netting will be necessary to verify identifications and collect demographic information like age and sex.

Herrera, Dulce

Los ojos que no ven

Presenter(s): Herrera, Dulce

Spruce A-- Session time: 09:20 - 09:35 in the Morning

Foreign Languages, Spanish

Faculty Sponsor(s): Garza, Efrain

Undergraduate Presentation

A menudo asociamos a los ojos con sabiduría, luz, entendimiento, libertad y capacidad de vivir la vida. A veces, aunque tengamos los ojos bien abiertos, no podemos ver la realidad. Los ojos son poderosos pero la vista puede existir sin tener ojos. Bill Cosby alguna vez dijo, "No todos los ojos cerrados duermen, ni todos los ojos abiertos ven." Esta frase es sumamente importante para entender el simbolismo de los ojos en obras teatrales de la mitad del siglo XX que tratan sobre el Franquismo. En las obras *En la ardiente oscuridad* y *Los ojos* de Antonio Buero Vallejo y José Ruibal, los ojos o la vista son símbolos que van más allá del simple hecho de poder ver. Nos llevan al mundo de la vista espiritual, que es lo que realmente nos pueden definir como personas que vivimos una realidad verdadera. Las dos obras teatrales critican al gobierno de Franco. Aunque los autores critican el gobierno, ellos están más disgustos con la sociedad que no abren los ojos para darse cuenta que el sistema está equivocado, que la situación fuera de España es muy diferente. En *La ardiente oscuridad*, no se logra que los estudiantes (sociedad) vean la realidad, que no actúen y defiendan su esperanza. En cambio, en *Los ojos* si vemos que el niño (sociedad) a pesar de quedarse callado durante la mayoría del tiempo si peleó y se vengó de su madre. Los dos autores hacen una propuesta a la sociedad a no dejarse llevar por lo que físicamente ven sino por lo que pasa detrás del escenario o en otras palabras realmente los invita a analizar la realidad. Los ojos son poderos y esenciales en nuestra vida, pero más poderoso es llevar lo que vemos en un análisis crítico y enfrentar la realidad como se debe.

Hess, Chelsie

An Evaluation of the Student Teaching Triad

Presenter(s): Ku, Heng-Yu; Hess, Chelsie; Kaufeld, Kimberly

Spruce A-- Session time: 10:00 - 10:15 in the Morning

Faculty Sponsor(s): Ku, Heng-Yu

Graduate Presentation

The Student Teaching Triad Model involves student teachers, cooperating teachers, and university supervisors. This model is a commonly used method during the student teaching field experience. In this study, quantitative and qualitative data was gathered from different survey instruments to assess the quality of the Triad Model. The results revealed that there was a significant difference between the mean responses across the student teachers, cooperating teachers, and university supervisors' ratings on student teaching evaluation. In addition, there was a significant difference in the mean responses between the cooperating teachers and university supervisors' ratings of the teacher education program. Furthermore, some emerging themes from the open-ended questions were identified.

Horst, Kayla

Exploration of the Nature of Fingerprints

Presenter(s): Horst, Kayla

Mt. Evans, Longs Peak Ballrooms-- Session time: 01:30 - 02:30 in the Afternoon

Chemistry

Faculty Sponsor(s): Pringle, David

Undergraduate Presentation

The objective of this research is to create an undergraduate laboratory experiment so that forensic science students can explore the nature of fingerprints. The first part of the laboratory experiment is to look at some of the various lifting techniques for fingerprints and do comparisons by looking at ridge details and patterns under a magnifying lens. The second part of the laboratory experiment is to study the chemical composition of fingerprints. Fingerprints are composed of a mixture of organic compounds, including fatty acids and amino acids, and inorganic compounds. Ethyl chloroformate and methyl chloroformate are used to derivatize the fatty acids and amino acids, converting the non-volatile acids to more volatile esters so they may be analyzed by gas chromatography-mass spectrometry. The ethyl chloroformate and methyl chloroformate are compared to see which gives better results and which would yield better results for an undergraduate laboratory experience. A better understanding of latent fingerprint chemistry will be helpful to students pursuing careers in forensic science.

Howerton, Kayla**A comparison of postural stability in gymnasts, volleyball players and non-athletes.***Presenter(s): Howerton, Kayla**Mt. Evans, Longs Peak Ballrooms-- Session time: 01:30 - 02:30 in the Afternoon*

Audiology & speech-language sciences

Faculty Sponsor(s): Bright, Kathryn

Undergraduate Presentation

Balance and postural stability are crucial elements in daily activities and the training of athletes. Volleyball requires the athlete to be capable of regaining balance after jumping and landing. Gymnastics requires the athlete to have focus on multiple aspects of balance during the execution of a skill. Little is known about the comparison of gymnasts, volleyball players and non-athletes with regards to postural stability. Current literature has examined age, comparison of certain sports to other sports, and children in athletics, all with regards to postural stability. However, no current research examines postural stability between these groups directly. Current literature has shown that there is a correlation between balance training and increase of performance and decrease in injuries (Oliver & Di Brezzo, 2009).

This research assessed the balance systems of athletes to determine if there is a relationship between two types of sports and balance function. The comparison of athletes to non-athletes indicated whether athletes have greater postural stability, the comparison of gymnasts to volleyball players indicated whether gymnasts have increased postural stability over volleyball players. Female participants, 18-25 years old, were asked to complete a videonystagmography (VNG) and posturography assessment. The VNG examined eye movement to check for possible vestibular dysfunction. The posturography assessment measured the participant's center of pressure in five conditions, eyes open and closed on a rigid surface, eyes open and closed on a compliant surface, and limits of stability. Thirty participants, 10 people for each category, were tested using the VNG and posturography equipment. Based upon reviewed literature, we hypothesized that gymnasts have greater postural stability over volleyball players and non-athletes, and volleyball players have greater postural stability over non-athletes. This research can potentially be applied to athletic training regimens and therapy techniques for postural stability.

Hubbard, Ashley**Examining *Sclerocactus brevispinus* and *Sclerocactus wetlandicus* genetic diversity in Uintah Basin, Utah***Presenter(s): Hubbard, Ashley**Longs Peak Ballroom-- Session time: 02:30 in the Afternoon*

Biological Sciences

Faculty Sponsor(s): McGlaughlin, Mitchell

Graduate Presentation

Sclerocactus glaucus was listed as an endangered species under the Endangered Species Act of 1973. In 2006 *Sclerocactus glaucus* was identified to be three distinct species *Sclerocactus glaucus*, *Sclerocactus wetlandicus*, and *Sclerocactus brevispinus*, previously grouped into a species complex. *Sclerocactus brevispinus* and *S. wetlandicus* populations found in the Uintah Basin, Utah, are currently listed as endangered, and are the focus of this research. *Sclerocactus brevispinus* and *S. wetlandicus* are characterized by their morphological variations as well as ecological divergence in soil types but overlap in their 40x40 km distribution. *Sclerocactus* populations are experiencing an increase in habitat destruction due to oil exploration, thus causing populations to decrease in number. Habitat fragmentation also has potentially increased the frequency of *S. brevispinus* and *S. wetlandicus* hybridization, decreasing unique genetic diversity. Using microsatellite data we will explore *Sclerocactus* diversity and evolutionary history. This will give insight to land management and conservation practices for protecting endangered populations. Examining genetic data allows for assessment of hybridization and diversity of each population giving land managers the opportunity to preserve the evolutionary history of *Sclerocactus* species.

Huntington, Jody**Male Counseling Students' Perceptions of Females***Presenter(s): Huntington, Jody**Multiple Session Presentation - Sessions 13,14**Columbine B-- Session time: 01:40 - 01:55 in the Afternoon*

Counselor Education

Faculty Sponsor(s): Black, Linda

Graduate Presentation

This presentation will include the purpose, process, and findings of a qualitative study which explored male counseling students' perceptions of female clients, peers, and faculty. The problem under study was that gender issues continue to be understated in the counseling profession; hence women are likely to continue to suffer from the consequences of their personhood being undervalued by all counselors, and in particular male counselors. People trained as counselors could be catalysts in the area of gender appreciation and agents of change in the area of gender oppression. Gender is a key characteristic of our clients and one that needs to be considered. Self-awareness regarding gender and power needs to be brought to the forefront of one's mind. Women in particular experience unique gender concerns, which can be damaging. Women seem to be placed in a double bind. If they dress sexy, they are more attractive to men and men like to look at them more, yet they judge them harshly. If they dress too casual or sloppy, they seem less intelligent; if they are too attractive they may be judged as "earning" any status or accolades because of their looks; or if they are too attractive they may be held to a higher standard. Ten participants were interviewed twice and responded to four journal prompts over six months. The data was reviewed, analyzed, and synthesized into nine themes. The themes will be discussed along with the research process and the implications and findings. The male, graduate counseling students offered an indication of perceptions of female

clients, peers, and faculty. The findings aid in the potential to advance gender understanding and facilitate gender consciousness in counseling programs, which could have strong implications on women and men, clients, peers, and faculty.

Ingle, Danielle

Postural Stability and Flexibility in Young Adults

Presenter(s): Ingle, Danielle

Research Excellence Award Finalist

Mt. Evans, Longs Peak Ballrooms-- Session time: 10:30 - 11:30 in the Morning

Sport & Exercise Science

Faculty Sponsor(s): Heise, Gary

Undergraduate Presentation

The components of postural stability and flexibility are considered essential to overall physical fitness and well-being. Previous researchers have evaluated the relationship between these factors in the elderly and have drawn conclusions between balance ability and the risk of serious falls in this demographic. However, data concerning the younger population and implications of gender difference has been largely inconclusive. The purpose of this study is to assess the strength of the correlation between stability and flexibility in young adults as well as to evaluate how the anthropometrical differences between men and women dictate flexibility performance. It is a quantitative clinical study with a target of 40 young adults between 18 and 35 years in age. The force platform will be utilized to measure COP (center of pressure) and to detect any sway in the AP axis (anterior-posterior). Flexibility measures will be taken with a manual goniometer and a sit and reach box (SRB). The goniometer will quantify joint angles of the hip, knee, and ankle and the SRB will assess the lower back and hamstring flexibility of each participant. We expect that a strong correlation between stability and flexibility will be apparent in each subject, and that females will express a greater range of motion (ROM) than males. We hope to support the relevance of age in these factors and of gender in flexibility.

Keywords: postural stability, static stability, dynamic stability, balance, flexibility, young adults, gender, force platform, goniometer, sit and reach test, anterior-posterior axis

James, Heather

Personal perceptions of undergraduate student holistic development through spiritual engagement

Presenter(s): James, Heather; Mildrexler, Janella; Roberts, Holly

Mt. Evans, Longs Peak Ballrooms-- Session time: 01:30 - 02:30 in the Afternoon

Higher Education & Student Affairs Leadership

Faculty Sponsor(s): Couture, Rene

Graduate Presentation

The purpose of this research is to explore students' perception of the influence of faith based organizations on their holistic development. Until recent years, little research has been conducted on students' spiritual development as related to their holistic development. This qualitative study will include interviews of students involved in faith based organizations followed by a focus group. Data will be analyzed using ongoing and open ended strategies to identify themes, patterns and categories. Because student affairs views student development as a holistic process that encompasses spirituality, we believe the findings from this research will further inform the mentoring capabilities of faith based organizations and student affairs professionals.

Jankovsky, Casey

The Art of Technology: A Demonstration of the Effects of Computers on Electronic Music

Presenter(s): Jankovsky, Casey

Aspen B-- Session time: 02:40 - 02:55 in the Afternoon

Music

Faculty Sponsor(s): Ehle, Robert

Undergraduate Presentation

The topic explored in this creative project is how the invention and development of computers (specifically personal computers) has had an effect on the formation of electronic music and compositional techniques used with the advent of new technology. Computers have become a very important aspect of electronic music because they are currently the preferred compositional tools of many composers as well as the preferred methods of sound creation for some musicians. The tool used to create this digital composition was Apple's Logic Pro 9 software with a USB attached Casio Privia PX-200 keyboard for note input. Both pre-recorded, public domain loops of music and original material were used. This composition demonstrates how typical electronic effects (i.e. synthesizers, echo effects, etc.) can be applied to a composition using only computer software. It also shows how computer composition software can be used to include acoustic sounding instrumentals along with electronic instruments in an electronic music composition. The implications of this are that computers have become advanced enough in terms of sound synthesis software to start replacing older components of electronic composition, such as stand-alone synthesizers and mixing boards, due to cost and ease of use. The lower cost of sound synthesis software programs make them the only option for some composers of electronic music, but the advances in technology have made it so the quality of their compositions does not necessarily have to decrease because of this. The ability of computers to produce realistic sounding acoustic tones also brings about the possibility, whether good or bad, of replacing real acoustic instruments in certain compositional situations, for example, if a composer doesn't have an orchestra with various instruments at his or her disposal.

Johnson, Jacqueline**Engineering plants to aid in the fight against malaria***Presenter(s): Johnson, Jacqueline**Longs Peak Ballroom-- Session time: 02:50 in the Afternoon*

Biological Sciences

Faculty Sponsor(s): Keenan, Susan

Graduate Presentation

Every thirty seconds a child dies as a result of a malarial infection. In total, malaria kills an estimated 1.1 to 2.7 million people worldwide annually. Unfortunately, attempts to create a vaccine against malaria have failed and development of resistance has been observed against all malarial drugs in circulation. A cost effective mechanism to stop this disease is needed, leading scientists to take a new approach to the creation of a malaria vaccine. This approach involves the production of genetically altered plants containing malaria antigens capable of eliciting strong immune responses. Vaccines produced within plant tissues can reduce a substantial amount of the costs needed for vaccine production, distribution, and transportation. This project will focus on incorporating one surface antigen from the sexual stage of the parasite's lifecycle into the genome of *Arabidopsis (A.) thaliana* in hopes of producing transgenic plant matter. The overall goal of is to determine whether the sexual stage antigen Pfs4845 from the *Plasmodium falciparum* genome can be expressed within the plant model *A. thaliana* using the pSAT expression vector family. This research represents the initial stages necessary for the development of a multi-subunit plant derived malaria vaccine.

Johnson, Kate**Spiritual Spinning Wheels: Religion's Role in Women's Spinning Bees During the American Revolution***Presenter(s): Johnson, Kate**Research Excellence Award Finalist**Mt. Evans, Longs Peak Ballrooms-- Session time: 01:30 - 02:30 in the Afternoon*

History

Faculty Sponsor(s): Tomlin, T.J.

Undergraduate Presentation

The boycott of British goods and the emphasis on homespun are well-known pieces of the American Revolution. Because of their domestic role, the task of creating homespun goods naturally fell to the women of the American colonies. Spinning bees were one of the more public examples of women's efforts and these gatherings varied in size and the women would spend the day at their spinning wheels carding and spinning yarn which could then be woven into cloth. Traditionally these women's actions have been interpreted as political expression and support for the Patriot cause. However, by examining colonial newspapers from the period, a pattern emerges of these bees taking place at minister's homes and often including a sermon or scripture reading. With this context in mind, this research will explore in the New England colonies the influence of religion on women's involvement in the spinning bees and investigate spirituality's role as opposed to politics in participants' motivation. How did the women's religious convictions overlap with their political thoughts? What influence did ministers, sermons, and the religious ideas of the day have on how women approached political expression and involvement? Answering these questions requires examining specific ministers who hosted bees, such as Ezra Stiles of Newport, Rhode Island. It also means looking at the context of spinning in colonial culture, and what its role reveals about women's perceived place and duties within their society. The focus of the research however, investigates what the presence of the ministers reveals about the Christian altruism and spiritual values that motivated women to participate in the bees, and how this influences historical analysis of women's participation in the American Revolution.

Johnson, Kelli**PDGF/VEGF signaling in the somatic stem cells of *Drosophila* testes***Presenter(s): Johnson, Kelli**Mt. Evans Ballroom-- Session time: 03:00 - 04:00 in the Afternoon*

Biological Sciences

Faculty Sponsor(s): Leatherman, Judith

Undergraduate Presentation

Adult stem cells are maintained by the niche they occupy within an organism. *Drosophila* testes support two distinct populations of stem cells, the germ line stem cells, which produce sperm, and the cyst stem cells, which produce somatic cyst cells to guide the germ cells through the differentiation process. Both stem cell populations cluster around a group of non-dividing somatic cells called the hub. The Receptor Tyrosine Kinase (RTK) pathway EGFR/Map Kinase is known to be required for both retaining stem cell qualities and for cell differentiation. However, the other pathways involved in maintaining stem cell qualities and initiating differentiation are largely unknown. We have identified a second RTK that is expressed in the testis niche, the PDGF/VEGF Receptor (Pvr). Expression of the ligand Pvf1 is restricted to the hub, while the receptor Pvr accumulates in CySCs and cyst cells. In order to test whether Pvr regulates CySC behavior, we expressed constitutive or dominant negative mutants in the cyst lineage cells via the Gal4 UAS system. Expression of constitutive Pvr led to an increase in CySC self-renewal, shown by expansion of the stem cell marker Zfh-1. In contrast, when we expressed dominant negative Pvr, testes appeared to have a modest decrease in the number of CySCs, a result we are continuing to investigate. Thus, Pvr signaling may promote self-renewal in the CySCs.

Johnson, Kelli**txtng: a nu POV Human Drivers of Modern Language Change***Presenter(s): Johnson, Kelli**Research Excellence Award Finalist*

Council Room-- Session time: 11:20 - 11:35 in the Morning

English

Faculty Sponsor(s): Bovaird-Abbo, Kristin

Undergraduate Presentation

While writing systems serve only as a record of what has been said or thought, language encapsulates the spoken word as well: that is, speaking and listening in turn. Since 2010, text talk, or textese, has been categorized as a language rather than a writing system. Although languages and writing systems are two distinct aspects of communication and serve different purposes, text talk incorporates both fields of communication equally and flexibly. Never before has a language been able to serve multiple functions from both areas. Previous studies have been analytical studies of a single point in time studying vernacular and syntax: an analysis of the writing system that textese was believed to be. Because the language of texting fills a unique niche in communication, a Psychological analysis method was applied to work within the parameters of texting.

A timeline comparison of the physical, psychological, and sociological drivers of language was used to determine the effects of various changes in textese. This form of analysis takes into account effectors such as keyboards, context, and people involved in the conversation that have driven the growth and change of the text talk language since its birth twenty years ago, allowing for an interweaving of historical change that led to the language used today while demonstrating linguistic growth based on external factors. The “change over time” model is an analysis not frequently used that is designed to determine the “health” of language, that is, whether the language is growing or stagnating based on environmental context of the use of the language. Using this new paradigm, the language of textese is found to be not only retaining the original user base; it is gaining new users as both the language itself and the identity it represents change over time.

Johnson, Lainey

Plurality in Undergraduate Student Impressions of Social Justice from a Gendered Perspective

Presenter(s): Cohen, Joshua; Johnson, Lainey

Research Excellence Award Finalist

Council Room-- Session time: 02:40 - 02:55 in the Afternoon

Higher Education & Student Affairs Leadership

Faculty Sponsor(s): Couture, Rene

Graduate Presentation

With the rise in popularity on college campuses of various notions of social justice and inclusive excellence, student definitions of these concepts have become increasingly fragmented and specified. As a result of such increased specificity, varying notions of social justice have also developed more oppositional positions to one another. While much of the adversarial positioning of plural conceptions of social equity is warranted, an unfair amount of garnered animosity also exists that is the result of misinformation concerning the relation of one position to another. So, the plural growth of social justice definitions has resulted in the development of flawed binaries that are founded on an “either/or” logic. Such duality works to hinder, rather than facilitate, the advancement of individual equality. In response to this obstacle, this project examines varying conceptions of social justice among differing student groups. Employing qualitative analysis and narrative inquiry, this project works to examine the differing definitions provided by students, working to identify the misconceptions that have informed such antagonistic understandings. The result of such an approach is a deconstruction of some of the binaries that currently exist within these different narratives, leading to the identification of networks that connect and link varying equalities. By dispensing with some of the undeserved opposition, this project provides an avenue for future understandings of social equity that are based on an understanding of multiple networks, rather than simplistic duality.

Kato, Raquel

Like' My Status if I'm a Narcissist

Presenter(s): Sardelli, Natalie; Perry, Raeden; Theriault, Lauren; Kato, Raquel

Mt. Evans, Longs Peak Ballrooms-- Session time: 10:30 - 11:30 in the Morning

Psychology

Faculty Sponsor(s): Traxler, Karen

Undergraduate Presentation

Facebook is not simply a social networking website; it has changed the way in which people from all walks of life communicate. Individuals can post status updates on facebook and communicate in real time. These real-time updates may suggest something about an individual's need to be noticed, admired, and viewed favorably just as Freud suggested that the ego ideal is to seek admiration as one develops a love for self. Using Freud's ego theory as a foundation, the current research examined the correlation between the number of facebook status updates made by an individual per day and their need to be recognized and receive attention. A survey instrument was created to test the hypothesis that the more frequently someone updated their facebook status, the higher level of narcissistic behavior he/she exhibited. One hundred four people between the ages of 17 and 60 responded to the survey, and a significant positive correlation existed. In other words, the researchers found that the more frequently an individual updated their facebook status, the higher level of narcissism they had. These results support Freud's ego theory by showing that people desire to be noticed and admired. This desire is made evident by the amount of times people spend drawing this attention through a higher facebook status update frequency.

Kaufeld, Kimberly

Spatial-Temporal Generalized Linear Modeling of Mountain Pine Beetle Outbreaks and Other Damage Causing Agents in the Rocky Mountain Region

Presenter(s): Kaufeld, Kimberly

Spruce C-- Session time: 11:20 - 11:35 in the Morning

Applied Statistics & Research Methods, Biological Sciences, Mathematics

Faculty Sponsor(s): Lalonde, Trent

Graduate Presentation

Tree mortality due to bark beetles, in particular the mountain pine beetle, is a growing concern in the Rocky Mountains and across the country. As this issue has become more apparent in the last few years, various spatial analysis methods have been used to analyze the spread of the outbreaks of the mountain pine beetle. Bentz et al (2010) used population models of the bark beetle and simulated climate changes to predict the potential for bark beetle outbreaks in the United States and Canada. Recent work on the Mountain Pine Beetle outbreak in British Columbia was conducted by Zhu et al (2008) where a spatial-temporal autologistic binary model was used to account for both spatial and temporal dependence on discrete time intervals. The model used logistic regression to model a response variable on explanatory variables and autoregression on responses from spatial neighborhoods. This research uses a autologistic binary model and proposes a new model, the

multinomial model, to assess multiple damage agents that have occurred in the Rocky Mountain Region.

Parameters associated with mortality from the Rocky Mountain region are measured repeatedly based on spatial distance over discrete time intervals from June to August from 2005 to 2009. The multinomial model provides parameter estimation for the spatial, temporal, mortality and host tree types for various damage causing agents. The damage causing agents analyzed in the model for the Rocky Mountain region are Mountain Pine Beetles, Pine Engravers, the Five Needle Pine decline,

and a category of all other damage causing agents in the Rocky Mountain Region. In both the binary and multinomial models, the spatial parameter was found to have a negative impact and both the ponderosa pine and the lodgepole pine host trees showed a significant increase in damage from the Mountain Pine Beetle.

Khameiss, Belkasim

Coastal Marine Engineering in Benghazi City, NE Libya

Presenter(s): Khameiss, Belkasim

Mt. Evans, Longs Peak Ballrooms-- Session time: 10:30 - 11:30 in the Morning

Earth Sciences

Faculty Sponsor(s): Hoyt, William

Graduate Presentation

Benghazi city is the second capital of Libya. This city has many brackish water lakes and a long coastal beach. In the last few years, Turkish and Italian companies designed canals to connect those lakes with the Mediterranean Sea but that canals are closed off by long shore drift sediment. The second issue is that sediments are filling the harbor (Benghazi harbor). In my research I will study how to develop this into a useable harbor. In order to plan successful engineering solutions for these lakes and for the harbor, we need to know the rate of sediment accumulation and direction of sediment movement. That will allow the design of jetties, groins, breakwaters, and seawalls that have a predictable engineering life.

