



# RADFORD UNIVERSITY 24<sup>TH</sup> STUDENT ENGAGEMENT FORUM

Student engagement is the product of motivation and active learning. It is a product rather than a sum because it will not occur if either element is missing.

-Elizabeth F. Barkley

APRIL 21-23  
2015

## ***Student Engagement Forum Coordinators***

Joseph I. Wirgau, Interim Director OURS

Ariana Colligan and Almara Hutchinson, Graduate Assistants OURS

### ***The following individuals and offices are acknowledged for their contributions:***

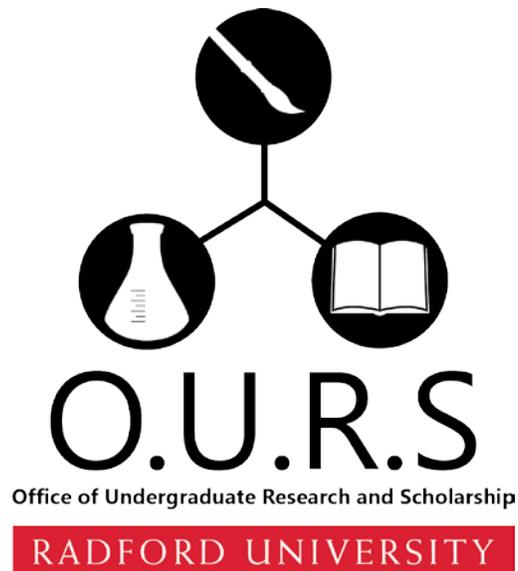
Sally Cox, Event Planning Manager

Halle Edwards, Work Study Student

Nancy Houff, Honors Academy Administrative Assistant

P. Niels Christensen, Associate Director of the Honors Academy

Radford University Printing Services



## Welcome!

It is my great pleasure and privilege to welcome you to the 24th Annual Student Engagement Forum! The Student Engagement Forum showcases the highest levels of academic achievement and creation of new knowledge at Radford University through our campus community's undergraduate and graduate students' creative works, scholarship and research. The displayed work represents a tremendous undertaking, often involving teams of students and faculty, to make progress on answering important questions for society, such as, the effect of nicotine and alcohol, the impact of pipeline projects locally, how personality traits effect other aspects of your life, assessment of concussions in youth sports, and so many more you will have to read through this thick program or better yet wander room to room in Heth for the next 48 hours to see them all!

Although what you hear and see represents countless hours of work, it is only the tip of the ice berg. Einstein once asked "if we knew what it was we were doing, it would not be called research, would it?" It is only through great perseverance, belief, and support that any of these projects succeeds. I want to publicly thank all of the presenters for staying the course and everyone who has sparked or encouraged the needed curiosity to get started, said a supporting word or offered a shoulder to lean, or even cry on, when the inevitable challenges of conducting relevant research arose.

Much like these research projects, organizing the Student Engagement Forum is a team effort. Research is built upon previous work so that anyone today can have knowledge that surpasses all of the geniuses from the last generation. We are lucky enough to build the Student Engagement Forum off of the foundation created by the tireless work of Dr. Joe King and more recently Dr. Niels Christensen. I owe them a debt of thanks for both their willingness to share their experiences and for building this event for the past decade. This year the heavy lifting has been done by Almara Hutchinson and Ariana Colligan, and the success of the entire forum is in large part due to their professionalism and hard work. Thank you to Sally Cox and her team in Student Events as they are easy and fantastic to work with in reserving and setting up all the rooms used for this event. I want to thank Halle Edwards for helping me publicize the event and creating an engaging cover, and Erica Wilkening for offering her experience in organizing the event. Nancy Houff needs to be publicly applauded for helping to keep OURS running while time and energy were diverted this past month toward forum preparations. Lastly, I would like to thank Dr. Sam Minner for trusting me with this job, Dr. Jeanne Mekolichick for being an advocate and sounding board on both my best and worst days, and everyone I have had the extreme pleasure to help support this past year. You make it easy to come to work each day!

Enjoy the celebration of new knowledge and I hope to see you all next year for the 25th version of the Student Engagement Forum!

Dr. Joe Wirgau  
Interim Director, Office of Undergraduate Research and Scholarship (OURS)

**Monday, April 20<sup>th</sup>:**

Choro Collectio: a Student Choreography Showcase Page 14  
 Albig Studio Theatre, Peters Hall B112 7:30 pm

**Tuesday, April 21<sup>st</sup>:**

Appalachian Studies and Social Work Oral Presentations Page 14  
 Heth 022 2:00 pm-3:20 pm

Health and Human Performance Oral Presentations Page 16  
 Heth 022 4:00 pm-5:00 pm

Health and Human Performance Poster Session Page 17  
 Heth 022 5:00 pm-5:30 pm

Interdisciplinary Oral Presentations Page 19  
 Heth 044 4:00 pm-5:50 pm

Biology Oral Presentations Page 21  
 Bonnie Auditorium 4:30 pm-6:00 pm

Biology Poster & ePortfolio Session Page 24  
 Heth 014 6:00 pm-7:30 pm

Chemistry Oral Presentations Page 37  
 Heth 016 5:30 pm-6:00 pm

Chemistry Poster Session Page 38  
 Heth 043 6:00 pm-7:30 pm

Choro Collectio: a Student Choreography Showcase Page 14  
 Albig Studio Theatre, Peters Hall B112 7:30 pm

**Wednesday, April 22<sup>nd</sup>:**

Innovations in Forensic Science Oral Presentations Page 45  
 Heth 043 9:00 am-12:00 pm

Nutrition and Dietetics Poster Session Page 51  
 Heth 022 10:30 am-12:00 pm

Interdisciplinary Oral Presentations Page 53  
 Heth 016 11:00 am-12:00 pm

Geospatial Science and Geology Poster Session Page 54  
 Heth 014 1:00 pm-3:30 pm

Exhibitions as Creative Research Page 63  
 Covington Art Museum 2:00 pm-4:00 pm

Scholar Citizen Digital Showcases Page 64  
 Heth 043 & Heth 022 3:30 pm-7:00 pm

Interdisciplinary Poster Session Page 68  
 Heth 014 5:00 pm-7:00 pm

**Thursday, April 23<sup>rd</sup>:**

Primate Behavior at the NC Zoo Oral Presentations Page 77  
 Heth 016 10:00 am-12:00 pm

Honors Academy Capstone Oral Presentations Page 82  
 Heth 022 3:00 pm-5:30 pm

Honors Academy Capstone Poster Session Page 86  
 Heth 022 5:30 pm-6:30 pm

Exhibitions as Creative Research Page 63  
 Covington Art Museum 2:00 pm-4:00 pm

Psychology Oral Presentations Page 88  
 Heth 016 2:20 pm-4:00 pm

Psychology Poster Session I Page 90  
 Heth 014 4:00 pm-5:00 pm

Psychology Poster Session II Page 97  
 Heth 043 5:00 pm-6:00 pm

Art History Symposium Page 110  
 Heth 016 4:00 pm-6:00 pm

**Saturday, April 25<sup>th</sup>:** SCORE Film Festival Radford Theater 12:00 pm-2:00 pm

## Graduating Highlander Scholars

### Ashley Atwood

Capstone mentor: Diane Millar, Communication Sciences and Disorders

#### **Nonverbal Communication Preferences in College Students**



Communication consists of two parts, verbal and nonverbal communication. Verbal communication is the use of spoken language, while nonverbal communication is the use of gestures, proxemics, and facial expression. Nonverbal communication makes up 50-90% of communication and can be used alone or paired with verbal communication to help convey meaning (e.g., Gupta, 2013; Tai, 2014). It is typical for individuals with Asperger's syndrome or High Functioning Autism to have impairments in communication, especially nonverbal communication. These individuals experience difficulties with social-emotional reciprocity, nonverbal communication during social interactions, and difficulty with relationships that can range from mild to severe (American Psychiatric Association, 2013).

In this study, 40 college students are asked to make judgments about nonverbal behaviors during conversation. They are asked to identify the types of informal nonverbal communication they prefer. Specifically, students will be shown a series of video clips involving two individuals engaging in conversation. The first set of videos will contain two videos targeting posture. Video 1A will present a college student speaking with an open posture (i.e., her chest is facing her partner) and video 1B will display the same college student using a closed posture (i.e., her body is turned away from the speaker). The second set of videos will target smiling. Video 2A will feature the individual speaking with half a smile and video 2B will feature no smile on the speaker's face during conversation. After viewing the videos, the students will be asked to make a judgment about each set of videos; they will be asked to identify where the speaker looks more approachable (video 1A or 1B, and then video 2A or 2B).

Nonverbal communication is an important contributor to successful communication and typically a challenging area for individuals with autism spectrum disorder. Results of the study may provide important information for professionals working with individuals with autism spectrum disorder. The complete set of results of the study and clinical implications will be discussed in the presentation. In particular, suggestions for possible nonverbal behaviors for speech-language pathologists to target in therapy with individuals with autism spectrum disorders will be presented.

### Amanda Blankenship

Capstone mentor: Jack Call, Criminal Justice

#### **Analysis of a Critical 4th Amendment Issue**



My capstone covers a current Supreme Court case and the Fourth Amendment. It describes the facts of the case and the constitutional issues raised in the case that relate back to the Fourth Amendment. I am following the case as it is going through the Supreme Court. I am also researching the Fourth Amendment, to gain a strong understanding of the amendment and applying that knowledge along with what I have learned through schooling to the facts of the case. I am also researching and applying similar cases that could relate back to this case. I am applying my opinion on how the case should be settled. I am basing my opinion on the facts of the case, previous cases, and the Fourth Amendment. My opinion will cover how the Fourth Amendment affects each fact and how things could have been handled differently. This will contribute to the way this case is viewed by the people who will have followed the case and have read my capstone. This can also contribute to people's future opinions of other cases that may come in the future or be from the past.

## Elizabeth Bowen

Capstone mentor: Lauren Flora, Communication Sciences and Disorders

### **Professional Attitudes and Perceptions of Consumer Use of Mobile Hearing Health Applications on Smart Technology**



Technology is continuously evolving and modifying the way that nearly everything is done. While these advances are often advantageous, the value and validity of some technological innovations must be questioned, especially when they involve an individual's healthcare. One such technological advancement includes mobile health (mHealth) applications, which allow an individual to access medical information from his or her personal mobile device and use that information to self-diagnose, monitor a health condition, or change current health management behaviors (Klasnja & Pratt, 2011; Free et al., 2010; Jimison et al., 1999). Increasingly, mHealth apps are embraced by the medical community due to its innovative and cost-effective means for the healthcare professional to deliver services and/or educational support to positively influence patient health management behaviors. Currently, however, there is little to no professional oversight required for app development before hitting the market.

Therefore, there is no regulation on whether or not the apps use evidence-based practice or validated clinical procedures for "assessment" or "screening" to ensure the consumer is provided with accurate information. Additionally, if these apps are found to produce valid and reliable results, there is the fear of extinction from the professional perspective. This research project will investigate the potential advantages and disadvantages of mHealth self-administered hearing screening applications with specific attention to the professional audiologist's perception of their use not only by the consumer but by the professional as well. A survey will be administered to local professional audiologists exploring how consumer use of these apps has influenced provision of services, if the audiologist would embrace the technology to enhance provision of service, and the overall effects of mHealth apps on the professional audiologist's mindset. As mHealth is a new and growing trend in the field of audiology, very little research has been done investigating the effects mHealth has on patient behaviors and professional provision of service. Therefore, this research project will further the literature on how mobile applications are positively or negatively impacting the field of audiology and the healthcare that individuals are receiving.

## Jesse Daniels

Capstone mentor: Christine Small, Biology

### **Using Land Use History and Site Conditions to Predict Invasive Plant Distribution in Central Appalachia**



Invasive plants quickly dominate natural areas and severely affect native plants, biodiversity, and ecosystem functions. This study examined the susceptibility of central Appalachian forests to invasive species. Vegetation and site conditions were surveyed from 2006 to 2008 in 140 sample plots (100-400 m<sup>2</sup>) in forests, fields, and wetlands at the Selu Conservancy, VA, to determine best predictors of invasive plant abundance. GIS maps digitized from 1954, 1975, and 2005 aerial photos were used to classify plots by historical land use. Fifty-one invasive species occurred in sample plots. Multiflora rose (*Rosa multiflora*) was most prevalent (62.9% of plots). Forests had lower invasive cover (15.5%) than other habitats, but very high invasive frequency (85.5%) and plant species richness (44 spp.) Multiple regression identified species richness ( $r = 0.417$ ), moisture ( $r = 0.357$ ), 1954 land use ( $r = 0.309$ ) and hydrology ( $r = 0.213$ ) as the most influential

factors in predicting overall invasive abundance in forests (overall  $r^2 = 0.447$ ). The best predictors of multiflora rose abundance were soil organic matter, species richness, 1954 land use, and herbaceous cover (overall  $r^2 = 0.440$ ). Model accuracy will be tested through GIS modeling and field surveys to help identify areas of high susceptibility to land managers. While forested habitats often appear more resistant to invasive species, areas with high richness, moisture, and agricultural history should be monitored vigilantly. Many of these factors can be acquired from satellite imagery, topographic maps, and soil surveys, saving time and resources during invasive assessments.

## Sarina Eames

Capstone mentor: Margaret Pate, Criminal Justice

### Perceptions of Sexual Assault Among Investigators



Sexual assault has been a growing incident through the years, but it is interesting to know how investigators handle those kinds of situations by using their knowledgeable experience to determine the facts. A focus group was conducted with investigators from a department within a college town and a non-college town. They analyzed grey line sexual assault scenarios and crime scene sketches, similar to how they would with real cases. The investigators were asked a few questions to discuss through, in order to get their perspective on the scenarios. The issues that were looked into were based on themes within the scenarios such as, alcohol use, sexual orientation, and prior relationship to the offender. The findings from the focus group will point out what specific facts investigators consider when analyzing cases and assist others in understanding how they form their conclusions. The main purpose is to define the definition of consent through the perspective of the investigators.

## Savannah Fender

Capstone mentor: Kathy Mitchell and John Jacob, Design

### More Than Meets the Eye: Multifunctional Garments



More Than Meets the Eye is a project that was established to challenge the way we design. It started with the extreme idea of being able to transform a garment into a functional item like a tent or hammock. From there versatility became one of the major factors for Fender's capstone. More Than Meets the Eye is a combination of research, sustainable practices, new technology, and above all garment design and production. With the help of professors Dr. John Jacob and Dr. Kathy Mitchell, Fender has developed a Fall 15 collection entitled Beastie. The collection includes over 30 different pieces that include items that are both versatile and reversible. Her collection includes mainly women's wear, with a glimpse of menswear. Fender took the collection a step further to include a functioning closure designed by herself, and created on the Department of Design's 3D printer. After everything was illustrated and created Fender developed a marketing strategy to promote her collection. This included things like a look book, campaign shoot, business cards, and range plan.

Fender used multiple fabrics, which even include a few interior textiles. Her collection pushes the limit of what can and cannot be wearable. Fender also created graphics which she screen printed on to t-shirts that follow along with the theme of her collection. Fender drew her inspiration from William Golding's novel Lord of the Flies. Her collection was accepted and shown at Knoxville Fashion Week in March 2015. By creating a collection that was aiming towards sustainability, Fender hopes consumers gain value in the garment which in return will expand the lifecycle. Throughout the collection Fender worked towards minimal waste. The collection, as well as the waste from the collection will be displayed at the Department of Design in McGuffey. Fender set up a forum to allow students to get a firsthand look at what comes from garment production, and allow them to ask questions. Overall this project has been an eye opening experience that will lead Fender towards her hope of pursuing a Master of Science in textiles. While her project takes an alternative route to everyday fashion, its main purpose is to highlight the multiple aspects that go into it.

## Caitlyn Foley

Capstone mentors: Nora Reilly, Psychology

### Employer Perceptions of Online Degrees: Critical Moderators



This present study would investigate hiring professionals' perceptions of online degrees and of the individuals that hold them. Various studies have shown a strong preference for graduates of traditional degree programs over those obtained solely through an online provider (Fogle & Elliott (2013), Columbaro & Monaghan (2009), Adams & DeFleur (2006), Bristow, Sheperd, Humphreys, & Ziebell (2011)). The belief is that online degrees do not result in the same value of education as traditional degrees. The major areas of concern when discussing online degrees are the quality of the education received and the lack of social interactions between students and their peers and professors. However, one aspect that these studies have not discussed is whether there is a systematic difference between degree preferences based on the degree held by the hiring manager. This study would aim to examine these areas of concern to determine if there has been a change in online degree perceptions since these previous studies were conducted. This study would also examine if the degree

preference changes if companies offer post-baccalaureate support.

## Cassidy Funk

Capstone mentor: Margaret Pate, Criminal justice

### Perceptions of Sexual Assault among Students



For decades the Federal Bureau of Investigation (FBI) defined rape as "carnal knowledge of a female forcibly and against her will." While the FBI officially updated this definition in 2013, broadening the scope of what is considered rape, the original definition is still in sync with the preconceptions many people possess regarding sexual assault. The ultimate goal of this research is to better understand how undergraduate college students perceive sexual assault and how those views differ depending on whether the victims were previously acquainted with their attackers and what the gender of the victim is. Undergraduate students will be asked to determine the guilt of four male rapists and rate how guilty they believe them to be on a scale ranging from 1 to 100 based on four scenarios: a female victim acquainted with the rapist, a male victim acquainted with the rapist, a female victim not acquainted with the rapist, and a male victim not acquainted with the rapist. The results from each of the four scenarios will be compared, demonstrating the degree to which each rapist

was considered guilty by the participants. This information will be useful in educating students about sexual assault, something that occurs every day on college campuses nationwide, and understanding why so many sexual assaults go unreported to college officials.

## Jana Greene

Capstone mentor: David Sallee, Health and Human Performance

### Scoliosis in Teenage Athletes: A Systematic Review



Scoliosis is a condition that involves an abnormal curving of the spine. It is one of the more common spinal abnormalities of today. According to thousands of studies and many measurements, the prevalence of scoliosis is about 8.3 % among adults in the United States ages 25-74; women being the more affected gender. However, the abnormality is much rarer in children and adolescents, with a prevalence of between 3 and 5 individuals affected per every 1,000. The methods to help control the spinal curvature vary in severity due to how severe the curvature is to begin with. The types of scoliosis can vary from congenital to neuromuscular and infantile to adolescent. This review will touch on each of the types of scoliosis and their treatment methods and formulate a consensus on the most effective treatments in use today. Scoliosis treatments vary in intervention strategies and the severity of said interventions. There are treatments ranging from physical therapy, back bracing/orthosis, and surgeries, depending on the degree of curvature, complications due to the spinal curve, the well-being of the patient and the time frame the patient has to correct the curve if medically needed. The choice of intervention and treatment is that of the patient and practitioner. According to the results found during the search, the most common interventions seem to be bracing and spinal surgery. Physical therapy is used in many cases but not as a primary treatment method. It is often paired with the two other methods of treatment. The search results also talk about the risks and effectiveness for each of these three methods. These methods have their own levels of being effective and some place a greater risk on the patient to provide a more permanent outcome.

