

Ursidae: The Undergraduate Research Journal at the University of Northern Colorado

Volume 4 | Number 1

Article 1

January 2014

Research Day and Research Excellence Awards Abstracts

Undergraduate Research Journal University of Northern Colorado

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University of Northern Colorado, Undergraduate Research Journal (2014) "Research Day and Research Excellence Awards Abstracts," *Ursidae: The Undergraduate Research Journal at the University of Northern Colorado*: Vol. 4 : No. 1 , Article 1.
Available at: <http://digscholarship.unco.edu/urj/vol4/iss1/1>

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**Undergraduate Research Journal at the
University of Northern Colorado**

Volume 4, Issue 1, 2014

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The Office of Undergraduate Research (OUR) provides support and recognition for undergraduate student research for all Colleges at the University of Northern Colorado to further University goals for active learning and original research. OUR offers opportunities for grants, internships, workshops, conferences and publication in the Undergraduate Research Journal at the University of Northern Colorado.

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The Undergraduate Research Journal at the University of Northern Colorado

The Undergraduate Research Journal at the University of Northern Colorado (URJ) is a fully open access academic journal that strives to recognize the scholarly accomplishments of undergraduates at UNC and stimulate future scholarly activity. The URJ is published electronically three times per year: spring, summer, and fall. One issue each year is designated a special publication featuring the abstracts of student finalists and winners of the Undergraduate Research Excellence Awards, and another is designated a special publication featuring works of UNC's McNair Scholars. All URJ publications are available at <http://journals.sfu.ca/urjnc/index.php/urjnc/index>

The purpose of the current issue is to feature the abstracts of the finalists and winners of the Research Day 2014 Undergraduate Research Excellence Awards.

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Research Day and Research Excellence Awards

For Research Day 2014, first and second place were awarded in the categories of oral presentations and poster presentations in three fields: Natural Sciences, Humanities and Arts, and Education/Behavioral Sciences and Business.

2014 Research Excellence Awards Winners

Natural Sciences – Oral Presentation

1st place – Tassie Forst

**2nd place – Kali Arenas, Jasen Kettle,
Julie Hernandez**

Natural Sciences – Poster Presentation

1st place – Jesus Medrano

2nd place – Rachel McPhee

Humanities and Arts – Oral Presentation

1st place – William Adams

2nd place – Casey Fogel

Humanities and Arts – Poster Presentation

1st place – Hanna Hann

2nd place – Arturo Bugarin-Correa

Education/Behavioral Sciences and Business – Oral Presentation

1st place – Jake Neel

2nd place – Rachel Stice

Education/Behavioral Sciences and Business – Poster Presentation

1st place – Lisha Amin

2nd place – Jennifer Wright

Undergraduate Research Journal at University of Northern Colorado
Special Edition: Undergraduate Research Excellence Award Winners & Finalists
Vol 4, No 1, 2014

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Sexuality, Masculinity, and Gender Fluidity in early 20th Century China

William Adams, Asian Studies

Faculty Sponsor: Michelle Low, Modern Languages

Abstract: This presentation delves into matters of sexuality, masculinity and gender fluidity in early 20th Century China, as revealed through the short story, “The Second Mother” written by Ba Jin in 1930. “The Second Mother” deals with an orphaned child who goes to live with his uncle, and who meets another character whom he refers to as his “Second mother.” This study focuses on one character in particular, who is an actor in an opera troupe, playing the role of a woman on stage, but also constantly dresses as a woman off stage, very similar to the role of Cheng Dieyi in the 1990’s Chinese film, Farewell my Concubine. Through an analysis of the text of the short story and climate of the culture in which the short story was written, issues regarding how individuals assign sexual and gender identities to others as well as themselves are explored. Specifically, this study discusses Chinese views of masculinity through the interactions of the characters within the story.