Khameiss, Belkasim

Marine Reef and Age Dating of Tertiary Sections, NE Libya

Presenter(s): Khameiss, Belkasim

Mt. Evans, Longs Peak Ballrooms-- Session time: 01:30 - 02:30 in the Afternoon

Earth Sciences

Faculty Sponsor(s): Hoyt, William

Graduate Presentation

The study area is located in NE Libya, to the north and east of Benghazi city. The outcrops of Tertiary reefs in NE Libya have five known section from Eocene, Oligocene, and Miocene ages. The previous work has only been done on microfossils, sedimentology and rare earth geochemistry for age dating. In this research, I will work to identify macrofauna, particularly, Coral, Echinoderms, and some Mollusks. These finding will be used to describe the paleoenvironments of these reef communities.

King, Carissa

Comparative analysis of the song syllable types produced by three nuthatch species: Evolutionary relationships do not predict similarity

Presenter(s): King, Carissa

Mt. Evans Ballroom-- Session time: 03:00 - 04:00 in the Afternoon

Biological Sciences

Faculty Sponsor(s): Benedict, Lauryn

Undergraduate Presentation

The red-breasted nuthatch (*Sitta canadensis*), the pygmy nuthatch (*Sitta pygmaea*), and the white-breasted nuthatch (*Sitta carolinensis*) are small, compact birds that live in forested areas, build nests in cavities, and eat insects gathered from the bark of trees. These birds are known to make different vocalizations and in this study we quantified the number of different syllable types used by each species. We predicted that because of close relation, the vocalizations of each species would share similarities while still being unique. I analyzed 20 recordings of each species using the sound analysis software SYRINX. I described 19 different syllable types from *Sitta pygmaea*, 10 syllable types from *Sitta canadensis*, and 9 syllable types from *Sitta carolinensis*. These results are consistent with the hypothesis that increased social behavior promotes increased vocal complexity. Pygmy nuthatches are social birds that will live and breed in communities. Conversely, red-breasted and white-breasted nuthatches are more solitary and will generally only

associate with their mate. I also found that the white-breasted nuthatch and the pygmy nuthatch use some syllable types which are nearly identical. Red-breasted nuthatches, on the other hand, have syllable types that bear little similarity to those of the other two species. Phylogenetically, pygmy nuthatches are more closely related to red-breasted nuthatches than they are to white-breasted nuthatches, raising questions about why the observed patterns of syllable similarity exist.

Klein, Alexander

What Happens To Electronics Once They Are Thrown Away

Presenter(s): Balderas, Angelica; Klein, Alexander; McAdow, Justin

Mt. Evans, Longs Peak Ballrooms-- Session time: 01:30 - 02:30 in the Afternoon

Business Administration

Faculty Sponsor(s): Krahnke, Keiko

Undergraduate Presentation

Our project for our International Management class was to pick a topic that interested us and was something that we wanted to learn more about. We chose to find out what happens to electronics after they are not wanted any more. Many people throw away their electronics not realizing that many times they are not being recycled properly or even handled properly. Our research will help us find where the unwanted electronics are going and what is happening to the people in the areas where they are being dumped.

Klosterman, Miranda

Self-Esteem and Relationship Perception

Presenter(s): Klosterman, Miranda

Mt. Evans, Longs Peak Ballrooms-- Session time: 10:30 - 11:30 in the Morning

Psychology

Faculty Sponsor(s): Pascoe, Elizabeth

Undergraduate Presentation

Fluctuations of in-the-moment self-esteem, also described as state self-esteem, may cause us to question our current relationship status, whatever it may be, and influence us to view romantic relationships in either a positive or negative light. This research is aiming to test whether manipulation of state self-esteem will cause a significant difference in either relationship satisfaction or, if single, relationship perception. This research is testing temporary state self-esteem and whether temporary fluctuations can affect results on relationship scales. Participants will be completing a priming task, taking place via computer, meant to temporarily lower or raise their state self-esteem. Participants will be told they are performing a task that is trying to determine whether vigilance, watchfulness, correlates with perception of romantic relationships. During the task they are asked whether the flashes appear on the right or left side of the screen. On the screen, using subliminal priming, the computer will pair either positive words ('fantastic', 'great', and 'wonderful') or negative words ('bad', 'horrible', and 'terrible') with self-referent words such as "I" to manipulate self-esteem. As a control, words are paired with the name Leo. After completing the computer task, participants will be asked to fill out surveys that include Relationship Assessment Scale (RAS) (Hendrick, 1988), Relationship Perception Scale created by Miranda Klosterman (based off the Relationship Assessment Scale, Hendrick, 1988), Personal Attitudes Scale (Cross, Bacon, and Morris, 2000), Rosenberg Self-Esteem Scale (Rosenberg, 1965), and the State Self-Esteem Scale (Heatherton and Polivy 1991). We expect individuals that had their self-esteem influenced negatively will have lower relationship satisfaction or a lower perception of relationships in general. Those that had self-esteem positively influenced will have higher relationship satisfaction or they will have a more positive perception of relationships overall.

Knapp, Christi

Nature's Relationships with Daoism and Modern China

Presenter(s): Knapp, Christi

Columbine A-- Session time: 10:00 - 10:15 in the Morning

Faculty Sponsor(s): Low, Michelle

Undergraduate Presentation

This research examines the different relationships China has had with nature. Daoism, being a traditional Chinese philosophy, provides a lot of insight into some of China's past views of nature. The Daoist philosophy saw nature as a salvation, which contrasts heavily with China's current relationship with nature. Now, nature is a resource to be exploited. These relationships are examined through original Daoist texts, cultural observations made in various locations in China, and discussions with Chinese citizens. The examinations highlight a relationship that has drastically changed and which is now quite detrimental to environmental quality. These observations are also used to conclude that a change in this relationship is again taking place; a respect for nature is once again emerging in China that is more in line with its Daoist tradition.

Kranz, Courtney

How America Used the World Bank and the IMF for Their Benefit

Presenter(s): Kranz, Courtney

Aspen B-- Session time: 10:40 - 10:55 in the Morning

Political Science

Faculty Sponsor(s): Blair, Brook

Undergraduate Presentation

The World Bank and International Monetary Fund ostensibly exist to aid countries in economic development and eradicating poverty. Although international in scope and charter, these institutions adhere to Washington consensus and support neoliberal

economic policy, including privatization, free markets and limited government involvement in the economy. Upon further examination, the main beneficiary of these World Bank and IMF policies is not the developing world but the United States. This presentation will use data from databases from the World Bank and the World Trade Organization to illustrate the ramifications of implementing neoliberal economic policy in Africa by focusing on trade policy, exchange rates, privatization and subsidies. The implementation of these policies often force African nations even further into economic decline. Simultaneously, the United States and American companies receive economic benefits at the expense of African development. For example, the World Bank and the IMF pressure African nations to lower subsidies and protectionist barriers. Meanwhile, American farmers enjoy substantial subsidies from the American government and are not forced to compete with African farmers. Similarly, African countries are thwarted in plans to develop large manufacturing industries because they are prevented from implementing the trade policies that facilitate manufacturing growth. The neoliberal policies implemented by the IMF and the World Bank are sending Africa further into poverty while generating large profits for American businesses.

Kuhr, Kelly

Lectura de cuentos de famosos escritores españoles

Presenter(s): Manoles, Ruby; Kuhr, Kelly; Leal, Erendira

Spruce C-- Session time: 01:00 - 01:15 in the Afternoon

Spanish

Faculty Sponsor(s): Gonzalez, Ester

Undergraduate Presentation

Lecturas de cuentos de famosos autores españoles

The presentations will deal with three short stories by the famous Spanish authors: Benito Pérez Galdós and Emilia Pardo Bazán. Both authors were writing during the end of the nineteenth Century. These stories are good examples of Spanish Costumbrismo and Naturalism, and concern with social situation at the end of the century, focus on women problems and quests.

Lamar, Margaret

Faculty Plagiarism: The University of Northern Colorado Scandal and its Implications for Today's Students and Educators

Presenter(s): Lamar, Margaret

Mt. Evans, Longs Peak Ballrooms-- Session time: 10:30 - 11:30 in the Morning

Higher Education & Student Affairs Leadership, History

Faculty Sponsor(s): Yakaboski, Tamara

Graduate Presentation

The prevalence of plagiarism often emerges as an important topic of discussion within higher education. A faculty plagiarism scandal at the University of Northern Colorado ignited a controversy both on campus and across the academic community. This poster presentation will provide an overview of the scandal, its major players, the impact on the campus, and implications for students and educators today.

Lambert, Ryan

On the Bathroom Wall: A Talk on UNC Latrinalia

Presenter(s): Lambert, Ryan

Aspen B-- Session time: 11:40 - 11:55 in the Morning

Anthropology, English

Faculty Sponsor(s): McBeth, Sally

Undergraduate Presentation

This presentation will focus on the construction of a homosocial community in male bathrooms at UNC, and it will use latrinalia (bathroom wall writing) to make its case. The presentation is based on the fourth chapter of my honors thesis, which has two purposes. First, the thesis serves as an ethnographic collection of previously unrecorded folklore from Greeley, Colorado, focusing on plausible urban legends, ghost stories (i.e. urban legends involving the paranormal and the seemingly impossible), miracle narratives, and latrinalia. Second, the project aims to analyze the functions of Greeley folklore. In interviewing various members of the Greeley and University of Northern Colorado communities, I determined that folklore validates one's sense of place. In other words, working from paradigms provided by Elliot Oring, William Bascom, and Victor Turner, this project argues that Greeley's folklore is an un-institutionalized medium that functions to create *communitas*, a strong sense of community among Greeley residents, through liminality, equality, inferiority, or marginalization. Additionally, this collection and analysis will hopefully advance an academic understanding of Greeley, Colorado.

Leach, Sara

Political Issues In The Mexican American Community

Presenter(s): Leach, Sara; Hernandez, April; Hernandez, Armando; Tapia, Jose; Simms, Thomas; Vining, Luna

Aspen A-- Session time: 11:20 - 11:35 in the Morning

Mexican American Studies

Faculty Sponsor(s): Falcon, Priscilla

Undergraduate Presentation

Today, the Mexican origin population is the fastest growing Latino and ethnic group within the United States. According to the U.S. Census Bureau statistics, there are 50.5 million Latinos in the United States, with Mexican origin populations making up 31 million or 68% of the total Latino population. The student presentations will examine the various ways politics plays out in the Mexican origin and Latino communities, from grassroots action and voter turnout to elected representatives and public policy issues.

Lee, Benjamin

Cloning of Immunoglobulin cDNAs from the Jamaican Fruit Bat (*Artibeus jamaicensis*)

Presenter(s): Lee, Benjamin

Research Excellence Award Finalist

Mt. Evans Ballroom-- Session time: 03:00 - 04:00 in the Afternoon

Biological Sciences

Faculty Sponsor(s): Hawkinson, Ann

Undergraduate Presentation

Bats have recently been identified as reservoirs of infectious agents that cause disease in humans, including rabies virus, SARS-like coronaviruses, Ebola and Marburg viruses, and Nipah and Hendra viruses. Little research has been done on how bats host these viruses without developing pathology. It has recently been determined that the Jamaican fruit bat (*Artibeus jamaicensis*) is highly susceptible to Tacaribe virus (TCRV), which is closely related to the viruses that cause the South American hemorrhagic fevers (SAHF). Previous work from our lab suggested Jamaican fruit bats infected with TCRV to be a viable animal model for SAHF; the presence of neurogenic tremors is a key symptom seen in both bat and human pathology. Characterization of the immunoglobulins (Ig) is a fundamental process to developing this animal model. The purpose of this study is to examine Ig mRNAs to clone and characterize IgG, IgA, and IgM genes. This strategy will allow us to identify segments where immunoglobulin genes differ between classes and reveal variable, diversity, and joining regions that contribute to immunoglobulin diversity. Total RNA was extracted from a bat spleen sample and reverse transcribed to cDNA. Ig specific CH1 domain primers were used to amplify sequences to be cloned into a cloning vector. Competent *E. coli* cells were transformed and screened for correct plasmid inserts. Bacterial plasmids were purified and sequenced. Orthologous IgG, IgA and IgM sequences from other mammalian species were acquired from Genbank for comparative analysis with Jamaican fruit bat sequences. To this end, we have cloned constant regions of Jamaican fruit bat IgG, IgA, and IgM. We aim to subclone amplified gene fragments into expression vectors and produce Ig-specific antibodies. We will use these antibodies to characterize bat immune responses to TCRV and compare them to human antibody responses to the viruses that cause the SAHF.

Legg, Elizabeth

Eye Movement Desensitization and Reprocessing in Conjoint Couples Therapy

Presenter(s): Legg, Elizabeth

Mt. Evans, Longs Peak Ballrooms-- Session time: 10:30 - 11:30 in the Morning

Psychology

Faculty Sponsor(s): Lahman, Maria

Graduate Presentation

Research indicates that Eye Movement Desensitization and Reprocessing (EMDR) is an effective and evidence based treatment for individuals with trauma-related symptoms (e.g., Bisson & Andrew, 2007; Chambless & Ollendick, 2001; Maxfield & Hyer, 2002; F. Shapiro, 2001). However, there is little information about its effectiveness within a couples therapy context. The purpose of this instrumental case study is to describe how members of a couple and their therapist experience EMDR treatment within conjoint couples therapy to address past trauma and unresolved family of origin issues and how this treatment modality impacts each member of the couple as well as their relationship. Specifically, the research questions are: 1) How do members of the couple experience conjoint couples therapy involving EMDR treatment? 2) How does the therapist experience providing EMDR treatment within the context of conjoint couples therapy? 3) What do the participants perceive as valuable or meaningful about the EMDR process? 4) What do they perceive as impeding the EMDR process or not valuable? 5) How does each participant describe the status of the couple prior to and following EMDR, both individually and relationally? Both members of a couple and their therapist will be interviewed, interviews will be recorded and transcribed, and a thematic analysis will be conducted. Artifacts may also be included as supplemental sources of data, including personal writings or artwork that are representative of the therapeutic process or of the clients at various stages of treatment, as well as documents such as questionnaires or measures that provide baseline and outcome ratings of personal and dyadic functioning. Furthermore, audio or video recordings of conjoint EMDR sessions may also provide additional data for thematic analysis. Data analyses will include a thorough description of the case and its setting, categorical aggregation to establish themes or patterns, and naturalistic generalizations.

Lenberg, Jerica

Use of MTT for viability testing may be inappropriate for macrophages.

Presenter(s): Lenberg, Jerica

Mt. Evans Ballroom-- Session time: 03:00 - 04:00 in the Afternoon

Biological Sciences

Faculty Sponsor(s): DeKrey, Gregory

Undergraduate Presentation

MTT (3-(4,5-Dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide) is a commonly used reagent to measure general metabolic activity in cultured cells. MTT is a yellow, water soluble substrate for various enzymes in living cells which can reduce it to a purple, insoluble formazan product that forms aggregates within and without cells over time. Quantification of the formazan product by spectrophotometry is used as an endpoint in assays of cell proliferation and cytotoxicity. However, because the formazan product is

insoluble in aqueous culture media, an exchange of medium (e.g., to organic) is typically the last step in these assays, and that limits the use of cells to those that are adherent. Observations in this laboratory found that some weakly adherent RAW 264.7 cells (mouse macrophage) detached from culture dishes within two hours of exposure to MTT at 0.45 mg/ml. Using light microscopy, formazan was clearly visible in/on cells with some aggregate filaments exceeding 100 μm in length. We hypothesized that weakly-adherent RAW 264.7 cells detach after MTT exposure because the formation of formazan aggregates disrupts their adherence. This was supported by the observation that more highly adherent cells (L929 fibroblasts) did not detach after MTT exposure. Using a hemocytometer, the average fraction of viable detached cells (with aggregates) was estimated to be 4%. While the loss of 4% of cells in the final step of an MTT assay may not significantly alter the assay's results, it is likely to contribute to the assay's indeterminate error, a potential that should be considered prior to the analysis of weakly adherent cell types.

Leyrer, Jonna

The effects of dopamine on NMDA receptor responses in a PCP mouse model of schizophrenia

Presenter(s): Leyrer, Jonna

Mt. Evans Ballroom-- Session time: 03:00 - 04:00 in the Afternoon

Biological Sciences

Faculty Sponsor(s): Thomas, Mark

Undergraduate Presentation

Schizophrenia (SZ) is a mental disorder characterized by emotional and cognitive dysfunction such as delusions and hallucinations, defective working memory and attentional deficits. The cognitive dysfunction is thought to involve abnormalities in medial prefrontal cortex (mPFC), an area that is influenced by the midbrain dopaminergic system. It is well established that (a) normal dopamine (DA) function is required for mPFC-mediated working memory function, and (b) the DA system is dysfunctional in SZ patients. The exact mechanisms by which DA modulates mPFC functions is unclear, however. Chronic administration of N-methyl-D-aspartate (NMDA) receptor antagonists such as phencyclidine (PCP) to humans results in symptoms indistinguishable from SZ. In normal animals, dopamine inhibits NMDA receptor activation in mPFC neurons. Sub-chronic administration (ie. below anesthetic levels) of PCP to rodents suppresses this inhibitory modulation of NMDA receptor function by dopamine. Thus, PCP and other "psychotogenic" NMDA receptor blockers may induce SZ symptoms in part by suppressing dopaminergic modulation of NMDA receptor function in the mPFC. Whole cell visually-guided patch clamp recordings will be performed in slices of mouse mPFC. NMDA receptor-mediated synaptic responses will be evoked in layer 5 pyramidal neurons. NMDAR responses will then be evoked in the presence of the DA D1 receptor (D1R) agonist, SKF 38393 (10 μM by bath application). For each neuronal recording, the amplitude of the NMDA receptor response in control solution will be compared with the response evoked in the presence of the D1R agonist. We propose to confirm the hypothesis that PCP will suppress dopamine modulation of NMDA receptor function. Ultimately, we plan to use these results to study the effects of novel antipsychotic agents on the modulation NMDA receptor mediated responses. Potential antipsychotic agents that are able to reverse the PCP-induced suppression of dopamine's effects may be more efficacious in treating the cognitive symptoms of schizophrenia.

Lindstadt, Abigayil

Eng 624 Middle English Panel

Presenter(s): Wolfe, Kateland; Duffy, Michone; Lindstadt, Abigayil

Multiple Session Presentation - Sessions 17, 18, 19

Spruce B-- Session time: 03:00 - 03:15 in the Afternoon

English

Faculty Sponsor(s): Lindstadt, Abigayil

Graduate Presentation

Written in the period 1200-1485, between Old English and Modern English, Middle English as a language allows for a wide variety of interpretations in both language and theme due to the fact that its relative syntactical freedom allows for rhetorical arrangements no longer possible in Modern English. Focusing on a variety of Middle English romances and ballads (such as the tales of Robin Hood and King Arthur), this panel will explore issues relevant to medieval aristocratic and bourgeoisie audiences using the frameworks of feminism, new historicism, ecocriticism, Marxism, and liminality.

Lindstadt, Abigayil

Eng 624 Middle English Panel

Presenter(s): Meyer, Trevor; McCurley-Hardesty, Karen; Lindstadt, Abigayil; Vance, Bremen

Multiple Session Presentation - Sessions 17, 18, 19

Spruce C-- Session time: 03:00 - 03:15 in the Afternoon

English

Faculty Sponsor(s): Lindstadt, Abigayil

Graduate Presentation

Written in the period 1200-1485, between Old English and Modern English, Middle English as a language allows for a wide variety of interpretations in both language and theme due to the fact that its relative syntactical freedom allows for rhetorical arrangements no longer possible in Modern English. Focusing on a variety of Middle English romances and ballads (such as the tales of Robin Hood and King Arthur), this panel will explore issues relevant to medieval aristocratic and bourgeoisie audiences using the frameworks of feminism, new historicism, ecocriticism, Marxism, and liminality.

Lorenzo, Adriana

A cardiac nurse practitioner is cost efficient and able to provide optimal care for the need of chronic health care maintenance in a cardiology clinic*Presenter(s): Lorenzo, Adriana**Mt. Evans, Longs Peak Ballrooms-- Session time: 01:30 - 02:30 in the Afternoon*

Nursing

Faculty Sponsor(s): Hummel, Faye

Graduate Presentation

The chronically ill patients in northern Colorado suffering from congestive heart failure (CHF) are finding that it is becoming harder to schedule an appointment and be seen by their cardiologist if they have an exacerbation of their disease. Frequent calls from patients are taken by the receptionist with complaints of shortness of breath or increased leg edema. They are given the next available appointment, usually six weeks out, or deferred to the emergency room because the cardiologist is either booked or at the hospital. The rationale of this solution is simple; the doctor to patient ratio is lopsided with too many patients requiring care from one cardiologist. The clinic's challenge of meeting the demand of chronic health care maintenance with cost-efficient positive outcomes is an example of the nation's health care cost burden. A cardiology nurse practitioner will help alleviate the outpatient demand of care at a more cost effective rate than another cardiologist.

A cost-benefit analysis will provide information regarding the necessity of a cardiac nurse practitioner and how they are vital to a cardiology practice. A meta-analysis and literature review using several references will demonstrate how a cardiac nurse practitioner will be able to provide routine and emergent care for patients with the diagnosis of congestive heart failure with improved patient outcomes. This study will also demonstrate how hiring a nurse practitioner will be more cost effective to the shareholders of the clinic rather than hiring another cardiologist. A comparison of hospital inpatient costs versus office visit costs for self-pay and Medicare patients will reveal how much more hospital visits are when a cardiologist has to turn a patient away for an exacerbation of their congestive heart failure. The conclusion will demonstrate that the nurse practitioner is more cost effective for a growing cardiac practice.

Lu, Pei-Chin**Parkinson's Disease and Exposure to Pesticides: A Meta-Analysis over Case-Control Studies***Presenter(s): Lu, Pei-Chin; Landram, Suzy; Kincaid, Tyler**Mt. Evans, Longs Peak Ballrooms-- Session time: 10:30 - 11:30 in the Morning*

Applied Statistics & Research Methods

Faculty Sponsor(s): Pulos, Steven

Graduate Presentation

This meta-analytical study examines the relationship between Parkinson's disease (PD) and exposures to pesticides. In total 14 studies (13 peer-reviewed studies and one thesis) ranging from the years 1998 to 2011 from 10 different countries were initially used in this meta-analysis. All studies included within the analysis used a case-control methodology, and log odds ratios were computed for each. A sensitivity analysis was conducted and only 11 studies were retained for a fixed-effect model with a combined odds ratios 1.3964 with a 95% CI 1.2016 to 1.6228. The authors conclude that a positive relationship between exposure to pesticides and a PD was found. Therefore, this meta-analysis suggests that exposure to pesticides does increase the possibility of developing PD.

Marshall, Sean**Examining the Relationship Between Deviance and College Students' Possible Selves***Presenter(s): Marshall, Sean**Mt. Evans, Longs Peak Ballrooms-- Session time: 01:30 - 02:30 in the Afternoon*

Sociology

Faculty Sponsor(s): Houser, Jeffrey

Graduate Presentation

In this study, the association between possible selves and deviance is explored. Possible selves represent individuals' perceptions of what they could become, what they hope to become, and what they are terrified of becoming. University of Northern Colorado (UNC) students between the ages of 18-48 (N=260) were asked to describe their past deviancy, current self-image, and expectations of the future. It was hypothesized that higher levels of deviance leads to more negative and less positive current and future self-identities. Students varied widely in the degree of their prior self-reported deviance. Those who reported a high level of prior deviance do not differ with those who reported no or little deviance earlier in life with respect to positive sense of self, both currently and in the future. An 84-item questionnaire was utilized as a data collection tool in college classrooms. Results of this study counter the prior notion that prior deviance shapes one's current and future self-identity.