## Michaela Horvath

Capstone mentor: Blas Hernandez, Foreign Languages and Literatures

### Hispanic Drug Culture



Written in Spanish, this paper is about the Mexican drug culture and the songs that have come about in popular culture in Mexico as a result. The drug culture has a large impact on the rest of the Mexican society, and music is one area that has been greatly influenced. In Spanish, these songs are known as “narcocorridos.” They are a form of ballad that can be traced back to the Mexican Revolution, but the true form of the narcocorrido is credited to Juan Ramírez-Pimienta in the 1930s. The lyrics of these songs include references to real events, places, and people and talk approvingly of illegal activities relating to the drug culture. Ideas for narcocorridos come from a variety of sources, such as stories heard in town and read on the Internet. This music has become an integral part of the culture and life in Mexico and has even spread to parts of the United States due to the fact that the both are affected by the drug culture. Known for narcocorridos, Los Tigres del Norte is one of the most popular bands in Mexico. Although nowhere near as popular, narcocorridos are in the American culture as well, such as in the popular television show Breaking Bad. The show is about a high school chemistry teacher in New Mexico who travels across the border to earn money by making methamphetamines. In the episode “Negro y azul,” a narcocorrido, is featured. Being such a popular show, this has helped narcocorridos become known in America.

## Ashley Light

Capstone mentor: Karen Arndt, Communication Sciences and Disorders

### Telling Stories: Phonological Awareness Intervention, Final Consonant Deletion and Past Tense Marking



**Rationale:** For children with phonological disorders and concomitant language impairment, improvement in phonological awareness can benefit both production of speech sounds and production of grammatical morphology (e.g. marking of regular past tense). **Participant:** The proposed study is a case study of a 3 year, 10 month old male who exhibits deficits in production of speech sounds as well as who has an expressive language delay. **Methods:** The client of focus struggles with final consonant deletion. The student clinician will engage the client in an elicited language task focused on marking of past tense, over 5 therapy sessions. In order to mark regular past tense, the phonemes /t/ or /d/ must be added to the end of the root verb. Intervention will include explicit instruction of the sounds /d/ and /t/ in relation to marking past tense, as well as instruction on the nature of tense marking. A pre- and post-intervention language narrative language sample will be collected to examine growth in marking of final consonants /d/ and /t/ in relation to marking past tense.

**Results/Discussion:** As this study is just beginning data collection, results are unknown. Implications for utilizing phonological awareness to target both speech and language deficits will be addressed.

## Kayleigh Long

Capstone mentor: danah bella, Dance

### A Look at Religion and Dance



For this project I have created embodied research based on two female icons in the religious world. Being a dance major I have studied a wide array of dance techniques, but before coming to college my views on religion were quite narrow. After taking a religion class, I was moved by how much religion and dance seem to coincide with one another. It seemed that sometimes one would not be able to exist without the other. With these being my first major choreographic works, I have really been able to further myself as a dancer, a choreographer, and a mentor to my dancers. I not only used this project for my own personal growth, but also to teach my dancers and help them grow towards their goal of becoming professionals. These creative projects will be disseminated at the Student Choreography Showcase on April 20th and 21st in Albig Theatre.

## Kaitlyn Metzler

Capstone mentor: Melissa Sumner, Music

### A Study of Alberto Ginastera's "Cinco canciones populares Argentinas"



The purpose of this project is to present a detailed study and written performance guide on Alberto Ginastera's song cycle: Cinco canciones populares Argentinas for voice and piano to be used by singers and vocal teachers. The performance guide is the result of five semesters of continuous research, study, and performance of the presented material. Included is a biography of the composer, slight musical analyses of each piece individually and of the song cycle as a whole, pronunciation guides using IPA notation, word-for-word and poetic translations, and interpretive suggestions based on research and personal performance of each of the pieces. The written portion will be heavily research and analysis based and will be in standard APA written format, including a bibliography. Additionally, my capstone project will include a presentation on the subject in lecture-recital format. I will synthesize the information in the written portion into a fifteen minute PowerPoint presentation to present publicly. This presentation will also include examples of each of the songs

being performed and (if applicable) examples of each of the Argentinian dances that each of the songs are based on.

## Taylor Newman

Capstone mentor: Lynn Zoch, Communication

### Career Paths of RU Journalism Alumni



Landing a job in the journalism field isn't easy. There's no instruction manual on how to go about it. For this Honors Capstone project, a literature review on the current state of the journalism field was conducted. This secondary research helped to form the questions asked during qualitative interviews with RU journalism alumni. The Radford University School of Communication has not before conducted a study of journalism graduates that focused on what pros and cons of their college experience steered their career paths. The expectation is the information collected will benefit future Radford University students pursuing a career in journalism as well as school faculty as they attempt to revamp or align coursework and outside related experiences (such as internships, participation in RU student media, volunteer work) to the choice of a future job, as well as of job success.

## Emma Paulsen

Capstone mentor: Blas Hernandez, Foreign Languages and Literatures

### An Analysis of the Business Practices of La Tienda



In this paper I have completed an analysis of the business La Tienda. I decided to research this business because I believed it would combine my Communication major with my Spanish major well, while allowing me to learn more about the Spanish culture before journeying there this summer. La Tienda, located in Williamsburg, VA, is an authentic Spanish store that sells genuine Spanish food and tableware, hosts wine tastings in their event space and, of course, serves tapas (tapas are small Spanish dishes, usually served with wine). The Harris family, an American family who spent time in Spain while in the military, runs the business. The Harris family lived in Spain in the 70s and decided that they wanted to share the Spanish food, culture and warmth with family and friends. So, La Tienda was born. The Harris' travel to Spain often, communicating with small businesses there to receive the finest products for their customers. Bringing authentic food and products to customers is not the only thing the Harris' strive towards. They have created a family friendly environment in Williamsburg, and also succeeded in allowing Spanish families across the nation once

again receive a taste of their homes. The purpose of this paper is to identify how the business began, the struggle of staying authentic in the United States, and a how the Spanish culture has influenced the business, family and surrounding area. It also analyzes the business practices of the store, and delves into how they receive authentic products, and how they showcase these products to their customers. Through this research I am striving to better understand the influence that Spain can have on the United States, and the influence it has already given us.

## Analise Roccaforte

Capstone mentor: Dayna Hayes, Psychology

### **The Effects of Dual Exposure of Alcohol and Nicotine on Spatial Memory**



Alcohol and nicotine are two of the most commonly co-abused substances in the United States with estimates suggesting that 46.2 million Americans are dual alcohol and tobacco users (Falk, et al, 2006). Further, nicotine use has been reported to escalate with increasing amounts of alcohol consumption such that chronic, binge alcohol drinkers are reported to be responsible for nearly half of all tobacco consumption in this country (Miller and Gold, 1998; SAMHSA, 2012). Importantly, alcoholics suffer from learning and memory impairments and cognitive dysfunction (Obernier, et al, 2002). However, the acute effects of nicotine have been shown to be neuroprotective, but chronic exposure may also lead to deficits in learning and memory (Abrous, et al, 2002). The purpose of the proposed study then was to investigate the effects of combined binge level alcohol and nicotine exposure on spatial learning and memory. To that end, adult male Sprague-Dawley rats were administered nicotine or saline subcutaneously (0.3mg/kg) three times daily (7am, 3pm, 11pm) for 10 days. The final four days of exposure also included three

intra-gastric intubations per day of ethanol (25% w/v in Vanilla Ensure Plus) or isocaloric dextrose solution. Following drug administration, animals were monitored until extinction of withdrawal behaviors (~18hrs). The Morris water maze task was then used to investigate spatial learning and memory (Morris, 1984). Preliminary findings suggest that concomitant administration of alcohol and nicotine results in differential impairments to the learning process.

## Kyle Rosner

Capstone mentor: Matthew Oyos, History

### **Economic Populism in America After the Great Depression and Great Recession**

The similarities between the Great Depression and Great Recession are striking on many levels. The economy plummeted, democratic presidents rode promises of change into the white house, and reform was enacted. Yet the most remarkable similarity between the two periods was the loss of trust by the American people and the movements that arose in the midst of the chaos. The political and financial institutions Americans came to rely on betrayed them and shook the public's collective foundation. What filled this gaping political and emotional void was populist movements. Populist movements post-Depression and Recession rectified the public's anger and aimed it squarely at the establishment, mainly personified by the president and Wall Street. These movements utilized the new media of their eras to disseminate their messages and to organize. In the 1930s, Huey Long and Father Coughlin spoke to millions via radio, and rhetoric transformed into action. Post-Recession, the Tea Party and Occupy Wall Street used social media and Internet resources to spread their message and organize as well. Through message and media, a renewed individualism blossomed in American politics, but this individualism left the movements without consensus. Eventually, the very nature that allowed populism to rise led to its own demise. Yet whether they dissipated or were absorbed, these populist movements succeeded in shining a spotlight on the establishment and sparking activism amongst everyday Americans.

## Jaquelyn Salzano

Capstone mentor: Diane Millar, Communication Sciences and Disorders

### Experiences of Patients with ALS



Literature suggests that speech-language pathologists (SLPs) play a critical role in the care of individuals with Amyotrophic lateral sclerosis (ALS), as speech is one of the primary areas affected by the disease. There are responsibilities for SLPs in treating this population. Robarge (2009) stated SLPs play a critical role in the maintenance of speech production and are the primary professionals responsible for monitoring changes in speech and swallowing. Similarly, Casey (2011) emphasized the important role of SLPs in addressing the communication needs of patients with ALS. She stressed the significance of having a SLPs prescribe appropriate communication devices that may improve the patients' quality of life. According to recent research, the main concerns of people with ALS include the progression of the illness, communication difficulties, and physical weakness (Trail, 2004). Patients with ALS are also concerns with professionals understanding their treatment priorities and concern with losing independence, which heightens the stress level of these patients with ALS. Given the rural nature of Southwest Virginia, it is not known whether individuals with ALS are receiving services by SLPs that are deemed best practices. This study will document the experiences related to their initial diagnosis, services from SLPs and other professionals. Interviews with 10 patients with ALS are used to provide insight. The findings will be compared to best practices in the literature.

## Emily Tenshaw

Capstone mentor: Dayna Hayes, Psychology

### Hippocampal Neurogenesis in Long-Evans Rats: Does Gender Matter?



Adult neurogenesis is the process in which new neurons are formed in the brain. Studies have shown that neurogenesis occurs throughout the lifespan in many species, including humans, but that gender differences are often found in the extent of neurogenesis (Kalkan et al, 2013; Chow et al., 2013). The neurogenesis-related gender differences have been shown to be due to numerous factors including brain plasticity potential and the estrous cycle (Simpson & Kelly, 2012). Importantly, most studies of adult neurogenesis have utilized male Sprague-Dawley rats. The current study expands the knowledge base to include an investigation of male and female rats of a separate yet equally prominent rat strain, Long-Evans (LE) rats. Adult Long-Evans rats of both genders were allowed to grow up in the psychology department rat facility. After approximately 6.5 months, the animals were perfused and their brains collected in order to determine baseline levels of hippocampal neurogenesis. Hippocampal tissue sections will be stained for Ki-67 immunoreactivity, a measure of actively dividing cells. Cells counts of neurons expressing Ki-67 will be conducted using an Olympus BX-43 microscope with 1000 X magnification. We hypothesize that there will be baseline differences between the genders of LE rats and that the level of neurogenesis will be altered when compared to the Sprague Dawley rats. The results of this study may be able to help determine if one gender or strain is more favorable than another depending on the nature of future studies.

## Kenzie VanDerwerker

Capstone mentors: Cynthia Ptak and Patricia Rossi, Communication Sciences and Disorders

### **Enhancing Communication and Education Through the Use of Sign Language and Deaf Culture**



Did you know that the fourth most used language in the United States is American Sign Language? ASL is not only used by the Deaf community but can also be used by special populations for assistance in communicating with the world. This Honors Capstone Project focused on several aspects of sign language- the use of sign language to assist in the development of communication with special populations (with a focus on autism spectrum disorder), the utilization of sign language (and Deaf history) to teach acceptance and understanding to elementary school children through the development of learning materials for teachers, a research paper into the Deaf culture in order to be sensitive to future Deaf clients, and finally the creation of a gesture/physical theatre class proposal (with trial workshops) to be used as a foundation for a future addition to the Deaf Education's American Sign Language minor/major requirements.

## Erika Worthley

Capstone mentor: Auguste Barfield, Health and Human Performance

### **Prevalence of Glenohumeral Internal Rotation Deficit in Female versus Male Athletes**

Context: Overhead athletes (e.g., baseball players) have an increased risk of shoulder injury compared to other athletes. Glenohumeral Internal Rotation Deficit (GIRD) is the standard measure of shoulder injury in athletes but little research has examined this variable in female populations. Objective: To compare GIRD in baseball and softball players at the collegiate level over the course of a non-competitive season. Methods: GIRD was assessed on 57 NCAA athletes (38 baseball, 19 softball players; ages 18-23). We took measurements to test for GIRD at two instances, pre-fall and post-fall season. We calculated GIRD as a fifteen-degree difference between the dominant and non-dominant shoulder internal rotation measurements. IRB approval was obtained. Results: Our pre-fall measurements identified more players with GIRD (n=9) than our post-fall measurements (n=5). At pre-fall, 10% of baseball players demonstrated GIRD. Fortunately, zero percent demonstrated GIRD at post-fall, indicating a major risk reduction. Twenty-six percent of softball players were positive for GIRD at baseline measurements. The same percentage demonstrated GIRD at follow-up, however, two players decreased their risk whereas two different players demonstrated GIRD. Discussion: Results clearly indicate that GIRD is a bigger concern in female overhead college athletes compared to males. This conclusion is supported by the higher percentage of players at risk for shoulder injury (through presence of GIRD) and the reduced ability to decrease player risk across the sport season.

**Tuesday, April 21<sup>st</sup>**

**Choro Collectio: a Student Choreography Showcase**  
**Albig Studio Theatre, Peters Hall B112      7:30 pm**

**Appalachian Studies and Social Work Oral Presentations**

**Heth 022                                      2:00 pm-3:40 pm**

**Health and Human Performance Oral Presentations**  
**Heth 022                                      4:00 pm-4:40 pm**

**Health and Human Performance Poster Session**  
**Heth 022                                      4:40 pm-5:30 pm**

**Interdisciplinary Oral Presentations**

**Heth 044                                      5:00 pm-5:50 pm**

**Biology Oral Presentations**

**Bonnie Auditorium      4:30 pm-6:00 pm**

**Biology Poster & ePortfolio Presentations**

**Heth 014                                      6:00 pm-7:30 pm**

**Chemistry Oral Presentations**

**Heth 016                                      5:30 pm-6:00 pm**

**Chemistry Poster Session**

**Heth 043                                      6:00 pm-7:30 pm**

**Choro Collectio: a Student Choreography Showcase**

Monday & Tuesday, April 20 & 21 Albig Studio Theatre, Peters Hall B112 7:30 pm

Chor Collectio features embodied collaborative research done by students in DNCE 420 -- Choreographic Studies II.

**Appalachian Studies Oral Presentations****Dead Deadly Food**

**Caroline Leggett**

Faculty Mentor(s): Theresa Burris Appalachian Studies  
Tuesday, April 21 Heth 022 2:00 pm-2:20 pm

A large portion of our environmental and health problems can be linked to America's broken food system. Our fast-food mentality is not only in the restaurant chains, it has evicted our home kitchens. Where does Radford University's food supply come from? How much fuel is used to get it here? How many pesticides are used? How tightly are the animals packed in cages before slaughtered? What is Radford University doing to promote food health, education, and sustainability? What could it be doing? Sourcing food locally; building local economy; reducing environmental pollutants; educating students; serving as a community model.

**The Impact Of Gender On Women's Contributions To Urban Appalachian Environmental Activism**

**Stacy Penven**

Faculty Mentor(s): Theresa Burriss Appalachian Studies  
Tuesday, April 21 Heth 022 2:20 pm-2:40 pm

In January, 2014, a Freedom Industries storage tank spilled 7,500 gallons of a chemical used in processing coal into the Elk River, affecting the water supply of nearly 300,000 residents in the Charleston, WV, area. This event mobilized community organizers to meet the needs of those affected by the spill and served as a catalyst for demanding stricter oversight of water safety regulations. Many of these organizers and activists are women living in the capital city. While the preeminent role of rural Appalachian women in activist movements against mountaintop removal mining has been well-documented, the purpose of this narrative study will be to explore the role gender plays in environmental activism within a metropolitan Appalachian setting. In the context of the Freedom Industries chemical spill, this project will examine gender as a motivating factor for urban grassroots activism as well as the challenges traditional gender roles may present in achieving environmental justice objectives. This research and its conclusions will add to the growing record of Appalachian women contributions to environmental advocacy, assist in future organizing efforts by detailing barriers to success that must be overcome, and highlight the particular strengths urban women bring to activism.

## **Social Work Oral Presentations**

### **Exploring the Interaction between Hospice Work and Social Worker Spirituality**

**Heather Bowden**

**Stephanie Foster**

Faculty Mentor(s): Rana Duncan-Daston    School of Social Work  
Tuesday, April 21                      Heth 022                      2:40 pm-3:00 pm

Social workers are among the team members providing comfort to patients and their families within the hospice setting. At times, social workers may be called upon to address the more spiritual aspects of care for people in the dying process. With the growing trend towards shorter lengths of service in hospice (NHPCO, 2012), social workers need to be even more prepared to step into the role of providing spiritual care. A qualitative study, supported by the Waldron College of Health and Human Services Research Award, is being conducted to explore the impact of hospice work on social worker spirituality and the impact of social worker spirituality on hospice work. A purposive sample of sixteen social workers (MSW level) experienced in the hospice setting are being invited to participate in in-depth interviews. The interviews are audio-recorded and transcribed to allow thematic development. Preliminary results from the first eight participants indicate that spirituality comes up frequently in hospice work. The participants found themselves in the role of offering spiritual care, most often by simply being present in the moment with the client; however three out of the eight participants thus far reported praying with their clients. The social workers in this sample experienced various impacts on their personal sense of spirituality. The participants indicated they did not initially feel prepared to address the spiritual needs of their clients and that more information on death and dying, spiritual self-awareness, and religious diversity would have been helpful. The results have direct implications for strengthening social work curriculum and developing practice guidelines for social workers who practice in the hospice setting.

### **Factors Contributing to Retention of Social Workers in Direct Practice**

**Haley Whitcraft**

Faculty Mentor(s): Diane Hodge                      School of Social Work  
Tuesday, April 21                      Heth 022                      3:00 pm-3:20 pm

The purpose of this study is to examine factors that keep social workers in direct practice, despite the high stress nature of the field. Through a thorough literature review, it appears that social workers may stay given organizational factors. This study, then, focuses primarily on several organizational factors that may contribute to retention, such as compensation for work, supervision, employee benefits, company decision-making policies, teamwork dynamics, and hiring procedures. We have developed a quantitative online survey for this purpose. The surveyed population will consist of Radford University social work alumni from the official School listserv. Participants will be both male and female graduates of the MSW program at Radford University who are currently in direct practice, but do not intend to leave the field within the next year and have been in direct practice for at least 5 years. By looking at social workers that have worked for 5 years and do not plan to leave, we hope to have obtained a population that is dedicated to their work and find out factors supporting their dedication. The data collected will be analyzed using basic standard quantitative evaluation of survey data, including averages of the Likert scaled responses and median scores. In identifying organizational factors that contribute to the retention of social work practitioners, we can provide specific recommendations for agencies to improve their organizational settings.