Female Sexual Socialization in Relation to Sexual Decision Making Processes

Lisha Amin, Communication Studies

Faculty Sponsor: Karen Traxler, Applied Statistics & Research Methods

Abstract: Researchers have studied sources of socialization and satisfaction levels regarding first sexual intercourse experiences and Carpenter (2002) developed three cognitive frameworks of virginity loss: gift, stigma, and process. However, researchers have yet to correlate how these areas are related. The purpose of this quantitative study is to examine how socialization about sex and sexuality influences adolescents' cognitive frameworks and subsequent decisions about and interpretations of first sexual intercourse.

A 20-question survey will be administered to over 250 undergraduate female participants from 18-25 years old recruited from a mid-sized Colorado university. First, I will examine relationships between socialization, cognitive frameworks, and experience of first-sexual intercourse. Second, I will use a backward stepwise multiple linear regression analysis to determine if any particular form of socialization, such as parents, peers, media, religion, or public school education systems will explain females delaying or initiating first sexual intercourse. I hypothesize that those females who were socialized about sex and sexuality from primarily parents and public education systems will have a gift cognitive framework about virginity and will report delaying first sexual intercourse, as well as higher levels of emotional and mental satisfaction and lower levels of physical satisfaction. I also hypothesize that females who were socialized about sex and sexuality from primarily the media and peers will have a stigma cognitive framework about virginity and will report a higher level of physical satisfaction, but lower levels of emotional and mental satisfaction.

This study contributes to the overall discussion of the importance of adolescents being socialized about sex and sexuality so that they may have healthy attitudes towards their sexualities in the future and make healthy choices regarding first sexual intercourse.

Determining Groundwater Flow through the Study of Soil Horizons, Subsurface Geology, and Vegetation at the Poudre Learning Center

Kali Arenas, Jasen Kettle, and Julie Hernandez, Earth Sciences
Faculty Sponsor: William Hoyt, Earth Sciences

Abstract: The purpose of our research is to determine the flow of groundwater at the Poudre Learning Center. As Earth Science students, we are interested in using soil, subsurface geology, and vegetation to determine where groundwater is flowing. In order to research groundwater, we are taking core samples using a telescoping bucket auger. With the core samples, we will be able to measure the thickness of soil horizons and subsurface geology layers. We will create a vertical profile connecting the corresponding layers. This will help us determine where groundwater is likely to flow. After the core is removed, groundwater will flow into the hole in relation with the water table. Using the depth of the water table from each core location, we will be able to illustrate the change in depth throughout the area of study. In addition, we will observe vegetation to determine if there is a correlation between where native grasses grow and the depth of the water table. We will overlay our data from soil horizons, subsurface geology and vegetation to create a map of groundwater flow across the property.

Influences of False-Evidence Ploys on Jurors' Verdicts and Perceptions of the Defendant

Racehl Best, Psychology

Faculty Sponsor: Karen Traxler, Applied Statistics and Research Methods

Abstract: A false evidence ploy (FEP) is a false claim by police to have nonexistent evidence. FEPs are used in police interrogations with the intentions of inspiring guilty but not innocent suspect to confess. FEPs have been connected to several documented cases of false confessions, including four of the five defendants in the Central Park Jogger Case (New York v. Wise et al., 2002; Kassin et al., 2010). False confessions have also been associated with FEP as demonstrated in several studies conducted throughout the last decade (e.g., Horselenberg et al., 2006; Kassin & Perillo, 2010). Despite this evidence of the connections between FEPs and false confessions, courts continue to allow juries to evaluate confessions under the assumption that jurors can recognize and reject coerced confessions (Woody, Forrest, & Stewart, 2010). The current study examined whether informing individual jurors about FEPs and whether FEPs are associated with false confessions would affect jurors' verdicts, recommended sentences, and perceptions of the interrogation. Based on findings from Forrest et al. (2012), we hypothesized that participants who learn that FEPs cause false confessions (FEP-FC) would render fewer guilty verdicts, recommend shorter sentences, and perceive the interrogation as more deceptive and coercive than would participants who learn that FEPs do not cause false confessions (FEP-NFC). Participants included 130 individual mock jurors randomly assigned to one of two conditions (FEP-FC or FEP-NFC). They read a realistic interrogation transcript with a testimonial FEP; the suspect confessed. After reading the transcript participants read the statement about FEPs, and then they were asked to render a verdict, recommend a sentence (if defendant was convicted), and rate the interrogation on a number of dimensions, including deception and coercion. No significant differences emerged between the two conditions, and we explore explanations for these outcomes.