Martin, Elia**Using Self-Determination Theory to Examine the Motivation of Ethnic College Students***Presenter(s): Martin, Elia**Research Excellence Award Finalist**Mt. Evans, Longs Peak Ballrooms-- Session time: 01:30 - 02:30 in the Afternoon*

Psychology

Faculty Sponsor(s): Cauffman, Krista

Undergraduate Presentation

The purpose of this study is to examine the relationship among academic self-concept, motivation and academic achievement amongst African American and other ethnic college students. Self-Determination Theory is used a framework to help understand

college students academic motivation. Existing research in this area has tended to not focus much on ethnicity; yet preliminary information suggests that associations among academic self-concept, academic motivation and achievement of African American college students take distinct forms from other ethnic groups. This study uses the Academic Motivational Scale (AMS, 1992) to measure intrinsic and extrinsic motivation for college students, the Academic Self-Concept Scale (ASCS, 1988) to measure self-concept, and self-reported GPAs are used to measure academic achievement. This research is currently in progress and it is anticipated that the variations of intrinsic and extrinsic motivation, academic self-concept, and academic achievement vary according to ethnicity. This research is intended to be beneficial for educators so more colleges may be structured in a way that meet the motivational needs of all ethnic students. Data for this study will be collected using quantitative methods by conducting surveys using Qualtrics online surveying system.

Matesi, Chelsea

The Effect of Presentation Level on the SCAN-3:A

Presenter(s): Matesi, Chelsea

Research Excellence Award Finalist

Council Room-- Session time: 10:20 - 10:35 in the Morning

Audiology & speech-language sciences

Faculty Sponsor(s): Stooddy, Tina

Undergraduate Presentation

The SCAN-3:A is widely used to screen and diagnose Auditory Processing Disorders (APD). The test is meant to be administered through an audiometer at 50 dB HL. The test manual states that it can be administered through a portable CD player when an audiometer is not available. If presented through a CD player, it is to be played at the patient's most comfortable listening level (MCL), or the clinician may present at their MCL. Because MCL is likely to vary across individuals, even those with normal hearing sensitivity, the question that was asked in this study was whether the presentation level affected scores of the SCAN-3:A.

Twenty-two young adult females from the University of Northern Colorado were recruited to participate in this study and were administered the SCAN-3:A three different times at one month intervals, at 40, 50, and 60 dB HL. Prior to each session, participants passed a hearing screening to ensure normal hearing sensitivity. The stimulus level of the SCAN-3:A was counter-balanced across participants in order to eliminate test order effects.

A Repeated Measures ANOVA with Multiple Comparisons were used to determine effects of presentation level on the scaled composite and subtest scores. There were significant differences across all intensity levels for the composite scores ($p < .001$). Results varied among the subtests. Effect sizes were also calculated and found to be strong.

Several professions outside of audiology, including speech language pathologists and psychologists, are qualified to administer this test. It is likely many of them would be doing this without an audiometer. Depending on the level they present through a CD-player, this could result in incorrect test scores and even misdiagnosis of APD. Because APD is typically diagnosed in children, it would be interesting in the future to evaluate the effect of presentation level on the SCAN-3:C(children's version).

Mathis, Jennifer

Econometric Statistical Investigation of the Causal Relationship Between Educators' Use of Data and Student Achievement

Presenter(s): Mathis, Jennifer

Mt. Evans, Longs Peak Ballrooms-- Session time: 01:30 - 02:30 in the Afternoon

Applied Statistics & Research Methods, Educational Leadership

Faculty Sponsor(s): Klopfenstein, Kristin

Graduate Presentation

With federal legislation and funding incentives of No Child Left Behind and Race To The Top, U.S. public schools are now held accountable for unbiased achievement outcomes for all students. A dominant feature of these initiatives is the strong recommendation of the use of data for instructional decision making to effectively close evident gaps within and among student subgroups. Literature has demonstrated the variability with which educators commonly access, understand, and use data to inform instruction. Despite strong pressures from federal, state, and private funders in the use of data, there is limited empirical research to justify this foundational assumption, and the research has had little success in establishing the relationship between the use of data by educators for instructional decision making and student achievement. Qualitative inquiry has focused primarily on educators' ability to build capacity and create structures to foster data-driven decision making, and quantitative research has attempted to identify the relationship between data use and achievement, demonstrating mixed or weak statistical evidence.

The intent of this study is to examine the complexities of investigating data use by educators and its impact on achievement, and to develop a research plan which would identify and measure educational leadership practices in schools which support knowledge of, access to, and use of student data for instructional and behavioral decision making by teachers and administrators in Colorado school districts. Further, and more complex, is the development of a plan to study the relationship of identified leadership practices with achievement. Empirical studies in this area have primarily used quantitative correlational and qualitative methods which are not strong enough to inform the causal relationship between educators' use of data and student achievement. I will propose econometric statistical techniques that will allow me to isolate the causal relationship between data use in schools and student achievement.

Maxey, Elizabeth

Cytotoxic Effects of Elapid and Colubrid Venoms on Colon (Colo205) Cancer Cells

Presenter(s): Maxey, Elizabeth

Mt. Evans Ballroom-- Session time: 03:00 - 04:00 in the Afternoon

Biological Sciences

Faculty Sponsor(s): Mackessy, Steve

Undergraduate Presentation

Background: Cancer is characterized by uncontrolled growth and spread (metastasis) of abnormal cells that, if not controlled, commonly results in death. In 2011 there were approximately 1.6 million new cancer cases, with approximately 572,000 cancer-related deaths, in the United States alone (about 1,500 per day). Colorectal cancer is the fourth most commonly diagnosed cancer in the United States, with approximately 140,000 new cases diagnosed and approximately 49,000 deaths (second only to lung cancer) in 2011. Treatment options are limited and depend on the stage of the cancer at diagnosis; therefore, there is a need to examine novel sources, such as snake venoms, for potentially useful cancer therapeutics. Elapid venoms contain many neurotoxic proteins, but many also possess cytotoxins that could be of medical relevance. Colubrid venoms are typically not harmful to humans but could possess components that are medically significant. In this study, the cytotoxicity of various elapid and colubrid venoms on Colo205 cancer cells was explored. Colo205 cells are colorectal adenocarcinoma cells, and 95% of colorectal cancers are adenocarcinomas. Results: Data show that some of the tested venoms exhibited high cytotoxicity (cell death rates $\geq 90\%$), while others exhibited little to no effect (cell death $\leq 20\%$) and others exhibited potent cytotoxic effect (cell death up to 90%). Discussion: Several venoms appear to limit cell proliferation, and further analysis of these venoms is being conducted to identify the component(s) responsible for these anti-cancer effects. Conclusion: The need to develop new treatment options for colorectal cancer is essential, as treatment options are limited, due in part to the over-sensitivity of the colorectal area to traditional cancer therapies. Venoms that exhibited cytotoxic effects on Colo205 cancer cells could lead to the identification of an agent that is effective in inhibiting the proliferation of this invasive cancer, which could potentially lead to novel drug therapy options for treating colorectal cancer.

Maxfield, Nicole

The Rise of Technology: A Middle Class American's Exploration of a New American Dream

Presenter(s): Maxfield, Nicole

Mt. Evans, Longs Peak Ballrooms-- Session time: 10:30 - 11:30 in the Morning

History

Faculty Sponsor(s): Haberman, Aaron

Undergraduate Presentation

This project will include the biography of a middle-class American who grew up during WWII, served during the Cold War, and introduced himself into the field of technology during the race to space. The time period focused on is 1968-1975. During this time he worked for high profile companies such as UNIVAC and NASA. The topics covered will be the new technology of that age, gender bias in the work place, and the social and economical issues of that era.

McBeth, Sally

Life History: Critical Inquiry and Humanistic Method in the Undergraduate Classroom; a Works-in-Progress Round Table, Discussionschu

Presenter(s): McBeth, Sally; Lambert, Ryan; Dougherty, Alaina; Schmidt, Christopher; Schuch, Kayla; Mueller, Blair; Jarrell, Rhiannon; Wright, Wendy; Berg, Holly; Sherwin, Alexander

Multiple Session Presentation - Sessions 2, 3

Columbine B-- Session time: 09:20 - 09:35 in the Morning

Anthropology

Faculty Sponsor(s): McBeth, Sally

Undergraduate Presentation

This presentation will explore pedagogical questions on the ethnographic field technique or methodology known as the life history. This method consists of a rigorous yet compassionate effort to portray the lives of ordinary individuals in specific cultures and contexts. In anthropology the life history, or personal narrative of one's life, has long been recognized as an important vehicle for learning about how culture is experienced and created by individuals. The method focuses on the ways that people construct personal meaning. It gives voice to the ordinary person, as opposed to the famous.

Through co-authoring a life history of between 75-100 pages, undergraduates learn first-hand how individuals cope with the stream of events, values, and rules that their culture imposes.

Life histories have a special significance in our highly technological and fast-paced, complex world. As we have become more isolated from one another, the life history offers a means of putting us back in touch with others.

This round table discussion of "works in progress" will raise the following questions:

How does the life history allow us to know and understand another person?

What do we seek in life histories?

What do we gain from them?

What are their limitations?

McCullough, Amy

Entre cuentos y mnirrelatos

Presenter(s): McCullough, Amy; Rascon, Leticia

Spruce A-- Session time: 11:40 - 11:55 in the Morning

Spanish

Faculty Sponsor(s): Gonzalez, Ester

Undergraduate Presentation

These presentations will analyze short stories and short short stories, as the microrrelatos are called. They will study "Amor 77" de Julio Cortázar, "La mosca que soñaba que era un águila" de Augusto Monterroso, "El nacimiento de la col" de Rubén Darío, and "Las cartas de Gerardo" de Elvira Navarro.

McGee, Micah

The Case of CSU-Pueblo: Does Adding Intercollegiate Sports Affect Enrollment?

Presenter(s): McGee, Micah

Mt. Evans, Longs Peak Ballrooms-- Session time: 10:30 - 11:30 in the Morning

Sport & Exercise Science

Faculty Sponsor(s): Gray, Dianna

Graduate Presentation

This study examined the trends in enrollment at Colorado State University – Pueblo (CSU-Pueblo), a small public university participating in Division II athletics. CSU-Pueblo reintroduced football, wrestling, and women's track and field in 2008 twenty-four years after the football program had been cut. An examination of descriptive statistics as well as time series plots indicates a significant upward trend in enrollment since the reintroduction of these sports.

A 1987 study by McCormick and Tinsley provided a spark of interest in research regarding athletic impact on enrollment at universities. Since McCormick and Tinsley's (1987) conclusion that cutting large-scale athletics programs could have a detrimental impact on enrollment, other research has found positive impacts on enrollment and applications at universities who either fielded successful athletic teams or merely added sports to their athletic programs. Goff (2000) suggests that enrollment might be the best measure of the effect athletics has on student interest in public universities. A majority of the research has been conducted at the NCAA Division I level (e.g. Goff, 2000; Mixon et. al., 2004; Toma & Cross, 1998) but several studies have examined institutions at the community college, NAIA, Division III and Division I-AA level (Ashburn, 2007; Cigliano, 2006; Goss et al., 2006; Weatherall, 2006). These studies suggest athletics have a positive impact on enrollment, applications and media coverage. However, little research has been conducted on the impact or trends in enrollment after introducing sports programs to an institution participating in Division II athletics.

This introductory study will lead to future research examining a potential quantifiable impact as well as qualitative research into the role athletics plays in a university's strategic enrollment plan.

McGuire, Kaipo

Motivational Characteristics of Student-Athletes Representing a U.S. Service Academy

Presenter(s): McGuire, Kaipo

Mt. Evans, Longs Peak Ballrooms-- Session time: 10:30 - 11:30 in the Morning

Sport & Exercise Science

Faculty Sponsor(s): Brustad, Robert

Graduate Presentation

Self-Determination Theory (SDT; Deci & Ryan, 1985) posits three types of motivation: intrinsic motivation (IM), or action undertaken because it is inherently interesting or enjoyable; extrinsic motivation (EM), action undertaken for external reasons; and amotivation, which is the absence of motivation. Although SDT has been utilized to study motivation in collegiate sport, there are no known studies that address the motivational characteristics of athletes representing U.S. service academies. This population is of interest because every student at a service academy has received a full academic scholarship and cadet student-athletes function in a very demanding and controlled environment with numerous additional academic and leadership responsibilities that extend beyond the normal demands placed upon college student-athletes. In order to contrast motivational characteristics of service academy college athletes with non-service academy college athletes the Sport Motivation Scale (SMS; Pelletier et al., 1995) was administered to athletes representing both types of institutions. The SMS has roots in SDT and was developed specifically to measure motivation in sport. A total of 67 athletes participated in the study (x = service academy athletes, y = non-service academy athletes) and were contrasted on three dimensions of intrinsic motivation (to know, to accomplish, and to experience stimulation), three dimensions of extrinsic motivation (external regulation, internal regulation, and identified regulation) as well as amotivation. Results indicated that non-service academy athletes scored significantly higher on intrinsic motivation to know, $t(65) = -4.216, p < .05$ but that no other significant differences existed between the groups. The results of this study suggest that athletes representing service academies do not have motivational profiles that differ markedly from the motivational profiles of non-service academy athletes.

McKinney, Kamille

Not in My Backyard: A Look at Sex Offender Programming and Management in the State of Colorado

Presenter(s): McKinney, Kamille

Mt. Evans, Longs Peak Ballrooms-- Session time: 01:30 - 02:30 in the Afternoon

Criminal Justice

Faculty Sponsor(s): Fitzpatrick, Colleen

Graduate Presentation

There are few groups more marginalized in society than convicted offenders, especially those convicted of sex crimes. Successful reintegration of these offenders into the community is key to the efficacy of sex offender management and yet is difficult to

implement. Recent research regarding the management of sex offenders in the community has yielded best practices that are accepted as the preferred methods to manage sex offenders. These practices, most notably include shared living arrangements, where sex offenders are housed together to allow for more specialized programming and resources. Even with research showing these practices as being the most effective way to manage sex offenders in the community they are not regularly implemented into probation and parole agencies due to policy constrictions. During interviews that I conducted with probation and parole officers in the state of Colorado it has become apparent that appropriate housing for sex offenders is the most problematic issue facing sex offender supervisors in the state. The use of shared living arrangements, while effective when implemented, is sporadic in Colorado and causes many political issues for the communities that do allow them. Increased use of these practices and widespread efforts to educate the community on their efficacy is needed in order to implement and utilize important resources that will increase public safety and increase the effectiveness of sex offender management in the state of Colorado.

Meadows, Laura

Microsatellite divergence among members of Lotus subgenus Syrmatium

Presenter(s): McGlaughlin, Mitchell; Meadows, Laura

Mt. Evans Ballroom-- Session time: 03:00 - 04:00 in the Afternoon

Biological Sciences

Faculty Sponsor(s): McGlaughlin, Mitchell

Undergraduate Presentation

Lotus subgenus Syrmatium is a group of eleven species in the Fabaceae (pea) family that occur in California. Three of these species are on the endangered list, and can be found on the Channel Islands off the coast of California. In the past members of Lotus subgenus Syrmatium have been recognized as distinct species based on their morphology, but recent analysis have indicated that genetic groups are not correlated with morphology. Rapidly evolving microsatellite data will allow us to study the genetic history of Lotus subgenus Syrmatium and better understand the evolutionary units within this group. We have developed fifteen primers that have been used to analyze 165 individuals from twenty-one different populations. I have collected microsatellite data from seven different species, which will be combined with the data from three other species allowing us to analyze the genetic differences and distinctions from all eleven species of Lotus subgenus Syrmatium. The data that has been collected will then be used to look at the genetic history of populations and species in relationship to taxonomic designation, morphology, and geographic location. Since these species are recently evolved, the data will allow us to understand Lotus subgenus Syrmatium's ecology and geographic distribution in regards to its speciation.

Mefford, Kelsey

Development of a Community Health Program Evaluation Tool

Presenter(s): Mefford, Kelsey

Spruce B-- Session time: 02:20 - 02:35 in the Afternoon

Public Health

Faculty Sponsor(s): Sharp, Teresa

Graduate Presentation

Opening Statement: Improving the well-being of mothers, infants, and children is an important public health goal. Poudre Valley Health Systems (PVHS) offers a continuum of programs targeting these health goals and are designed to meet community needs through evidence-based best practices for health promotion, health protection, and preventative services.

Purpose of this project is to evaluate the community health content and subsequent health behaviors of 3 PVHS programs; BabyCare 101, Breastfeeding, and The Happiest Baby on the Block.

Methodology: Because proper infant care and breastfeeding are crucial to the health and physical development of newborns, and to show current programs are meeting community needs, an evaluation survey was developed to assess program health impacts. An initial survey was conducted at the end of each course to assess the knowledge acquired by participants. Three-four months later, a second survey was developed (using "SurveyMonkey") to assess participants' compliance to information given in the courses. Surveys included 15-20 questions in a yes/no format. Surveys were first evaluated by PVHS Educators for literacy level and flow of the questions. Respondents accessed the survey link via e-mail. Response frequencies were tabulated using "SurveyMonkey".

Results: 100% of participants completed the initial survey (BabyCare n=24, Breastfeeding n=25, Happiest Baby n=4). Of those participants, 60% indicated their willingness to complete the second survey. Collection and analysis of the second survey is currently in progress.

Conclusions: Information from program assessments is essential for the maintenance of current best practices and effective health programs. Although this survey is still in progress, the results from this survey will measure the health impact of the behaviors being taught in these courses, while contributing to improvements in current programs and planning for future courses. Results will be disseminated to the public through the PVHS 2012 Community Health Annual Report of Programs.

Mildrexler, Janella

The nature of engagement for students in a non-traditional faith based student organization

Presenter(s): Mildrexler, Janella

Mt. Evans, Longs Peak Ballrooms-- Session time: 10:30 - 11:30 in the Morning

Higher Education & Student Affairs Leadership

Faculty Sponsor(s): Schwartz, Jana

Graduate Presentation

This ethnographical narrative inquiry explores undergraduate students' perception of their engagement in a non-traditional, faith-based student organization on their individual holistic development. Although research has been conducted on students' spiritual development (Love, 2002; Holmes, Roedder, & Flowers, 2004), until recent years, less focus has been applied to the development of students involved in non-mainstream, or under represented, spiritually based group. Because student affairs views student development as a holistic process that encompasses spirituality, and because students represent a diverse range of beliefs and experiences, I believe findings from this research will further inform the mentoring and development of under represented student populations. I postulate the students will indicate positive support received from mentors and peers related to their developing spiritual beliefs allows them to feel welcomed and safe enough to develop other personality characteristics.

Miller, Bobbie

Representation of "Latino" in the "70's show"

Presenter(s): Guse, Krysten; Blanton, Darcie; Miller, Bobbie; Eckstrom, Jennifer

Spruce A-- Session time: 01:20 - 01:35 in the Afternoon

Spanish

Faculty Sponsor(s): Park, Jungwon

Undergraduate Presentation

This panel examines the latino character presented in the TV series "70's Show." By analyzing this character, we plan to critically understand how Latinos are represented and their stereotypes are reproduced in the mainstream US media.

Modahl, Cassandra

Evolution and Biological Roles of Three-Finger Toxins in Snake Venoms (families Colubridae, Elapidae, and Viperidae)

Presenter(s): Modahl, Cassandra

Longs Peak Ballroom-- Session time: 10:30 in the Morning

Biological Sciences

Faculty Sponsor(s): Mackessy, Steve

Graduate Presentation

Three-finger toxins (3FTXs) belong to a superfamily of non-enzymatic proteins found primarily in snake venoms and are named for the distinctive three b-stranded loops that extend from a central core like three fingers of a hand. Three-finger toxins offer the opportunity to study molecular structure and function relationships because despite this highly conserved scaffold, they bind to different receptors/acceptors and exhibit a wide variety of biological effects. These effects include flaccid paralysis, cardiotoxicity, platelet aggregation inhibition, or cytotoxicity, as well as several others. A single snake venom can have several 3FTXs with different functions and in some cases, these activities can be prey-specific. The two currently characterized prey-specific toxins were found to be non-conventional 3FTXs, a heterogeneous group of 3FTXs recognized by the presence of a fifth disulfide bond on the first loop. My dissertation research is investigating the recruitment, evolution, and biological roles of non-conventional 3FTXs in the venoms of the major modern snake families (Colubridae, Elapidae and Viperidae), especially in association with defining snake dietary preferences. Three-finger toxins from Elapidae and Colubridae are isolated using chromatographic and mass spectrometric methodologies, and toxicity assays (LD50) are used to evaluate potential prey-specific effects. Prey-specific toxins are further characterized using MALDI-TOF mass spectrometry techniques to determine precise molecular masses, internal amino acid sequences and the number of disulfide bonds present in these toxins. Using known 3FTX sequences from these three snake families, degenerate primers were designed to amplify and sequence new 3FTXs in order to understand more about the evolutionary diversification of these proteins. Analyzing the gene organization of these toxins will provide insight into the evolution of 3FTXs and their capacity to adopt different biological roles. The capacity for 3FTX gene sequences to evolve quickly makes 3FTXs ideal for studying protein evolution, and they have also proved to be useful as templates for protein engineering given their adaptability.

Moore, Robyn

More Than Therapy: Determining How Speech Language Pathologists Can Best Meet the Needs of Early Intervention Families

Presenter(s): Moore, Robyn

Research Excellence Award Finalist

Mt. Evans, Longs Peak Ballrooms-- Session time: 10:30 - 11:30 in the Morning

Audiology & speech-language sciences

Faculty Sponsor(s): Fahey, Kathleen

Undergraduate Presentation

Speech and language disorders are the most common reason for early intervention services in children under the age of five. Early intervention seeks to lessen or eliminate the need for speech and language services later in the child's life by providing therapy to the child and education to the parents during the child's critical period of language development. Previous research has indicated that families of children with speech and language disorders are often dealing with other stressors including a lack of emotional support and the financial burdens of therapy and care. The relationship between the caregiver and the speech language pathologist is based on trust and rapport, and the caregivers need to feel that the therapist shares an interest in the child. This qualitative study uses individual interviews and focus groups from both speech language pathologists and caregivers to better understand the needs of

caregivers and examine how effectively early intervention speech language pathologists meet these needs. We anticipate that caregivers of children with speech and language disorders are struggling with a lack of resources, including emotional and financial supports, as well as the need for more education regarding their child. The results of this study could serve as a training tool for speech language pathologists in meeting the needs of the families they serve.

Morones, Seth

Whatever it Takes: How Mentors for College-Level Independent Student Provide Social Capital and its Effects on Educational Attainment

Presenter(s): Morones, Seth

Mt. Evans, Longs Peak Ballrooms-- Session time: 01:30 - 02:30 in the Afternoon

Educational Studies, Sociology, Social Science

Faculty Sponsor(s): Musick, David

Undergraduate Presentation

Using Bourdieu's concept of social capital, this qualitative study explores the transition process of homeless youth into high education through the use of mentors and social capital, with implications for ways to increase rates of access to post-secondary opportunities. Researchers who specialize in homeless youth education have noted the alarming rate of homelessness throughout the country, and the limited number of homeless youth who gain access to higher education settings. This phenomenon derives out of circumstances including lack of support (financial and familial), lack of knowledge about post-secondary opportunities, or lack of adequate preparation for collegiate level work. Nevertheless, little research has been done to link success rates and solutions, such as positive mentor relationships. This study examines exactly how mentors can be used as a positive medium in gaining social capital and, ultimately, access to higher education. Through a round of 30-minute interviews, we will be asking questions about transition experiences into higher education of approximately 8 to 12 independent students at a northern Colorado campus. We expect that these students found mentors through both natural and structured occurrences in four key settings: school, work-based, religious-based, or youth development organizations. The researchers anticipate that mentors helped students gain knowledge and skills that are typically required to enter a post-secondary environment. Likewise, we also anticipate that these interactions may lead to long-term relationships wherein the mentors maintain a positive influence on their protégés.