## **Health and Human Performance Oral Presentations**

### **Assessing the Student Body Knowledge of and Attitudes Toward the Student Athletic Fee**

**Kelby Jackson**

Faculty Mentor(s): Kevin Ayers

Health and Human Performance

Tuesday, April 21

Heth 022

4:00 pm-4:20 pm

The rising cost of a university education is well documented (Sherfinski, 2013) and is of particular interest to those having to pay. Student debt in the United States is reported to be over one-trillion dollars (Peale, 2013). Nationally, the trend for funding of higher education by states has been decreasing for several years (Ehrenburg, 2013). Most athletic departments at universities do not receive federal or state funds directly and are expected to be self-supporting auxiliary units. Most athletic departments struggle to break even financially (Lanter, 2013). Funding for the majority of athletic departments comes primarily from students in the form of a general or athletic fee. The purpose of this study was to determine whether or not the undergraduate student body at Radford University was aware of the student athletic fee, the amount of this fee, how this fee is allocated, and their perceptions with regards to this fee. This study provides information regarding Division I universities in Virginia and the fee amount that students pay. An online survey was used to assess the knowledge of and perceptions of the undergraduate student athletic fee at Radford University, a Division I university without football. This study should be important to anyone who has a vested interest in higher education costs including; university faculty, staff, and administrators; athletic department administrators; students; family members of students; government officials at the state and federal levels; lending institutions; and society in general.

### **My Sport's Team Has Been Discontinued: What Do I Do Next?**

**Haley Shotwell**

**Claire Doherty**

**Caitlin Gerig**

Faculty Mentor(s): Kevin Ayers

Health and Human Performance

Tuesday, April 21

Heth 022

4:20 pm-4:40 pm

In the spring of 2014 Radford University athletic department discontinued three athletic programs including: women swimming and diving, field hockey, and men track and field. Approximately sixty five student-athletes were impacted by this decision. Although the discontinuation of sports teams is not without precedent, there is little in the current literature concerning the matriculation decisions and welfare of student-athletes who have been affected by these decisions. Our study wanted to examine the matriculation decision making process for these athletes. Specifically we were interested in discovering not only why these student-athletes chose to stay or leave the university but also how this decision impacted them personally. We surveyed approximately sixty-five students (N=65) who were impacted by the discontinuation of their sport at Radford University. We hypothesized that class standing would determine at what rate student-athletes transferred. We also hypothesized that these individuals identified as athletes more so than students. We were especially interested in the reasons behind student-athletes decisions to stay at Radford or to leave the university. Of particular interest was the decision of several high school student-athletes, who had signed National Letters of Intent, who still chose to come to Radford in spite of no longer having a team with which to participate. This information should be important for university administrators, admission officers, athletic department personnel, coaches, and student-athletes.

### **Health and Human Performance Oral Presentations**

**Jessie Bass**

Faculty Mentor(s): J. P. Barfield                      Health and Human Performance  
Tuesday, April 21                      Heth 022                      4:40 pm-5:00 pm

The purpose of this study was to examine average intensity under different conditions during warm-up, workout of the day (WOD), and cool-down in CrossFit participants. There were 10 CrossFit athletes that participated in the study (Mean Age = 25+7 years). Institutional Review Approval was obtained for this research and each participant gave written consent before they were examined. Participants wore the FT7 Polar Heart Rate monitor for one individual training session to calculate average heart rate (i.e., percent of maximum heart rate or % HR Max) under warm-up, WOD, and cool down conditions. Average heart rate intensity was determined for each condition. The heart rate response was typical of moderate-intensity aerobic exercise during warm-up with an average heart rate intensity of 70+12%. For training (WOD), average heart rate intensity was 82+17%. For cool down average heart rate intensity was 67+4%. Warm-up and cool down was at a moderate intensity while the WOD was at a vigorous intensity. These intensity responses meet the American College of Sports Medicine guidelines for health and performance benefits.

### **Health and Human Performance Poster Session**

#### **Scoliosis in Teenagers and Common Treatment and Intervention Methods : A Systematic Review of Sportdiscus and AMED Literature**

**Jana Greene**

Faculty Mentor(s): David Sallee                      Health and Human Performance  
Tuesday, April 21                      Heth 022                      5:00 pm-5:30 pm

Scoliosis is a condition that involves an abnormal curving of the spine. It is one of the more common spinal abnormalities of today. According to thousands of studies and many measurements, the prevalence of scoliosis is about 8.3 % among adults in the United States ages 25-74; women being the more affected gender. However, the abnormality is much rarer in children and adolescents, with a prevalence of between 3 and 5 individuals affected per every 1,000. The methods to help control the spinal curvature vary in severity due to how severe the curvature is to begin with. The types of scoliosis can vary from congenital to neuromuscular and infantile to adolescent. This review will touch on each of the types of scoliosis and their treatment methods and formulate a consensus on the most effective treatments in use today. Scoliosis treatments vary in intervention strategies and the severity of said interventions. There are treatments ranging from physical therapy, back bracingorthosis, and surgeries, depending on the degree of curvature, complications due to the spinal curve, the well-being of the patient and the time frame the patient has to correct the curve if medically needed. The choice of intervention and treatment is that of the patient and practitioner. According to the results found during the search, the most common interventions seem to be bracing and spinal surgery. Physical therapy is used in many cases but not as a primary treatment method. It is often paired with the two other methods of treatment. The search results also talk about the risks and effectiveness for each of these three methods. These methods have their own levels of being effective and some place a greater risk on the patient to provide a more permanent outcome.

## **Health and Human Performance Poster Session**

### **Crossfit Intensity**

**Todd Turner**

Faculty Mentor(s): J.P. Barfield

Health and Human Performance

Tuesday, April 21

Heth 022

5:00 pm-5:30 pm

Crossfit is a new training program that is gaining popularity across the United States. Little research has been done to document intensity of this workout regime and therefore expected training benefits are unknown. To determine projected training adaptations to Crossfit we must first document the training intensity of a training session. The purpose of this study was to determine if Crossfit athletes heart rate met vigorous intensity threshold, an intensity both associated with health and performance benefits. Ten athletes (Mean age = 23.3 + 5.7 years) from a local Crossfit program were assessed. A Polar FT7 heart rate monitor was used to test average heart rate intensity during warm up and WOD (workout of the day). One athlete was tested at a time for a full training session. The percent of athletes who exceeded vigorous activity threshold (60% heart rate reserve) was determined. Data were collected from ten Crossfit athletes. Seventy percent of participants averaged a vigorous intensity heart rate during warm up and 80% averaged vigorous heart rate during the WOD. As a group, participants averaged 65% and 85% of heart rate reserve during warm up and WOD respectively. Crossfit proves to be a high intensity workout that raises the heart rate above both health and performance adaptation thresholds.

### **The Impact of Alcohol Consumption and Its Effect on Depression, Suicide Ideation and Attempt in Adolescents**

**Katelynne Seager**

**Danielle Bishop**

Faculty Mentor(s): David Sallee

Health and Human Performance

Tuesday, April 21

Heth 022

5:00 pm-5:30 pm

The impact of alcohol on the mental health and safety of adolescents is of particular interest, especially in regard to current research linking the practice to depression, suicide ideation and attempt. The purpose of this research is to identify the relationship between alcohol consumption in adolescents and its effect on depression, suicide ideation and attempt. The goal is to provide additional support for the theory that alcohol consumption by adolescents is correlated with depression, which may be a predictor of suicide ideation and attempt. Data drawn from communities in Southwest Virginia revealed the following odds ratios. High school students who indicated that they had five or more drinks of alcohol within a couple of hours within the past 30 days were: 2.5 times more likely to report symptoms associated with depression, 3.4 times more likely to report making a plan to commit suicide, and 2.9 times more likely to report a suicide attempt. Sharing this information could be valuable for the creation of prevention practices for students on campus as well as the larger community.

## ***Interdisciplinary Oral Presentations***

### **The Emergence of ISIS**

**Annabel Bergin**

Faculty Mentor(s): Brock Cutler  
Tuesday, April 21

Heth 044

History  
4:20 pm-4:40 pm

This research project focuses on the Islamic State of Iraq and Syria (ISIS), and how they gained their rise to power. My paper will begin by discussing background information about ISIS. This will include their origins, history, goals, beliefs, and the role of Islam. It will also focus on how the Islamic State grew successful and powerful, and what could have been done to prevent the militant rise. More background information will consist of the relationship between the United States and the Middle East, history of the Arab region, and Europe's role in Middle Eastern affairs. My project will contain a comparison to the al-Qaeda terrorist group, discussing the relationship, similarities, and differences between the two religious organizations. More research will be included covering the United States foreign policy regarding ISIS. The paper will include research on key figures and leaders of ISIS, and their influence on the organization, and later will conclude with a prediction of ISIS's future and their influence on the Middle East, Europe, and the United States. After conducting and examining much research, I have concluded that ISIS's potent mix of extreme religious beliefs and military skill has arose because of the restructure and reorganization of the group, the civil war in Syria, and the socio-political conditions in Iraq. The rest of the paper will include important events and facts to support these three reasons for their emergence.

### **The I-Told-You-So Parties: Western Europe, Terrorism, and the Success of the Far Right**

**Kyle Rosner**

Faculty Mentor(s): Paige Tan  
Tuesday, April 21

Heth 044

Political Science  
4:40 pm-5:00 pm

The 2014 elections for European Parliament saw a record number of far right political parties elected to power, gaining 15 more seats from 2009. Domestically, these parties have seen even greater amounts of success, with France's National Front and the Danish People's Party becoming the largest parties. Western Europe's far right political parties' rise to power has soared since 9/11, to the surprise of many. This increased popularity is due to a variety of reasons, ranging from economic crisis to Euro-skepticism, but perhaps none more than terrorism. During this same period of success, Western Europe has experienced dozens of terrorist attacks from Islamic extremist groups and far right parties have become the "I told-you-so" parties after such attacks. The parties chosen for study, the Danish People's Party, France's National Front, the United Kingdom Independence Party, and the Dutch Party for Freedom, have all found great success, used the I-told-you-so strategy, and reacted to terrorist attacks differently. This paper will examine each party's message in response to a variety of attacks and analyze why particular strategies were pursued. For example, a party's proximity to mainstream power determines its response to attacks as illustrated by the contrast between the French National Front's reaction to 9/11 in 2001 and Charlie Hebdo in 2015. Through analysis of their political tactics, the rising power of these parties can be better understood.

## ***Interdisciplinary Oral Presentations***

### **Gabriel Garcia Marquez**

**Rebecca Stamm**

Faculty Mentor(s): Jolanta Wawrzyccka    English  
Tuesday, April 21            Heth 044            5:00 pm-5:20 pm

This presentation is on the subject of Nobel Prize laureate Gabriel Garcia Marquez. The focus of this presentation is on Marquez's life, his accomplishments, and his contribution to the arts. The presentation takes an in-depth look at Marquez's childhood and how his early years affected his later career, as well as his political and personal choices. Two of his most famous novels, *Two Hundred Years of Solitude* and *Chronicle of a Death Foretold*, are carefully analyzed and explained. Marquez's Nobel Prize in Literature is featured, including not only his reasons for receiving this award, but also a snippet of his Nobel lecture. Throughout his life, Marquez was awarded various awards for his contribution in both literature and film. These awards are showcased and explained within this presentation. Marquez's impact on the world can be seen in today's literature, film, and even in pop culture. This presentation makes an effort to highlight key event and accomplishments in Marquez's life, while also showing whom the man behind these incredible works really was.

### **Boris Pasternak: The Poet Behind Doctor Zhivago**

**Jesse Harden**

Faculty Mentor(s): Jolanta Wawrzyccka    English  
Tuesday, April 21            Heth 044            5:20 pm-5:50 pm

This presentation looks at the life and work of Boris Pasternak, the Russian poet and Nobel Prize-winning author of "Doctor Zhivago." The research for this presentation aims to answer three main questions: Who was Boris Pasternak, how did he become such a notable poet and author, and what made his works Nobel-worthy? This goal was accomplished mainly through the use of secondary online sources and is divided into several areas, noting Pasternak's background & early life, influences, a brief analysis at his poetry and "Doctor Zhivago", why his literary works were Nobel-worthy, and finally his death and impact. Notable influences on Pasternak covered in this presentation include Alexander Scriabin, the famous composer, and Leo Tolstoy, the author of "War and Peace", among others. For poetry, Pasternak's poem, "Hamlet", which is included in "Doctor Zhivago", is covered. For "Doctor Zhivago", a brief analysis of the novel, its adaptations, and importance in the world at the time it was published. Finally, the presentation ends with Boris Pasternak's controversial fate after winning the Nobel Prize, his death, and his incredible legacy on the world.

## ***Biology Oral Presentations***

### **Arsenic Production By Environmental Bacteria And Bacteriocins**

**Nathan Pirino**

**Alan Schano**

Faculty Mentor(s): Georgia Hammond

Biology

Tuesday, April 21

Bonnie Auditorium

4:45 pm -5:00 pm

Tube-well construction in Bangladesh since the 1980s has exposed a large population to the toxic effects of arsenic compounds in drinking water. This health hazard has highlighted the need for analyzing how arsenic becomes concentrated in water sources. Previous research has demonstrated the effects of microbial processes on the rate at which arsenic is leached from mineral compounds into water. The Brinton Arsenic Mine in Floyd, VA provides a unique opportunity to study environmental bacteria and their mobilization of arsenic compounds. These bacterial processes involve conversion between different forms of arsenic, the two most prevalent being arsenate (AsV) and arsenite (AsIII). Both types of compounds can interfere with protein function and metabolic processes in humans and bacteria alike, with arsenite being the more toxic of the two. Our research goal is to design a laboratory model system in which we use bacteriocins to diminish bacterial production of these toxic forms of arsenic. Bacteriocins are proteins secreted by bacteria to inhibit the growth of competitive species. Using bacteriocins to kill bacteria that contribute to the mobilization of arsenic in the environment can be a significant step towards reducing the amount of arsenic that reaches surface and ground water systems.

### **A Systemic Parasitic Infection of the Lined Shore Crab, *Pachygrapsus Crassipes*, by an Unknown Scuticociliate**

**Daniel Metz**

Faculty Mentor(s): Robert Sheehy

Biology

Matthew Close

Biology

Tuesday, April 21

Bonnie Auditorium

5:00 pm-5:15 pm

A previously unreported parasitic infection of lined shore crabs, *Pachygrapsus crassipes*, was discovered in a salt marsh in southern California. *P. crassipes* being a common and well-studied organism, the discovery of a widespread infection by an unidentified parasite ciliate in the order Scuticiliatida was unexpected. Prevalence and infection intensity data were collected, and the transmission ecology of the parasite was explored both in the lab and using controlled field enclosures. Morphological measurements were obtained from both live ciliates and ciliates stained using silver carbonate impregnation. The pathology of this infection is currently being explored through examination of thin-sectioned and stained paraffin-embedded tissues of infected and uninfected crabs. Parasitism manifested as a systemic infection, easily identifiable by heavy parasitemia in a fresh hemolymph smear. Live tissue squashes suggested histophagy, as ciliates were observed to be arrayed cytosome-first along crab muscle tissues. More detailed histological examination will elucidate this pathology. Phylogenetic analysis using sequence data from both nuclear and mitochondrial genes is underway to determine a rough evolutionary framework into which this ciliate likely falls. The parasite's morphology was found to be inconsistent with published descriptions of known scuticociliates, both those parasitic to crustaceans and other marine invertebrates and free-living. Genetic characterization of the ciliate is ongoing, and will be used to construct a set of phylogenetic trees in order to aid in identification of this potentially undescribed parasite.

## **Biology Oral Presentations**

### **Trouble with Trenbolone? The Effects of a Common Runoff Pollutant**

**Emily Guise**

Faculty Mentor(s): Sara O'Brien

Biology

Tuesday, April 21

Bonnie Auditorium

5:15 pm-5:30 pm

Trenbolone is a relatively new endocrine disrupting chemical that acts as a testosterone mimic, and is considered to be one of the most powerful anabolic steroids in use (Saaristo 2013). Trenbolone has three times the bonding affinity of testosterone and has a half-life of a year (Orlando 2004). With extensive usage in the beef cattle industry as a growth promoter, trenbolone has been found to appear in animal waste and runoff from cattle feed lots (Bartelt-Hunt 2012). Such a stable and potent molecule being released into the environment could potentially cause devastating effects on freshwater environments. As a potent androgen, trenbolone could increase masculine traits in freshwater species, and may disrupt reproductive processes. When exposed to trenbolone, the freshwater fish species, *Gambusia holbrooki* have shown significant changes to their morphology and breeding behaviors. Identification of these changes will provide information helpful to evaluate and understand the environmental risk factor of trenbolone use.

### **Assessing Herpetofaunal Diversity at Selu Conservancy**

**Matti Hamed**

Faculty Mentor(s): Matthew Close

Biology

Tuesday, April 21

Bonnie Auditorium

5:30 pm-5:45 pm

Recent reports on amphibian and reptile declines have stressed the need for long-term data on underrepresented taxa. In 2014 we began collecting long-term data on herpetofaunal diversity and abundance to detect trends in community structure as well as population densities and demographics at Selu Conservancy in Montgomery County, VA. We examined trap capture rate for each species found, assessed capture rates throughout the season, and compared species composition and relative abundance between two different microhabitats. We identified fourteen different species of reptiles and amphibians, including one enigmatic salamander species morph. Pitfall traps captured the highest diversity of amphibian and reptile species, but funnelbox traps captured some species that were not recovered by the pitfall traps. Capture rates increased during early summer and early fall while they decreased between July and August. Our preliminary comparison of the two sites indicates that the sinkhole and upland sites vary in the number of different species and in the densities of species supported. Specifically, our sinkhole site consisted of ten species with a relatively high abundance of *Plethodon cinereus*, while the upland site was composed of six species with a relatively high abundance of *Anaxyrus americanus*. Additional data are needed to further support variations with microhabitat, and additional field seasons are needed to assess long-term temporal changes.

### **Biology Oral Presentations**

#### **Using Land Use History and Site Conditions to Predict Invasive Plant Distribution in Central Appalachia**

**Jesse Daniels**

**Josh Oliver**

Faculty Mentor(s): Christine Small

Biology

Tuesday, April 21

Bonnie Auditorium

5:45 pm-6:00 pm

Invasive plants quickly dominate natural areas and severely affect native plants, biodiversity, and ecosystem functions. This study examined the susceptibility of central Appalachian forests to invasive species. Vegetation and site conditions were surveyed from 2006 to 2008 in 140 sample plots (100-400 m<sup>2</sup>) in forests, fields, and wetlands at the Selu Conservancy, VA, to determine best predictors of invasive plant abundance. GIS maps digitized from 1954, 1975, and 2005 aerial photos were used to classify plots by historical land use. Fifty-one invasive species occurred in sample plots. Multiflora rose (*Rosa multiflora*) was most prevalent (62.9% of plots). Forests had lower invasive cover (15.5%) than other habitats, but very high invasive frequency (85.5%) and plant species richness (44 spp.) Multiple regression identified species richness ( $r = 0.417$ ), moisture ( $r = 0.357$ ), 1954 land use ( $r = 0.309$ ) and hydrology ( $r = 0.213$ ) as the most influential factors in predicting overall invasive abundance in forests (overall  $r^2 = 0.447$ ). The best predictors of multiflora rose abundance were soil organic matter, species richness, 1954 land use, and herbaceous cover (overall  $r^2 = 0.440$ ). Model accuracy will be tested through GIS modeling and field surveys to help identify areas of high susceptibility to land managers. While forested habitats often appear more resistant to invasive species, areas with high richness, moisture, and agricultural history should be monitored vigilantly. Many of these factors can be acquired from satellite imagery, topographic maps, and soil surveys, saving time and resources during invasive assessments.