Greca; Use of Art as a Social Distinguisher in Mexico

Arturo Bugarin Correa, Art & Design
Faculty Sponsor: Robert Weis, History

Abstract: This thesis examines the development, creation and characteristics of the charro attire as a piece of art, and its use as a social and class distinguisher in Mexico since the seventeen-century; focusing on the suede patterns called greca that adorn the attire, and their possible native origins. First, I analyzed the social equalization brought by changing laws and customs, most specifically the 1633 royal decree reinforcing King Felipe II's 1568 and 1570 decrees prohibiting natives to ride horses, and the widespread use of the same by the seventeenth century. Then, I explored how those legal prohibitions led to the use of visual identifiers to distinguish between hacendados and their peónes that led to the creation of the charro attire. Second, the charro attire itself was analyzed as a work of art. The process of elaborating a charro attire, who creates them, the materials used, colors, patterns and their origin are examined in order to gain a better understanding of how the origin and development of the attire led to the current design used. The greca itself was analyzed by separating the individual design aspects that create it and then trying to locate, if possible, their origin in indigenous, colonial and foreign design. This has brought to attention the visual, yet little known relationship between hacendados and their peónes, and how the attempt to distinguish between both groups might have in fact united them even more.

The Preliminary Effects of Colorado Senate Bill 10-191: Educator Effectiveness on Secondary Education Preservice Teachers

Michelle Crandell, Social Sciences/Educational Studies

Faculty Sponsor(s): Travis Boyce, Africana Studies; Angela Vaughan, Academic Support & Advising

Abstract: Presently, teacher retention rates are exceedingly low in the United States with one-third of teachers leaving the field after three years. More significantly, half of all teachers in inner city schools quit within three years. In November of 2011, Colorado passed Senate Bill 10-191, which mandates a yearly evaluation for all teachers in the State of Colorado. If preservice teachers are increasingly worried about potential job loss partially due to uncontrollable factors, many might choose to leave the field before even entering the classroom, exacerbating teacher shortages particularly in low income school districts. Drawing on a pool of preservice teachers ready to enter the field at a Colorado state supported institution that is known nationally for its teacher education program, this research examines the effects legislation may have on teacher job satisfaction and retention. 110 preservice teachers in a secondary education teaching program were surveyed and interviewed in a focus group to determine their perception of self in relationship to their professional aspirations as teachers, their willingness to teach in diverse school settings, and how they felt SB 10-191 would affect their role as an educator. Early results evaluated through multiple regression analysis of survey data indicate a distinct fear of the bill and decreased willingness to teach in diverse school settings. These results have the potential to redefine teacher education programs to include more education on the bill and the way it will shape the teaching profession. This may also make it possible for the State of Colorado to redefine the implementation of the bill to match high teacher expectations with high teacher retention rates in all school districts.

Dispelling the Stigma of Mental Illness: What Sort of Information Is Most Effective?

Casey Fogel, Communication Studies

Faculty Sponsor: Jarae Fulton, Communication Studies

Abstract: Public attitudes toward people with mental illness are relevant to the social, psychological, physical, and economic well-being of those affected by mental illness. Individuals afflicted with mental illness often avoid seeking help for fear the confidentiality of their diagnosis or treatment will be violated. The current study is designed to assess the relative effectiveness of different types of stigma reducing education. A sample of college students will be administered a revised version of Day's Mental Illness Stigma Scale before and after viewing an educational documentary video. Half the participants will view a video narrated by an affected peer demonstrating the success possible for an individual with mental illness, and the others will view the same video narrated by a famous actress. The responses to the mental illness stigma scale will be analyzed using a repeated measures ANOVA to determine the effectiveness of each of the educational methods. It is expected that the findings of this study will help those who create stigma reduction education campaigns better address the needs of their target audiences.