Mueller, Hannah

From Confucius to Mushu: A Study on the Ballad of Mulan through Time

Presenter(s): Mueller, Hannah

Columbine A-- Session time: 01:00 - 01:15 in the Afternoon

History

Faculty Sponsor(s): Fong, Adam

Undergraduate Presentation

The Ballad of Mulan is a timeless classic, but since its beginnings in the Northern and Southern Dynasty in Northern Wei, its significance and message has changed through its two thousand year existence. The Ballad of Mulan portrays Confucian ideals during the Northern Wei time period, and survived the uprising of Buddhism and Daoism by the nomadic tribes in the north. Though Confucianism does not specifically outline female roles, Mulan portrays a loyalty to family that Confucianists praise in many of their texts. Later, with Neo-Confucianism, the Ballad of Mulan could have either praised her efforts for protecting her father, or Neo-Confucianists would have found a woman going to war an atrocious act. At the same time, with powerful empresses such as Wu Zetian, would there have been more respect for the legend? Lastly, the Ballad of Mulan in the present includes other elements in the story, such as romance, particularly in many of the Chinese and American movies retelling the story.

Muller, Simone

Petrographic and cathodoluminescence characterization of zircons in the Hyde School Gneiss, Adirondack Lowlands, New York: Implications for determining the protolith

Presenter(s): Muller, Simone

Mt. Evans, Longs Peak Ballrooms-- Session time: 10:30 - 11:30 in the Morning

Earth Sciences

Faculty Sponsor(s): Baird, Graham

Undergraduate Presentation

The Adirondack Mountains are an area of exposed Grenville Province in northern New York that has been subjected to numerous orogenies. It is divided into the Lowlands and the Highlands, which are separated by the Carthage-Colton mylonite zone. Within the Lowlands is the Hyde School Gneiss, a series of leucocratic gneisses known as alaskite with thin interlayered amphibolites. The protolith of the Hyde School Gneiss has been highly debated. There are two hypotheses for the protolith. One hypothesis is that the protolith is intrusive while the other hypothesis is that it is extrusive. The overall aim of this study is to further investigate which hypothesis is correct by examining internal and external features of zircons within the Hyde School Gneiss.

Zircon is a mineral able to record changes that take place in a rock unit and may be used for geochronology. Zircons from six Hyde School Gneiss bodies have been examined via thin section and SEM-CL (scanning electron microscope - cathodoluminescence) analysis. Size, color, shape, and clarity were all measured using a petrographic microscope, while the internal zoning (or lack of) was studied with SEM-CL. Overall, differences in the shape, color, clarity, size, and presence (or lack) of zoning may be controlled by the different events that formed the rock unit. So far petrographic analysis has shown one distinct population of zircons for all six samples: dark yellow, semitransparent, 40-60µm, rounded, anhedral grains. This is completely different from previous studies where the main zircon population is transparent, unzoned, 80-100µm, elongate, euhedral grains. The meaning of this discrepancy is currently being studied in conjunction with determining the protolith of the Hyde School Gneiss.

Nelson, Missy**Reinvigorating Our Region: The Importance of Perception and Vision***Presenter(s): Nelson, Missy**Mt. Evans, Longs Peak Ballrooms-- Session time: 10:30 - 11:30 in the Morning*

Civic Engagement

Faculty Sponsor(s): Wycaver, Sarah

Undergraduate Presentation

As part of a larger research competition, this study explored the ways in which the Greeley community could “reinvigorate” itself. The Greeley community struggles with an overwhelming perception that it is a community challenged by crime, low-income work, and less than desirable living conditions. This inquiry set out to explore what it means to re-envision the Greeley community. This study employed a general qualitative research methodology. Data collection centered on historical artifacts, observations, and participant interviews. Additionally, considerable time was spent exploring how other communities similar to Greeley have overcome like challenges. Findings from this research underscore the importance of ascetics, community involvement, and solidarity in among residents.

Nesiba, Michelle**The Role of BMP signaling in the Cyst Stem Cells of the Drosophila Testis***Presenter(s): Nesiba, Michelle**Mt. Evans Ballroom-- Session time: 03:00 - 04:00 in the Afternoon*

Biological Sciences

Faculty Sponsor(s): Leatherman, Judith

Undergraduate Presentation

In this lab we study adult stem cells, and use the Drosophila testis as our model organism. The stem cells of the testis are found in a localized region around a cluster of cells called the hub. There are two populations of stem cells surrounding the hub, the germ line stem cells (GSCs), which produce sperm, and the cyst stem cells (CySCs), which produce the cyst cells that guide the germ cells through differentiation. The BMP signaling pathway is important to keep GSCs as stem cells (to make them “self-renew”), and BMP ligands are produced from the hub and CySCs. It is unknown whether the CySCs also require BMP signaling to self-renew. To test this, we inhibited BMP signaling in CySCs by crossing TjGal4 flies with UAS dad flies. By doing this we turned on the dad gene in CySCs. Dad is an I-Smad, an intracellular inhibitor of BMP pathway activation. After crossing these flies the testes were dissected and immunostained, and the number of CySCs per testis were tallied. There were significantly less CySCs in the experimental than in control testes. We conclude that the BMP pathway functions in the CySCs to promote self-renewal. Future experiments will examine mutants for the BMP ligand Gbb to determine whether CySC self-renewal is inhibited upon ligand depletion.

Nickell, Amber**Establishing “Roots”: The American Historical Society of Germans from Russia, 1969-1989***Presenter(s): Nickell, Amber**Multiple Session Presentation - Sessions 11, 12**Spruce B-- Session time: 01:00 - 01:15 in the Afternoon*

History

Faculty Sponsor(s): Clinefelter, Joan

Graduate Presentation

How do diasporic communities negotiate groupness utilizing shared or the perceived sharing of historical memory and ethnic identity? Once removed from their ancestral homelands, what spaces do they call their own? Utilizing the Germans from Russia as a case study, the thesis this chapter belongs to employs a social-cultural methodological approach in examining the group’s grassroots use and abuse of historical memory to propagate a shared point of identification and a unique diasporic space. Using two of The American Historical Society of Germans from Russia’s publications, Work Papers and The Journal for the American Historical Society of Germans from Russia, as case studies, this chapter examines the society’s use and abuse of historical memory in constructing a diasporic identification and space, which transcended geographical borders and time. Specifically, this chapter treats the society’s creation and transmission of a diasporic cult of ancestors, forgetting or reconciliation of internal differences, and dialogue with past and present Germans from Russia. The chapter argues the American Historical Society of Germans from Russia created a point of identification, a network, and a sense of groupness based in historical memory utilizing the pages of their journals, which served as an alternative space for exercising diasporic identity.

Nicolau, Thais**Villa-Lobos and a Brazilian Portrait***Presenter(s): Nicolau, Thais**Spruce B-- Session time: 11:40 - 11:55 in the Morning*

Music

Faculty Sponsor(s): Harris, Caleb

Graduate Presentation

Villa-Lobos and a Brazilian Portrait

Heitor Villa-Lobos is the most influential and prolific Brazilian composer of the twentieth century. His compositions include a variety of styles and explore different chamber and orchestral formation, as well as the boundaries of each instrument in an incessant search for original sonorities and authentic representation of his country. Villa-Lobos' compositions combine elements from the Brazilian folklore, intricate rhythm, and impressionistic harmonic procedures, resulting in a distinct originality that triggered collaborations with Artur Rubinstein, Nadia Boulanger, and Andrés Segovia.

Although Villa-Lobos' early compositions were more related and attached to European traditions, Brazilian music gradually dominated the style of his works. In 1917, combining the Symphonic Poem genre to the unique rhythms and sonorities derived from Brazilian folk material, Villa-Lobos composed Amazonas and Uirapurú, portraying specific regions, fauna, and characters from his native country. In the 1930's Villa-Lobos wrote what for piano solo became the most representative piece of his nationalistic descriptive style: *Ciclo Brasileiro* (Brazilian Cycle). From the peasants' plantation to a feast in the dry lands, from a rhythmic Indian dance to the mesmerizing melodies of a serenade musician, Villa-Lobos portrays in these pieces his native country as if painting episodes of his cultural experiences through his music.

This lecture intends to identify and demonstrate Villa-Lobos' nationalistic musical language through examples of his original writing in the four pieces for piano solo from his Brazilian Cycle: *Plantio do Caboclo*, *Impressões Seresteiras*, *Festa no Sertão*, and *Dança do Índio Branco*.

Nicolau, Thais

Your Body as Your Instrument from the Beginning

Presenter(s): Nicolau, Thais

Research Excellence Award Finalist

Council Room-- Session time: 02:20 - 02:35 in the Afternoon

Music

Faculty Sponsor(s): Harris, Caleb

Graduate Presentation

Your Body as Your Instrument from the Beginning

Music performance is often considered a complex activity that triggers both mental and physical aspects of the body. Questions concerning the mental process have been widely discussed in varied perspectives (e.g. the approach to theory teaching, memorization skills, and techniques to overcome stage fright), while broader physical aspects of playing an instrument are rarely addressed in pedagogy courses. When included in such courses, the subject is commonly restricted to discussing parts of the body directly associated to the production of sound (e.g. hand position for pianists).

The awareness of the entire body while playing the piano becomes clearly important when considering its preventive aspects. In addition, this concept potentially provides a broader and perhaps more profound definition of piano technique fundamentals. Developing an awareness of your body as your instrument from the first contacts with the instrument provides the students with a great advantage in technical skills and understanding of physiology.

This study discusses the importance of movement, the relationship between posture, acture and support, the connection of balance and flexibility, and the integration of whole-arm and fingers and its relationship to sound quality. It focuses particularly on the beginner repertoire, providing carefully selected examples in order to convey each topic above and to illustrate how students can engage with the instrument in an interactive way.

Ochoa, Miranda

Reflections for Youth: Staff Perceptions and Experiences

Presenter(s): Ochoa, Miranda

Mt. Evans, Longs Peak Ballrooms-- Session time: 10:30 - 11:30 in the Morning

Human Services

Faculty Sponsor(s): Bezyak, Jill

Undergraduate Presentation

Residential treatment centers for youth and children provide multi-disciplinary treatment for those with emotional and behavioral problems who cannot be managed at home. These centers offer a greater level of care while still remaining less restrictive than a licensed hospital. Direct care staff are the central agents of change because they have the most interaction with clients and are responsible for assisting in daily living activities. This phenomenological study uses semi-structured interviews to explore staff perspectives at Reflections for Youth, a non-profit community-based program that offers both in and outpatient services. The purpose of this study is to gain insight about how direct care staff view their jobs and what leads to success at a residential treatment center in order to offer ideas for areas of improvement and suggestions about how to improve the overall quality of care in residential treatment. Interviews with 3-5 direct care staff currently employed at Reflections for Youth will concentrate on experiences working with troubled youth and career fulfillment. The opinions that these professionals have on such topics can improve residential treatment facilities by illustrating issues that can influence the overall quality of care. It is expected that the direct care staff will emphasize these topics: relationships with residents and co-workers, perceived differences in positions, role modeling and positive development for the clients, and areas of concern and success.

Owsley, Kendra

Engaging Children through Service: Incorporating Service-Learning within Elementary Education

Presenter(s): Owsley, Kendra

Multiple Session Presentation - Sessions 17, 18

Aspen B-- Session time: 03:00 - 03:15 in the Afternoon

Educational Studies, English, Interdisciplinary Studies, Reading, Spanish

Faculty Sponsor(s): Helwick-Jackson, Ginny

Undergraduate Presentation

Have you ruminated upon the remedy for teenage apathy and disengagement in the current United States public education system as seen in the documentaries *Waiting for Superman* and *The Race to Nowhere*? Developing from a single idea to provide correspondence to a young boy, the service projects of a cluster of elementary school children at an afterschool program grew to bounds unexpected. These service-learning activities have given children an increased intrinsic motivation to learn, pathways for parental involvement, and an overall educational success for the participants. Extensive research has been completed on service-learning at the high school and university levels, yet is lacking in elementary education. This research project focuses on implementing service-learning activities with English Language Learners (ELLs) and their parents to practice reading, writing, speaking, and listening skills in English and their first languages. The first activity in which the students were involved was correspondence in Spanish and English to a boy in Columbia. Herein, they cultivated a global perspective by learning about the country through the subjects of geography, mathematics, music, art, and science. The second activity involves serving nursing home residents in the surrounding community where students are currently learning about multiple educational disciplines while forming an appreciation for the elderly. Research on this project will conclude summer of 2012 via interviews. Attendees to the presentation will participate in a service-learning activity during the session and discuss the impact serving others can have in their specific vocations.

Oyer, Laura

Understanding the Working Alliance between Clients Diagnosed with Anorexia Nervosa and Therapists in Individual Psychotherapy: A Phenomenological Approach

Presenter(s): Ruechel, Beth; Oyer, Laura; Joy, Kelly; Sanders, Julianne

Mt. Evans, Longs Peak Ballrooms-- Session time: 01:30 - 02:30 in the Afternoon

Clinical Counseling, Counseling Psychology, Educational Psychology, Human Rehabilitation, Nutrition, Nursing, Psychology, School Counseling, School Psychology, Sport & Exercise Science, Social Science

Faculty Sponsor(s): O'Halloran, Sean

Graduate Presentation

The purpose of this qualitative study was to explore perceptions and experiences of clients diagnosed with Anorexia Nervosa (AN) and therapists who work with AN, with regard to how the working alliance was formed and challenged in a minimum of five sessions during the process of individual psychotherapy. The overall goal of this study was to identify the essence or essences of the working alliance in therapy with clients diagnosed with AN, and identify factors that influence its formation. Phenomenology, a qualitative methodology, guided this study to help identify the shared meaning or essence among participants. Participants included clients who are currently in individual psychotherapy and have or had a diagnoses of AN, and therapists who work with this population. Data collection methods included semi-structured interviews with the participants and artifact collection during the interviews. The data was analyzed using Moustakas' (1994) method of analysis, including horizontalization, textual description, structural description, and invariant structure/essence. Anticipated themes include 1) the importance of meeting the client where he or she is, 2) talking less about the eating disorder, 3) honesty and self-disclosure from both the therapist and client, and 4) moving slowly.

Parry, Traci

VOLUNTARY WHEEL RUNNING DOES NOT PROTECT AGAINST DOXORUBICIN-INDUCED OSTEOPENIA IN THE GROWING RAT

Presenter(s): Parry, Traci

Research Excellence Award Finalist

Mt. Evans, Longs Peak Ballrooms-- Session time: 10:30 - 11:30 in the Morning

Biological Sciences, Sport & Exercise Science

Faculty Sponsor(s): Hayward, Reid

Graduate Presentation

Despite numerous negative side effects, including osteopenia, doxorubicin (DOX) continues to be used clinically because of its high success rate in the treatment of an array of cancers. Currently, it is unclear whether exercise can attenuate the deleterious effects of DOX on bone architecture. PURPOSE: To determine whether voluntary wheel running attenuates the negative effects of DOX on bone in growing male rats. METHODS: Male Sprague-Dawley rat pups (25 days old) were randomly assigned to four groups: sedentary control, SED+C; sedentary DOX, SED+DOX; voluntary wheel run control, WR+C; and voluntary wheel run DOX, WR+DOX. Animals received 2 mg/kg DOX i.p. or saline over 7 successive days. On day one, SED animals did not exercise while animals in WR groups were allowed free access to cage-mounted running wheels for 10 weeks. Upon protocol completion, animals were sacrificed and tibia and femur excised for assessment via dual energy x-ray absorptiometry and micro computed tomography. RESULTS: WR+C animals ran an average of 23 ± 3 km/wk while WR+DOX animals ran an average of 12 ± 3 km/wk. Treatment with DOX resulted in significantly lower tibial length and tibial bone mineral content and density ($p < 0.05$) compared to SED+C. The negative effects of DOX were observed in both the cortical and cancellous envelopes. Midshaft femur cortical cross-sectional area, cortical volume, and polar moment of inertia were significantly lower in DOX-treated rats compared to SED+C. Distal femur metaphysis cancellous bone volume/tissue volume was also lower in DOX-treated compared to SED+C rats. Voluntary wheel running did not protect against the detrimental effects of DOX treatment on the skeleton in developing rats. CONCLUSIONS: DOX treatment in male rat pups suppressed bone growth and resulted in cancellous and cortical osteopenia. Voluntary wheel running did not protect the growing skeleton against the negative effects of DOX treatment.

Parsons, Natasha

Facebook and Friends: The Effects of Facebook on Interactions Among College-Age Individuals*Presenter(s): Parsons, Natasha**Spruce A-- Session time: 02:20 - 02:35 in the Afternoon*

Communication Studies, Human Services, Sociology

Faculty Sponsor(s): Brothe, Crystal

Undergraduate Presentation

Facebook is a dynamic method of communication that has revolutionized interpersonal interactions, particularly among college-age students. Due to its extreme popularity, the effects of Facebook on friendships merit a close examination. Using a combination of current research and a survey created by the author, this project seeks to raise awareness of the impacts Facebook has on personal interactions between college-age students.

Patrick, Meghan**Strategic Orientation of Big Pharma in Base-of-the-Pyramid Markets***Presenter(s): Metherd, Joshua; Patrick, Meghan**Research Excellence Award Finalist**Council Room-- Session time: 11:40 - 11:55 in the Morning*

Business Administration

Faculty Sponsor(s): Wanasika, Isaac

Undergraduate Presentation

The purpose of this study is to explore the strategic orientation of big pharma in bottom-of-the-pyramid markets (BOP) and also examine the financial viability of these strategies. Western pharmaceutical markets have continued to decline and are expected to grow by a paltry 3% under conditions of depleted drug pipelines, aging populations, shareholder expectations and pressure reform the delivery of healthcare. On the other hand, BOP markets are growing at 14% and have 5 billion people representing 65% of the world's population and a market power of \$5 trillion. However, most people in BOP economies live on US\$3 per day, in addition to deep economic, social and political instability. This calls for a new business model to tap into their potential, despite the obstacles. A viable value creating BOP strategic orientation for big pharma will require an entrepreneurial mindset, innovation through co-creation, multiple developmental pathways, scalable and adaptable logistics, creative marketing through a new price-performance envelope that emphasizes volume rather than margins and utilization of native marketing resources and collaboration with local institutions. Data on strategic orientation of big pharma with respect to BOP markets will be extracted from annual letters to the shareholders using a novel method of historiometry. Sanitized letters will be rated by students with business training to evaluate strategic orientation of each firm. The ratings will be completed on a Likert scale questionnaire for further regression analysis. In addition, the study will analyze the financial viability of BOP markets relative to developed markets using archival data from S & P Capital IQ database. The study will contribute to identifying effective strategies suitable for BOP markets and also provide a business case for investing in such markets. In order for big pharma to sustain competitiveness, there will be a need to pay more attention to BOP markets.

Pedigo, Maria**Los engaños y las contradicciones en El sí de las niñas***Presenter(s): Pedigo, Maria**Spruce A-- Session time: 09:00 - 09:15 in the Morning*

Foreign Languages, Spanish

Faculty Sponsor(s): Garza, Efrain

Undergraduate Presentation

Los ideales del teatro neoclásico incluían la razón, la moderación, y la naturalidad. Además, los dramaturgos neoclásicos respetaban las unidades de tiempo, lugar y acción. Todo esto se puede ver en *El sí de las niñas* de Leandro Fernández de Moratín. Mientras que su obra es un ejemplo perfecto del teatro neoclásico, hay algunos aspectos de *El sí de las niñas* que se pasan por alto, específicamente los engaños y las contradicciones en el comportamiento de los personajes. Aunque es necesario considerar estos engaños que se presentan a lo largo de la obra, se debe reconocer que estas aparentes contradicciones no disminuyen su valor como obra neoclásica. Como se podía ver antes, *El sí de las niñas* tiene todos los componentes necesarios para ser considerada como neoclásica; sigue las normas de tiempo, acción y lugar, y tiene el fin didáctico de llamar la atención del pueblo español a sus tradiciones de la educación de las niñas y de sus matrimonios e incitarlo a cambiar. Entonces, si *El sí de las niñas* es neoclásica de todas formas, ¿qué debe pensar una persona de los personajes y sus engaños? Pues, por las acciones, sean razonables o irrazonables, de sus personajes, Fernández de Moratín prueba que una persona no puede ser completamente buena o mala, sino que tiene sus vicios, sus engaños, sus imperfecciones. Éstas les hacen reales y humanas, o en otras palabras, verosímiles. Por eso, *El sí de las niñas* es "obra modélica" del neoclasicismo en todo sentido.

Peters, Annette**Prolonged Grief Symptom Severity and Suicide Risk among Bereaved LGBT Undergraduates***Presenter(s): Ruechel, Beth; Peters, Annette; Rings, Jeffrey**Mt. Evans, Longs Peak Ballrooms-- Session time: 10:30 - 11:30 in the Morning*

Counseling Psychology, Psychology

Faculty Sponsor(s): Rings, Jeffrey

Graduate Presentation

Problem or Major Purpose

According to the CDC (2011), suicide is the third-leading cause of death for individuals aged 15-24. Simultaneously, university counseling centers have reported continual increases in service requests over several years (Benton et al., 2003). Some risk factors for undergraduate suicide include being an international student (Mori, 2000), a non-traditional student, (Silverman et al., 1997), or LGBT (SSCW, 1999).

Bereavement only recently has been studied as a risk factor for undergraduate suicide (Rings & Riva, 2012) despite prior evidence among the general population (Prigerson et al., 1999). Research has identified other risk factors for the development of PG symptomatology. Such risk factors include attachment style (Stroebe et al., 2006), traumatic mode of death (Hardison et al., 2005), and being a first-degree relative of the deceased (Mitchell et al., 2004). However, the relationship between sexual orientation, PG symptomatology, and suicide risk remains unexplored.

This study's primary aim is to assess for differences in PG symptomatology and suicide risk between bereaved undergraduates according to sexuality. It is hypothesized that those who self-identify as LGBT will demonstrate significantly higher degrees of PG symptomatology and suicide risk than a heterosexual comparison group. This study will highlight the need for an improved understanding of such issues among LGBT undergraduates in particular, hopefully assisting university counseling centers and the community at large to provide more adequate means for support.

Procedure

This secondary analysis will examine cross-sectional survey data initially gathered for a study examining relationships between PG symptomatology, perceived closeness to the deceased, and suicide risk among 2,045 undergraduates enrolled at a large college in the Western United States.

Results

Data analysis is forthcoming.

Conclusions and Implications

Conclusions and recommendations for further research based on the results will be provided as one component of the presentation.

Peterson, Brent

The Effect of Preconditioning on Initial Physiological and Psychological Assessments Following Treatment

Presenter(s): Peterson, Brent

Research Excellence Award Finalist

Council Room-- Session time: 01:20 - 01:35 in the Afternoon

Sport & Exercise Science

Faculty Sponsor(s): Schneider, Carole

Graduate Presentation

Exercise has been associated with the improvement of various physiological and psychological variables in cancer survivors post cancer treatment. However, little information exists on the role prior physical activity may have on functional capacity. PURPOSE: To assess the differences between prior physical activity and the initial physiological and psychological assessments in cancer survivors following treatment. METHODS: A total of 412 cancer survivors that had undergone radiation and/or chemotherapy were eligible for this study. Participants completed comprehensive physical assessments and Piper fatigue and Beck depression inventories. Functional capacity was determined during an initial assessment including VO₂peak (multistage treadmill protocol). Prior physical activity (PA) was defined as being none (1), low (2), and moderate (3) based on frequency, intensity, and duration according to the ACSM guidelines. A multivariate analysis of variance (MANOVA) determined the group variance differences. RESULTS: There was a significant ($p < .05$) main effect for prior PA. Post hoc pairwise comparisons determined that there were significant ($p < .05$) differences between groups 1 and 3 for VO₂peak (21.23 ± 6.70 vs. 23.46 ± 7.02 mL•kg⁻¹•min⁻¹, respectively), groups 1 and 3, and groups 2 and 3 for fatigue (5.09 ± 2.23 vs. 4.28 ± 2.19 and 5.07 ± 2.03 vs. 4.28 ± 2.19 , respectively) and groups 1 and 3 for depression (12.03 ± 7.74 vs. 9.90 ± 6.19 , respectively). Moderately active individuals showed greater initial assessment values for functional capacity (VO₂peak). Additionally, greater decreases were observed in fatigue and depression in the moderate activity group. CONCLUSION: Cancer treatment-related side-effects lengthen the recovery process post treatment for cancer survivors. The results of this study demonstrate the importance of moderate prior physical activity for the attenuation of treatment-related reductions in functional capacity, fatigue and depression.