## **Biology Poster Session**

### **Extraction of Alkaloids from Dieffenbachia**

**Eyob Ayalew**

Faculty Mentor(s): Gary Cot'e

Biology

Tuesday, April 21

Heth 014

6:00 pm-7:30 pm

Dieffenbachia seguine (Dumbcane) from the Araceae family contains crystals of calcium oxalate in all parts of the plant. Crystals have been observed in many other plants and, although their function is not fully understood, they are believed to deter predators from consuming the plant. In addition to the irritation of eating crystals, the crystals may function to poison predators by releasing toxins into abraded tissue. Evidence of this may be bifurcated cells, which forcefully eject needle-like crystals that could function as microscopic toxic darts. The distribution of crystals in the flowers of 21 species of aroids were examined (Cot'e and Gibernau, 2012, Am. J. Botany 99:1231-1242). Crystals were arrayed in an arrangement consistent with the protection of male and female gametes (pollen and ovules), but were also found in flower parts offered as a food bribe to pollinator beetles. Our hypothesis is that toxins may be associated with crystals that protect gametes, but not with crystals in food bribes. Dieffenbachia flowers were obtained from French Guiana. We are extracting putative alkaloids from different parts of the flowers and testing for their existence. We will present data comparing gamete-protecting flower parts to food bribes.

### **Does Infection of the Freshwater Snail Helisoma Trivolvis by Trematode Parasites Induce Behavioral Changes?**

**Cari McGregor**

Faculty Mentor(s): Jeremy Wojdak

Biology

Tuesday, April 21

Heth 014

6:00 pm-7:30 pm

Many aquatic snails have infections that vary in degree of intensity. Helisoma trivolvis are freshwater snails that serve as an intermediate host for Echinostoma trivolvis. The definitive hosts for E. trivolvis are muskrats (Ondatra zibethicus), which eat H. trivolvis and ingest E. trivolvis completing the parasites life cycle. The purpose of this study was to see if there were any behavioral changes in trematode infected H. trivolvis. More specifically would intensity of infection change the snail's behavior, causing the H. trivolvis to expose itself more often, possibly increasing the parasites transmission? Experiments were conducted to see if higher infected H. trivolvis would choose algae over a covered habitat. The results showed that there was no difference in the behavior for low-infected snails and high-infected snails.

### **Biology Poster Session**

#### **Behavioral and Physiological Correlates of Snake Feeding Performance Based on Ingestion Ratio**

**Renee Jessee**

Faculty Mentor(s): Matthew Close  
Tuesday, April 21 Heth 014

Biology  
6:00 pm-7:30 pm

In general, larger snakes are expected to consume larger prey, but why is that, and how do they know the size limitations of what they can physically consume? To answer this we are analyzing the feeding behaviors of 15 Texas rat snakes (*Pantherophis obsoleta*) fed similar meal sizes (based on mass) but consisting of different sizes and numbers of prey items: One group of snakes is offered one large mouse, group 2 is offered both one medium sized mouse and one small sized mouse, and group 3 is offered 3 small mice. Feeding trials are recorded and the videos are analyzed for the following behavioral measures: investigatory time, avoidance time, handling time, and swallowing time. In addition to behavioral measures, corticosterone levels will also be measured using enzyme-linked immune assay (ELISA) tests of snake plasma following feeding trials to determine whether snakes are possibly stressed when presented with larger prey. Based on preliminary work, we expect the following: 1) snakes are capable of distinguishing a prey item that is too large to ingest before attempting to ingest it, 2) feeding behaviors will negatively correlate with the size of the prey, particularly at the largest prey size class, 3) avoidance behaviors will positively correlate with the size of prey, and 4) corticosterone levels will rise in response to the introduction of relatively large prey into the diet. This study is ongoing and new data will be added during the spring and summer 2015.

#### **The Effects of Vespa Amino Acid Mixture (VAAM) on the Common House Fly, *Musca Domestica*.**

**Chelsea Rasnic**

Faculty Mentor(s): Jason Davis  
Tuesday, April 21 Heth 014

Biology  
6:00 pm-7:30 pm

VAAM is an amino acid mixture based on an extract from Japanese giant hornet (*Vespa mandarinia japonica*) larval saliva. VAAM is used in the health industry for its supposed ability to increase fat metabolization rate and build endurance. Recent studies in our laboratory have found that VAAM does improve endurance and metabolism, but it also significantly increases stress-induced mortality. In the current study, I have attempted to further elucidate the impact of VAAM modulation on house fly recovery from cold and CO<sub>2</sub> gas knockout, impacts on weight, and internal temperature changes. Our results show that flies treated with VAAM recover quicker from extreme cold temperatures and have an overall lower average weight than flies not treated with VAAM, though the exact mechanisms underlying this process remain uncertain.



## **Biology Poster Session**

### **Calcium Oxalate in Petioles of Deciduous Leaves**

**Chris Smith**

**Stephen Lackney**

**Skyler Carrell**

Faculty Mentor(s): Gary Cote

Biology

Tuesday, April 21

Heth 014

6:00 pm-7:30 pm

Microscopic intracellular crystals of calcium oxalate are produced throughout the plant kingdom. These crystals are thought to defend against herbivory, but other roles have also been suggested, including that they sequester calcium from cell walls during controlled breakdown of plant tissues. One case of such controlled breakdown is the abscission of spent leaves and floral parts, in which a layer of cells with weakened walls is formed. Calcium oxalate crystals have been extensively studied in leaf blades of many different plants, but there have been few reports of crystals in leaf petioles. John Huth and Gary Cote at Radford University compared distal petiole tips (at the point of twig attachment and ultimate abscission) from spring, summer, and autumn leaves of several deciduous tree species. *Ginkgo biloba*, *Acer saccharum*, *Crataegus mollis*, *Carpinus caroliniana*, and *Tilia americana* petioles showed a dramatic increase in crystal number over the seasons. We have extended and quantified these results by measuring the concentrations of calcium oxalate in petiole tips of these species at different times throughout the season. Results confirm a dramatic increase in calcium oxalate levels in four of the species over the growing season (*Ginkgo* results are still incomplete). This is consistent with a role of crystals in preparing the petioles for abscission. We are also measuring levels of calcium oxalate in leaf blades to determine if the pattern is specific to petioles.

### **Impacts of Ethanol and Nicotine Withdrawal on Fecal Immunoglobulin A Levels in Rats**

**Henry Harris**

**Ryan Lingg**

Faculty Mentor(s): Sarah Redmond

Biology

Dayna Hayes

Psychology

Tuesday, April 21

Heth 014

6:00 pm-7:30 pm

Alcohol and nicotine are both well known to cause depression of immune response; however, the effects of withdrawal from these substances have not been extensively explored. The impacts of exposure may arise from direct depression of the immune system or from the stress associated with exposure and withdrawal. In this study the immune response of adult male *Rattus norvegicus* was tested following exposure to both alcohol and nicotine, alcohol alone, nicotine alone, or neither ( $n = 4/\text{group}$ ). Nicotine or saline was administered 3 times per day for 10 days (0.3 mg/kg in saline; subcutaneous). Alcohol (25% w/v in nutritionally complete diet; intragastric) or isocaloric dextrose-containing diet was administered during days 7-10 of nicotine administration following the same thrice-daily schedule. Fecal samples were collected 4, 7, 11 and 14 days post exposure and fecal extractions were tested via ELISA to measure immunoglobulin A (IgA) levels. The effects of ethanol exposure, nicotine exposure, time post-exposure, and the interactions of the three were tested using a 3-way ANOVA. There was a significant decrease in IgA levels in the nicotine group on day 7 ( $p = 0.015$ ), followed by an increase in IgA levels measured on day 11 in ethanol exposed groups ( $p = 0.011$ ). This fluctuation in mucosal immunity following binge exposure to ethanol suggests that the effects of even short term alcohol use impact the immune response during a withdrawal period.



### **Biology Poster Session**

#### **Establishing DNA Barcoding Protocol for Identification of Unknown Species**

**Brittany Justice**

Faculty Mentor(s): Bob Sheehy

Biology

Tuesday, April 21

Heth 014

6:00 pm-7:30 pm

DNA Barcoding is an exceedingly helpful tool in the identification of an unknown species based on blood or tissue samples. Many species have DNA sequence data compiled in The International Barcode of Life (iBOL) databank, called the Barcode of Life Data Systems (BOLD). Comparison of DNA sequence data to sequences in the database allows for efficient identification of a sample taken from an unknown species. In this study, various procedures were tested to quickly and inexpensively isolate suitable DNA for PCR amplification. Primer cocktails were also tested to determine their effectiveness for amplification of different taxa within broad taxonomic groups, such as fish, invertebrates, terrestrial vertebrates, and fungi. Specific DNA barcode regions were amplified and characterized through the use of appropriate primers and PCR amplification and agarose gel electrophoresis. DNA sequencing will be conducted and DNA sequences will be compared with sequences in the BOLD databank to determine species classification. The goal of this study is to establish protocols which will allow the application of DNA Barcoding to the examination of biodiversity at the Selu conservancy, as well as assist other Radford University researchers with their studies.

#### **Testing and Rehabilitating Stream Ecosystems in Knoxville, Tennessee, 2014**

**Fallon Parker**

Faculty Mentor(s): Karen Power

Biology

Tuesday, April 21

Heth 014

6:00 pm-7:30 pm

The testing and regulating of freshwater bodies in Tennessee are conducted by the Tennessee Department of Environmental Conservation in the Water Resources sector. In summer 2014, I helped conduct aquatic invertebrate and vertebrate surveys, habitat assessments, and heavy metal testing in 16 counties nearest the TDEC Knoxville office. These surveys are part of a cycle where each stream is tested every 5 years and regulated appropriately. Many of these streams are on or have been on the 303d list, also known as the dirty waters list. Monitoring their recovery (or lack thereof) will assist with long-term management of these watersheds. One of these 303d streams that my poster will focus on is Red House Branch. This branch was polluted by excessive sedimentation by Short Mountain Silica, a sand-extracting company in Mooresburg, Tennessee. After failing to be listed as an Exceptional Tennessee Water in August of 2001, sediment loads from Short Mountain Silica were restricted. We have since documented marked improvements in the stream ecosystem, including an increase in invertebrate density, an increase in pollution-intolerant invertebrates, higher dissolved oxygen concentrations, colder water temperatures, and higher specific conductivity. We also have documented improvements or increased variation in flow, depth, and sediment.

### **Biology Poster Session**

#### **Monitoring the Status of Gray Bats, 2009-2014, Since the Onset of White-Nose Syndrome**

**Brenna Hyzy**

Faculty Mentor(s): Karen Powers  
Tuesday, April 21 Heth 014

Biology  
6:00 pm-7:30 pm

The gray bat (*Myotis grisescens*) is a federally endangered species whose summer range extends across the upper Tennessee River Basin. Gray bats over-summer in southwest Virginia and generally overwinter in Tennessee hibernacula. Prior to the onset of White-nose Syndrome (WNS) in Virginia, gray bats were beginning to increase in abundance. Given the potential for reversal in recovery trends seen in the last 10-20 years, we initiated yearly surveys in 2009 to monitor the health of known summer populations in Virginia. Our objectives were to examine the relative health of these bats using body mass index (BMI), and determine any changes in juvenile recruitment across sites and years. In 2014 we completed data collection and analysis. We did not find any marked changes in BMI across years for gray bats. This suggests that surviving bats are either not being negatively impacted by WNS or have recovered sufficiently by August-September as to not document obvious differences across years. In the age ratio analysis, after isolating our analysis to only the pictures that we had definitively aged via backlit photos (2010-2014), we found slight declines that may be biologically significant, though not statistically significant. However, this trend is worth continued monitoring. As gray bats have only recently shown to be prone to WNS infection (2012).

#### **Wildlife Show-and-Tell: An Internship at the Discovery Center, Claytor Lake State Park**

**Kelsey Wessman**

Faculty Mentor(s): Karen Powers  
Tuesday, April 21 Heth 014

Biology  
6:00 pm-7:30 pm

State parks are a type of protected areas for wildlife preserving areas from extreme levels of human activities. However these parks also are established so that tourists may appreciate their natural beauty, historic interest, or recreational potential. Claytor Lake State Park, located in Dublin, Virginia, was associated with river damming for hydroelectric power for the Appalachian Power Company. Beneficially, this new lake that visitors could enjoy became Claytor Lake, and land was set aside for the creation of the state park. As an intern at the state park, my duty was to collect the small wild animals and display them at the Discovery Center so people could see them closer and learn about them from the naturalistinterpreter. My main responsibility at the center was to feed the animals at the hour called Frenzy Feeding when the visitors came in to watch the animals feeding. My poster highlights the natural history of the American toad (*Anaxyrus americanus*), painted turtle (*Chrysemys picta*), and eastern garter snake (*Thamnophis sirtalis*), which were the most exciting and active to watch when they fed. These three often can be seen in the wild at the park, and their commonality makes them useful teaching tools for visitors. My internship benefited the tourists of Claytor Lake State Park, as they were introduced to wildlife who inhabit this protected area. At the same time, I benefited from this project by improving my identification skills, animal care skills, and learning of new ways to interact with the public.

### **Biology Poster Session**

#### **Transcription and Splicing of CYP4F3 in HepaRG cells**

**Cassandra Boerstler**

**Kristy Galloway**

**Arpitha Rajashekara**

**Zeynep Aydin Burakgazi**

Faculty Mentor(s): Peter Christmas

Biology

Tuesday, April 21

Heth 014

6:00 pm-7:30 pm

Cytochrome P450s enzymes metabolize many prescription drugs in the liver, but the expression of these enzymes changes during inflammation, and this can modify drug pharmacokinetics in unpredictable ways. The Cytochrome P450 4F3 (CYP4F3) gene is alternatively spliced and generates two enzymes with distinct functions. One splice form, CYP4F3B, is induced by the cholesterol-lowering statin drugs. The other splice form, CYP4F3A, regulates inflammation by inactivating the chemoattractant leukotriene B4. Changes in CYP4F3 gene expression and splicing during inflammation have potentially important consequences for drug usage, but have not been investigated. We are using real time PCR to measure changes in expression of CYP4F3A and 4F3B in human liver cells in response to statins and inflammatory signals. This provides a model system that will enable us to identify the factors that regulate CYP4F3 transcription, splicing, and activity.

#### **Growth of *Gromphadorhina Portentosa* (Madagascar Hissing Cockroach) from Royalactin Produced by Transgenic *Escheria Coli*.**

**Steve Gallas**

**Marleigh Durham**

Faculty Mentor(s): Joyce Caughron

Biology

Jason Davis

Biology

Tuesday, April 21

Heth 014

6:00 pm-7:30 pm

The purpose of this research is to see if the protein royalactin is both necessary and sufficient for inducing increased growth in invertebrates such as Madagascar hissing cockroaches (*Gromphadorhina portentosa*). Previous work has shown that consumption of royal jelly can induce growth in invertebrates and has suggested that the protein royalactin is the most likely active agent in the process. In the current study we explore the effect of isolated royalactin to see if it is similar or different from the total royal jelly mixture. Royalactin was first isolated into an inclusion body inside *E. coli* and then cloned to pET19b-royalactin. After the cloning was successful a SDS-PAGE was run in order to validate the production of the protein. With the success of the SDS-PAGE an assay was designed to isolate royalactin so that the cockroaches could be administered to the roaches on a weekly basis. The experimental and control group were both weighed at the onset of treatment. Although creating the treatments have been successes it is still too early to observe any substantial variation between the two groups.

## **Biology Poster Session**

### **Computational Molecular Modeling of Plant Proteins**

**Charnele Johnson**

Faculty Mentor(s): Tara Phelps-Durr      Biology  
Tuesday, April 21      Heth 014      6:00 pm-7:30 pm

Both plants and animals have populations of undifferentiated stem cells. During an organism's development, the stem cells undergo cell division producing two daughter cells. One daughter cell becomes a stem cell and therefore helps maintain the stem cell population. The other daughter cell differentiates into a specialized cells that allows the organism to function. Differences in gene expression are what determine whether a daughter cell remains undifferentiated or differentiates into a specialized cell. For example, in the mustard plant Arabidopsis, a group of genes known as the KNOX genes are expressed in the undifferentiated cells. Once cells have differentiated into specialized cells, such as leaf cells, the KNOX genes must be turned off and kept off in order for proper development to continue. The ASYMMETRIC LEAVES1 (AS1) and 2 (AS2) genes encode transcription factors that keep the KNOX genes off in differentiated cells. Experiments have shown that the AS1 and AS2 proteins physically interact with each other; however, the exact regions of the proteins that make contact are unknown. Part of the difficulty in determining the regions of contact is that neither the AS1 nor AS2 protein has been crystallized; therefore, the exact 3D structure of these proteins is unknown. Here we used molecular modeling software to predict the 3D structure of AS1 and AS2. We then computationally modeled the physical interaction between the AS1 and AS2 proteins.

### **Exploring the Synergistic Effects of Estrogen-Mimicking Endocrine Disrupters on the Physiology of *Gambusia Holbrooki***

**Katharyn Self**

Faculty Mentor(s): Sara O'Brien      Biology  
Tuesday, April 21      Heth 014      6:00 pm-7:30 pm

Endocrine disrupting chemicals (EDCs) are environmental chemicals that interfere with the normal function of the endocrine system. They are known to cause negative effects in hormone responsive target organs, tissues, and cells. Humans are exposed to EDC's in their everyday environment, especially through food packaging, food preservatives, and personal care products. Two EDC's that are commonly found are Bisphenol-A (BPA) and Butylated hydroxyanisole (BHA). BPA leaches into the food from the protective inner coating of canned foods and other food storage devices. BHA is found in food packaging as well as consumer and industrial animal feed to prevent rancidity. Both BPA and BHA are considered to be estrogenic mimicking chemicals. Previous studies have found that high amounts of external estrogen and estrogen like chemicals in a variety of organisms have resulted in morphological abnormalities and have been linked to early puberty, decreased sperm counts, sexual dysfunction, and higher relative frequencies of reproductive cancers (Jobling et al, 1995). Additionally, exposure to these EDCs may result in feministic behaviors in some species (Molina et al, 2011). Currently most EDCs have been tested on model organisms individually, however there is growing concern that humans and other organisms are exposed to a milieu of chemicals simultaneously. Our study examines the influence of BPA and BHA, both singularly and synergistically on the morphological and behavioral characteristics of the mosquitofish (*Gambusia holbrooki*). Using this ecologically relevant model, we begin to elucidate the physiological effects of living in a complex chemical exposome.

### ***Biology ePortfolio Presentations***

#### **Impacts of Stress Associated with College Major in Immune Response**

**April Tingle**

**Cassandra Boerstler**

**Kasey Neely**

**Tanya Schultz**

Faculty Mentor(s): Sarah Redmond

Biology

Tuesday, April 21

Heth 014

6:00 pm-7:30 pm

Immunoglobulin A (IgA) levels decrease during stressful events because the body becomes overwhelmed and produces fewer protective antibodies. IgA provides protection for mucosal membranes and defends against pathogens. Individuals undergoing stressful events are more susceptible to infection. Different academic majors may be more or less stressful, and, therefore, the IgA levels of students in these majors may differ. We will measure salivary IgA levels of students in biology, communication, accounting, and music majors and compare them to correlate to the stress levels of students in those majors.

#### **Impacts of Smoking on Human Salivary IgA Levels**

**Zeb Pike**

**Mary Currier**

**Manuella De Carvalho**

**Leia King**

Faculty Mentor(s): Sarah Redmond

Biology

Tuesday, April 21

Heth 014

6:00 pm-7:30 pm

The purpose of this experiment is to determine if there is a difference in the level of stress in smokers and non-smokers. Stress levels are directly correlated to the amount of salivary immunoglobulin A (IgA), an antibody secreted by mucosal membranes. The level of IgA indicates how well the immune system is functioning. IgA levels will be assessed utilizing an ELISA test on saliva samples of the test subjects. Each experimental group will contain 30 individuals of the Radford University campus community. The data will be evaluated to show if there is a statistically significant difference between the mean IgA levels of smokers and non-smokers in the study.