6-Thiopurine and Thiol-Fluorescent Probes

Tassie Forst, Chemistry

Faculty Sponsor: Richard Hyslop, Chemistry & Biochemistry

Abstract: When it comes to analyzing and measuring drugs within the human body there are many techniques that can be utilized. Some are more specific or accurate than others. For my research I am working with an antileukemic drug, 6-thiopurine (6-TP) to find a more sensitive measurement in biological tissues than what is available currently. I am going to do this by using a thiol fluorescent probe, 9-chloromethyl anthracene, which can create an extremely sensitive measuring technique for detecting compounds in the body. My research is to find a successful way to attach the thiol fluorescent probe to 6-TP so it can be used to detect 6-TP in biological tissues with high sensitivity. I will do so by making solutions of 6-TP and 9-chloromethyl anthracene and reacting them to form the new product, 6-TP with the attached thiol fluorescent probe. The results thus far have been measured using thin layer chromatography (TLC) to separate the new product but this has not been extremely successful. Other methods to separate the new product I will be using are preparative TLC which will hopefully give a measurable product to determine the structure of the new product and if the reaction was successful.

The Influence of Historical Violin Treatises on Modern Teaching and Performance Practices

Hanna Hann, Music Education
Faculty Sponsor: Bob Ehle, Music

Abstract: Effective technique in violin playing has evolved because of several historical pedagogical treatises written by knowledgeable masters. These treatises have been of great influence in the development of today's pedagogical approaches. Unfortunately, many students may not know why a technique was prescribed and how the various aspects of technique work together. Understanding why these techniques are used today, and even how they evolved, can help a student correctly apply and reach the desired result. The treatises of Francesco Geminiani (1751), Leopold Mozart (1756), L'abbe le Fils (1761), and Pierre Marie Froncois de Sales Baillot (1834) were analyzed to research how and why today's optimal Franco-Belgian violin technique was established. Using qualitative analysis, each master's technique was documented with an emphasis on understanding the reason, or effectiveness of technique. Their approaches to various performance matters— right hand dexterity, facility, speed, and agility, as well as articulation, volume, dynamics, and even vibrato— are compared and contrasted.

What's Love Got To Do With It? How Minor Property Crime Relates to Domestic Violence

Jaclyn Holien, Criminal Justice

Faculty Sponsor: Mary West-Smith, Criminal Justice

Abstract: In 1994, in response to concerns about domestic violence, Colorado State Legislature created statutes intended to protect victims of intimate partner violence. Colorado Revised Statute 18-6-800.3 defines domestic violence as “an act of violence or threatened act of violence upon a person with whom the actor is, or has been, involved in an intimate relationship.” This statute also includes other crimes against persons, property or animals “when used as a method of punishment, revenge, intimidation, coercion, or control.” The inclusion of ‘other crimes’ in this definition is unique to Colorado, and because Colorado law mandates police officers to make an arrest in domestic violence situations, these statutes may have inadvertently led to an increase in arrests for domestic violence crimes throughout the state. The literature concerning domestic violence demonstrates how this crime has become more recognizable over the last forty years through its criminalization, education of the public, and victims’ rights advocacy programs. What remains to be explored however, are the possible unforeseen consequences of stringent policy changes, broad definitions, and limited police and prosecutorial discretion. By focusing on misdemeanor property crimes that are prosecuted as crimes related to domestic violence, I examine how the statutory language of domestic violence laws in Colorado is being interpreted by members of the criminal justice system such as law enforcement, and prosecuting attorneys. Participants for this study include members of law enforcement, domestic violence treatment providers, and offenders who were charged with domestic violence after committing minor property damage. The data for this research has been collected and analyzed using qualitative methods wherein participants have been interviewed and their responses have been transcribed. Preliminary findings suggest that law enforcement officials feel they must make an arrest when property damage has occurred between intimate partners though many feel it is unnecessary.