Plate, Krista

How much money can be saved by supplying individually packaged antimicrobial sponges for use during central line placement?

Presenter(s): Plate, Krista

Mt. Evans, Longs Peak Ballrooms-- Session time: 01:30 - 02:30 in the Afternoon

Nursing

Faculty Sponsor(s): Hummel, Faye

Graduate Presentation

Aim: The aim of this cost-benefit analysis is to display how healthcare costs can be reduced when hospitals provide appropriate supplies to complete certain procedures. The specific focus of the research is regarding the use of an antimicrobial sponge at the site of central line placements. The use of this antimicrobial sponge has been shown to have an impact on the reduction of infection and bleeding at the site of a central line. The problem I have identified is that the antimicrobial sponge is not included with the central line placement kit. Therefore, staff members are opening an entire central line dressing change kit to obtain the antimicrobial sponge and

then discarding the remaining items. I am proposing that it will be much more cost effective to have the supply department stock the antimicrobial sponge individually and attach it to the central line placement kit. This practice will save healthcare dollars and decrease unnecessary waste of supplies.

Methodology: I have compared the cost of a complete central line dressing change kit and the cost of a single antimicrobial sponge. I then obtained the hospital statistics for the number of central lines that are placed each month and multiplied the difference in the cost of the supplies to reach the amount of money that can be saved each month by supplying the antimicrobial sponge in an individual package.

Outcome: Unnecessary expenditures in healthcare will be reduced and the amount of wasted supplies will be decreased.

Posey, Brianne

Gender Preference and Idealization of the Female Body Type

Presenter(s): Posey, Brianne

Mt. Evans, Longs Peak Ballrooms-- Session time: 01:30 - 02:30 in the Afternoon

Psychology

Faculty Sponsor(s): Granrud, Carl

Undergraduate Presentation

The Fat Prejudice Theory (Robinson and Beacon, 1996) examines the hatred, discrimination, and prejudice towards individuals who are seen in society as “overweight” or “fat”. On the adverse The Thin Privilege Theory (Neumark-Sztainer, 1999) states that “thin” individuals will have more physical, economical, social, and educational opportunity’s compared to overweight or fat individuals. Research evidence shows that there is a social stigma surrounding women who are overweight, but there are no claims and or evidence to support if there is a specific body type that is more often discriminated against or linked with negative associations. There are four different possible female body shapes- apple, banana, pear, and ruler, and in each one fat is distributed differently. Although fat is distributed differently, each body shape, if the BMI (Body Mass Index) is high enough, can be considered as overweight. Gender preference studies is a popular research field which examines the theory that there is not simply one female body shape that is preferred and stereotyped over the other, but that the preference varies between genders. The purpose of this study is to examine the gender differences in preference and idealization for the female body type among heterosexual college students. The students will be presented with the four possible female body shapes and asked to 1) give their preference, 2) give what they assume the opposite sexes preference is, 3) select the body type that they find ideal, 4) select from a pre organized list of negative and positive adjectives and pair the adjectives with the body shape of their choosing. The results will provide evidence for which female body type evokes fat prejudice and which evokes thin privilege. The goal of this research is to bridge the gap between gender preference studies and fat studies- as the two disciplines rarely communicate.

Powers, Chandra

Plows, Food, and God - Developing American Imperialism through Humanitarian and Christian Reform Projects

Presenter(s): Powers, Chandra

Multiple Session Presentation - Sessions 2, 3

Spruce B-- Session time: 09:20 - 09:35 in the Morning

History, Political Science

Faculty Sponsor(s): Haberman, Aaron

Graduate Presentation

This paper examines the role of Raymond Robins, a progressive reformer and American Red Cross officer, and Henry Wallace, a New Dealer, Vice President, and Progressive Party presidential candidate, in constructing the American Empire through humanitarian and Social Gospel reform. They proposed these humanitarian policies, combined with their religious beliefs, out of a desire to avoid a Cold War with the Soviet Union. They aimed for the U.S. to compete with communist ideology over the rest of the world through cultural diffusion. This paper studies Robins and Wallace’s rhetoric through the period of 1917-1949, using the political theory of soft power and democratic peace theory, in contrast to hard power. The irony in Robins and Wallace’s rhetoric and proposed policies is that even in their staunchly anti-imperialist proclamations, their vision to develop the “backward areas of the world” and Americanize them served as a way for the U.S. to develop into a cultural empire, a “liberal” “empire by invitation,” as coined by historians Anthony Pagden and Geir Lundestaad. The purpose of this paper is to contribute to the dialogue of American imperialism by proposing that both “hawks” and “doves” have imperial ambitions.

The research for this project came from the archives at the Universities of Wisconsin and Iowa. Speeches, pamphlets, letters, and articles written by Robins and Wallace are used to study their rhetoric. The secondary sources used for this paper center on the historical context of the 1920s, ‘30s, and ‘40s, biographies of Robins and Wallace, and political theories of soft power and imperialism. The methodology of this paper centers on a cultural perspective, observing Robins and Wallace’s ideas of American exceptionalism, Christianity, progressive development, democracy, and capitalism and their ideas of implementing American ideas abroad. This paper serves as a combination of two MA thesis chapters.

Quezada, Nancy

Es el Colegio para Mi? Why Students of Mexican Descent Choose or Do Not Choose to Attend College

Presenter(s): Quezada, Nancy

Mt. Evans, Longs Peak Ballrooms-- Session time: 01:30 - 02:30 in the Afternoon

Educational Psychology

Faculty Sponsor(s): Pugh, Kevin

Undergraduate Presentation

With the rapid increase of the Hispanic community in the United States, the issue of educational attainment emerges. The purpose of the current research is to investigate the different motivational factors that influence students of Mexican descent to attend or not to attend college. A total of ten participants will be interviewed, five of whom will be University of Northern Colorado students and the other five will be people who share similar characteristics but are not in college. Oral interviews will be performed and a content analysis will provide an overview of the different factors that seem to impact adolescents of Mexican descent to pursue higher education. It is anticipated that the biggest factor will be the relationship with their parents as previous research has shown that family interactions play a key role in adolescent's decision of attending college. Exposure to college is another factor that is expected to be an important motivator in adolescent's higher education attainment, this topic has not been explored enough in previous research and it is hoped to be an important element of the conclusions of the research presented. If a particular population is growing, but the number of educated individuals in that population is not growing at the same rate, then there is a problem. This seems to be the case with students of Mexican descent, and by further exploring different aspects that contribute or challenge the attainability of higher education it is hoped to develop better programs in schools and outside of them to increase the number of students who attend college.

Quinn, Colin

Initial Physiological and Psychological Measures in Cancer Survivors During Treatment Versus Following Treatment

Presenter(s): Quinn, Colin

Mt. Evans-- Session time: 10:30 - 11:30 in the Morning

Sport & Exercise Science

Faculty Sponsor(s): Schneider, Carole

Graduate Presentation

There have been suggestions that once cancer survivors complete treatment that exercise interventions can be similar to the apparently healthy population. This implies that the negative effects of cancer treatments occur during treatment with no lingering side-effects once treatment is completed. PURPOSE: To compare cancer survivors' initial physiological and psychological assessment values during treatment to the initial values of cancer survivors' following treatment.

METHODS: Five hundred eighty-one cancer survivors participated in initial fitness assessments examining pulmonary function, cardiorespiratory fitness (VO₂peak), muscular strength, resting heart rate and blood pressure. Additionally, participants completed inventories of depression, fatigue, and quality of life. Participants were separated into two groups, those who were in treatment (n=99) and those who had completed treatment (n=482). RESULTS: Significant differences were found on the initial assessment values between groups for VO₂peak (p<.05). Cancer survivors in treatment exhibited higher VO₂peak scores (24.06±.76 ml/kg/min) on the initial assessment compared to cancer survivors who had completed treatment (21.97±.33 ml/kg/min). No significant differences were found in measures of pulmonary function, muscular strength, resting heart rate and blood pressure. Initial psychological parameters (depression, fatigue, quality of life) were not significantly different between groups. CONCLUSION: The higher initial VO₂peak values for cancer survivors during treatment suggest that the cumulative negative effects of cancer treatments occur throughout the treatment regimen. Cancer survivors following treatment have cumulated

Raish, Robert

Guided Reinvention of the Formal Definition of Convergence of a Sequence in the Classroom

Presenter(s): Raish, Robert

Mt. Evans, Longs Peak Ballrooms-- Session time: 10:30 - 11:30 in the Morning

Educational Mathematics

Faculty Sponsor(s): Raish, Robert

Graduate Presentation

Students completing a calculus sequence often have very little understanding of limits even though limits is the common theme that connects most topics covered in a calculus course (Davis 1986, Sierpinski 1987, Tall 1980, Tall 1981). Research suggests that if students are able to create their own definition that it may lead to deeper understanding of the topic. In previous teaching experiments pairs of students have been able to reinvent the formal definition of sequence convergence where there were multiple researchers guiding the students. I will be collecting data from students enrolled in a second semester calculus course as they attempt to reinvent the formal definition of sequence convergence. Students will work on an activity designed under the guided reinvention heuristic and will work in small groups of four. I will video record all class sessions where the students will be working on the activity and will also video record a hour exit interview that will be used to measure the extent to which the participants were influenced by the activity. The calculus course that I will be sampling from has been taught with the approximation framework for teaching limits, which emphasizes the use of the approximation metaphor. The approximation metaphor has been shown to be a rich metaphor that allows students to think about limits in multiple contexts and is structurally similar to the formal definition of limit convergence. I am interested in seeing what cognitive challenges that students may encounter during the guided reinvention and how those challenges may be resolved and how this may differ from previous guided reinventions. I will also be interested in seeing if students use approximation framework language to articulate their thoughts and how elements of the approximation framework maybe incorporated into the students' definition.

Ramezani, Niloofar

Incremental Partitioning of Variance of the Academic Excellence Indicator: Early High School Scores' Effect on Students' College Ready Performance

Presenter(s): Ramezani, Niloofar

Aspen B-- Session time: 02:20 - 02:35 in the Afternoon

Applied Statistics & Research Methods, Educational Studies

Faculty Sponsor(s): Lalonde, Trent

Graduate Presentation

The Academic Excellence Indicator (AEIS) pulls together a wide range of information on the performance of students, which is one of the most important response variables in educational studies, in each school and district in Texas every year. Texas was the first state to adopt college readiness standards based on the Texas Education Agency (TEA) announcement which can be a great representative of students' performance. There are many indicators to measure college readiness and in this study participation and performance on college admission tests (ACT and SAT) and also college ready graduates' percentage play the role of response variables and are compared as well based on the power of their models. The main goal is to find the effect of early high school mathematic scores on public schools' students' college ready performance.

By using the method of "Incremental Partitioning of Variance" within a multiple regression, based on having a strong solid theoretical basis for determining which variables to control and order of their entry, the models are fit over four years. College ready performance is modeled based on students' mathematic scores over two years, the annual dropout rates, and some demographic control variables. All variables are evaluated in sequence based on literature review (Hanushek, E, 1999; Kruger, A. and Whitmore, D. 2002)

Ramsey, Ian**Examination of Stereotypical Behavior Portrayed by Gay and Lesbian Characters on Primetime Television**

Presenter(s): Bitz, Shelby; Ramsey, Ian

Mt. Evans, Longs Peak Ballrooms-- Session time: 10:30 - 11:30 in the Morning

Psychology, Sociology, Social Science

Faculty Sponsor(s): Pascoe, Elizabeth

Undergraduate Presentation

Television has long been a vehicle for social change. Minorities marginalized by society have often found representation on television as a stepping stone to broader acceptance by the majority. The impact media have on the affect of the general public can be powerful. That is why it is important to understand how minorities, such as gay lesbian individuals, are portrayed. As the American public has become more accepting of lesbian and gay individuals more homosexual characters have begun to be introduced. Many view the incorporation of queer characters into the mainstream American conscious as a groundbreaking move forward in the fight for equal representation. The portrayal of such characters, however, may not be as progressive as they appear. The hypotheses examined in this study are whether 1) cross-gender stereotypes that are used in the portrayal of gay and lesbian characters on television may reinforce assumed stereotypes already assigned to gay and lesbian individuals and groups in real life 2) lesbian and gay characters are depicted as sexual beings (oversexed, sex-obsessed) but rarely shown in intimate situations comparable to heterosexual characters. This study aimed to investigate the links between stereotypes associated with gays and lesbians and how these stereotypes effect the portrayal of gay and lesbian characters on primetime television. Researchers examined eight programs, that have been on television in the last ten years and aired during a primetime time slot, that include a gay or lesbian individual as a main character. Instances of cross-gendered stereotypes (e.g. men cleaning) and same-sex intimacies (vs. heterosexual intimacies) were recorded. In exploring these examples, it is hoped that light will be shed on the social and psychological impact such portrayals may have on gay and lesbian individuals and groups, and the effects on society as a whole.

Ranney, Beverly**Delivering Biology Online: Wet Labs vs. Virtual Simulations, Future Research Directions**

Presenter(s): Ranney, Beverly

Longs Peak Ballroom-- Session time: 02:15 in the Afternoon

Biological Sciences

Faculty Sponsor(s): Jurin, Richard

Graduate Presentation

Online education is an accepted delivery method of content at community colleges. An area that needs addressing is whether virtual biology simulations can replace traditional laboratory experiences for online students. Combined as a lecture-laboratory course, any learning gains in introductory biology laboratory instruction can be difficult to separate from learning that occurred due to lecture instruction. Data from a community college offering campus-based introductory biology was compared to data from online introductory biology offered by the same community college. The instructors used a common syllabus, identical textbook, the same pool of exam questions for midterm exams, and identical pre- and post-tests. The pre-test was given to students before course material was shown to students and for participation points. While instructor difference and learning gains due to lecture and not laboratory instruction cannot be definitively separated, this data presents a beginning step in understanding effective delivery of biology online.

Ransom, Andrew**The Modified Griess and Sodium Rhodizonate Tests: A Verification of These Chromophoric Tests for Lead and Nitrites In Gunshot Residues**

Presenter(s): Ransom, Andrew

Mt. Evans, Longs Peak Ballrooms-- Session time: 01:30 - 02:30 in the Afternoon

Chemistry, Criminal Justice

Faculty Sponsor(s): Pringle, David

Undergraduate Presentation

Firearms and toolmark examiners around the world commonly use the Modified Griess and Sodium Rhodizonate tests in their examination of gunshot residues. The former is used to detect nitrites, which can help to determine a distance range between the firearm and victim. The latter is used to detect lead particles, which can be useful when testing the clothing of both suspects and victims. This investigation focuses on the validation of these two tests. Also, the procedures taken for both the creation of the

chemicals, as well as the test themselves, will be described. These tests were performed on known test positives for both lead and nitrates, and the results will be used to discuss the validity of both tests.

Rascon, Andrea

College Experiences: First-Generation Female Undergraduates

Presenter(s): Rascon, Andrea

Mt. Evans, Longs Peak Ballrooms-- Session time: 01:30 - 02:30 in the Afternoon

Higher Education & Student Affairs Leadership, Human Services

Faculty Sponsor(s): Yakaboski, Tamara

Undergraduate Presentation

The numbers of women entering in and receiving college degrees are continuously increasing. Additionally, first-generation students are advancing to make up a bigger population at universities. Much research has covered each populace in higher education, separately. Minimal focus on First-generation Female (FGF) students has limited the understanding of what the everyday college environment offers to enhance academic, social and ethical experiences. Though numbers are increasing, both particular populations are frequently viewed as vulnerable when it comes to success in college. Results from the conducted qualitative group discussions will be a demonstration of the key aspects maintaining high levels of influence in college and also the supportive and educational resources that universities are potentially missing. Anticipated findings include much of family and peer support, influences of society role-expectations, self-development, emotional well-being, and student engagement. Financing and academics were categories previously considered; however, this study is for the purpose of exploring college experiences contributing to these students being successful and positively growing as an individual throughout college.

Ray, Jessi

Conducting Laboratory Analysis of Gunshot Residue (GSR) on Clothing to Identify a Shooting Suspect

Presenter(s): Price, Alan; Arko, John; Ray, Jessi

Mt. Evans, Longs Peak Ballroom-- Session time: 01:30 - 02:30 in the Afternoon

Chemistry, Criminal Justice

Faculty Sponsor(s): Price, Alan

Undergraduate Presentation

This presentation will impact the forensic science community by showing how television dramas misrepresent the forensic laboratory analysis capabilities when analyzing gunshot residue (GSR) on clothing.

Fictitious annals of television dramas depict criminalists in crime laboratories being able to determine which individuals discharged a firearm by examining their clothing. From this misrepresentation of laboratory capabilities, attorneys and law enforcement personnel frequently have incorrect perceptions of the analysis process for gunshot residue. Actually, most crime laboratories do not routinely examine clothing for GSR. Considerable research has been conducted to determine muzzle to target distance using GSR and stippling; however, studies are absent in assessing whether a specific item of clothing worn by a shooting suspect contains GSR. This research focused upon the utility of examining fabric for GSR in an attempt to identify a specific individual's clothing subsequent to a shooting incident, using a scanning electron microscope (SEM). Three common pieces of fabric were used as samples for collecting GSR and were then examined. Researchers used cotton, polyester, and denim sleeves for collection of residue samples. The revolver used in this project was a .357 magnum, with a 2.5 inch barrel. The three basic elements of GSR are barium (Ba), antimony (Sb), and lead (Pb). Carbon-coated aluminum stubs were used to collect GSR particles from each individual fabric sample.

The analysis of clothing for GSR can be very inconclusive. Multiple extraneous variables will influence GSR analysis results. Without having the scanning software capabilities for an SEM/EDS, searching for and identifying GSR is very difficult and time consuming. This study illustrated that GSR on fabric cannot by itself be initially identified merely by shape, size and brightness under the SEM/EDS. As previously stated, mythical television entertainment is incorrect in representing forensic laboratory capabilities.

Reavill, David

Simulating Microsatellite Data Sets Using Coalescent Theory

Presenter(s): Reavill, David

Mt. Evans, Longs Peak Ballrooms-- Session time: 01:30 - 02:30 in the Afternoon

Applied Statistics & Research Methods, Biological Sciences

Faculty Sponsor(s): Lalonde, Trent

Graduate Presentation

Microsatellite genetic markers are invaluable for inferential population genetic studies associated with mutation rates and allele frequencies because of their unique properties. Important microsatellite properties are that 1) mutations are not selected against and therefore stay in the genome, 2) mutations are produced by adding or subtracting additional nucleotide repeats, 3) microsatellites behave as co-dominant alleles, and 4) microsatellites are highly variable. In this study, I developed algorithms using the R programming language to generate realistic microsatellite data sets. The gamma distribution is used to model allele frequencies and is parameterized by the shape parameter α and the scale parameter β such that the expected mean allele frequency is $E[X] = \alpha/\beta$ and the expected number of alleles (n_a) for a locus is equal to the reciprocal of the mean allele frequency. The number of desired alleles at each locus is adjusted using coalescent theory by moving in the reverse direction of a phylogenetic tree structure to the most recent common ancestor (MRCA). Coalescence between alleles is modeled as a stochastic event and the time to coalescence is approximated using the exponential distribution. After the number of alleles is fixed then a forward generation-by-generation mechanism is used by a lottery selection of multilocus haploid gametes with replacement from the previous generation. The advantage to using this type of backward and forward modeling system is that it allows for flexibility in adjusting the migration rate and the effective population size.

Future goals for this research project are to adjust 1) the number of populations to evaluate, 2) number of individuals sampled from a population, 3) the number of loci represented within populations, and 4) the amount of allele variability at each locus when performing inferential tests on population structure and gene flow.

Refaat, Hebah

Does the use of saline locks for intravenous access by EMS personnel save money for the emergency department at North Colorado Medical Center?

Presenter(s): Refaat, Hebah

Mt. Evans, Longs Peak Ballrooms-- Session time: 01:30 - 02:30 in the Afternoon

Nursing

Faculty Sponsor(s): Hummel, Faye

Graduate Presentation

Aim: The purpose of this project was to conduct a cost-benefit analysis determining the financial implications of utilizing extension tubing by emergency medical services (EMS) personal to create a saline lock (SL) device when initiating intravenous (IV) access in the prehospital setting. Currently Weld County Paramedic Services (WCPS) does not use extension tubing as a linking device to create a SL when initiating IV access, but instead use a drip set. Such practice has had a negative contribution on the budget of the emergency department (ED) at North Colorado Medical Center (NCMC), since it is the expectation that all nurses are to replace existing EMS IV tubing with an extension set to form a SL when patients are admitted to inpatient wards.

Methodology: The methodological process for determining the economic effectiveness of using SLs by WCPS when inserting IVs in a prehospital setting was conducted by comparing the differences in the cost of SL devices to drip sets, which was then multiplied by the number of admitted patient's to inpatient wards at NCMC. Patients admitted with ambulance transfer as the mode of arrival to the ED, were the only patient's included in the cost-benefit analysis.

Results: Findings revealed that WCPS would annually save \$423.36 if they used extension tubing to create a SL when initiating IV access in the prehospital setting, while the ED at NCMC would save \$ 8,856 annually with practice change.

Conclusion: The conducted cost-benefit analysis provides evidence that there is a great economic benefit to the use of SLs when peripheral access is initiated by EMS personal in the prehospital setting.

Reineke, Maggie

Correlations Between Ambivalent Sexism and Health Outcomes

Presenter(s): Pascoe, Elizabeth; Reineke, Maggie

Mt. Evans, Longs Peak Ballrooms-- Session time: 01:30 - 02:30 in the Afternoon

Public Health, Psychology

Faculty Sponsor(s): Pascoe, Elizabeth

Graduate Presentation

It is well established that individuals who report more experience with discrimination also tend to report more negative health outcomes (Pascoe & Smart Richman, 2009). Discrimination is often thought of in terms of blatancy; however, subtle discrimination may cause more psychological and physiological harm than experiences of blatant discrimination (Williams, Neighbors & Jackson, 2003; Williams & Mohammed, 2009). Benevolent sexism (a view that women are needed to "complete" men, or that women should be taken care of) and ambivalent sexism (an ambivalent attitude toward men, assuming that men will always have a negatively-viewed power advantage over females, while also endorsing beliefs such as women should take care of the man at home) are forms of subtle discrimination.

This research proposes to examine the relationship between benevolent sexism and negative health outcomes and ambivalent sexism and negative health outcomes. We hypothesized that individuals who more frequently endorse ambivalently sexist ideals report different health experiences than individuals who do not. In addition, this research proposes to examine whether individuals who report more frequent experiences with benevolent sexism report different health outcomes than those who report more frequent experiences with hostile sexism. Based on previous research on subtle discrimination, anticipated results are that individuals who more frequently endorse or experience benevolent sexism and individuals who more frequently endorse or experience ambivalent sexism report a greater proclivity toward mental and physical ailment.

Participants were students in UNC introductory psychology courses. Participants answered a series of questionnaires meant to assess attitudes towards various forms of sexism, experiences with various forms of sexism, health-related questionnaires, and measures which assess personality or individual difference variables often thought to moderate or mediate the link between discrimination and health.