#### **How Stress Levels in College Students Studying in the Library Vary Depending on the Time of Day**

**Marleigh Durham**

**Seth Harrison**

**Megan Collier**

**Sara Jones**

**Danielle Lattanze**

Faculty Mentor(s): Sarah Redmond

Biology

Tuesday, April 21

Heth 014

6:00 pm-7:30 pm

In our research, we are using an ELISA test in order to observe immunoglobulin A (IgA) levels in college students while they study. Three experimental groups will be used: early morning studiers (8:00am-10:00am), mid-day studiers (2:00pm- 4:00pm) and late night studiers (10:00pm- 12:00am). Due to the nature of IgA and decreased production during stress, we can see how varied times of study affect the stress levels of college students. It is also important to take into consideration the fluctuations of stress markers, such as corticosterone and IgA levels, of humans during everyday life. Corticosterone is released through the endocrine system and provokes emotions such as anxiety and stress. Although the varied levels of corticosterone will not be tested, IgA levels will provide us with a related measurement of the varied levels of stress of these students. We expect to observe how this stress marker is secreted during a student everyday life; but hope we can pinpoint a particular time period in which students are producing more IgA while studying. This study will enable us to identify the time of day in which students who are studying are more stressed out and provide insight on how stress markers vary dependent on the time of day.

## ***Biology ePortfolio Presentations***

### **Impacts of Exercise on College Student Salivary IgA levels**

**Hannah Markowitz**

**Henry Harris**

**Eyob Ayalew**

Faculty Mentor(s): Sarah Redmond

Biology

Tuesday, April 21

Heth 014

6:00 pm-7:30 pm

Immune system function can often be an indicator of stress levels in humans. High levels of immunoglobulin A (IgA) in the saliva can indicate high levels of stress in a person. In this study we will be looking at the effect of exercise on stress in college students by assessing salivary IgA levels in two experimental groups (n=30 per group): one group sampled directly before exercising at the university gym and one sampled directly after exercising there. We will be collecting samples of saliva from these students and comparing IgA levels between experimental groups. We hypothesize that the students who have just finished exercising and are leaving the gym will have lower IgA levels, having just relieved some stress by working out. Results from this research could have implications for college students looking for ways to reduce stress in their lives.

### **A Study on Studying : Which is Better for Stress? Studying in groups, or studying alone?**

**Elizabeth Grandy**

**Mohammad Iqbal**

**Holly Rindorf**

**Ashley Sherertz**

Faculty Mentor(s): Sarah Redmond

Biology

Tuesday, April 21

Heth 014

6:00 pm-7:30 pm

Secretory immunoglobulin A (IgA) is found in the mucous membranes of respiratory passages and gastrointestinal tracts. As part of our research on the effect of stress on the immune system we will be collecting saliva samples to measure levels of secretory IgA. We will compare the IgA levels and, therefore, stress levels of students studying in groups to students studying on their own and students who aren't studying at all, to determine which study method lowers stress levels. We predict that higher levels of secretory IgA, indicative of higher stress levels, will be found in students studying alone, while students in study groups will have lower levels of secretory IgA, and those who are not studying will be the lowest.

### **My Eportfolio: An Online Identity for Professional Gain**

**Emily Guise**

Faculty Mentor(s): Sara O'Brien

Biology

Erin Webster-Garrett

English

Tuesday, April 21

Heth 014

6:00 pm-7:30 pm

An ePortfolio is an excellent opportunity to create an innovative and positive online identity to be used for professional development. ePortfolio's provide dimension to employment, research, and volunteer experiences that may lack detail on Resumes or CVs. While a resume may showcase a person's achievements, an electronic portfolio can showcase a person, providing a potential employer or graduate school more insight than a list of achievements can provide.

***Biology ePortfolio Presentations*****The Effects of Cardiorespiratory or Yogic Exercise on Salivary Immunoglobulin Levels****Alan Schano****Diamond Cooper****Steve Gallas****Anthony Whisman**Faculty Mentor(s): Sarah Redmond  
Tuesday, April 21 Heth 014Biology  
6:00 pm-7:30 pm

One of the metrics by which immune function can be measured is the presence of basal levels of immunoglobulin. Immunoglobulin A (IgA) is the antibody protein that is secreted into mucous membranes, including those that line the digestive and respiratory tracts. IgA aids in immune defense by neutralizing foreign pathogens and other antigens, so decreased IgA can be an indicator of depressed immune function. Previous research has shown that immune function is inversely correlated with stress experienced by an individual. Our work examined possible relationships between types of exercise, levels of stress, and immune function. We sought volunteers to offer saliva samples from two experimental groups who have just participated in two types of exercise on their own accord. The two types of exercise were cardiovascular exercise on a treadmill and a yoga class. These samples were compared with each other as well as a control group of individuals who had not recently exercised. The saliva samples were tested for IgA concentration through a direct enzyme-linked immunosorbent assay (ELISA). In this method IgA was coated in molecules that bind to a surface where it could be bound by alternate enzyme-tagged antibodies specific to IgA. When the prescribed substrate was added to the bound enzyme-tagged antibodies, a color change proportional to bound IgA could be detected through spectrophotometry.

## Chemistry Oral Presentations

### **Mutagenic Characterization of the Bacterial Loop of E. Coli Beta Glucuronidase**

Hannah Gullickson

Skye Hickling

Faculty Mentor(s): Kimberly Lane

Chemistry

Wednesday, April 22 Heth 016

5:30 pm-5:45 pm

The activity of some bacterial forms of beta glucuronidase are associated with side effects observed with the administration of the chemotherapy drug CPT-11, a pro-drug for the topoisomerase inhibitor SN-38. In the liver, SN-38 is tagged with a glucuronide group to produce less toxic SN-38G. In the large intestines, reactivation to SN-38 occurs when beta glucuronidase cleaves the glucuronide group on SN-38G. This reactivation leads to severe gastrointestinal damage and diarrhea for cancer patients. Recently a new generation of Z-77 inhibitors targeting the bacterial form of beta glucuronidase has been discovered and shown to interact with a loop found near the active site of the enzyme. The Z-77 inhibitor is specific to the bacterial form of beta glucuronidase, making a direct stacking interaction with phenylalanine in position 365. This loop has been shown to be necessary for inhibitor binding in bacteria, but does not exist in the human form of the enzyme. To determine the importance of this residue in the binding of these inhibitors, mutations to alanine, leucine, tyrosine, and tryptophan were made using ICM-Pro from MolSoft, LLC. The software ICM-Pro was used to analyze the inhibitor's binding to the enzymes at position 365 and determine energy values of the interaction. Molecular modeling is an inexpensive way to determine the effect the Z-77 inhibitor on the bacterial loop. The results of this experiment will be used to gain insight into the binding of this family of inhibitors and will hopefully guide future structure based drug design.

### **Mutagenic Analysis of Bacterial Loop Binding Selectivity of E. Coli Beta-Glucuronidase**

Charles Folsom

Faculty Mentor(s): Kimberly Lane

Chemistry

Wednesday, April 22 Heth 016

5:45 pm-6:00 pm

Colorectal cancer is the third leading cause of cancer death in men and women in the United States. It is expected to cause 47,000 deaths in the United States in 2015. Chemotherapy is used to kill off cancer cells within the body, through the intoxication or inhibition of certain cellular processes to prevent cancer cell growth. The chemotherapy pro drug camptothecin (CPT-11) is used to treat cancers, including colorectal cancer. Unfortunately, there are many side effects of CPT-11, including bloody diarrhea, which can lead to death. This is caused by CPT-11's metabolites interaction between the enzyme E. coli beta-glucuronidase in the large intestine. The commercial inhibitor Z-77 blocks this interaction, by binding to a structural bacterial loop that controls binding selectivity of E. coli beta-glucuronidase. It is hypothesized that amino acid phenylalanine 365 (F365) in this loop controls the binding selectivity as it has a pi stacking interaction with Z-77. This project will test this theory by mutating F365 to amino acids alanine, leucine, tyrosine, and tryptophan. These mutants will be characterized using enzyme activity assays and binding assays to determine their ability to bind Z-77. Outcome of this experiment will provide vital information about the binding selectivity of the bacterial loop in E. coli beta-glucuronidase that will help colorectal cancer researchers synthesize more advanced inhibitor drugs for chemotherapy.

## Chemistry Poster Session

### **Characterization of the Mutated Bacterial Loop of E. Coli Beta Glucuronidase**

**Lindsay Lesure**

Faculty Mentor(s): Kimberly Lane                      Chemistry  
Tuesday, April 21                      Heth 043                      6:00 pm-7:30 pm

E. coli beta-glucuronidase is a bacterial enzyme associated with a severe side effects caused by the chemotherapy pro-drug CPT-11. CPT-11 is converted to its toxic active metabolite SN-38. In the liver SN-38 is converted to the non-toxic SN-38G by the addition of a glucuronide group. Once SN-38G leaves the liver and moves to the intestinal tract the bacterial beta-glucuronidase removes the glucuronide group from SN-38G converting it back to the active topoisomerase inhibitor SN-38. A build up of the toxic metabolite can cause severe diarrhea and intestinal damage. A new generation of bacterial beta-glucuronidase inhibitors have recently been discovered. One of these inhibitors is known as Z77. It has been shown that this molecule interacts with a loop only found on the bacterial form of beta-glucuronidase. It has been shown that this loop is essential for the binding of the inhibitor to the enzyme. The phenylalanine at position 365 in the bacterial loop is thought to be important for binding. To determine the importance of the phenylalanine the amino acid was mutated to tyrosine, tryptophan, alanine, and leucine. Computational docking studies were done using ICM-Pro by Molsoft LLC to determine the binding ability of the mutated beta-glucuronidase enzyme to the inhibitor. This project will allow for a better understanding of the binding of the Z77 inhibitors and aid in improving the inhibitors and others like it.

### **Nanostructured Functionalized Carbon Based Materials for Improved Water Purification**

**Spencer Hayes**

Faculty Mentor(s): Francis Webster                      Chemistry  
Tuesday, April 21                      Heth 043                      6:00 pm-7:30 pm

With industrialization and population ever increasing, so does the amount of contaminants in our water supplies which reduces the availability of clean drinking water for the world. This problem affects both developed and developing countries and a wide array of different research efforts are underway to develop new methods or materials to help provide clean water. Our project focuses on the development of an inexpensive, multi-functional absorbent material that will improve existing filtration technology. Our material is easily synthesized with resources that are very common and also readily accessible. The process consists of controlled dehydration of simple sugars with sulfuric acid. The carbon material that is produced is highly functionalized, containing sulfonic acid, carboxylic acid, and phenolic functional groups that do an extraordinarily good job at adsorbing many pollutants. Using this starting carbon material, we have also developed techniques to form a ferrihydrite iron carbon composite material through the adsorption of ferric nitrate with precipitation in base to yield a carboniron composite gel. We have prepared sand coated with our carboniron composites and tested them for the ability to adsorb copper (II) and phosphate. Our tests have shown the ability to remove both from solution as well as several other heavy metals and organic dyes. This composite material is capable of removing a wide range of water contaminants and may be implemented into already existing larger scale water filtration systems.

## *Chemistry Poster Session*

### **Low Cost High Performance Parallel Processing Molecular Modeling**

**Bismark Amofah**

Faculty Mentor(s): Timothy Fuhrer      Chemistry  
Tuesday, April 21      Heth 043      6:00 pm-7:30 pm

High performance parallel processor computing has become an important part of computational molecular modeling, particularly for systems containing 100 or more atoms. Until recently, computing of this kind was done at very expensive supercomputing facilities. LittleFe is a 24 processor high performance parallel processing computer that can be built in less than a day for a relatively small price. By building and programming their own parallel processing computer students not only gain the ability to run high level models in undergraduate computing labs, but also gain understanding in the theory and practice of how high performance computing works. We have built and programmed LittleFe unit and started to develop teaching modules for it in molecular dynamics, molecular structure, and protein ligand docking.

### **How Do Fullerenes Form? The Top-Down versus Bottom-Up Mechanism**

**Hannah Bell**

Faculty Mentor(s): Timothy Fuhrer      Chemistry  
Tuesday, April 21      Heth 043      6:00 pm-7:30 pm

For the first twenty years after the discovery of fullerenes, a bottom-up mechanism of assembly, where fullerenes form by successive addition of C<sub>2</sub> units, was generally accepted. Recent experimental and theoretical discoveries have led to questioning of this premise and the postulation of a top-down mechanism where fullerenes are thought to form from the folding up of graphene sheets and success losses of C<sub>2</sub> units. Herein we investigate these two mechanisms by comparing thermodynamic stabilities of several fullerene anions of size between 80 and 88 carbon atoms.

### **Alcohol in Mouthwash**

**Carissa Fitch**

Faculty Mentor(s): Cindy Burkhardt      Chemistry  
Tuesday, April 21      Heth 043      6:00 pm-7:30 pm

Many commercial brand mouthwashes contain ethanol as a carrier of other ingredients, including flavor, and serves as an antibacterial agent. We all are guilty of feeling the burn or tingle in our mouths when we use a mouthwash and usually associate this feeling to the product being very effective, but the presence of this ethanol could be doing more harm to consumers than good. There is a common problem of teenagers drinking mouthwash and becoming extremely ill according to the poison control center. There have even been cases of consumers dying from acute ethanol consumption due to ingestion of massive amounts of mouthwash. Alcoholics repeatedly turn to mouthwash to get their fix of alcohol in desperate times. Prolonged usage of alcohol containing rinses has even been linked to an increased risk of oral cancer. Gas chromatography was used to quantitate and compare the alcohol content of many brands of mouthwashes.

### *Chemistry Poster Session*

#### **Synthesis of Novel Magnetic IronCarbon Nano-Composites for Environmental Applications**

**James Cardenas**

Faculty Mentor(s): Francis Webster      Chemistry  
Tuesday, April 21      Heth 043      6:00 pm-7:30 pm

With more and more countries becoming industrialized there is decreased amount of clean water available, particularly in third world countries. Sewage run-off from these factories have had heavy metal contaminates in water sources near the factories. A solution to combat these contaminates is currently being sought after. This investigation focuses on the synthesis, characterization, and adsorbent properties of a novel magnetic iron-carbon nano-composite. Highly functionalized nano-particulate carbon was produced through the acid dehydration of glycerol. Co-precipitating Fe (II) and Fe (III) formed magnetic nano-composites with ammonium hydroxide in the presence of a colloidal suspension of functionalized carbon. Composite samples were analyzed by scanning electron microscopy (SEM), attenuated total reflectance infrared spectroscopy (ATR), and thermal gravimetric analysis (TGA). Materials were precipitated as micron sized platelets covered with nano-sized spherical particles with a diameter of less than 50nm. This study focuses on the composite material and its ability to absorb Cadmium (II) from solution. Adsorption capacity was found to be highly pH dependent, decreasing as the solution became more acidic. The magnetic nature of the nano-composites allows for simple removal of the material from solution after adsorption.

#### **A Quantitative Chemical Analysis of Tea**

**Halle Edwards**

Faculty Mentor(s): Cindy Burkhardt      Chemistry  
Tuesday, April 21      Heth 043      6:00 pm-7:30 pm

Across the world, tea is one of the most popular and healthiest beverage choices for consumers. Tea contains many naturally occurring chemicals known to be beneficial to the human body, such as theobromine, which can help lower blood pressure by working as a vasodilator, and flavanoid which can reduce inflammation. Theophylline and xanthine are also found in tea and can assist in the treatment of asthma. Of particular interest to this study is caffeine, a widely used and easily accessible stimulant used by most consumers to jump start their day. Other than its ability to boost alertness, caffeine can help improve memory, relieve tired muscles after a workout, and boost logical reasoning. In this study, a specific brewing method was established and strictly followed for each trial. High Performance Liquid Chromatography was then used to determine the caffeine content of many different teas. The results will be presented upon completion of this study.

## *Chemistry Poster Session*

### **Determination of Malathion in Soil**

**Matthew Potter**

Faculty Mentor(s): Cindy Burkhardt      Chemistry  
Tuesday, April 21      Heth 043      6:00 pm-7:30 pm

Malathion is an organophosphate widely used as a pesticide, and is the most commonly used organophosphate pesticide in the United States. It has also been used in low concentrations in some lotions and shampoos used for treating lice in humans. As a pesticide, malathion works by preventing the nervous systems of many insects from functioning normally. Beyond insects, this pesticide has also been known to affect bees and fish. Malathion is much less toxic to humans, however if ingested or absorbed it may metabolize into malaoxon, which is a significantly more toxic compound. Humans may ingest malathion by breathing in the fumes, through skin exposure, or ingesting residue on foods. In high enough levels of exposure, malathion can have the same effect on humans and animals as it does on insects. Therefore, the quantitative analysis of malathion concentrations in soil used agriculturally is an area of high interest. A method was developed utilizing gas chromatography-mass spectroscopy to determine a detection limit of malathion. A further study showed that by analyzing only certain mass charges of the extract by a SIMS mode analysis, a lower detection limit was possible. For the extraction of malathion from soil samples, a method was developed using ultrasonic extraction. Results for different soil samples will be presented.

### **Determination of Bisphenol-A in Thermal Printing Receipts**

**Hannah Heishman**

Faculty Mentor(s): Cindy Burkhardt      Chemistry  
Tuesday, April 21      Heth 043      6:00 pm-7:30 pm

This experiment was performed to determine the amount of Bisphenol-A on thermal printing receipts. Bisphenol-A (BPA) is a carbon based synthetic compound with two hydroxyphenyl groups. On thermal printing receipts, BPA is used as a developer. BPA can imitate our own body's hormones such as estrogen and other hormones that could be hazardous for our health. These health effects include reproductive disorders, heart disease, as well as diabetes. Sales associates who handle printing receipts on a daily basis have BPA in their bloodstream. Standard solutions were made from 100 to 1000 ppm and checked for linear correlation. Approximately 20 thermal printing receipts were obtained, soaked in acetone, and then analyzed by GC-MS. The areas of these peaks were then used to determine the amount of BPA on each receipt.

### Chemistry Poster Session

#### **Composite Layer-by-Layer Films Formed Using Functionalized Carbon Nanoparticles and Cationic *Moringa Oleifera* Protein**

**Angela Gerard**

Faculty Mentor(s): Francis Webster      Chemistry  
Tuesday, April 21      Heth 043      6:00 pm-7:30 pm

Electrostatic layer-by-layer (LbL) self-assembly of multilayer films has been the focus of recent research efforts and this technique has been used for development of multifunctional coatings, electronic devices, bioreactors, and unique drug delivery systems. In this work, novel thin film coatings were successfully formed on glass substrates using the layer-by-layer assembly of glycerol derived carbon nanoparticles and a positively charged *moringa oleifera protein* taken from a seed extract. Synthetic negatively charged carbon nanoparticles (< 50nm) were synthesized through a one-pot dehydration of glycerol using sulfuric acid at 150°C and were multi-functional in nature with hydroxyl, carboxylic acid and sulfonic acid functional surface groups. LbL composite film growth, topography, composition and stability were analyzed using uv-vis spectroscopy, x-ray photoelectron spectroscopy (XPS), scanning electron microscopy (SEM) and atomic force microscopy (AFM). In-situ attenuated total reflectance (ATR) infrared spectroscopy was also used to monitor the chemical composition and growth of individual layers. Results showed that films could be easily formed with a thickness and linear growth rate that depends on both ionic strength and pH. In-situ ATR-IR results showed that this technique could be used to easily monitor protein binding and film growth. Preliminary tests of the composite film to serve as an antimicrobial surface were conducted using *E. Coli* adsorption with analysis using the LIVE/DEAD™ bacterial viability kit. Fluorescent imaging indicated that the nano-carbon/*moringa* composite film (10 bi-layers) could indeed kill *E. Coli* (>80%) and the overall results showed that LbL films with novel properties could be formed from renewable starting materials.