Insights from a Hybrid Zone: Song Diversity and Song Evolution among Sage Sparrows in Owens Valley, California

Carissa King, Biological Sciences

Faculty Sponsor: Lauryn Benedict, Biological Sciences

Abstract: In Owens Valley California, a hybrid zone exists between two subspecies of sage sparrow: *Amphispiza belli canescens* and *Amphispiza belli nevadensis*. As oscine passerines, sage sparrows learn their songs. Therefore, a comparison of song characteristics with genetic data can provide insight into how cultural and genetic evolution influence trait diversity. In this study we analyzed and compared the songs from birds located at the northern end (pure *A.b. nevadensis*), southern end (pure *A.b. canescens*), and the middle of the contact zone (hybrids). We found significant differences between *A.b. nevadensis* and *A.b. canescens* in 6 of 7 variables describing song timing and audio frequency. The usage of identified syllables in the songs also varied based on subspecies and location. None of the identified syllables were used exclusively by *A.b. nevadensis* or *A.b. canescens*, while 16 syllables were used exclusively by hybrids. The majority of birds in the hybrid zone showed a mixture of *A.b. nevadensis* and *A.b. canescens* song characteristics and syllable usage. A principle component analysis showed distinct song characteristics for both the northern and southern populations, with the hybrid songs showing characteristics that encompass most of the components from both ends of Owens Valley. Song in this area appears to be learned from both parent populations, but song characteristics do not vary concordantly with diversity. In several hybrid populations the pattern of mtDNA haplotypes did not match the pattern of song characteristics. The presence and form of hybrid songs indicate that cultural and genetic evolution may act differently to shape sage sparrow traits across Owens Valley.

The Effects of a 12-Week Aerobic and Cognitive Training Intervention on Psychological, Muscular Endurance, and Attention in Cancer Survivors: A Pilot Study

Rachel McPhee, Sport & Exercise Science
Faculty Sponsor: Brent Peterson, Sport & Exercise Science

Introduction: Despite current advances, cancer survivors often experience an array of symptoms often outweighing the benefits of treatments such as; chemotherapy, radiation, or surgical intervention causing issues of pain, fatigue and what is termed Chemotherapy-related Cognitive Impairment (CRCI). CRCI may affect a number of processes such as; processing speed, working memory, memory, concentration, executive function, organizational skills, linguistic skills, and activities of daily living; ultimately negatively impacting Quality of Life (QOL) and cognitive function of suffering individuals. Research has indicated that individual aerobic and cognitive training programs result in improvements of various cognitive functions. However, this is the first examination of a combined cognitive and aerobic training program. **Purpose:** To examine the effects of a 12-week aerobic and cognitive training intervention on attentional acuity, muscular endurance, and psychological measures in cancer survivors. **Methods:** Six subjects each completed an initial comprehensive physical assessment, cognitive assessment, and QOL assessment, (TMT-A) visual attention test, and Beck depression, and Piper fatigue inventories. Assessment were followed by a 12-week computer-based cognitive training, aerobic training, and flexibility training intervention was completed. Change was calculated as percentages from pre-assessment to post-assessment. **Results:** Pre to post evaluation of percent change resulted in decreased time of task completion, suggesting improvements in attentional acuity (-56.4%). All physiological measures improved presenting noticeable declines in fatigue (-9.0%), and depression (-14.3%) and an increase in QOL (1.0%). Improvements were also presented in muscular endurance (15.1%) and all measures of flexibility. **Conclusion:** although data are preliminary, this information would suggest that cognitive and aerobic training may be a viable method for the improvement of CRCI, and muscular endurance in cancer survivors.