Rhoads, Michael

A Qualitative Analysis of Learning to Hit in Volleyball

Presenter(s): Rhoads, Michael; Larson, Nicole

Mt. Evans, Longs Peak Ballrooms-- Session time: 10:30 - 11:30 in the Morning

Educational Psychology, Sport & Exercise Science

Faculty Sponsor(s): McDevitt, Teresa

Graduate Presentation

The relative effectiveness of verbal versus visually-enhanced feedback for teaching hitting in volleyball was compared. As part of this investigation, a qualitative analysis was undertaken to explore thoughts that participants have while learning to hit. Participants'

cognitions were assessed using a Think-Aloud Protocol in which participants verbalized what they were thinking about during each acquisition session. Athletes' preferences for learning were also evaluated using the How I Learn to Hit Interview.

Participants overwhelmingly preferred the visually-enhanced feedback. After assessing participants' thoughts while learning, six major themes emerged: cognitive processes, knowledge, environmental effects, self-efficacy, emotions, and visual appearance. These themes were similar to previous findings. However, the specific themes of cognitive processes and knowledge were findings that add to the body of literature on athletes' thoughts while learning with visual feedback. A content analysis was conducted to compare the treatment conditions and to see how thoughts differ based on achievement level in the study.

This investigation not only contributes to the scientific understanding of how people learn with visual feedback, it also helps to inform practitioners about the viability of using visual feedback. Future studies should further examine the thoughts that athletes have while learning, and how these thoughts are influenced by learning with visual feedback.

Riggs, Jamie

A Generalized Linear Mixed Model for Enumerated Sunspots

Presenter(s): Riggs, Jamie

Aspen C-- Session time: 10:40 - 10:55 in the Morning

Applied Statistics & Research Methods

Faculty Sponsor(s): Lalonde, Trent

Graduate Presentation

Sunspot count data for a twenty-month period from May 2010 through December 2011 were provided to estimate average monthly sunspot numbers. The data include sunspot counts from a sunspot minimum to the current rise toward a maximum. Monthly estimates are determined from a mixed effects, loglinear model constructed specifically from these Poisson-distributed, count data, with observer as a random effect, and observing condition as a fixed effect. This model differs in the treatment of the data distribution assumptions of the existing linear regression model developed by Shapley (1949) from Wald (1940), which model sunspot numbers by variance-stabilizing transformations prior to a least-squares fitting of two random effects variables. The loglinear model methodology meets or exceeds the performance criteria set by Shapley, and provides a method for determining the relative sunspot number reported monthly by the American Association of Variable Star Observers Solar Division. Model improvements using additional explanatory fixed effects and further investigation of random effects probability distribution and link function combinations are discussed.

Roche, Jeff

I'm Homeless Not Hopeless: An Exploration of Homeless Adults' Attachment-Based Narratives

Presenter(s): Roche, Jeff

Mt. Evans, Longs Peak Ballrooms-- Session time: 10:30 - 11:30 in the Morning

Counseling Psychology

Faculty Sponsor(s): Lahman, Maria

Graduate Presentation

The purpose of this narrative-based case study is to illustrate the multifaceted life stories and experiences of individuals in the Rocky Mountain region who are homeless. Through this study, the author purports to not only further the attachment and homelessness knowledge bases, but also bring new insights into the work of counselors and outreach workers. Through this inquiry, the author explored the effects that one's layered attachment narrative and major life events have had on the process of becoming homeless, and on individual's current life outlook and sense of community. Consistent with narrative methodology, semi-structured interviews were conducted with ten individuals, staying at a homeless shelter, in order to draw out attachment-relevant events in their narratives. Narratives were deconstructed so as to extract attachment-relevant themes, while maintaining relevant contextual details. Emergent themes included: adverse attachment experiences directly informed or impacted one's behavior and outlook, use of identity hierarchy and compartmentalization to maintain esteem and motivation, birth of a child and spiritual epiphany as major turning points, and obvious resilience.

Keywords: attachment, case study, community, homeless, homelessness, internal working models, narrative

Romero, Deborah

Linguistic Perspectives on Second Language Acquisition: From textbook to classroom.

Presenter(s): Romero, Deborah; Castorena, Roman; Pedigo, Maria; ; Smith, Jennifer; Pina-Green, Hatzry; Hanson, Myra; Bristol, Lauren

Multiple Session Presentation - Sessions 5, 6

Columbine A-- Session time: 10:20 - 10:35 in the Morning

Faculty Sponsor(s): Romero, Deborah

Undergraduate Presentation

In this presentation, pre-service teachers in English as a Second Language will showcase how they are applying the linguistic knowledge they develop in an Introductory Linguistics Class and using this to understand K-12 students' English language acquisition. Students will present insights and findings from their observations of English language learners from a range of first language backgrounds. They will also propose examples of meaningful communicative instructional activities and techniques that can be used to promote language development.

Students will explore various linguistic phenomena they have identified in oral and written English language acquisition process, and topics include phonetics, morphology and syntax as observed across a range of English language learners. Discussion will present

examples of how English is acquired as a second language, the possible role of the first language in this process and examples of useful language activities that could be implemented to help students build English language competency in specific areas.

Romero, Deborah

Rethinking What Counts: Preservice ESL Teachers' Use of Video Composition at the College Level

Presenter(s): Romero, Deborah; Gomez, Veronica; Coronado, Sully; Balderrama, Delia; Dvorak, Ncolle; Richards, Shelly
Multiple Session Presentation - Sessions 3, 4

Spruce C-- Session time: 09:40 - 09:55 in the Morning

Faculty Sponsor(s): Romero, Deborah

Undergraduate Presentation

This presentation illustrates how research in multimodal composition and new literacies inspired the implementation of innovative assessment practices into an English as a Second Language (ESL) teacher preparation course and how undergraduate students used video to document their own learning and relate real world experiences back to course content and theories in Second Language Acquisition.

The presentation discusses how the video composition assignment was introduced into the college classroom, as an alternative assignment to a traditional academic paper. Students will share their experiences making the videos and segments of final video compositions, depicting voices and images of adult and child English learners' will illustrate the range and scope of final products, while also offering complex evidence of pre-service teachers' learning. The videos and data from course exit surveys underscore how students connected key theories and concepts in the field of ESL to actual learners.

Finally, the presentation invites critical reflection on the need and significance for academia, and in particular teacher preparation programs, to broaden our notions of what counts, especially with regards to student assessment and multiliteracies. In this college course over 30% of students selected the video assignment in lieu of the traditional written paper. More significantly still, 75% of those who produced videos were themselves English language learners. One suggestive implication is that many undergraduates, but especially culturally and linguistically diverse students, are eager to express themselves and communicate their knowledge in complementary multimodal formats, which differ considerably from written papers.

Rose, Anne

Song types, repertoires and patterns of song sharing among canyon wrens, *Catherpes mexicanus*

Presenter(s): Rose, Anne

Research Excellence Award Finalist

Mt. Evans Ballroom-- Session time: 03:00 - 04:00 in the Afternoon

Biological Sciences

Faculty Sponsor(s): Benedict, Lauryn

Undergraduate Presentation

Natural history studies provide insight into the evolution and function of communicative behaviors such as bird songs. The canyon wren, *Catherpes mexicanus*, is a non-migratory, monogamous bird species occurring in western North America. Earlier studies describe the vocal repertoire of *C. mexicanus* as simple and comprising of only three song types. Our study provides a quantitative description of *C. mexicanus* song. We recorded fourteen wrens, including at least twenty naturally occurring songs from each, over the summer of 2011 in Larimer County, Colorado. In total, we recorded over 1400 songs and subsequently visualized these as sonograms. We assessed the number of different song types and their use by individual males in different territories. We identified five main song types, and eight total song types, for *C. mexicanus* in Larimer County; these main song types were remarkably conserved across the study group. In addition, we characterized the structure of song bouts and the use of the different song types. Birds generally sang with eventual variety, meaning a single song type was repeated for a long period before the wren switched types. Future work will compare song types of Larimer County wrens with other regional populations. Our results indicate that the canyon wren has stability in song type use and previously unrecognized complexity in its vocal repertoire.

Rossmann, Jenna

The Rise of Narcissism among Millennial Offenders

Presenter(s): Rossmann, Jenna

Mt. Evans, Longs Peak Ballrooms-- Session time: 01:30 - 02:30 in the Afternoon

Sociology

Faculty Sponsor(s): Henderson, Angela

Undergraduate Presentation

Are the levels of narcissistic traits rising among millennials who are on probation? I will use observations from my internship with the Weld County Probation department as well as survey results that will be distributed to probation officers who work at the Greeley office in Weld County to collect the data. My hypothesis is that the levels of narcissistic tendencies among millennial offenders will be higher than they are amongst individuals who are in other age cohorts such as generation x or baby boomers. I will use questions from the Narcissistic Personality Inventory (NPI) within the survey that I will distribute to collect the data from the probation officers. I will also do extensive research regarding different types of crimes that involve narcissism and the individuals who may be more prone to commit those crimes. I believe that the results will show that millennial offenders are in fact more narcissistic than offenders in other age cohorts.

Rossmann, Karisa

Second Language Acquisition: Myths and Theory

Presenter(s): Rossman, Karisa; Blea, Victoria; Umulisa, Joseline; Mojahed, Yasamen

Spruce B-- Session time: 01:40 - 01:55 in the Afternoon

Faculty Sponsor(s): Cibils, Lilian

Undergraduate Presentation

The students on this panel, a group of pre-service teachers pursuing an endorsement in Teaching English to Speakers of Other Languages, will present a variety of projects they designed to explore and apply their understandings of second language acquisition. The first group of students examined popular second language learning myths through surveys they designed. They critically analyzed common beliefs reflected in the survey responses by comparing them to current understandings in second language acquisition theory. The second group of students explored second language learning in the classroom context. They observed English language learning and teaching in different settings and applied relevant aspects of second language acquisition theory to reflect on their observations.

Rowell, Kimberly

Cost Benefit Analysis of Reusing Collection Feeder Baby Bottles

Presenter(s): Rowell, Kimberly

Mt. Evans, Longs Peak Ballrooms-- Session time: 01:30 - 02:30 in the Afternoon

Nursing

Faculty Sponsor(s): Hummel, Faye

Graduate Presentation

In 2011, approximately 16% of infants born at a hospital in Northern Colorado were admitted into the Neonatal Intensive Care Unit (NICU). According to data gathered from Central Supply and Environmental Services, nearly 69,980 collection feeder baby bottles, or Snappies, were purchased and disposed of by the NICU leading to an estimated cost of \$25,927.59 dollars. In this analysis, the average number of days admitted into the NICU and the average number of bottles used were assessed to calculate the amount in dollars that could have been saved, if any, by reusing the bottles. This brand of baby bottles has been approved by the FDA as safe for reuse with proper cleaning and sterilization techniques. Results indicate a significant reduction in cost by reusing baby bottles in the NICU.

Rozner, Sarah

M.C. Escher: A man who combined art and mathematics

Presenter(s): Rozner, Sarah

Columbine B-- Session time: 11:20 - 11:35 in the Morning

Mathematics

Faculty Sponsor(s): Diaz, Ricardo

Graduate Presentation

M.C. Escher's art has captivated the attention of many people, including mathematicians. The purpose of this research project is to explore the life history of M.C. Escher as well as the mathematics found in his art.

I will focus on the mathematics found in Escher's painting, Print Gallery, as the mathematics relates to complex analysis, namely conformal mappings. However, the conformal map used is a special type of conformal map known as an elliptic function. A brief discussion on conformal maps and elliptic functions will be presented as well as how it was used in Print Gallery.

Ruechel, Beth

Impacts of Blame Assignment and Cause of Death on Prolonged Grief Symptomatology and Suicide Risk

Presenter(s): Ruechel, Beth; Peters, Annette; Rings, Jeffrey

Mt. Evans, Longs Peak Ballrooms-- Session time: 10:30 - 11:30 in the Morning

Counseling Psychology

Faculty Sponsor(s): Rings, Jeffrey

Graduate Presentation

Approximately 10-20% of bereaved persons may develop Prolonged Grief (PG; Maciejewski, et. al., 2007), a unique and severe strain of grief that more accurately predicts poorer mental health functioning than PTSD and depression (Melhem et al., 2004). There also is a significant relationship between PG symptom severity and suicide risk (Clark, 2001; Prigerson et al., 1997).

According to Kubler-Ross (1969), bereaved people typically experience the desire to, or make an attempt to, place external blame for a death onto something or someone else. Guilt occurs when one's anger and blame instead is focused inward, leading one to assume responsibility or liability for the loved one's death. Nevertheless, there is a lack of research on the effect of blame assignment on the grieving process.

Melhem et al. (2007) found significantly higher rates of PG among youths who either blamed someone else or were blamed by others for the suicide of a parent. In light of their findings, the role of blame needs to be assessed in greater depth as a risk factor for PG, particularly among an adult sample that may be grieving deaths due to other causes, including suicide. It is hypothesized that (1) blame assignment will predict both PG symptom severity and suicide risk, and (2) persons grieving traumatic deaths will report higher rates of blame assignment than those grieving non-traumatic deaths.

This secondary analysis will examine cross-sectional survey data initially gathered for a study assessing relationships between PG symptoms, perceived closeness to the deceased, and suicide risk among 2,045 undergraduates at a large college in the Western

United States. Data analysis is forthcoming. Conclusions and recommendations for further research based on the results will be provided as one component of the presentation.

Said, Nasar

Correlations among executive functions, study strategies, self-efficacy, and academic achievement

Presenter(s): Said, Nasar

Aspen B-- Session time: 01:00 - 01:15 in the Afternoon

Educational Psychology

Faculty Sponsor(s): Welsh, Marilyn

Graduate Presentation

The purpose was to investigate the correlations among executive functions, study strategies, self-efficacy, and academic achievement used 53 female students of undergraduate level at School of Psychological Sciences. The analysis showed that the study strategies of retention, comprehension skills, study time required, perseverance, questioning, and test taking were positively correlated with academic achievement representing in the high school GPA. The executive functions of task monitor and planning have slightly negative relationship with high school GPA. That means students who had low scores on poor task monitor and planning items reported high average of GPA. Also, students' scores on the measures of inhibit and initiation were negatively correlated with the most recent exam scores of psy 120; whereas students' scores on the direct measures of executive representing in LNS and TOL were not significantly correlated with their high school GPA. Self-efficacy was significantly corrected with theirs on both measures of academic achievement; GPA and the most recent exam of psy 120. The most important findings of this study were regarding the relationships between study strategies and executive functions. The executive functions of inhibit, shifting, emotional control, initiation, working memory, planning, task monitor, and task organization on the self-report measures were significantly correlated with most of study strategies of goal setting, retention, procrastination, time management, perseverance, test taking, test preparation, determining priorities. Initiate, planning, and inhibition were good predictors of time management, academic procrastination, and determining priorities as study strategies that used by the participants. Self-efficacy was related to the study strategies of time management, test taking, comprehension skills, procrastinating, retention, study time, and test preparation. Students who have high self-efficacy adopt effective study strategies. Self-efficacy also was related to most of the components of executive functions of planning, task mo

Saito, Shawn

The First Virtue in Chinese Culture: Filial Piety and Society's Roles for Women

Presenter(s): Saito, Shawn

Columbine A-- Session time: 01:20 - 01:35 in the Afternoon

History

Faculty Sponsor(s): Fong, Adam

Undergraduate Presentation

This paper historically and analytically examines the connections between filial piety and women's roles in pre-modern Chinese society. Due to a strong emphasis on Confucian values, Chinese society before 1500 highly valued filial piety not just for men, but for women as well, which affected both the roles women had in Chinese society as well as how women were evaluated by their peers. Relying on primary sources that discuss these issues, this paper explores the complex ways that women found a place for themselves in a patriarchal and hierarchical world. This paper thus contributes to scholarly discussions of gender roles in pre-modern China and the influence of normative values on society.

Sanchez, Danny

Protestor Impact On Patients Entering a Planned Parenthood of the Rocky Mountains Health Care Center and Abortion Clinic.

Presenter(s): Sanchez, Danny

Multiple Session Presentation - Sessions 1, 2

Aspen C-- Session time: 09:00 - 09:15 in the Morning

Psychology, Sociology, Social Science

Faculty Sponsor(s): Sanchez, Daniel

Graduate Presentation

Access to Planned Parenthood facilities is being blocked by anti-choice protesters, making it difficult or impossible for women to get much-needed family planning services. Anti-choice protesters use scare tactics, especially threats of God's disapproval, to influence women's decision not to seek family planning services. Four decades of self-report data suggest that control over if, when, how many, and under what circumstances women will reproduce is their single biggest quality of life issue. Through intimidation, the anti-choice movement intends to deny women that control.

While academic and medical literature proves that abortion is both safe and legal, pro-choice advocates still adamantly oppose abortion as a safe and legal medical service in all realms. One prominent way people in the pro-choice movement actively oppose abortion is by protesting outside of abortion clinics by way of: carrying large graphic photos and signs stating their beliefs against abortion, blockading people from entering health care facilities, providing counseling against abortion and having a general presence outside of abortion clinics for both abortion care providers and patients alike to physically see. One of the largest organizations to see this movement is Planned Parenthood Federation of America and its affiliates, which are America's largest abortion provider. While pro-life advocates are protected under the first amendment of the constitution of the United States the impacts and effects their

presence has on patients can be very intimidating. The purpose of this study is to analyze what impacts and effects pro-life protesters have on patients of a Planned Parenthood of the Rocky Mountain Health Care Center in which provides abortion services.

Sand, Kayla

Knowledge, Attitudes, and Behaviors Among College-Aged Females Regarding Nutrition Before and During Pregnancy

Presenter(s): Sand, Kayla

Aspen B-- Session time: 02:00 - 02:15 in the Afternoon

Dietetics

Faculty Sponsor(s): Clark, Alena

Undergraduate Presentation

The purpose of this study is to examine the nutrition-related knowledge, attitudes and behaviors of women of childbearing age and how these factors might affect a future pregnancy. In this study, the knowledge of key nutrients, behaviors and attitudes will be examined to see if a nutrition intervention needs to be implemented. It is important to educate women of childbearing age on the importance of healthy eating and lifestyle behaviors during pregnancy, including achieving appropriate weight gain and receiving adequate amounts of calories and nutrients, to reduce any risks of complications and increase the probability of developing a healthy baby. Numerous complications can develop with both mother and child if adequate nutrition is not met throughout the mother's pregnancy, including iron deficiency anemia, gestational diabetes, low birth weight, neural tube defects, and fetal alcohol syndrome. A survey will be conducted in the spring of 2012 to approximately 100 non-pregnant female University of Northern Colorado college students. The survey will assess each subject's demographic background, knowledge concerning prenatal and maternal nutrition, and behaviors and attitudes towards their image, weight, and diet. The subjects' knowledge, behavior, and attitude in relation to the study will help determine if they are receiving adequate and accurate information about nutrition before and during pregnancy and if they know what they need to do to prevent certain problems or complications from occurring in themselves and their infants. At the conclusion of the study, more information about the knowledge, attitudes, and behaviors before and during pregnancy will be known, determining if college females in Greeley, Colorado need to be educated more on preconception and prenatal nutrition. Information gathered can be used to determine if an intervention program needs to be implemented.

Sater, Brittany

Throwing Away Money: The Importance of Sorting Hospital Waste into the Appropriate Container

Presenter(s): Sater, Brittany

Mt. Evans, Longs Peak Ballrooms-- Session time: 01:30 - 02:30 in the Afternoon

Nursing

Faculty Sponsor(s): Hummel, Faye

Graduate Presentation

Introduction: In the hospital setting, waste is divided into "white trash" and "red trash". White trash bags contain non-contaminated items such as paper trash and packaging. Red trash bags are used for items contaminated with blood and other body fluids. The disposal of white trash versus red trash is different in both process and cost to the facility. Methods: A cost-benefit analysis was conducted at a 225 bed hospital in Northern Colorado, looking specifically at waste disposal after a cesarean section. The purpose was to determine if the hospital was losing money due to improper trash sorting in this specific setting. Results: It was found that all trash in the birthing center operating room was being placed in red trash bags. This has the potential of costing the hospital an average of \$3891.94 per year. Conclusion: It is recommended that the hospital place one white trash container in the operating room, as well as provide employees with education on proper trash sorting due to the projected cost-savings.

Sauter, Megan

Playing In Kindergarten Today

Presenter(s): Sauter, Megan

Mt. Evans, Longs Peak Ballrooms-- Session time: 10:30 - 11:30 in the Morning

Educational Studies

Faculty Sponsor(s): Guccione, Lindsey

Undergraduate Presentation

The purpose of this research is to determine the extent to which children in a Kindergarten classroom are interacting through a definition of play that I have created for my Undergraduate Honors Thesis in Childhood Education. Throughout my research, I have found no consensus on a formal definition of play in today's society. I define play as an activity children take part in that allows them to explore interests and ideas in a pleasurable way. Play is an activity that allows a child to work with others and exchange ideas or work alone and develop ideas. It can be real or pretend. Play can be child-directed to teacher-directed. It is not an activity that one must be forced to complete or that is seen as a punishment. I will test this definition to see if it is inclusive or missing any play-related behaviors. This research is important because play is an important element in early childhood learning as indicated by many education and psychology scholars. The classroom environment has changed over time with an increase in focus on testing and early academic benchmarks. Therefore looking at how play is still presenting itself in a Kindergarten classroom is an important area for research.

For this study, I will observe in an a.m. and p.m. kindergarten. Each day, I will use researcher field notes to document my observations of play in their classroom. I will try to determine when and how children play in a public school classroom. I will use my observations to examine and revise my working definition of play.

Saviola, Anthony**Anti-neoplasia effects of a novel snake venom disintegrin, tzabcanin***Presenter(s): Saviola, Anthony**Longs Peak Ballroom-- Session time: 03:05 in the Afternoon*

Biological Sciences

Faculty Sponsor(s): Mackessy, Steve

Graduate Presentation

Integrins are a class of membrane-bound $\alpha\beta$ heterodimer proteins that are often over-expressed 50-100 fold in cancerous cells. They mediate cell survival, proliferation, and tumor invasion. Further, integrins recognize a tripeptide-binding site on several extracellular matrix (ECM) proteins such as fibronectin, and this integrin-fibronectin interaction is critical for metastasis and has also been shown to lead to resistance to numerous chemotherapies. With current cancer therapies inadequate and non-specific, identifying treatments that can specifically inhibit cancer progression remains a major focus of cancer biology research. Toxin drugs have been an emphasis of research in the last decade, and snake venoms in particular have been a useful source of several protein drugs and additional novel protein drug leads. Currently, using a multistep high performance liquid chromatography (HPLC) method we have isolated a novel 7.3kDa monomeric disintegrin (tzabcanin) from the venom of the Middle American Rattlesnake (*Crotalus simus* tzabcan). Cell proliferation (MTT) assays indicate that tzabcanin is not cytotoxic to human colon cancer cells (Colo-205), however, it inhibited Colo-205 cell binding to the ECM protein fibronectin in a dose dependent manner, with 84% cell binding inhibition at 10 μ g/50,000 cells. Further, tzabcanin has no effect on adhesion of cells to Matrigel or fibrinogen, indicating that tzabcanin is not binding to the $\alpha\beta$ 1 integrin. Preliminary flow cytometry results suggest that tzabcanin blocks $\alpha\beta$ 5, and perhaps other integrins, thus inhibiting Colo-205 cell adhesion to fibronectin. Further research is being conducted to examine the ability of tzabcanin to inhibit Colo-205 cell binding to the ECM protein vitronectin, as well as the ability of tzabcanin to inhibit cancer cell migration and invasion. Our results suggest that by binding $\alpha\beta$ 5 and perhaps other integrins, tzabcanin may inhibit colon cancer cell progression in vitro.