#### **Optimization of Density Functionals for Endohedral Metallofullerenes**

**Jordan Snelgrove**

**Angel Lambert**

Faculty Mentor(s): Timothy Fuhrer      Chemistry  
Tuesday, April 21      Heth 043      6:00 pm-7:30 pm

Endohedral metallofullerenes (EMF) are a type of fullerene, soccer ball shaped carbon molecules, which are synthesized with metal atoms or clusters trapped inside. The properties of these fullerene molecules can be modeled by a computer using Density Functional Theory (DFT). DFT is a simplification of quantum mechanics that reduces the amount of computation time needed while still providing fairly accurate results. We have compared computed geometries, energies and band gaps using various DFT methods for several important EMFs. By comparing these computed values to experimental values, we state which commonly used DFT method is most accurate for EMFs as well as proposing a new hybrid DFT method specifically designed for EMFs.

### Chemistry Poster Session

#### **Regioselective Opening of Propenylbenzene Oxides Via Intramolecular N-H Activation**

**Christine Tutwiler**

Faculty Mentor(s): Christopher Monceaux Chemistry  
Tuesday, April 21 Heth 043 6:00 pm-7:30 pm

$\beta$ - and  $\gamma$ -amino alcohols have been used extensively in the synthesis of therapeutics due to their structural similarities to neurotransmitters and hormones. We aim to produce  $\beta$ - and  $\gamma$ -amino alcohols regioselectively by utilizing an unexplored epoxide opening of E- or Z-propenylbenzene oxides activated by an intramolecular N-H bond. This chemistry could be applied to the synthesis for derivatives of PRC200, an experimental triple reuptake inhibitor. Application to other CNS active amino alcohols will also be demonstrated.

#### **Expression and Purification of Arabidopsis AS-2: A study of Chromosomal Proteins**

**Stephen Lackney**

Faculty Mentor(s): Kimberly Lane Chemistry  
Tara Phelps-Durr Biology  
Tuesday, April 21 Heth 043 6:00 pm-7:30 pm

Cell differentiation is an important factor in biological growth and development. In the genus *Arabidopsis*, otherwise known as mustard weed, cell differentiation is controlled by gene expression levels, specifically expression levels of KNOX genes. These KNOX genes, when expressed, promote the creation of stem cells. When the KNOX genes are turned off, these stem cells go on to become differentiated cells such as flowers, and leaves. The two proteins that are thought to help down regulate the expression of these KNOX genes are AS-1 and AS-2. They do this by sitting on the promotor regions of the DNA for KNOX genes, and physically blocking it. Scientific studies show that AS-1 is a Myb domain protein, meaning it is a transcription factor that should bind to DNA. However, getting isolated AS-1 to consistently bind to DNA is problematic. Biochemical studies have shown that AS-1 and AS-2 come together to form a complex in order to bind to DNA. The structures of both the AS-1 and the AS-2 proteins have been predicted, but a 3-D structure has yet to be determined for either one. Our aim is to get a complete structure for both of these proteins and assess the binding sites on each in order to determine exactly how they bind to each other to form a complex. So far, AS-1 has yet to be easily transformed into *E. coli*, but AS-2 has been transformed into *E. coli* cells. Because of this, we have focused on AS-2 isolation and purification in hopes of determining its structure.

#### **Potential Antiviral Effects of Phenazine Derivatives on the La Crosse Virus**

**Zachary Carpenter**

**Nima Hami**

Faculty Mentor(s): Christopher Monceaux Chemistry  
Tuesday, April 21 Heth 043 6:00 pm-7:30 pm

The La Crosse Virus (LCV), which is transmitted by mosquitos, can cause serious problems especially when contracted by children. Some complications that can arise can range from a simple fever to encephalitis. We have data suggesting that a component of the supernatant of the genus *pseudomonas* may display antiviral activity against LCV. It is well known that *pseudomonads* produce phenazines. These phenazines show antibacterial and antifungal activity. We have an interest in investigating whether these phenazines are involved in the observed antiviral activity. Phenazines are redox-active compounds that can generate reactive oxygen species (ROS) that can have a potential toxic effect on bacteria and fungi. By synthesizing an array of phenazine compounds, we can analyze them against LCV and test their potential antiviral effects.

**Wednesday, April 22<sup>nd</sup>****Innovations in Forensic Science****Heth 043                      9:00 am-12:00 pm****Nutrition and Dietetics Poster Session****Heth 022                      10:30 am-12:00 pm****Interdisciplinary Oral Presentations****Heth 016                      11:00 am-12:00 pm****Geospatial Science and Geology Poster Session****Heth 014                      1:00 pm-3:30 pm****Exhibitions as Creative Research****Covington Art Museum 2:00-4:00 pm****Scholar Citizen Digital Showcases****Heth 043 & 022            3:30 pm-7:00 pm****Interdisciplinary Poster Session****Heth 014                      5:00 pm-7:00 pm**

## **Innovations in Forensic Science Oral Presentations**

### **Effect of Experience on Accuracy of Metric and Nonmetric Ancestry Estimation Methods**

**Dominique Ford**

Faculty Mentor(s): Donna Boyd

Anthropological Sciences

Wednesday, April 22 Heth 043

9:00 am-12:00 pm

Identifying unknown deceased individuals in forensic investigations often includes estimation of ancestry, which relies on metric and non-metric variables of the cranium. Non-metric methods for ancestry estimation have been recently criticized as subjectively assessed and dependent upon observer experience. Metric methods have been touted as more scientific, particularly for inexperienced observers. This includes the use of FORDISC, a software system that allows statistical comparison of metrics from unidentified crania to data contained in a Forensic Data Bank a database of known crania from prior forensic cases. This study will compare metric and non-metric methods for ancestry estimation and test the theoretical assumption that experience correlates with increased accuracy of nonmetric assessments of ancestry. In a blind study, ten skulls of known ancestry will be examined for non-metric indications of ancestry. Standard measurements of these crania will then be taken and entered into FORDISC 3.1 to evaluate metric accuracy in ancestry predictions. This protocol will be carried out by an observer with little experience (less than one year) in ancestry estimation and compared with data from an observer with considerable experience (20+ years). The hypothesis being tested is that for the inexperienced observer, metric ancestry analysis will be more accurate, while for the experienced observer, use of nonmetric traits will be more accurate. Comparison of these methods will highlight the role of observer experience in ancestry estimation and underscore the strengths and weaknesses of each method.

### **Microscopic Comparison of Perimortem Blunt Force Trauma and Postmortem Bone Breakage**

**Marta Paulson**

Faculty Mentor(s): Donna Boyd

Anthropological Sciences

Wednesday, April 22 Heth 043

9:00 am-12:00 pm

One of the most important goals of a Forensic Anthropologist is to be able to determine how a person died. Sometimes it is obvious how it happened; other times it can be difficult. Although antemortem (before death) trauma is usually characterized by some degree of bone healing, perimortem (at or around the time of death) trauma and postmortem (after death) breakage do not typically manifest these reparative signatures and are difficult to distinguish from one another. Prior studies which have attempted to differentiate these two processes have focused on macroscopic differences in breakage patterns in fresh (green) versus dried bone. Few studies have focused on these differences at the microscopic level. The goal of this project is to create a system of identifying and differentiating perimortem Blunt Force Trauma and postmortem breakage at the microscopic level. Samples of perimortem fractures (due to Blunt Force Trauma [BFT]) and postmortem breakage were examined and compared at both the macroscopic and microscopic level (using the RU Forensic Science Institute's Keyence VHX-1000 microscope). Microscopic signatures of perimortem BFT and postmortem breakage were identified and a protocol developed for differentiating these processes. This protocol was evaluated through the use of a blind test comparing 30 samples of bone exhibiting either perimortem BFT or postmortem breakage. Accuracy rates of identification are used to modify and improve the original protocol. This research will assist forensic professionals in identifying and differentiating perimortem trauma from postmortem breakage in forensic death investigations.

## **Innovations in Forensic Science Oral Presentations**

### **Creation of a Nonhuman vs. Human Bone Identification Digital Atlas**

**Jessica Wood**

Faculty Mentor(s): Donna Boyd

Cliff Boyd

Wednesday, April 22 Heth 043

Anthropological Sciences

Anthropological Sciences

9:00 am-12:00 pm

Anthropologists, Law Enforcement, Medical Examiners, Coroners, Search and Rescue Teams, and other groups often have to differentiate between non-human and human remains both in the field and in the laboratory. Today, there are a number of atlases which allow for comparison of human vs. non-human bone; however, all of these references focus on the complete bone and most are not frequently updated or allow for the addition of comparative samples. A digital atlas focusing on macroscopic and light microscopic differences across species does not currently exist. This project aims to create a digital atlas for differentiating fragmentary human from non-human bone. Over the years, the Radford University Osteology and Forensic Science laboratories have amassed a large collection of non-human remains. These are currently being identified and categorized in terms of their species and will be used to develop this atlas.

### **Terminal Ballistics Research**

**Kurt Weaver**

Faculty Mentor(s): Donna Boyd

Wednesday, April 22 Heth 043

Anthropological Sciences

9:00 am-12:00 pm

Research will be conducted which will focus on observing the terminal ballistic effect of two common handgun calibers on skeletal material. The purpose of this study is to observe and document the traumatic effect of jacketed hollow point (JHP) projectiles impacting long bones. The ballistic trauma resulting from hollow points will be compared to the trauma caused by standard full metal jacket (FMJ) projectiles. Unlike full metal jacket projectiles, hollow points are designed to expand to a larger diameter upon impact, thus creating a larger wound channel and increased subsequent damage to flesh and bone. The traumatic effects on bone will be compared with regard to bullet type (FMJ vs. JHP) as well as caliber (9x19mm vs. .45 auto). The study will be conducted at an outdoor shooting range under the supervision of a range safety officer. Processed pig elements will be used to properly emulate peri-mortem gunshot trauma on human flesh and bone. Four pig femora will be placed at a distance of five feet and shot from a bench-rest for guaranteed accuracy. Entrance and exit defects will be measured and recorded. The skeletal trauma produced will also be observed and recorded. Regarding bullet type, it is predicted hollow point projectiles will have a greater traumatic effect than full metal jacket rounds. It is also predicted .45 caliber bullets will produce more skeletal trauma than 9mm. This study will produce valuable data which can further our understanding of gunshot trauma to bone. Increased research on the topic will contribute to the ever-expanding body of forensic research and facilitate future assessments of skeletal trauma resulting from gunshots.

## **Innovations in Forensic Science Oral Presentations**

### **Reconstruction of Perimortem Gunshot Trauma to the Thorax**

**Samantha Rubush**

Faculty Mentor(s): Donna Boyd

Anthropological Sciences

Wednesday, April 22 Heth 043

9:00 am-12:00 pm

Forensic anthropology is the application of the science of anthropology and its several subfields toward answering medico-legal questions. In addition to establishing the biological profile of unknown human remains, reconstruction and interpretation of perimortem trauma (that which occurs at or around the time of death) is an important goal. Although the effects of gunshot cranial trauma have been the subject of many research studies, few studies have focused on the thorax. This research project focuses on a case study involving a homicide victim with gunshot trauma to the thorax. Macroscopic and microscopic examination of gunshot-related fractures located on this individual's ribs, vertebrae, and clavicles is performed in order to reconstruct and interpret the trauma applied to this individual. This includes reconstructions of direction and amount of force, bullet trajectory and damage, and type of weapon likely used. Three-dimensional images of the effects of the trauma to the skeleton will be generated to reconstruct and demonstrate the trauma event. The ultimate objective is to further our understanding of the effects of perimortem gunshot trauma to the thorax.

### **Development of a Digital Antemortem Bone Fracture Healing Staging System For Use in Child Death Investigation**

**Sharon Roller**

Faculty Mentor(s): Donna Boyd

Anthropological Sciences

Wednesday, April 22 Heth 043

9:00 am-12:00 pm

Validation of charges of maltreatment in child death investigations often relies on documentation of a pattern of prior (non-accidental) injury. Evidence of multiple antemortem (before death) bone fractures renders claims of accidental injury less likely. Critical to this process is the ability to recognize and date these antemortem fractures based on degree of healing. Prior studies of fracture healing rates have been primarily based on radiographic (X-Ray) images of bone healing stages but radiographic observations of this process have resulted in rather broad and inaccurate bone repair stages and estimates of Time Since Injury (TSI). The goal of this study is to determine whether a more accurate antemortem fracture healing staging system can be developed based on high-quality microscopic digital imaging. Over 700 microscopic digital images of healing fractures from a minimum of seven child death cases involving antemortem and perimortem (occurring at the time of death) trauma will be analyzed. These fracture images were taken and are stored on the RU Forensic Science Institute's Keyence VHX-1000 digital microscope at 5-200x magnification. They represent a wide range of TSI. Each antemortem fracture depicted on these images will be analyzed and categorized for evidence of the skeletal microstructure repair process and will then be temporally sequenced. This will allow for a more accurate understanding of the microscopic characteristics of each stage of bone repair. Comparison of these images will also allow for the development of a more accurate fracture dating technique.

## **Innovations in Forensic Science Oral Presentations**

### **Microevolutionary Change in Femoral and Humeral Head Diameters and its Implications for Sex Estimation in Forensic Anthropology**

**Robin Taylor**

Faculty Mentor(s): Donna Boyd

Anthropological Sciences

Wednesday, April 22 Heth 043

9:00 am-12:00 pm

Forensic Anthropologists have previously documented microevolutionary change in several aspects of our skeleton, including cranial and mandibular shape and stature. These have been linked to genetic and especially environmental factors (e.g., better nutrition). However, secular changes in other skeletal dimensions, particularly in the postcranium, have not been fully documented. The goal of this research is to examine evidence for microevolutionary change in metric dimensions of the humerus and femur over the past century. The Terry population consists of measurements and observations of a large sample of White and Black males and females from the late 18th to mid-20th century curated at the Smithsonian. Maximum humerus and femur head diameters of approximately 120 individuals (30 White Males, 30 White Females, 30 Black Males, 30 Black Females) from individuals born in the late 19th to early 20th century were compared to a similar sample of individuals from the mid-20th century, resulting in a total sample of 240 individuals for comparison. The hypothesis being tested is that maximum femoral and humeral head dimensions will show a significant increase over time. Results will be interpreted in terms of the soft tissue correlates of these anatomical areas and possible environmental factors for these changes. Since these measurements are relied on heavily by Forensic Anthropologists to determine an unknown individual's sex, change in them through time has significant implications for our accurate assessment of the biological profile.

### **Assessing the Accuracy of Radiographic Imaging in Death Investigations: A Forensic Anthropologist Perspective**

**Sara Franklin**

Faculty Mentor(s): Donna Boyd

Anthropological Sciences

Wednesday, April 22 Heth 043

9:00 am-12:00 pm

In the Medical Examiner's office, radiographic imaging is often a first step in identifying and differentiating antemortem and perimortem injuries in death investigations. Results of this imaging determine the need for further testing, including consultation with forensic anthropologists. However, the accuracy of interpreting these radiographic images has recently been questioned, particularly for the inexperienced technician with no knowledge of osteology or forensic anthropology. The purpose of this study is to evaluate the accuracy of radiographic imaging in cases of antemortem and perimortem injury to bone. A blind test will be conducted involving 15 students (9 have training in osteology, 8 have training in osteology and forensic anthropology, and 7 have training in neither) to test their accuracy in identifying and interpreting injuries on bone from roentgen rays. 100 images are randomly chosen from a selection of known antemortem and perimortem trauma cases from RU Forensic Science Institute death investigations. The deceased ranged in age from infant to elderly. The hypothesis being tested is that students with a knowledge of both osteology and forensic anthropology will more accurately identify and interpret a greater number of skeletal traumas than those without this knowledge. The results of this study will assess the importance of a knowledge of osteology and forensic anthropology in identifying and interpreting skeletal trauma from radiographic images. This will clarify the role of training in osteology and forensic anthropology in medico-legal death investigations involving radiographic assessment of skeletal trauma.

## **Innovations in Forensic Science Oral Presentations**

### **A Comparison of Macroscopic and Microscopic Methods of Identification of Tool Class and Type in Incidents of Sharp Force Trauma**

**Haley Harry**

Faculty Mentor(s): Donna Boyd

Anthropological Sciences

Wednesday, April 22 Heth 043

9:00 am-12:00 pm

Research into the resulting wounds of Sharp Force Trauma (SFT) is important in forensic cases to help provide more conclusive evidence about the type of tools used during criminal acts. Prior research has shown differences in kerf size and shape, wastage, and overall wound morphology across different tool classes and types. However, these differences have primarily been explored through macroscopic methods. This experiment compares macroscopic and microscopic approaches to the analysis of skeletal signatures of SFT can positively identify the tool class and type. It is hypothesized that a microscopic analysis of SFT wounds will more accurately identify tool class and type compared to a macroscopic approach. A standardized cutting platform will deliver sharp force trauma to a sample of 30 fleshed ribs of *Sus scrofa*, using a variety of instruments (knife, serrated knife, axe, machete, hatchet, Philips head screwdriver). Ribs are then defleshed, photographed, x rayed, and analyzed to define the macroscopic and microscopic evidence for each tool's SFT signature. Accurate recognition of these signatures will then be tested in a blind study of 30 SFT defects from known tools to assess and compare the precision of both the macroscopic and microscopic methods. The implications of this study could prove to be an important reference in criminal cases in which Sharp Force Trauma is present, but the type of tool is unknown to the investigator.

### **A Comparability Study of Radiographic, Macroscopic, and Microscopic Digital Evidence Of Bone Repair in the Diagnosis of Child Abuse**

**David Foley**

Faculty Mentor(s): Donna Boyd

Anthropological Sciences

Wednesday, April 22 Heth 043

9:00 am-12:00 pm

A Comparability Study of Radiographic, Macroscopic, and Microscopic Digital Evidence Of Bone Repair in the Diagnosis of Child Abuse David Foley In any suspicious case of child death, a radiographic skeletal survey following standard protocol should be implemented. This protocol includes various imaging techniques including radiology, MRIs, and CT scans. Coroners, Medical Examiners and other physicians rely sometimes exclusively on these imaging techniques to offer initial identification of potential abuse situations. These images are also relied on heavily to assess time since injury (TSI) of the fracture. However, there is much debate about the accuracy and reliability of radiographic images, particularly in cases of antemortem (before death) fractures involving various stages of healing. The purpose of this study is to compare macroscopic and microscopic digital images of antemortem bone fracture and associated healing to radiographic evidence for these fractures to assess comparability in identification methods across these different media. The research question being tested is are the observations of bone repair comparable across macroscopic, microscopic, and radiographic techniques? A blind study will be conducted of a random sample of 100 radiographs derived from 7 child death cases with and without antemortem healing. Independently assessed digital microscopic and macroscopic images of bone repair from these cases will be compared to the radiographs to assess accuracy of radiographic methods of fracture ID and comparability of digital media. Radiographic, macroscopic and microscopic digital images of staged bone repair will be organized into a digital archival encyclopedia which will be uploaded to the RUFSI's (Radford University Forensic Science Institute) Picture Archiving and Communication System and to the FSI website for professional use in death investigations.