Current Literature on Sensory Processing Specificity in Autism

Jannessa McReynolds, Psychology

Faculty Sponsor: Nancy Karlin, Psychology

Abstract: This literature review is being written in preparation for data collection. Currently, autism is defined at the behavioral level. Although much has been learned about the genetic, environmental, structural, and neuropsychological etiologies of autism much more research must be conducted to reach a full comprehensive definition of the disorder. At the behavioral level, a significant portion of individuals with autism have some level of sensory processing deficit, studies report 100% prevalence in this population. The goal of many researchers in the autism field is to identify how abnormal sensory response patterns differentiate this group from those with other developmental disorders as well as those who are typically developing. Findings show a unique pattern of under-responsivity to external stimuli as a function of maturation, in abnormal proprioceptive processing, and in auditory filtering. The present study seeks to verify previous findings and further the investigation of unique modulation patterns across sensory systems in this population. This will be evaluated with the use of the Short Sensory Profile, a questionnaire given to caregivers to assess his/her child's response to sensory stimuli while performing a variety of tasks in daily life. Participants will include parents or legal guardians of individuals diagnosed with autism, individuals diagnosed with attention-deficit hyperactivity disorder, and individuals without a diagnosis demonstrating typical developmental patterns.

The Effects of an Aerobic and Cognitive Training Intervention on Cognitive Function, Psychological, and Physiological Variables in Cancer Survivors and Non-Cancer Controls: A Pilot Study

Jesus Medrano, Sport & Exercise Science
Faculty Sponsor: Reid Hayward, Sport & Exercise Science

Introduction: There are more than 100 clinically distinct types of cancer, each having their own symptoms and requiring different methods of cancer treatment. Despite current advances, the positive effects from treatment are often matched and overshadowed by negative side effects. One of the most prevalently reported symptoms is chemotherapy-related cognitive impairment (CRCI). CRCI has been reported to negatively affect memory, concentration, reaction time, attention, cognition, organizational skills, linguistic abilities, executive function, and activities of daily living. **Purpose:** To examine the effects of 12-weeks of aerobic and cognitive training on cognitive function in cancer survivors who have undergone or are currently undergoing adjuvant treatment for cancer. **Methods:** Eight cancer survivors and two non-cancer controls participated in this pilot study. Groups were composed of cancer-aerobic (n = 2), cancer- cognitive (n = 2), cancer-flexibility only (n = 2), cancer-aerobic and cognitive (n = 2), and non-cancer controls (n = 2). Each subject completed an initial comprehensive physical assessment, cognitive assessment, Quality of Life (QOL) assessment, Piper fatigue inventory, and Beck depression inventory. Following these assessments, a 12-week computer-based aerobic and cognitive training intervention was completed for every subject. All aforementioned variables were reassessed upon completion of the intervention. **Results:** Friedman's 2-way non-parametric ANOVA revealed significant ($p < 0.05$) differences in QOL, depression, Piper fatigue substest-B, all physiological variables, and the Weschler Memory Scale LMII between all groups. However, follow-up dependent measures t-tests only confirmed significant ($p < 0.05$) decreases in fatigue in the cancer-cognitive group. **Conclusion:** Although results are preliminary and sample sizes are small, the data would suggest that both cancer survivors and non-cancer controls respond favorably toward aerobic and/or cognitive training and that cognitive training alone may be specifically beneficial for cancer survivors.

Identifying Low- to Moderate-Income Taxpayer Preferred Characteristics for §25B Design

Jake Neel, Business Administration

Faculty Sponsor: Joseph Cahalan, Accounting

Abstract: The Social Security and Retirement Savings Crisis is an important and prevalent issue in the United States. However, the current §25B tax incentive for Low- to Moderate-Income (LMI) taxpayers, also known as the “Saver’s Credit,” is typically unutilized. My purpose for this research is to identify the causes for this low utilization, while developing suggestions to improve the credit’s use by making it more attractive to the targeted LMI population.

In order to identify preferences, I have distributed paper surveys to Volunteer Income Tax Assistance (VITA) clients in Weld County, Colorado. Additionally, online surveys were distributed through social networks such as Facebook and LinkedIn.