Schenk, Adrian**Fish oil supplementation alters lipid microdomains in bovine luteal cells in vitro***Presenter(s): Schenk, Adrian**Mt. Evans Ballroom-- Session time: 03:00 - 04:00 in the Afternoon*

Biological Sciences

Faculty Sponsor(s): Burns, Patrick

Undergraduate Presentation

Lipid microdomains are microscopic regions of the cell membrane that have many functions which include coupling membrane receptors with downstream signaling pathways. These domains are enriched with cholesterol and sphingolipids. Recent studies from our laboratory have shown that luteal cells obtained from cows supplemented with fish oils have decreased response to PGF₂ stimulation in vitro. The omega-3 fatty acids in fish oils may alter the levels of cholesterol and sphingolipids within lipid microdomains ultimately resulting in decreased downstream cell signaling. The objective of this study was to determine the effect of fish oil supplementation on lipid microdomains in bovine luteal cells. Bovine corpora lutea were obtained from a local slaughterhouse and digested using collagenase. Mixed luteal cells were incubated in T-25 culture flasks containing Hams F-12 culture medium supplemented with 5% fetal calf serum, insulin (5 μ g/ml), transferrin (5 μ g/ml), selenium (5 ng/ml), 100 U/ml penicillin, 0.1 mg/mL streptomycin, and 0.25 mg/ml amphotericin B (pH 7.34) for 24 to 48 hours in an atmosphere of 95% air, 5% CO₂ at 37°C. The cells were then transferred to 35mm microscopy culture dishes and treated with 0 or 0.3% fish oil (V/V) for 24 to 48 hours. Lipid microdomains were stained using cholera toxin subunit B Alexa Fluor 555 fluorescent labeling kit and observed using confocal microscopy. For a positive control an additional set of dishes were treated with 10 mM of β -methylcyclodextrine (β -MCD) for 1 h at 37°C, which is known to remove cholesterol and disrupt microdomains. Cells incubated with β -MCD resulted in dispersed lipid microdomains. Cells supplemented with fish oil resulted in a more dispersed fluorescence pattern as compared to control cells. In conclusion, fish oil treatment appears to alter lipid microdomain which may influence downstream signaling pathways in bovine luteal cells.

Schiebout, Michael H.**Response of riparian areas of the Shortgrass Steppe to release from cattle grazing using exclosures: Comparison at different spatial and temporal scales***Presenter(s): Schiebout, Michael H.**Longs Peak Ballroom-- Session time: 11:15 in the Morning*

Biological Sciences

Faculty Sponsor(s): Franklin, Scott

Graduate Presentation

Human impact on grasslands through cattle grazing has had a profound influence on plant structure and composition, but little work has been conducted on the shortgrass steppe to determine how riparian areas respond to cessation of cattle grazing. To investigate this question, a seasonal and a multi-year study were conducted on the Pawnee National Grassland. Species composition and functional composition were compared for areas exposed to grazing and areas released from grazing. Plant richness, evenness and diversity was calculated for each treatment and compared over the study period. In addition, soil nutrient levels and biomass levels were compared over one grazing season. We hypothesized that species and functional composition would differ in areas released from grazing and that overtime differences will become greater. We also predicted that areas released from grazing would have greater aboveground biomass and species diversity but display less evenness. We did not think soil nutrient levels would differ over one grazing season. Results from the seasonal study showed areas exposed to grazing had statistically less aboveground biomass and greater heterogeneity than non-grazed areas. However, no differences in diversity were observed from this short-term study. The

multi-year study showed that species composition varied comparing grazed to un-grazed areas from the onset but demonstrated similar directional movement for diversity and species composition. This suggested other environmental factors, perhaps hail, had a greater impact on the vegetation community than grazing. Release from grazing caused the species composition to change more than continual grazing and contributed to an increase in species evenness. Functional composition started and remained different for the treatments, but within treatments did not change significantly. This study demonstrates variability of species composition from year to year on the shortgrass steppe and supports the idea that grazing has minimal impact in grasslands adapted to low levels of precipitation.

Schmitt, Craig

Investigating Static and Dynamic Variables' Unique Contributions to Explained Variance in Attendance for the 2011 Major League Baseball Season

Presenter(s): Schmitt, Craig

Mt. Evans, Longs Peak Ballrooms-- Session time: 10:30 - 11:30 in the Morning

Sport & Exercise Science

Faculty Sponsor(s): Gray, Dianna

Graduate Presentation

Variable ticket pricing (VTP) refers to the changing of a single-game ticket price based on expected demand (Rascher, McEvoy, Nagel, & Brown, 2007). First used by the Colorado Rockies in 1998, nearly two-thirds of Major League Baseball (MLB) teams were employing VTP strategies by 2008 to increase local revenue (e.g., ticket sales), typically a MLB team's largest source of income (Levin et al., 2000). VTP is a static pricing model where prices are set based on expected demand rather than actual demand; ticket prices cannot adjust based on in-season fluctuations in individual game attractiveness. To overcome this limitation, one option is dynamic ticket pricing (DTP), first used in MLB by the San Francisco Giants in 2009. DTP uses an algorithm that continually adjusts prices based on real-time demand accounting for ticket sales, weather, current standings, etc.

Early attendance demand models used in the context of MLB identified sets of variables that best explain attendance (Noll, 1974; Hill, Madura & Zuber, 1982). More recent studies have focused on the significance of individual variables while using a myriad of control variables (e.g., Horowitz, 2007; McEvoy, Nagel, DeSchraver & Brown, 2005; Meehan, Nelson & Richardson, 2007; etc.).

The purpose of this study is to estimate an attendance demand model to examine which game and home team static variables (variables known prior to the season that do not change such as a team's previous season wins, stadium age, day of the game, divisional opponent, etc.) significantly contributed to explained variance in 2011 MLB attendance after controlling for dynamic variables (e.g., current home team performance, weather, etc.) and static economic/demographic variables (e.g., unemployment rate, Fan Cost Index, etc.). The data is currently being analyzed. Results could provide support for MLB teams to continue implementing VTP or to adopt more sophisticated pricing models such as DTP.

Schneider, Amy

Cost Benefit Analysis of Mandatory Influenza Vaccine Policy

Presenter(s): Schneider, Amy

Mt. Evans, Longs Peak Ballrooms-- Session time: 01:30 - 02:30 in the Afternoon

Nursing

Faculty Sponsor(s): Hummel, Faye

Graduate Presentation

The purpose of this cost-benefit analysis was to assess the economic implication upon hospitals of mandating flu vaccines by comparing vaccine costs to work absenteeism. A community hospital in Northern Colorado recently mandated flu vaccines for all health system employees. During the 2009-2010 season, influenza vaccine was given to all voluntary employees. Then during the 2010-2011 season, a policy was initiated mandating all employees receive the influenza vaccine. For each season, the costs of vaccine inoculation were compared to employee absenteeism reported as sick hours during the influenza season in an effort to understand the economic effectiveness.

Schwabe, Anna

DNA microsatellite analysis of *S. parviflorus* to clarify morphologically based species level taxonomy and hybridization levels between these two species

Presenter(s): Schwabe, Anna

Longs Peak Ballroom-- Session time: 11:00 in the Morning

Biological Sciences

Faculty Sponsor(s): McGlaughlin, Mitchell

Graduate Presentation

Sclerocactus glaucus (Cactaceae), the Colorado Hookless cactus, is an federally threatened plant species endemic to Colorado. Taxonomy within *Sclerocactus* has been difficult due to similarities in morphologies as well as morphological shifts throughout the life cycle. Within the genus stems, spines, and flowers may express overlapping variation across species, thus making specific identification complicated. Prior to 2009 *S. glaucus* was made up of what are now considered three species. *Sclerocactus glaucus* populations are believed to be diminishing in size and number due to land use for economic and recreational purposes, as well as potential hybridization with more common *Sclerocactus* species. Introgression of a frequently occurring species, *Sclerocactus parviflorus*, is considered an immediate threat, as hybridization between *Sclerocactus* species is common. In order to clarify some of the questions surrounding this rare cactus species, I am conducting a genetic analysis of ~800 individuals from 35 distinct populations of both *S. glaucus* and *S. parviflorus* around the Grand Junction area. Highly mutable microsatellite repeat sections of nuclear DNA will be compared in and among populations of *S. glaucus* populations to determine species diversity in and among populations.

Preliminary data for eleven microsatellite loci have been collected and analyzed for variation specific to *S. parviflorus* within *S. glaucus* populations. Initial results suggest a low level of recent inter-species hybridization indicating that taxonomic identification cannot be assigned based on morphological characters. The data from these analyses will be used to identify populations comprised of *S. glaucus* with minimal introgression and which can then be targeted for conservation and recovery efforts. The results from this study will aid in taxonomic clarification, as well as in determining how morphology reflects lineage histories.

Setiawan, Caly

From Body to Soccer: Social Constructions by Somali Youth

Presenter(s): Setiawan, Caly

Mt. Evans, Longs Peak Ballrooms-- Session time: 01:30 - 02:30 in the Afternoon

Sport & Exercise Science

Faculty Sponsor(s): Stiehl, Jim

Graduate Presentation

In this phenomenological study, I aimed to describe the social construction of the body by young Somalis in northern Colorado and the social practices in association with physical activity. Six Somali youth aged between 16 and 19 years old participated in the study. I collected data using semi-structured interviews. Themes that emerged from the data include the social construction of body knowledge, leisure bodies for informal soccer, and corporeal bodies for formal soccer. I conclude that Somali youth experienced a shift in constructing knowledge of their bodies on moving to the United States. In Somalia, corporeal body was about survival and pleasure, but this aspect of the bodies was not prominent compared to spiritual body. At this point, informal soccer is where they articulated pleasure bodies. In the United States, the knowledge about corporeal body becomes central to Somali youth as they play organized soccer.

Keywords: body, corporeality, social construction, Somali youth

Shackelford, Dan

Validation of the Rocky Mountain Cancer Rehabilitation Institute Multistage Treadmill Protocol for Cancer Survivors

Presenter(s): Shackelford, Dan

Research Excellence Award Finalist

Mt. Evans, Longs Peak Ballrooms-- Session time: 01:30 - 02:30 in the Afternoon

Sport & Exercise Science

Faculty Sponsor(s): Schneider, Carole

Graduate Presentation

Currently there is not a multistage treadmill protocol for cancer survivors. Most protocols have stages that are either too high in intensity or too long in duration and are highly stressful for cancer survivors. The Rocky Mountain Cancer Rehabilitation Institute (RMCRI) developed a treadmill protocol designed specifically for cancer survivors to address this issue. PURPOSE: To validate the RMCRI multistage treadmill protocol for cancer survivors. METHODS: Fifteen cancer survivors completed a randomized double validation study to compare oxygen consumption (VO₂peak) between two protocols. The RMCRI treadmill protocol, using gas analysis to determine VO₂peak, was validated against the Bruce protocol. Participants completed the randomized trials one week apart in random order. The Bruce protocol VO₂peak was then compared with the VO₂peak recorded from the gas analysis for the RMCRI treadmill protocol. Additionally, ACSM's predicted VO₂peak equations were validated against the RMCRI protocol using gas analysis. RESULTS: No significant differences (p=.98) in VO₂peak were found between the RMCRI protocol and the Bruce protocol and these values were significantly correlated with the RMCRI gas analysis test (R²=.712, p=.003). The VO₂peak achieved using RMCRI gas analysis compared to ACSM's predicted VO₂peak equations showed no significant difference (p=.72). The VO₂peak values obtained with ACSM's predicted VO₂peak equations were significantly correlated with the VO₂peak values from the RMCRI protocol gas analysis (R²=.830, p<.001). This suggests ACSM's predicted equations may be used in place of gas analysis for the RMCRI protocol. CONCLUSION: The RMCRI multistage treadmill protocol which has shorter stages and lower intensities was better tolerated and less stressful for cancer survivors. Given the validity and strong correlations to other treadmill protocols, the RMCRI cancer specific protocol should be the standard for the determination of functional capacity (VO₂peak) in cancer survivors.

Shane, Maryann

Analysis of Bovine Temperature using Clustered Binomial Logistic and Multinomial Logistic Regression Models

Presenter(s): Shane, Maryann

Spruce B-- Session time: 11:00 - 11:15 in the Morning

Applied Statistics & Research Methods, Biological Sciences

Faculty Sponsor(s): Lalonde, Trent

Graduate Presentation

The screening of core body temperature of dairy cows and other cattle has become a popular technique in the farming and ranching sectors to monitor changes in animal health. Farmers and veterinarians have used core body temperatures to keep track of general health and well-being of cattle, enabling them to isolate and treat or eliminate ill and infectious members of the herd (Schutz and Bewley, 2009). Innovative companies have produced radio frequency temperature-sensing bolus devices with tracking software to make the process of data collection more manageable and convenient. These bolus devices are placed permanently in the second reticulum of the cow and record body temperature each time the animal moves into the milking pen, where two radio frequency panels receive and send the data to a tracking software.

In this study, conducted for DVM Systems, LLC, the temperatures of dairy cows were monitored in order to predict the onset of disease, with the aim of isolating the infected cattle as early as possible to treat and prevent the spread of these diseases. Extremely low and unreasonable temperature readings were ignored due to effects of the consumption of cold water (Boehmer, 2009); a positive departure from what is considered a normal temperature is what flags an alert for the possibility of a sick cow.

This study assesses the accuracy of the bolus RFID in correctly identifying an unhealthy cow. For this purpose, a number of Generalized Linear Models (McCullagh and Nelder (1989); Dobson (1990)) were applied to discrete response data. To model the probability of the presence of any disease, both a clustered Bernoulli response and a Binomial response were used within logistic regression models. These models were extended to model the probabilities of the presence of individual diseases using multinomial logistic regression.

Shugdar, Effat

Saudi Parents' Guide to the Inclusion of Children with Disabilities in Community Settings

Presenter(s): Shugdar, Effat

Research Excellence Award Finalist

Mt. Evans, Longs Peak Ballrooms-- Session time: 01:30 - 02:30 in the Afternoon

Special Education

Faculty Sponsor(s): Brewer, Robin

Graduate Presentation

Due to cultural norms and the lack of integration of children with disabilities in Saudi Arabia, parents often feel ashamed to walk with their children with disabilities in their communities or public areas. Based on my experience in working with parents who have children with disabilities, I found that the majority of these parents do not engage their child in different community settings due to this embarrassment. Therefore, teaching parents with disabled children strategies to help them include their children in communities activities with fewer cultural barriers will encourage parents to include their children in their communities successfully.

Reviewing the research, two primary research studies were identified to help me develop and teach effective integration strategies. First, Day (2000) designed a process to support families with children with disabilities in including young children in different community settings. Souza and Kennedy (2003) also described an intervention program to include students with disabilities of transition age in a variety of community locations.

Using strategies delineated by Day (2000) and Souza & Kennedy (2003), a process was designed to address the problem of Saudi Arabian parents' fear in integrating their children with disabilities into the community. Teaching the parents this process will help to include the children into their local communities. Through these strategies, parents will learn how to implement the following steps: How to develop a weekly visual schedule, how to inform a child about the location of the activity, how to write and read a social story to help understand the community activity, how to use communication devices/tools to communicate with other people, how and when to reinforce the child and how to teach new behaviors.

Shungu, Alex

Impact of Language on Chemistry Learning Process for English Language Learner College Students in the United States

Presenter(s): Shungu, Alex

Mt. Evans, Longs Peak Ballrooms-- Session time: 10:30 - 11:30 in the Morning

Chemistry

Faculty Sponsor(s): Song, Youngjin

Graduate Presentation

The purpose of this multiple case study was to examine how English Language Learner (ELL) college students perceive their understanding of chemistry materials presented by the instructor in a general chemistry class. In this qualitative study, observations, semi-structured interviews, and artifacts were used to understand how these students learn chemistry. Approximately 5 to 10 participants were chosen from three different sites including two community colleges and one university in the Rocky Mountain region of Colorado. Six observations were conducted in lecture and laboratory classes to see the cognitive interactions between ELL students and their peer students, as well as ELL and their chemistry instructor. In-depth semi-structured interviews were conducted with four volunteer ELL students. As part of triangulation data collection strategy, interview data from three of the students' chemistry instructors and artifacts such as the student's personal notes, lab reports, and test scores were also collected. These multiple sources of data were crucial to understand how ELL students learn chemistry. Findings from this study may help college instructors in their general chemistry classes to overcome some challenges they face while teaching first generation minority students, particularly ELL students who recently immigrated to the United States.

Siegrist, Mary

Challenges of Accessing and Merging Public Education Data

Presenter(s): Siegrist, Mary

Spruce B-- Session time: 10:00 - 10:15 in the Morning

Faculty Sponsor(s): Klopfenstein, Kristin

Graduate Presentation

This research will discuss the challenges of accessing and cleaning publicly available State of Colorado school-level data so it can be merged into one easily accessible data set. There are three primary needs for this new data set in Colorado.

- Training programs for superintendents and principals can use these data to prepare education leaders for the data analysis they will be expected to do in the field as part of the Unified Improvement Planning process.

- Providing background information about the schools attended by students in the Colorado longitudinal data system currently under development funded by a \$17.4 million ARRA grant.
- Training new researchers how to appropriately manage, analyze, and interpret data from the Colorado longitudinal data system.

Examples will be given of the process taken to clean and merge the various data sources using STATA and the uses for the resulting data will be explained.

Skeen, Debbie

Cost-Identification Analysis: Reusable Pulse Oximeters versus Disposable Pulse Oximeters in the Emergency Department

Presenter(s): Skeen, Debbie

Mt. Evans, Longs Peak Ballrooms-- Session time: 01:30 - 02:30 in the Afternoon

Nursing

Faculty Sponsor(s): Hummel, Faye

Graduate Presentation

Reusable pulse oximeters represent the potential for significant cost savings in comparison to disposable pulse oximeters. Pulse oximetry measures a patient's arterial blood oxygen saturation noninvasively by measuring light absorption of the hemoglobin. They are omnipresent in the healthcare arena, including emergency rooms. Pulse oximetry readings decrease the need for arterial blood gases and are documented routinely with vital sign assessments. Using cost-identification analysis, preliminary results indicate a significant cost savings for a Colorado Level II Trauma Center emergency room by switching the majority of adult disposable pulse oximeters to reusable pulse oximeters.

Slusher, Donn

Communities, Cameras, and Conservation - A Mountain Lion Honors Research Project

Presenter(s): Slusher, Donn; Mangan, Ann; Nolde, Doug; Munson, Elizabeth

FRCC

Multiple Session Presentation - Sessions 7, 8

Columbine A-- Session time: 11:00 -11:15 in the Morning

Biological Sciences

Faculty Sponsor(s): Patterson, Barb

Undergraduate Presentation

Mountain lions are an intricate part of Colorado's ecosystems, but little is known about this top predator. High costs and difficulties associated with research make the mountain lion one of the least studied carnivores. As the wildlife-urban interface grows, the areas where people live and recreate are becoming more and more the same areas where mountain lions live. A unique collaboration in Northern Colorado called Communities, Cameras, and Conservation (CCC), a citizen science project, hopes to learn more about mountain lions by using high-tech self-triggering cameras monitored by local students and volunteers. The CCC cameras are "caring eyes on nature" an innovative way for communities to observe secretive and hidden wildlife and to actively participate in conservation. The results of this project include an increased appreciation and respect for wildlife and the development of skills for students in continuing their education and careers in natural resources. The data collected by CCC is valuable to park managers and scientists who gain new information about animal and human use in their parks and open lands.

Smith, Andrew

The Effect Prior Physical Activity has on Physiological and Psychological Outcomes in Cancer Survivors

Presenter(s): Smith, Andrew

Research Excellence Award Finalist

Mt. Evans, Longs Peak Ballrooms-- Session time: 01:30 - 02:30 in the Afternoon

Sport & Exercise Science

Faculty Sponsor(s): Schneider, Carole

Graduate Presentation

Cancer survivors are impacted by physical and emotional responses associated with diagnosis and treatment. Current research shows that exercise provides a positive effect in cancer survivors at various stages in their recovery. **PURPOSE:** To investigate the effect physical activity level prior to beginning a cancer rehabilitation program has on physiological and psychological outcomes in cancer survivors following a supervised 3-month exercise intervention. **METHODS:** Two hundred forty-seven cancer survivors participated in initial fitness assessments examining heart rate (HR), systolic (SBP) and diastolic blood pressure (DBP), cardiorespiratory fitness (VO₂peak), and abdominal strength (crunches). In addition, subjects completed inventories assessing fatigue and depression. Subjects were divided into three groups based on self-reported physical activity prior to the initial assessment; none (no prior physical activity), low (< 150 minutes of prior physical activity per week), and moderate (= 150 minutes of prior physical activity per week) according to ACSM guidelines. Subjects were given an individualized exercise prescription and participated in 3 months of supervised exercise. Subjects were reassessed following the 3-month intervention. **RESULTS:** No significant differences ($p > .05$) were found between prior physical activity and any of the physiological or psychological variables assessed following the 3-month intervention. However, significant improvements ($p < .01$) were found when comparing percent change pre to post 3-month exercise in all physiological and psychological variables [HR (-2.56%), SBP (-1.45%), DBP (-1.20%), VO₂peak (+17.51%), crunches (+60.53%), fatigue (-2.13%), and depression (-2.24%)]. **CONCLUSION:** The results of this study suggest that cancer survivors demonstrate improved physiological and psychological outcomes following a supervised three-month exercise intervention regardless of their physical activity level prior to entering a cancer rehabilitation program.

Sones, Janae

Later Life Repartnering and the Family System: The Current State of the Literature

Presenter(s): Sones, Janae

Mt. Evans, Longs Peak Ballrooms-- Session time: 10:30 - 11:30 in the Morning

Gerontology, Psychology

Faculty Sponsor(s): Rings, Jeffrey

Graduate Presentation

Never before has the elderly population comprised such a large portion of society. A byproduct of living a longer life may include having increased opportunities for pursuing romantic relationships. While divorce and remarriage are common today, dating and repartnering, or establishing a long term and committed relationship, is a phenomenon that society seems to have reserved only for younger cohorts. Nevertheless, single older persons face several unique challenges in regards to repartnering during this particular chapter of their lives. Research in this arena appears to concentrate on the reasons for, predictors of and unique forms that these relationships seem to take. Lastly, a small section of this literature focuses on the often contentious bridging between an older couple's new relationship and their respective family systems, especially an adult child's problematic reaction to her/his parent's new partner. The purpose of this poster presentation is to provide pertinent recommendations for future research regarding elderly re-partnering based on a comprehensive assessment of the state of the current literature.

Directions for future study include comprehensive studies covering issues such psychological health of blended families in late life and longitudinal research exploring relationship development. Furthermore, qualitative explorations exploring women's motivations for repartnering are available, but research is needed to explore men's unique experiences. Lastly, the opinions of adult children toward their parents' new relationships are largely represented through their parents' perceptions of those attitudes. Instead, qualitative research with adult children would enable more definitive conclusions on how later life relationships affect a family system. In conclusion, while some research exists on older couples' repartnering experiences, at this time much more research is critical to efficiently understand the complexities of these relationships.

Steward, David

Conduct Meetings: Creating Crucial Conversations for Learning and Growth

Presenter(s): Steward, David

Mt. Evans, Longs Peak Ballrooms-- Session time: 01:30 - 02:30 in the Afternoon

Higher Education & Student Affairs Leadership

Faculty Sponsor(s): Lahman, Maria

Graduate Presentation

The purpose of this intrinsic evaluative case study was to explore the extent that a conduct meeting addresses student learning outcomes. Accountability via assessment is quickly becoming a requirement of units in higher education which then produces fear in many student affairs practitioners. The author counters that evaluation should be embraced for if done properly assessment can provide valuable data for improvement. Using focus groups with three conduct administrators, observations of conduct meetings, and document reviews of thirty conduct meetings the author establishes a process to examine a universities conduct process, in particular the conduct meeting itself in relation to program specific learner outcomes. Findings will help to clarify the meeting protocol as well as provide information for training purposes.