**Innovations in Forensic Science Oral Presentations****Consistency and Comparison of Ballistic Wound Patterns and Entrance Wound Diameter on Osteological Remains****Christopher Wingard**

Faculty Mentor(s): Donna Boyd

Anthropological Sciences

Wednesday, April 22 Heth 043

9:00 am-12:00 pm

Firearms were used in 69% of the murders committed in 2013 (FBI statistics), and handguns account for the majority of the weapons. The ability of forensic scientists to extract as much information as possible about the type of firearm, the caliber, the type of projectile, and the distance from the firearm to the victim is an important piece of evidence for law enforcement. A number of studies have examined characteristic wound shapes and fracture patterns formed by ballistic trauma; however, few studies have examined the consistency of wound patterns and entry wound diameters under controlled settings. A series of trials were conducted with 9 mm, .40 caliber, and .45 caliber handguns using pig skulls as the test subjects. The purpose of this experiment is to look at within group consistency of wound patterns and diameter for each caliber and to compare between groups to determine if the wound diameters resulting from each caliber can be reliably classified. If the trauma caused by a single firearm using the same type of bullet at the same distance on nearly identical skulls is not consistent, then between group comparisons cannot be made. A method for digitally measuring entry wound diameter was developed as a component of this project.

### **Nutrition and Dietetics Poster Session**

#### **Is There Enough Evidence to be Able to Recommend Consumption of Lycopene to Prevent Prostate Cancer?**

**Mary Muse**

**Caitlin Thedieck**

**Valerie Agyeman**

Faculty Mentor(s): Anne Alexander

Nutrition and Dietetics

Wednesday, April 22

Heth 022

10:30 am-12:00 pm

**Objectives** Is there sufficient evidence to support the claim that dietary lycopene has a significant role in the prevention of prostate cancer in humans? **Search Strategy** Through PubMed (NIH/NLM), peer reviewed articles were found using meta-analysis and randomized clinical trial designs, that were completed within the last 15 years. The exclusion criteria included in vitro studies, those using animal subjects, and those not available in the English. **Keywords** used were lycopene, prostate cancer and FDA labeling. **Selection criteria and analysis** The studies were graded for their quality, evaluation of research design and relevance to the question using the format of the Academy of Nutrition and Dietetics Evidence Analysis Library. Only studies receiving a positive quality evaluation were included in the analysis. **Antioxidants** have possible chemopreventive activity, which led to the investigation of lycopene. In the late 1980's lycopene was discovered to have twice the antioxidant power of beta-carotene on cells, which piqued the interest of many. Oxidative stress has been associated with prostate cancer risks. Studies have shown that an increase in the carotenoid pigment has an increased antioxidative effect on prostate-specific antigens. However, when lycopene was consumed alone, significant cancer preventive effects could not be proven. After evaluating the evidence, it appears that there is inconclusive support for the claim of lycopene consumption and its prevention of prostate cancer. This supports the FDA claim that labeling of food products containing lycopene as prostate cancer prevention cannot be used.

#### **Lutein, Zeaxanthin, and Age Related Macular Degeneration**

**Sarah Gilbert**

**Jennifer Pfautz**

**Stefanie Brocker**

Faculty Mentor(s): Anne Alexander

Nutrition and Dietetics

Wednesday, April 22

Heth 022

10:30 am-12:00 pm

**Objectives** To determine if there is sufficient evidence to support the claim that dietary lutein and zeaxanthin have significant roles in prevention of age related macular degeneration (AMD) in humans. **Search Strategy** Peer reviewed articles including cross sectional, cohort and randomized clinical trials, completed within the last 10 years, were identified through PubMed (NIH/NLM). Exclusion criteria included in vitro studies. **Key words** used were lutein, zeaxanthin, AMD, age related macular degeneration, and nutrition. **Selection criteria and analysis** The evidence was graded for quality, evaluation of research design and relevance to the question using the format of the Academy of Nutrition and Dietetics Evidence Analysis Library. Only studies receiving a positive quality evaluation were included in the analysis. **Results and conclusions** Lutein and zeaxanthin are antioxidants belonging to a large class of plant pigments called carotenoids. These compounds may protect the eye from oxidative damage. This damage, particularly in the retina and retinal pigment epithelium, is often correlated with age related macular degeneration. Other lifestyle factors that increased the risk of AMD are obesity, smoking, and alcohol consumption. Studies used either food sources or non-food supplementation as the source of lutein and zeaxanthin. The evidence suggests that AMD progression is slowed with an adequate quantity of these pigments. Although it appears that supplementation resulted in preserved or improved retinal function these results were determined to be statistically weak. It is possible that prolonged supplementation can result in increased beneficial outcomes.

## **Nutrition and Dietetics Poster Session**

### **Anthocyanins and Heart Disease**

**Thomas Mahoney      Cara Sponsler   Jarrod Alls**

Faculty Mentor(s): Anne Alexander      Nutrition and Dietetics  
Wednesday, April 22      Heth 022      10:30 am-12:00 pm

Is there sufficient evidence to recommend consumption of anthocyanins to prevent heart disease in healthy adults? Search Strategy PubMed (NIHNLN) was used to identify appropriate research. Inclusion criteria included randomized clinical trials, case controlled designs, cross-sectional, longitudinal studies and studies in English. Excluded were studies with non-human subjects, use of anthocyanin supplements, any older than five years, or using severely ill individuals. Keywords: anthocyanins, phytochemicals, berries and heart disease. Selection criteria and analysis Articles were evaluated on quality and relevance to the objective using the format of the Evidence Analysis Library of the Academy of Nutrition and Dietetics. Results and conclusions Anthocyanins are a subclass of bioactive compounds called dietary flavonoids. They are found primarily in red, blue, and purple pigmented fruits and vegetables. In vitro studies suggest a beneficial effect on cardiovascular health through inhibition of LDL oxidation and foam cell formation which may decrease the incidence of atherosclerosis. Some in vivo studies conclude that dietary anthocyanins may lower blood pressure, lower arterial stiffness, and lower incidence of myocardial infarction. Population studies have associated intakes of anthocyanin-rich foods, in particular, with heart healthy outcomes. A concern is what level of dietary anthocyanins needs to be consumed to demonstrate these benefits. Studies using validated food frequency questionnaires suggest that a daily intake of 1 to 3 portions of red and/or blueberries could be sufficient.

### **Curcumin: A Natural Cancer Preventative Agent?**

**Susan Kouzel**

**Jordan Batson**

Faculty Mentor(s): Anne Alexander      Nutrition and Dietetics  
Wednesday, April 22      Heth 022      10:30 am-12:00 pm

What is the strength of the evidence supporting the consumption of curcumin from food to help prevent cancer. Search Strategy: PubMed (NIHNLN) and Google Scholar were used to identify appropriate studies over the past 6 years. Inclusion criteria included clinical trials and cell culture studies, using human subjects and either human or animal cells, written in English. Exclusion criteria included studies that were solely focused on cancer treatment rather than prevention. The main keywords searched were Selection criteria and analysis: Using the format of the Academy of Nutrition and Dietetics Evidence Analysis Library, the evidence was reviewed and graded to assess quality, research design and relevance to the question and studies were included if they received a positive quality evaluation. Results and conclusions: Curcumin is a polyphenol derived from the *Curcuma longa* Linn, a member of the ginger family found in the culinary spice turmeric. Our results indicate that curcumin has been shown to have powerful cancer preventative properties by regulating a variety of biological pathways. An important study showed curcumin to be a down-regulator of a tumor suppressor gene. Curcumin has previously shown promise inhibiting production of procarcinogenic eicosanoids in rodents but not in humans. In vivo studies of human patients demonstrated that large oral administration of curcumin can decrease already existing aberrant crypt foci, precursors to colon cancer. Curcumin has shown beneficial effects in the regulation of various genetic pathways and cell signaling involved in cancer development, including invasion, metastasis, apoptosis, and angiogenesis. The main concern is the low bioavailability of curcumin, resulting in poor absorption, low target organ concentration, and more rapid elimination from the body before proper absorption would be allowed. There is not enough evidence to support the use of curcumin as a functional food in the prevention and treatment of cancer, however, more pharmacological research is needed to develop therapeutic drugs containing curcumin with increased bioavailability to the cells.

## ***Interdisciplinary Oral Presentations***

### **Learning Chinese in the U.S. vs. Study Abroad in China and Taiwan**

**Sara Franklin**

Faculty Mentor(s): I-Ping Fu

Foreign Languages and Literatures

Wednesday, April 22 Heth 016

11:00 am-11:20 am

This research looks into the differences between learning the Chinese language in the United States and learning in China and Taiwan through the Study Abroad experience. This research will also touch on some growing issues on learning a foreign language and how a college or university should make foreign language a learning requirement. This research draws mostly from first-hand interviews from students that have learned the Chinese language at Radford University from the last ten years including myself, current students whom are prepping to study abroad in China this summer and foreign language students that have attended Radford University.

### **The Basel, Switzerland Drumming Tradition**

**Jeremy Marks**

Faculty Mentor(s): Rob Sanderl

Music

Wednesday, April 22 Heth 016

11:20 am-11:40 am

The Basel, Switzerland drumming tradition is an ancient art form dating back at least 600 years. Originally conceived as a means of communication on the battlefield during the Middle Ages, drumming evolved into an important cultural activity that remains to be one of the most popular hobbies in Basel today. Basel's unique musical style is highlighted every year during the carnival of Fasnacht. Fasnacht, which attracts hundreds of thousands of people, is held annually in the city of Basel beginning at 4am the Monday after Ash Wednesday. The festival involves somewhere between 15,000 and 20,000 active participants that parade through the streets showcasing the drumming style that was born there. The American style of drumming that I study here at Radford University also originates from battlefield communication, and the methods we used can be directly linked back to the city of Basel, Switzerland where they're kept alive during Fasnacht. Drawing connections between the US style and the BaselSwiss style is an important step in having a complete understanding of historical field music. I will be comparing and contrasting these two styles of drumming that show the historical and cultural relationship that they share.

### **Geology Poster Session**

#### **Potential Auxiliary Water Sources for Mountain Lake, Giles County, Virginia**

**Kent Weidlich**

**Dylan Dwyer**

Faculty Mentor(s): Chester Watts  
Wednesday, April 22 Heth 014

Geology  
1:00 pm-3:30 pm

Mountain Lake, located in Giles County, Virginia at an elevation of 4785 feet above sea level is believed to be one of the highest lakes east of the Mississippi River. It is also one of only two naturally formed lakes in Virginia. The lake covers what was an ancient meadow and stream sitting in a water gap formed by the dissection of a plunging anticline. Recent studies by researchers at Kent State University suggest that an earthquake triggered a landslide over 6,000 years ago damming the stream and causing the lake to form. The dam consists of colluvium that allows conduits to form through the dam and these holes control the water level, allowing it to rise and fall. In 2008 the water level dropped to the lowest in historic times. During the winter and spring of 2013, the owners filled the depressions at bottom of the lake with local natural soil and rock, resulting in a partial refilling of the lake. After completion of this project, the lake reached its highest water levels since 2005 in August 2013. With the lake still not reaching full pond, the owners asked researchers at Radford University for suggestions for supplementing the lake inflow with water from other nearby watersheds. In the spring of 2014 the authors began to investigate those watersheds in search of viable sources of water. The authors also investigated potential sites of water loss at key locations within the watershed currently serving Mountain Lake and its drainage system. Two watersheds were identified as having potential for supplementing flow. A northern watershed did not have enough water to warrant further investigation. A western watershed appears to have the greatest potential as an auxiliary water source. Several sites were identified where water has been diverted away from the lake and out of its natural watershed.

#### **Effects of Terrain Modification on Surface Water Runoff from the Blueberry Cottages Watershed at Mountain Lake, Giles County, Virginia**

**Dylan Dwyer**

**David Imburg**

Faculty Mentor(s): Chester Watts  
Wednesday, April 22 Heth 014

Geology  
1:00 pm-3:30 pm

Mountain Lake, located in Giles County, Virginia, is one of two naturally formed lakes and is the only significant natural lake in the unglaciated southern Appalachians (Cawley et al., 2001). Updated theories on the formation of the lake suggest it formed from a rockslide in the Tuscarora Formation, along with colluvial damming. The lake is located immediately to the west of the Eastern Continental Divide. The watershed for Mountain Lake is roughly 321 acres, making it nearly 7 times greater than the lake at full pond (Roning, 2011). This first order drainage basin fills from the south and empties to the north. The study area lies on the southwestern side of the lake where, in 2002, construction of the Blueberry Cottages occurred.

## **Geology Poster Session**

### **Geochemistry of Rhyolite Clasts from the Lower Mount Rogers**

**Elise Brown**

**Allison Murrie**

Faculty Mentor(s): Elizabeth McClellan    Geology  
Wednesday, April 22    Heth 014    1:00 pm-3:30 pm

The Mount Rogers Formation (MRF), located in the Blue Ridge of SW Virginia, was formed in the initial stages of continental rifting of the supercontinent Rodinia. The volcanic and sedimentary rocks are separated into an upper and lower MRF. The upper MRF consists of three volcanic units that range in age from ca. 755 to 750 million years: an older, less evolved Buzzard Rock Rhyolite; a middle unit of lava flows, the Whitetop Rhyolite; and a younger, pyroclastic Wilburn Rhyolite. The lower MRF contains volcanic rocks, including the Fees Rhyolite (753 m.y.) along with sedimentary conglomerates and arkoses. The conglomerates are dominated by cobble to boulder-sized clasts of rhyolite. We are investigating the source of the rhyolite clasts by comparing their geochemistry with the known MRF rhyolites. Recent U-Pb dating of rhyolite clasts from MRF conglomerate shows that these clasts fall into three age groups: ~753, ~760, and ~770-780 million years. The ~753 Ma and ~760 m.y. clasts appear geochemically similar to each other, but are distinct from MRF rhyolites with an exception of the Buzzard Rock Rhyolite. Clasts in the ~770-780 m.y. range show more geochemical variation. All clast samples have a smaller negative Eu anomaly than the known MRF rhyolites except for the Buzzard Rock Rhyolite. The clasts appear to be slightly depleted in HREEs in relation to the other MRF rhyolites. The geochemistry and ages of the clasts are evidence that a broader range of volcanic events occurred during continental rifting of Rodinia than previously recognized.

### **Assessing Volcanism in the Mount Rogers Formation, Sw Va: Stratigraphic Placement of the Bearpen Rhyolite**

**Patrick Trout**

Faculty Mentor(s): Elizabeth McClellan    Geology  
Wednesday, April 22    Heth 014    1:00 pm-3:30 pm

The Mount Rogers Formation (MRF) in SW Virginia represents continental rifting along the eastern margin of the supercontinent Rodinia, that occurred ~760-750 million years ago. The upper MRF consists three distinctive volcanic units: the older Buzzard Rock Rhyolite, the middle Whitetop Rhyolite, and the younger pyroclastic Wilburn Rhyolite. The lower MRF consists of interlayered volcanics, including the Fees Rhyolite, along with clastic sedimentary deposits. Based on our recent mapping we have defined a previously unrecognized unit that we call the Bearpen rhyolite for its location on Bearpen Ridge. Compared to other rhyolite units in the MRF, the Bearpen contains abundant K-feldspar phenocrysts typically concentrated in clusters, along with lesser quartz and plagioclase. The matrix of the unit appears to flow around the phenocrysts. Fiamme and flow banding occur in some outcrops. This project focuses on mapping the contacts of the Bearpen rhyolite with other units in the MRF and describing its petrographic characteristics, in order to determine its placement in the overall stratigraphy. Petrographically, the Bearpen rhyolite resembles the Wilburn Rhyolite. However, our mapping shows that stratigraphically, the Bearpen rhyolite occurs between the Fees Rhyolite in the lower MRF and the Whitetop Rhyolite in the upper MRF. As well, our U-Pb age date of 756 m.y. for the Bearpen rhyolite does not overlap with the ~750 m.y. age of the Wilburn. This new information suggests the Bearpen is stratigraphically within the lower MRF but formed from processes similar to those that created the ash flow sheets of the Wilburn rhyolite.

### **Geospatial Science Poster Session**

#### **Determining the Correlation Between Land-Use and Water Quality in the James River**

**Samuel Creany**

Faculty Mentor(s): Andrew Foy                      Geospatial Science  
                                 Charles Manyara                      Geology  
Wednesday, April 22    Heth 014                      1:00 pm-3:30 pm

Water quality standards are set around uses for waters. There are six designated uses for surface waters in Virginia: aquatic life, fish consumption, public water supplies, recreation, shellfishing, and wildlife. The standards define the water quality needed to support each of these uses. If a body of water contains more contamination than allowed by water quality standards, it will not support one or more of its designated uses. Such waters have "impaired" water quality. The goal of this project is to analyze land use and land cover change around an impaired body of water to determine if land cover change has affected water quality in the study area. It is important because it will provide protection of water resources and explain the linkage between land use/land cover and water quality. The reason for doing this is to help influence better choices in future development so that water quality can be restored. This paper provides detailed instructions on the analysis of land use and land cover and can be replicated in any study area. The major methods of this project include: (1) collecting data for water quality and satellite imagery, (2) analyzing monitoring stations to determine levels of pollution, (3) using remote sensing to analyze land use change over a given period, (4) comparing land use change and water quality, (5) determining the correlation between land use change and water quality. The results will be used to identify temporal and spatial patterns that have led to changes in water quality.

#### **The Potential Demographic and Environmental Affects the Mountain Valley Pipeline & Atlantic Coast Pipeline projects can pose on Virginia & West Virginia**

**Ben Titlow**

Faculty Mentor(s): Andrew Foy                      Geospatial Science  
                                 Stockton Maxwell                      Geology  
Wednesday, April 22    Heth 014                      1:00 pm-3:30 pm

A total of 850 miles of proposed pipeline infrastructure is expected to be put into place throughout Virginia and West Virginia. This research provides a review of natural gas demands, and thus the need for infrastructure development. The study focuses on the Marcellus and Utica Shale region and the proposed infrastructure throughout West Virginia and Virginia. A statistical analysis was conducted to study the significance of various demographic variables through the counties in which the infrastructure and construction will take place. The goal was to determine whether or not there is a relationship between county demographics and pipeline development. Data was collected from each line developer to create routes for the Mountain Valley Pipeline and the Atlantic Coast Pipeline, and overlaid with data from the U.S. Census Bureau. The routes pass through a total of 31 counties, spanning a total of 850 miles in distance. Typically implementation of infrastructure projects lies along areas of prosperity, or low population rates. The analysis of variance test (ANOVA), a common statistical test produced similar results, which helps one understand choices that are made throughout development of a pipeline. Routes either avoid certain demographic areas or avoid areas with difficult geologic regulations. There are limited benefits to the state in which pipeline infrastructure is built. Much of the labor requires unique skill sets, so outsourcing often takes place. A major question remains; do the people within the state actually benefit? Or will these line constructions result in damages, dangers, and disasters for the community?

## *Geospatial Science Poster Session*

### **Dendroecology**

**Shannon Knutson**

Faculty Mentor(s): Richard Maxwell      Geospatial Science  
Wednesday, April 22      Heth 014      1:00 pm-3:30 pm

Dendroecology is the study of creating timelines of ecological events (e.g., wildfire and insect outbreak) by looking at tree rings. By analyzing many trees at a forest location, one can reconstruct ecological events back in time hundreds of years. I am using previously collected samples of Virginia pine trees growing in the New River Gorge, WV to determine how the species responded to past fire events. Samples were well-sanded prior to scanning them into our computer system, allowing us to begin crossdating them. Annual growth will be analyzed to identify periods of growth release (increase) and growth suppression (decrease) following wildfire events. Analysis will be conducted in the TRADER package in R which allows for the analysis of tree growth over time. I expect to see a handful of ecological events that will affect all our samples, and therefore, show how significant wildfire events are to the growth of the forest. Our data can then be used to reconstruct an accurate timeline of forest disturbance in the New River Gorge.