To supplement this quantitative information, open-ended questions were included with the online survey and I also plan to conduct in-person focus groups in order to further identify themes in respondents’ preferences.

The sample for the paper and online survey will include at least 100 participants, while the focus group will be conducted with at least 3 people.

It is expected that taxpayers will choose a design that is simple, more beneficial to those who have less wealth, flexible for those with lower liquidity, and contains a refundable portion that potentially enables and increases LMI taxpayer tax refunds. Based on the results, a credit redesign will be formulated and suggested to increase utilization of the Saver’s Credit, and subsequently increasing taxpayer saving and retirement security in the long term.

What Fosters a Successful Resident Assistant? A Qualitative Study on Resident Assistant's Development of Self-Authorship

Rachel Stice, Higher Education & Student Affairs Leadership

Faculty Sponsor: Matthew Birnbaum, Higher Education & Student Affairs Leadership

Abstract: Resident Assistants (RAs) hold a challenging position on college campuses. In addition to performing as a full time student, an RA is given an incredible amount of responsibility in various facets, including peer education, policy enforcement, administrative tasks, and role modeling positive behaviors. With the evolution of Higher Education in the U.S., RAs are now charged with promoting student development and various multi-faceted responsibilities. However, there are limited research studies and theories specifically addressing this population. Utilizing qualitative research methods, this case study explores the student development of 7 Resident Assistants through the lens of Baxter Magolda's theory of self-authorship. Participants from the University of Northern Colorado (UNC) describe their experiences as an RA through a semi-structured interview with the following themes: how their experience as an RA impacted their social life, how their experiences in training shaped their own experience as an RA, how they felt supported throughout their experiences as an RA and what they have found value in as an RA. Through this process there was a particular interest in understanding how RAs are able to complete their public responsibilities while maintaining student identities at a university. Based on participant's responses, the conclusions of this research indicate that a more supportive curriculum for professional staff directly involved with RAs that will support their own cognitive, social and academic development. Student Staff Training is identified as a strong catalyst for providing that supported environment. The intention of this research is to provide future RAs with tools so they may be better equipped to handle the challenges of the RA role and can also apply their support into their roles as citizens in the work force.

Reconstructing Activity Patterns at Epidamnus, Albania: Impacts of Greek and Roman Colonization

Jennifer Wright, Anthropology

Faculty Sponsor: Britney McIlvaine, Anthropology

Abstract: Colonization is often associated with exploitation of local laborers. However, the degree to which physical activity in local populations changes following colonization depends upon the policies of the colonizers, and the technology that is locally available. This research tests the null hypothesis that levels of physical activity, as evidenced by osteoarthritis in human skeletons, remained constant at Epidamnus, Albania during Greek and Roman colonial occupation (620-100BC). To test this hypothesis, 80 skeletons from Epidamnus were examined for evidence of osteoarthritis, and scored according to international standardized protocols. Of these 80 individuals, 27 were adults that showed sufficient preservation for analysis of osteoarthritis. Results indicate that osteoarthritis was more pronounced in all joint surfaces during the Greek than the Roman period (shoulder, elbow, wrist, hip, knee, ankle, cervical vertebra, and temporomandibular joint), with the exception of the thoracic and lumbar vertebrae. Chi-square indicates that this pattern is statistically significant in the shoulder ($p=0.02$) and ankle ($p=0.003$), and approaches significance in the elbow ($p=0.09$), wrist ($p=0.06$), and temporomandibular joint ($p=0.06$). These results do not support the null hypothesis of no change from the Greek to the Roman period. Historical documents indicate that Greek colonization resulted in increased dependence on agriculture and largely replaced nomadic pastoralism in local Illyrians. The Romans then introduced new technologies to increase agricultural efficiency. The emerging pattern indicates that the introduction of new, sophisticated technology made life easier for Illyrians during the Roman period. However, the impacts of small sample size are also considered.