Suk-Erb, Wipanee

Failing to Succeed, Resilience in Psychology Graduate Students Comprehensive Exam Survivors: A Case study

Presenter(s): Suk-Erb, Wipanee

Mt. Evans, Longs Peak Ballrooms-- Session time: 10:30 - 11:30 in the Morning

Counseling Psychology

Faculty Sponsor(s): Lahman, Maria

Graduate Presentation

One of the most stressful periods for graduate students is during the Comprehensive Exams. Many students started being frustration since they prepare for the exam, during the test dates, and even during the time waiting for the results. The students who pass their exams automatically feel relieved while students who do not pass continue to feel frustrated. In this stressful period students may endorse fight or flight mechanism to alter their situations. Students may either utilize failing the first exam as a great reinforcement for them to do the best they can in their second chance or other students may be too discouraged to move on and finally give up.

Psychology students have been trained to utilize psychological theories and methods to apply to understand people and alter situations. However, as human beings, sometime in their lives, they encounter difficult situations themselves. Therefore, it is interesting to see how psychology students who find out during their training that they failed comprehensive exam altering their situation.

The purpose of this qualitative case study is to unpack the graduate psychology students' experiences of failing and thriving until succeeding the Comprehensive Exam. This study will explore their experience of obstacles, challenges, and strengths through this process. The implication of this study would yield a contribution to alleviate experience to graduate students who have test anxiety, who fear of unsuccessfulness, and who may experience the same situation in failing comprehensive exam in order to learn and have insightfulness about this process from students who striving and achieving it. On the other hand, this experience would apply to students in different fields or even people in general who are interested in life experience and thriving.

Suk-Erb, Wipanee**The Experiences of Training Practica Students at the University of Northern Colorado***Presenter(s): Suk-Erb, Wipanee**Mt. Evans, Longs Peak Ballrooms-- Session time: 10:30 - 11:30 in the Morning*

Counseling Psychology, Psychology

Faculty Sponsor(s): Rue, Lisa

Graduate Presentation

The purpose of phenomenological study aimed to describe the professors' experiences of training practica students at the University of Northern Colorado. Participants in the current study included faculty in the School of Applied Psychology and Counselor Education who have years of experience teaching individual counseling practica at the University of Northern Colorado. By mean of elucidating salient factors in the development of individual counseling practica, this study explored the strengths, challenges, obstacles, and also direction of training students in globalization and diverse population trends. Suggestions for improvement were also obtained.

Terry, Alexander**Both endosulfan-alpha and endosulfan-beta inhibit macrophage inflammatory responses***Presenter(s): Terry, Alexander**Mt. Evans Ballroom-- Session time: 03:00 - 04:00 in the Afternoon*

Biological Sciences

Faculty Sponsor(s): DeKrey, Gregory

Undergraduate Presentation

Endosulfan is an organochlorine insecticide of the cyclodiene group that has been produced commercially as a mixture of two isomers: endosulfan-alpha and endosulfan-beta. Acute exposure to endosulfan is known to cause neurological toxicity, whereas subacute and/or chronic exposures can cause endocrine disruption, altered development, and altered immune function. A recent study has also shown that endosulfan can enhance inflammatory responses in mouse macrophages. In particular, endosulfan exposure was shown to increase nitric oxide (NO) production by bacterial endotoxin (LPS)-stimulated cells. Because enhanced inflammation can mediate or contribute to pathology in many tissues, and because endosulfan-alpha and endosulfan-beta have differential toxicities, we examined the effects of the individual endosulfan isomers on macrophage function. At a concentrations of 0.33 μM and higher, endosulfan-alpha (the more generally toxic isomer) significantly inhibited ($p < 0.05$) LPS-induced NO production by RAW 264.7 cells, a mouse macrophage cell line. Because these results were in opposition to the previously-published study, we hypothesized that the endosulfan-enhanced inflammatory response of mouse macrophages is mediated primarily by the beta endosulfan isomer. To test this hypothesis, RAW 264.7 cells were cultured with 0, 10, 33, 100, or 300 μM endosulfan-beta for 24 hours (37° C, 5% CO₂) in the presence or absence of LPS (0.1 $\mu\text{g/ml}$), and NO production was estimated by measuring nitrite levels (Griess reagent). At a concentration of 300 μM , endosulfan-beta was found to be overtly cytotoxic (using a WST-1 reduction assay). However, at the lower concentrations (non-cytotoxic), endosulfan-beta caused a significant ($p < 0.05$) and dose-dependent reduction in LPS-stimulated NO production when compared to control cultures. In the absence of LPS, NO production was undetectable. These results contrast with previous published studies and show that neither endosulfan isomer enhances macrophage inflammatory responses.

Tien, Nai Chieh**Communication and Relationships of Intercultural/Multilingual Couples: Cultural and Language Differences***Presenter(s): Tien, Nai Chieh**Mt. Evans, Longs Peak Ballrooms-- Session time: 10:30 - 11:30 in the Morning*

Counseling Psychology

Faculty Sponsor(s): Softas-nall, Basilia

Graduate Presentation

Intercultural/multilingual marriages refer to marriages that each partner was born and raised in a different country and speaks a different first language. As the United States becomes more and more diverse, and the number of couples with partners from different background increases, the unique experience of these couples deserves more attention. The propose of this study was to explore how cultural and language difference affect intercultural/multilingual couples' communication and relationships, also, the strengths of these couples that keep them together.

Three intercultural/multilingual couples were interviewed for this study; each interview was about 120 minutes. Participants were interviewed both together as a couple and separately as individuals. The major findings that all couples mentioned is they have different challenges in their relationship compared to monocultural/monolingual couples; several strengths were identified by all three couples which are openness, respect, willingness to learn, spend time in both cultures/countries. Last, it seems like each couple created an unique new culture of their own throughout the couplehood.

Based on these findings, a few recommendations can be made to counselors or other mental health professionals. Such professionals need to be aware of the strength of intercultural/multilingual couples, the importance of working with their differences, and the uniqueness of their relationship. Counselors and mental health professionals must understand each intercultural/multilingual couple as a unique unit, and to be aware that they sometimes face a lot more challenges than monocultural/monolingual couples in their relationships. Counselors should not assume anything when conducting counseling with the couple or one of the partners, and should respect differences and help the couple to find a way to work with the differences according to the themes that were identified in this study—the strength of successful intercultural/multilingual relationships—in order to help the couple create their own culture and better communication

Tindall, Breonna**Attachment Styles of African American College Students***Presenter(s): Tindall, Breonna**Mt. Evans, Longs Peak Ballrooms-- Session time: 01:30 - 02:30 in the Afternoon*

Africana Studies, Psychology

Faculty Sponsor(s): Jolly, Tricia

Undergraduate Presentation

The purpose of this study is to identify the love attachment styles that promote ambivalence amongst college students' intimate relationships. This study has a particular focus on the love attachment experience of African American students in comparison to their White and Hispanic counterparts. The structure of intimate relationships of African Americans has been somewhat of an anomaly to researchers in the field. These relationships tend to lack stability and commitment. This study postulates that the insecure dating structures of African Americans are a result of their tendency to have a greater number of insecure love attachment styles. This study plans to prove African American's greater disposition toward insecure love attachment styles, through the administration of several instruments. There will be a Demographic survey administered along with two surveys to measure implicit and explicit forms of ambivalence. I will also disseminate two separate surveys that identify love attachment styles as well as measure the level individuals hold to irrational beliefs. Once this study has identified the relationship attachment styles, along with the levels of ambivalence and irrational beliefs of all participants, we will compare the results of our different demographic groups. We have no findings at this point to report.

Troup, Jonathan**Evaluation of an Introduction to Proofs Course***Presenter(s): Troup, Jonathan**Mt. Evans, Longs Peak Ballrooms-- Session time: 01:30 - 02:30 in the Afternoon*

Educational Mathematics

Faculty Sponsor(s): Karakok, Gulden

Graduate Presentation

The purpose of our research is to determine the effectiveness of a course that introduces students to the concept of rigorous mathematical proof through research videos, and to offer informed suggestions on how to improve the course and videos used in the course. Operating at five different locales, the purpose of the course is to train students how to recognize proofs as valid, and to construct viable, rigorous proofs independently as a result of implementing research based videos in the course. In order to evaluate how well this proof instruction program meets its goals, we collected qualitative data in the form of written student responses to open-ended pre-tests and post-tests, respectively administered at the beginning and the end of a given semester of six different classes, five of which implemented the videos in their courses. These tests asked students to show the truth or falsehood of a given mathematical claim, thereby implicitly prompting them to independently construct either a proof or a counterexample. We have been exploring the possible qualitative differences in student performance and conception of proof between these collected pre-tests and post-tests. Even though analysis of data is still in progress, preliminary results of pre-test analysis indicated four different categories of students attempt to construct proofs. Results from both pre- and post-tests will be shared at this presentation.

Keywords: evaluation, proof

Valdez, Jesse**The Role of NonCognitive Factors in the First Year Seminar***Presenter(s): Valdez, Jesse**Mt. Evans, Longs Peak Ballrooms-- Session time: 01:30 - 02:30 in the Afternoon*

Faculty Sponsor(s): Vaughan, Angela

Graduate Presentation

The purpose of this research was to investigate how a student's noncognitive factors such as Academic Self-Efficacy, and Academic Engagement contributed to their academic success and persistence here at UNC. The investigators looked at how student responses to the SSI (A measure of 6 noncognitive factors) related to university enrollment data for Fall and Spring semesters (2011-2012 academic year) and student GPA. The investigators worked to determine if the SSI could be used as a predictive measure for student success and retention above and beyond current index scores (i.e. ACT/SAT scores, highschool GPA) Despite a small sample size significant results were found.

Vargas, Rodolfo**El triunfo del amor en El amor que asalta***Presenter(s): Vargas, Rodolfo**Aspen C-- Session time: 11:20 - 11:35 in the Morning*

Foreign Languages, Spanish

Faculty Sponsor(s): Garza, Efrain

Undergraduate Presentation

Hay personas que lo único que los motiva a vivir es descubrir algún día al amor de su vida para ser feliz. En "El amor que asalta" de Miguel de Unamuno nos encontramos a Anastasio, quien se hubiera suicidado tiempo atrás si no fuera por el enorme deseo de saber que se siente estar enamorado. Unamuno nos trata de dar varias señales en esta historia de lo que él piensa que es el amor verdadero, ya que muchas veces simplemente es sólo un cariño el que se siente. Unamuno nos presenta paradojas en esta historia que parecen no tener sentido, sin embargo al hacer un análisis más profundo del cuento nos damos cuenta de que tan cierto es lo que se

produce cyst cells, which guide the germ cells through differentiation. To study cell signaling in the SCs we used immunofluorescence to observe whether Akt and Tor, part of the insulin-like signaling pathway, are expressed in the testis, using enhancer trap lines. We found that Akt-lacZ was expressed in many germ cells down the length of the testis, but there was no expression of Akt in the SCs. Our results on Tor expression were inconclusive. We also stained testes with anti-phospho-AKT to observe which cells underwent signaling. We found phosphoAKT accumulation in some differentiating germ cells, but not in the SCs. In order to further test whether this signaling pathway may be involved in cyst SC self-renewal, we expressed wild-type or dominant negative Tor in the cyst SCs via the Gal4 UAS system. Wild-type Tor overexpression showed no phenotype, and we are currently analyzing testes, which express dominant negative Tor. Our results to date suggest that Akt signaling does not play a major role in testis SC self-renewal.

Warning, Nat

Habitat selection and distribution of canyon wrens in the northern Colorado Foothills

Presenter(s): Warning, Nat

Longs Peak Ballroom-- Session time: 09:40 in the Morning

Biological Sciences

Faculty Sponsor(s): Benedict, Lauryn

Graduate Presentation

The canyon wren (*Catherpes mexicanus conspersus*) is considered to be fairly common in suitable habitat within its range, but rarely occurs in high densities. Though it is generally known that canyon wrens are restricted to cliffs, rock faces, and rocky outcrops, studies of detailed habitat requirements are scarce. We conducted 200 surveys in areas with vertical rock and cliff habitat on public lands throughout Larimer County, CO from May-September 2011, identifying and monitoring 20 canyon wren territories. We measured detailed habitat characteristics within each territory including elevation, cliff height, cliff length, cliff orientation, cliff approach, slope, distance to nearest water, relative frequency of crevices and boulders, presence of cliff swallows, and predominant vegetation type. We compared these data with the same parameters from a random sample of 20 surveyed sites absent of canyon wrens. Significant differences were found in crevice frequency between occupied and unoccupied sites, with canyon wrens generally utilizing cliffs that offered high crevice density. Canyon wrens were also found in consistent association with cliff swallows, perhaps an indicator of insect prey density. A lack of significant differences in the remaining habitat parameters along with observations of large sections of unoccupied cliffs suggest that lack of suitable habitat does not limit the canyon wren population in the northern Colorado foothills. Instead, our data suggest that foraging sites, insect availability, and microhabitat features might be most important to canyon wrens when establishing territories. Future research will examine how these factors may determine canyon wren distributions.

Way, Carole

The Costly "Stick" of Sharps Injuries

Presenter(s): Way, Carole

Mt. Evans, Longs Peak Ballrooms-- Session time: 01:30 - 02:30 in the Afternoon

Nursing

Faculty Sponsor(s): Hummel, Faye

Graduate Presentation

Needlestick injuries are a common and costly occurrence across every healthcare setting. Employees working in the surgical setting are at an even greater risk for exposure to bloodborne pathogens through sharps injuries because of the specialized environment in which these employees work. Management of these exposures and injuries are very costly for organizations with costs greatly increasing if a bloodborne disease is contracted as a result of a sharps injury. Not only are monetary costs involved but employees who contract bloodborne diseases as a result of sharps injuries also incur social and human costs. This cost analysis examines the benefits of reducing sharps injuries in this high risk environment through education and environmental controls. Costs of managing needlestick injuries were obtained from a local hospital setting, analyzed, and compared with current literature. Results show that implementing education and environmental controls that help reduce the number of sharps injuries results in significant cost savings to organizations and employees.

Weaver, Hope

Film "The Mission" and Colonial Latin America (5)

Presenter(s): Gomez, Juan; Weaver, Hope; Helbak, Leah

Aspen C-- Session time: 03:40 - 03:55 in the Afternoon

Spanish

Faculty Sponsor(s): Park, Jungwon

Undergraduate Presentation

This panel examines the colonial Latin American society through the lens of film "The Mission."

Weaver, Tyler

Determination of Arson Accelerants using Gas Chromatography

Presenter(s): Weaver, Tyler

Mt. Evans, Longs Peak Ballrooms-- Session time: 01:30 - 02:30 in the Afternoon

Chemistry

Faculty Sponsor(s): Pringle, David

Undergraduate Presentation

Arson causes millions of dollars in damages every year. Gas chromatography is frequently used for accelerant analysis to help prosecute arsonists. In this research accelerant analysis was performed using passive headspace sampling and gas chromatography to identify the accelerant used. The following parameters were investigated (1) the amount of accelerant used, (2) the time it was allowed to burn before extinguishing, (3) the time between burning and sampling. Carpet samples were used as the material to see if any interference came from the carpets synthetic polymers.

West, Jasmine

Aid Effectiveness: Doctors Without Borders/Médecins Sans Frontières How does the Paris Declaration measure aid for a single, neutral development group?

Presenter(s): West, Jasmine

Research Excellence Award Finalist

Council Room-- Session time: 10:00 - 10:15 in the Morning

Anthropology, Foreign Languages, Public Health, Sociology, Social Science

Faculty Sponsor(s): Moritz, Christine

Undergraduate Presentation

Aid Effectiveness: Doctors Without Borders/ Médecins Sans Frontières

How does the Paris Declaration measure aid for a single, neutral development group?

In 1999 Médecins Sans Frontières (MSF) received the Nobel Peace Prize for their efforts in the maintenance of peace among nations. Their objectives of independent, neutral assistance and funding have been constant for 41 years, and now more than ever, donors and other parties question whether foreign aid is contributing to the development of disadvantaged nations, or worsening their current circumstances. In various political discussions foreign aid is questioned because there are no established rubrics for measuring aid effectiveness. The Paris Declaration was created in 2006 to establish a system for how to measure the quality of aid and development focusing on five key components: accountability, ownership, alignment, harmonization and results. In the review of these criteria, I am able to measure the aid provided by MSF.

My research is based upon interviews from MSF employees as well as an extensive literary review of development issues. I have gathered a thorough analysis of how general aid contributes to a more self-sustained community, or how aid may worsen existing conditions. By including an assessment of MSF financial and international activity reports, I am able to further compare aid effectiveness of MSF to the outlined development system of the Paris Declaration.

Williams, Derek

Varying Parameters for Maximum Riboflavin Extraction from a Vitamin Tablet

Presenter(s): Williams, Derek

Mt. Evans, Longs Peak Ballrooms-- Session time: 01:30 - 02:30 in the Afternoon

Chemistry

Faculty Sponsor(s): Pringle, David

Undergraduate Presentation

In riboflavin extraction, it's accepted to easily obtain 100% extraction from a tablet. There are standard methods for extraction, but this can be difficult using given laboratory instruments for the specified lab. Previous research has attempted several techniques to maximize extraction, but failed to achieve 100% extraction of the riboflavin from the tablet using our given materials. In this research project, many variables are individually adjusted to maximize the extraction. A series of experiments were run changing each variable individually yielding maximum extraction of riboflavin from the tablet using as little resources as possible, 100% extraction was achieved. Using the method outlined in the paper for the extraction allows for maximum efficiency, yet still conserving reagents as needed for the laboratory.

Workman, Karlynn

Enhancing Learning With "Around the World" Unit: Galeton Boys and Girls Club Weld County

Presenter(s): Workman, Karlynn

Mt. Evans, Longs Peak Ballrooms-- Session time: 10:30 - 11:30 in the Morning

Sociology

Faculty Sponsor(s): Jennison, Karen

Undergraduate Presentation

Does educational structure and instruction benefit the students who attend the Galeton unit of The Boys and Girls Club of Weld County? A cross-sectional, field study research project was conducted. A pre-test and post-test were given to 10 of the 30 students to evaluate progress of knowledge related to the central unit, "Around the World".

Wright, Wendy

Film "The Mission" and Colonial Latin America (3)

Presenter(s): Wright, Wendy; Leal, Erendira

Spruce A-- Session time: 11:20 - 11:35 in the Morning

Spanish

Faculty Sponsor(s): Park, Jungwon

Undergraduate Presentation

This panel examines the colonial Latin American society through the lens of film "The Mission."

Yamasaki, Kara

Differences Between College Freshmen and Seniors in Hookup Behavior

Presenter(s): Yamasaki, Kara

Mt. Evans, Longs Peak Ballrooms-- Session time: 10:30 - 11:30 in the Morning

Psychology

Faculty Sponsor(s): Dunn, Thomas

Undergraduate Presentation

This survey study focuses on undergraduate college students and their involvement in brief sexual encounters (hookups). This study will compare the differences and similarities of hookup behavior between college seniors and freshmen in order to investigate when, during college, hookup behaviors are most likely occurring. College environments have been known to provide a time of experimenting, and can potentially provide the contact and structure to engage in romantic relationships. Being away from the boundaries set by parents allows students to make independent choices that may not have been pertinent while they were living under the supervision of their parents. Conducting this research could help people to better understand whether sexual experimenting is more likely to take place before college, during the transition stage into college, or after being exposed to a few years of college. Hookup behavior in relation to drug and alcohol use, contraception, self-esteem, regret, emotional reactions, and the Problem Behavior Inventory (a screening device for depression, anxiety, and other symptoms of common psychological distress) will also be analyzed in this study. This survey also seeks to learn about contraception and STI patterns in hopes of gaining insight into what needs to be emphasized or reiterated in the sex education of young adults, particularly pertaining to the risks involved with engaging in hookup behaviors. For the purposes of this research, hookups are defined as sexual encounters involving consensual and direct physical contact of the genitals between two or more individuals that have not engaged sexually with one another in the past, and do not expect or plan on having another sexual encounter together in the future.

Young, Kate

Construction and Characterization of Merged Atmospheric-Oceanic Temperature Profiles from Dropsondes and AXBT's during the ITOP Project

Presenter(s): Young, Kate

Mt. Evans, Longs Peak Ballrooms-- Session time: 01:30 - 02:30 in the Afternoon

Applied Statistics & Research Methods, Earth Sciences

Faculty Sponsor(s): Schaffer, Jay

Graduate Presentation

The Impact of Typhoons on the Ocean in the Pacific (ITOP) was a multi-national field campaign aimed at examining the ocean response to typhoons in the western North Pacific. During the project, between August and October 2010, two USAF aircraft deployed 698 dropsondes and approximately 780 Airborne eXpendable BathyThermographs (AXBTs). Dropsondes collect high-resolution measurements of pressure, temperature, relative humidity and winds as they descend through the atmosphere. The Earth Observing Laboratory (EOL) at the National Center for Atmospheric Research (NCAR) has developed a comprehensive method of quality control (QC) which is applied to all project dropsonde data. The QC steps broadly include, examination of the individual raw data profiles; automated processing through NCAR's Atmospheric Sounding Processing Environment (ASPEN) software; generation of histograms to evaluate the range and distribution of each parameter; examination of time series plots to examine the consistency of soundings launched during each flight, and to show the variability of soundings from different missions; and finally, examination of the each individual QCed sounding profile. AXBT sensors measure temperature, as a function of depth, from the sea surface down to approximately 300 meters. These data are a valuable resource for examining upper ocean temperatures and the impact they have on storm initiation and evolution. The AXBT data collected during ITOP contain known errors and little has been done to establish a comprehensive method of quality assurance. The goals of this research include: 1) Developing a comprehensive quality control scheme for oceanic temperature profiles collected during ITOP, 2) Identifying a sample of collocated, temporary matched, dropsondes and AXBTs and merging the data from each to create complete atmospheric-oceanic profiles, 3.) Characterizing the structure of these unique thermodynamic profiles. Preliminary results will be presented with attention paid to possible future implementation of these techniques in an operational setting.

Zivotic, Johanna

The effect of discrimination on balance concentration and health-information processing and retention.

Presenter(s): Breitenbach, Danette; Zivotic, Johanna; Callahan, Myraiah

Research Excellence Award Finalist

Mt. Evans, Longs Peak Ballrooms-- Session time: 01:30 - 02:30 in the Afternoon

Psychology

Faculty Sponsor(s): Pascoe, Elizabeth

Undergraduate Presentation

Previous research has demonstrated that experiencing discrimination can have negative effects on a person's psychological and physical well-being. It is suggested that this may occur by disrupting working memory. This study will examine the relationship discrimination has on one's physical performance and the ability to remember health-related information. Participants will be randomly assigned to one of six conditions, each involving two variables: whether the participant will be included or excluded from an interactive online ball tossing game called CyberBall, and whether the sex of the other game players is different from or the same as the participant's own sex. Participants excluded from a different sex group have the potential to attribute their exclusion to gender discrimination. First, the participants will take part in a balancing task to determine their initial balancing ability which will be

recorded for comparison later in the study. Afterwards they will engage in the CyberBall activity. All players aside from the participant will be computerized, have been assigned race-neutral names and have been programmed to eventually stop tossing the ball to the participant (exclusion) or continue to throw the ball to the participant (inclusion) for the duration of the activity. Next, participants will be given a nutrition pregnancy brochure. Following a second phase of the balancing task, where results will be compared to initial balancing task scores, participants will be asked to take a test regarding the brochure's information. It is hypothesized that the participants who have been discriminated against will have a decrease in concentration ability demonstrated by decreased balancing performance and decreased memory retention based on the test scores. If supported, this information may suggest that racial disparities in health may partially be due to decreased information processing ability following discrimination within health care settings.