### **Dendroclimatology study of Virginia pine in New River Gorge, WV**

**Jacob Britton**

Faculty Mentor(s): Stockton Maxwell      Geospatial Science  
Wednesday, April 22      Heth 014      1:00 pm-3:30 pm

Dendrochronology is the study of tree rings to analyze past environmental phenomenon, and consists of a multitude of subfields studying everything from environmental to climatological factors. Not surprisingly, climatic factors such as annual precipitation and temperature affect the trees annual growth. This results in changes in the physiology of a tree's growth rings which can be analyzed to construct the environment in the past. This project will study the effect of climate on the annual growth of Virginia pine (*Pinus virginiana*) species in the New River Gorge, WV. Standard dendrochronological techniques will be used to analyze the samples; as well as specific sub-field techniques from dendroclimatology. Based on previous studies and taking into account the nature of the local environment, the Virginia pine species should show variation in annual growth rate due fluctuations in regional temperature and precipitation. These findings will allow for a reconstruction of past climatic variation and patterns which can be utilized to predict how the forest will respond in the future. It can also be used to detect climatic disturbances, such as local extreme drought, or even more widespread climatic changes such as global warming. Based on this research, we can also increase our understanding of more widespread and dramatic climatic phenomenon and how it will impact our future.

### **Geospatial Science Poster Session**

#### **Developing a Land Use Management Plan for Rural Areas within Radford City Limits**

**Joshua Oliver**

**Andrew Witt**

**William Bowling**

Faculty Mentor(s): Richard Roth

Geospatial Science

Wednesday, April 22 Heth 014

1:00 pm-3:30 pm

Land use planning can provide opportunities for appropriate urban development projects or conserving natural habitats. Land use planners consult many different geographic factors, as well as laws such as zoning ordinances, to determine the best land use for any specific land area. For this project, research will be conducted on two contiguous properties owned by the City of Radford. The first property, Parcel ID: 071097, is a 100-acre tract located off of Peterson Drive and the second property, Parcel ID: 070740, is a 30-acre tract located off the same road adjacent to the Little River. The first property is categorized by the City of Radford as being within the Rural' zoning district and the second is under the Resource Stewardship' zoning district. The purpose of this research is to develop a land use plan based on the above factors and any other locational, economic, cultural, and legal information available. The recommended land use plan for the two properties will be presented to the City of Radford's City Council.

#### **Analyzing Different Remote Sensing Models to Locate and Identify Temporal Changes of Wetlands in Southwest, Virginia**

**Joshua Oliver**

Faculty Mentor(s): Andrew Foy

Geospatial Science

Charles Manyara

Geology

Wednesday, April 22 Heth 014

1:00 pm-3:30 pm

Wetland destruction has been a growing concern over the past 30 years and is still occurring even though these lands are protected by the Clean Water Act of 1974. According to the EPA, every state in the United States has had wetland loss. 22 states have lost 50 percent or more of their original wetlands. Virginia has lost roughly 42 percent of the state's naturally occurring wetlands since the early 1600's. The EPA has predicted that every state, with the exception of Alaska, Vermont, and Hawaii, will have at least 50 percent wetland loss by 2050. The goal of this research is to explore spatial and temporal changes of wetlands in a section of southwest Virginia. By using remote sensing models produced for locating and verifying unknown wetland locations it is possible to map and model the changes in wetland over time. There are three main objectives: (1) Analyze three different remote sensing models for predicting wetland locations, (2) Statistically validate models' prediction accuracy using official wetland delineation procedures, and (3) Determine the percent change of wetland size using the most accurate model for the study area to denote temporal changes throughout the past 30 years.



### **Geospatial Science Poster Session**

#### **Assessing Risk of Being Targeted by Terrorist Bombings Through OLS Regression and Spatial Analysis**

**Micah Reed**

Faculty Mentor(s): Andrew Foy                      Geospatial Science  
Wednesday, April 22      Heth 014                      1:00 pm-3:30 pm

Since the terrorist attacks on September 11, 2001, terrorism has become a focal point in the United States. It is a major hazard that causes fear in Americans, damage to infrastructure, injury, and deaths. The goal of this research is to develop and implement a risk map of the likelihood a Virginia county would be targeted by a terrorist bombing attack. Through the use of prior research along with statistical methods to determine which variable a county will have that makes it a good target for a terrorist bombing. With known locations of previous terrorist bombing events in the United States, it is possible to determine characteristics of these locations that are similar. These characteristics could include population, population density, ethnic diversity, or number of cities within the county. The research used OLS regression and spatial analysis to determine which characteristics make a county at higher risk for a terrorist bombing. With OLS and spatial regression, a predictive surface that represents the risk of a terrorist bombing was formulated. The surface created by the OLS along with demographic information of Virginia Counties helped identify which counties have a higher risk of being targeted by a terrorist bombing. The counties found to have characteristics matching those determined by the OLS and spatial regression model were symbolized as high to low risk for being a likely target of a terrorist bombing in order to create a map that displays the research findings.

#### **Geographic Information System-Based Statistical Prediction Model to Identify Water Mains at Risk of Failure**

**Dustin Engledove**

Faculty Mentor(s): Andrew Foy                      Geospatial Science  
Wednesday, April 22      Heth 014                      1:00 pm-3:30 pm

Water distribution networks provide water for large populations. These networks consist of water mains that are constantly deteriorating. Failure of any of the pipes in the network could result in loss of service for numerous people. Physically inspecting the condition of these water mains to identify pipes that need repair or replacement can be time intensive and economically costly. The goal of this project was to develop a GIS-based statistical model to identify water mains that need renovation or replacement. The ability to predict water main failures using a geographic information system (GIS) and statistical software (JMP PRO) can reduce both time and money spent on maintaining, replacing and renovating the system. Factors which cause main failure can be divided into two broad groups; operational and environmental. Operational factors consist of material, diameter, and length of the pipe. Environmental factors include soil type, air temperatures and water temperatures. This project analyzes the water distribution network of the City of Lynchburg, Virginia using logistic regression and GIS. The data will be derived from the City of Lynchburg's GIS database which contains attributes about the water lines such as pipe diameter, length, material, date of installation, depth of the pipe, and occurrence of failures. The final product is a GIS model that represents which water mains are likely to fail.

### **Geospatial Science Poster Session**

#### **White-Tailed Deer Forage Assessment of Managed and Unmanaged Food Plots**

**Trenton Miller**

Faculty Mentor(s): Andrew Foy                      Geospatial Science  
Wednesday, April 22      Heth 014                      1:00 pm-3:30 pm

Wildlife habitat management planning has experienced many challenges in recent years. Financial constraints have hindered many government and conservation agencies efforts in project planning. Due to financial issues, many wildlife clearings and projects have been abandoned. Supervision of foraging clearings is important to the conservation of wildlife populations. Coordinating multiple conservation agency efforts will help meet these challenges. Habitat assessment is a tool that is used by wildlife managers to make planning decisions. These tools could also be used to judge whether management is necessary for the success and usage by fauna. Two wildlife clearings (one managed, one unmanaged) were selected for this study and were used to implement a fecal pellet group survey. Pellet group surveys are a simple way to measure relative deer densities of an area. The objective of the study was to test and statistically prove with ANOVA analysis that managed wildlife clearings are exploited more by local white-tail deer populations via pellet group surveys sampling. It has been established that pen raised deer defecate at a rate of 13.4 times per 24 hour period. Using this constant, the amount of forage days by deer at each site location can then be calculated. It is hypothesized that managed wildlife clearings attracted more wildlife based on the presence of droppings.

#### **Using the Error-Band Geometry Model to Classify Uncertainty in Cell Phone Collected Spatial Data of Man-made Features using an iPhone 5S**

**Daniel Huneycutt**

Faculty Mentor(s): Andrew Foy                      Geospatial Science  
   Charles Manyara                      Geospatial Science  
Wednesday, April 22      Heth 014                      1:00 pm-3:30 pm

Mobile technology has become an important resource in the geographic community for collecting spatial data. The use of high sensitivity GPS receivers has been the choice of professionals for mobile data collection, but these units are expensive and training is needed for proper operation. An alternative solution to these types of units is cell phones. With apps that contain location based services downloaded on to a cell phone, collection of spatial data is possible, easy, and cheap. The goal of this research is to collect man-made features with an iPhone 5S cell phone and by using the root mean square error formula along with a high sensitivity GPS, calculate the accuracy of the cell phone's locating services. Using analysis of variance to compare accuracies within the feature types collected by the iPhone, the error-band geometry model will be used to classify spatial uncertainty of collected man-made features. The results from this research will provide users with information to determine if it is necessary to use an expensive GPS receiver or if the positional quality is reliable enough to collect data using the cheaper and easier alternative of a cell phone.

### **Geospatial Science Poster Session**

#### **Developing a Visitor Map and Brochure Based on User Opinion for Selu Conservancy**

**William Dowd**

Faculty Mentor(s): Andrew Foy                      Geospatial Science  
Wednesday, April 22      Heth 014                      1:00 pm-3:30 pm

Developing a visitor map and brochure based on user opinion for selu conservancy William Dowd, Senior, Geospatial Science With guidance from: Dr. Andrew Foy, Assistant Professor, GIS Center Director Jeff Armistead, Director of Selu Conservancy Every year, Radford University students from multiple disciplines utilize Radford University's Selu Conservancy for independent research projects, outdoor recreation and class field trips. The conservancy has over 380 acres of forest and open space, as well as facilities for research and events. The objective of this research project is to create a visitor map and brochure for the conservancy based on the information needs and interests of RU students. Creating a map and brochure for visitors to the property is important, because it will lead to a decrease in confusion pertaining to topics such as access concerns, facility locations, and current use policies. This research included three phases of research and work. First, a comprehensive literature review of relevant materials that describe the many aspects of Selu conservancy was written. Then, the development and administration of a survey instrument that gauges respondents' needs and interests relating to the development of such a product took place. The survey covered aspects of preferred cartographic elements and information needs of visitors. The final stage involved the creation of the mapbrochure product. The results of this work have been presented to the director of the facility for approval to be published and used in circulation at the conservancy.

#### **Development of Strategic Land Use Plan for Selu Conservancy**

**Ben T Titlow**

**Will Dowd**

**Michael Lane**

**Otis Nicholas**

Faculty Mentor(s): Richard Roth                      Geospatial Science  
Wednesday, April 22      Heth 014                      1:00 pm-3:30 pm

Development of Strategic Land Use Plan for Selu Conservancy Selu Conservancy is a 380 nature preserve located in the southern portion of Montgomery County Virginia, and is owned by the Radford University Foundation. Radford University leases the property for use as an outdoor classroom as well as a retreat and conference center. The objective of this project is to create a strategic development plan based on the prior, current and potential future land uses of the conservancy. This is an important project because academic use and interest in the facility has been steadily increasing over the last three years and with this comes many new ideas for projects and developments that may or may not fit with the mission of the Conservancy. The creation of a strategic development plan will benefit both the Selu Steering Committee as well as those who wish to pursue new projects on the property. To accomplish this goal, two phases of research will take place. First, use published and student-generated spatial data and other available materials to understand the history and current use of the property. Second, use these data to develop an appropriate master plan for Selu, including map products. We plan to create deliverables such as several terrain analysis maps for the prospective locations, which include important geomorphological and ecological characteristics.

**BFA Graphic Design Show****Exhibitions as Creative Research**

**Arceta, Ritchel**  
**Becker, Jillette**  
**Compton, Julie**  
**Epifanio, John**  
**Garofalo, James**  
**Henry, George**  
**Hoskins, Sarah**  
**Jessen, Elisse**  
**McHugh, Katherine**  
**Moody, Brooke**  
**Nanamchiew, Manthana**  
**Sours, John**  
**Suter, Madison**  
**Zaki, Kareem**

Wednesday & Thursday, April 22 & 23    Covington Art Museum    2:00 pm-4:00 pm

Senior BFA students exhibit their work in a final graduation show. The formal opening of the BFA graphic design show is April 24. Between April 21 and 23, students will be gathering in the museum to plan their use of space, decide whose work goes where and how much space each person gets, and individually hang their own works. Usually, visitors do not see the process of planning and installing an exhibition, so this is an unusual opportunity to see and ask questions about how installation decisions are made and how they affect the audience's impression and understanding of the works in the exhibition. Visitors are invited to drop in and feel free to walk around and talk to the students who are present. Different students will probably be present each afternoon and at different times as they will be handing their works when they are not in classes.

***Scholar Citizen Oral Presentations*****Research, Curricula Development, & Grant-Writing Support For ROOTS WITH WINGS: Floyd County, Virginia, Place-Based Education Oral History Project: A Youth Resiliency Effort****Victoria Curtis****Taylor LaPrade****Caroline Leggett****Austin Addair****Christopher Miller**

Faculty Mentor(s): Theresa Burriss

Appalachian Studies

Wednesday, April 22 Heth 022

3:00 pm-3:20 pm

Radford University students have developed teaching materials for use in the Floyd County place-based education oral history project, Roots with Wings, to strengthen the capacity of Floyd County youth, as well as Radford University student mentors, to compete in the global economy. Community partners at the Old Church Gallery in Floyd County have identified a need for hands-on learning materials to provide high school students with a more sophisticated understanding of their community resources and strengths. Youth taught to capture the wisdom of elders learn lessons of past hardships and absorb demonstrations of coping skills. The Roots with Wings Project uses technology to foster these connections. As a result, both the RU students, who serve as mentors, and the Floyd County high school students gain a greater degree of mastery over a variety of communication and technology skills, such as interviewing, digital recording and editing, and public speaking.

**Roots With Wings: Floyd County Place-Based Education Oral History Project****Victoria Curtis****Taylor LaPrade****Lauren Bailey****Ellisse Tracy****Bianca Dickerson****Haley Frazier****Madison Hardin****Kurt Koonce****Caroline Leggett****Blake Sholes****Kimberly Pearman**

Faculty Mentor(s): Melinda Wagner

Sociology

Wednesday, April 22 Heth 022

3:20 pm-3:50 pm

The Radford University Appalachian Regional and Rural Studies Center, Center for Social and Cultural Research, and Scholar-Citizen Initiative partner with the Floyd Story Center and Old Church Gallery in Floyd County and with Floyd County High School for this mentor-based program to improve community connections, preserve cultural heritage, and build technology skills. The Floyd County Place-based Education Oral History Project plants the roots of the web of meaningful relationships found to be a factor in community resilience. At the same time the Project affixes state-of-the-art technology wings. Radford University mentors work as part of an intergenerational team to teach high school students how to conduct ethical, methodologically sound interviews; record using state-of-the-art audio and video equipment; transcribe; create searchable content logs; research historical background; archive; discover stories and themes in interviews; extract a theme from hour-long interviews; and create movies. Mentors come from a variety of majors and contribute by applying the special knowledge and skills learned in their coursework to the Project.

**Scholar Citizen Oral Presentations****Senior Health and Wellness Fair**

**Bert Herald  
Debra Super  
Kelly Garman  
Megan Jones  
Stephanie Page**

**Camden Harrison  
Emily Shannon  
Kendra Watson  
Megan Osborne**

**Campbell Carter  
Jasmine Thomas  
Mackenzie Kirchmier  
Renee Buchanan**

Faculty Mentor(s): Jyotsna Sharman      Nutrition and Dietetics  
Wednesday, April 22      Heth 022      3:50 pm-4:20 pm

In the course Nutrition through Life Cycle II: Adult and Elderly, Nutrition & Dietetics juniors study about the process of aging as well as the disorders and diseases of older adults. They learn how to assess the nutritional needs of older adults and offer appropriate interventions and education. Additionally, they also analyze the different physiological, socioeconomic, cultural, and psychological factors that influence food and nutrition behavior in older adults. Participating in the Senior Health and Wellness Fair gave future dietetic professionals an opportunity to augment, extend and apply their classroom learning and communication skills to benefit local seniors, and more specifically, to effectively counsel and educate them on nutritional advice consistent with the Dietary Guidelines for Americans. For the project students developed appropriate nutritional handouts, brochures and tri-fold displays. Students also assembled and offered nutritious food samples for tasting, as well as conducted nutritional screening, including assessment of malnutrition. The effort was directed at educating older adults on their unique nutritional needs to assist them in leading a healthier and good quality life. After the culmination of the activity, students examined their own perspectives and assumptions about themselves, the health fair, the elderly people they interacted with, and the impact of these perceptions on their service. The activity encouraged students to consider their goals as personally and/or professionally oriented to community service. Finally, this activity helped facilitate students in their exploration of self, as well as the community needs and issues, rather than their developing pre-mature solutions to otherwise complex civic challenges.

**Scholar Citizen Panels****Dream of a Nation: Scholar Citizen CORE 102 Student Calls to Action**

Faculty Mentor(s): Michele Ren                      English  
    Rodney Ray                      English  
    Judy Mann                      English  
 Wednesday, April 22    Heth 043                      3:00 pm-4:20 pm

Students from SCI CORE 102 courses will present the "best" dozen of 59 video speeches. The videos, chosen from each section, will inform the average person about what they can do regarding topics chosen from Dream of a Nation, "a public awareness and education initiative aiming to inform and empower citizens and students with critical knowledge and solutions for strengthening our society." ~dreamofanation.org

**Scholar-Citizen ePortfolio Showcase**

ePortfolio Showcase featuring the works and reflections of students graduating in May 2015 as Graduating Scholar-Citizens and Scholar-Citizen Fellows.

**Trouble with Trenbolone? The Effects of a Common Runoff Pollutant****Emily Guise**

Faculty Mentor(s): Sara O'Brien                      Biology  
 Wednesday, April 22    Heth 043                      4:30 pm-6:00 pm

**My College Experience****Analise Roccaforte**

Faculty Mentor(s): Erin Webster-Garrett    English  
 Wednesday, April 22    Heth 043                      4:30 pm-6:00 pm

**Matti Hamed's ePortfolio: Scientific Outreach****Matti Hamed**

Faculty Mentor(s): Erin Webster-Garrett    English  
 Wednesday, April 22    Heth 043                      4:30 pm-6:00 pm

**My Journey of Discovering Who I am****Ashleigh Patterson**

Faculty Mentor(s): Pamela Frasier                      Health and Human Performance  
 Wednesday, April 22    Heth 043                      4:30 pm-6:00 pm

**My Diagnosis Does Not Define Me****Holly Thomas**

Faculty Mentor(s): Pamela Frasier                      Health and Human Performance  
 Wednesday, April 22    Heth 043                      4:30 pm-6:00 pm

**From 1st Generation to RU Domination-Alexis Steptoe's Journey****Alexis Steptoe**

Faculty Mentor(s): Pamela Frasier                      Health and Human Performance  
 Wednesday, April 22    Heth 043                      4:30 pm-6:00 pm

**Scholar-Citizen ePortfolio Showcase****Suicide Prevention on College Campuses****Faith Cromer**

Faculty Mentor(s): Pam Frasier Health and Human Performance  
Erin Webster-Garrett English  
Wednesday, April 22 Heth 043 4:30 pm-6:00 pm

**Dating Violence Research****Amy Alderman**

Faculty Mentor(s): Pam Frasier Health and Human Performance  
Wednesday, April 22 Heth 043 4:30 pm-6:00 pm

**A Look in the Life****Dayana Cossio**

Faculty Mentor(s): Pam Frasier Health and Human Performance  
Wednesday, April 22 Heth 043 4:30 pm-6:00 pm

**Consent****Tiffany Goins**

Faculty Mentor(s): Michele Ren Women's Studies  
Wednesday, April 22 Heth 043 4:30 pm-6:00 pm

**Appalachian Studies Association Conference Presentation: Travel Experience****Sarah Sheppard**

Faculty Mentor(s): Dr. Theresa Burriss Appalachian Studies  
Wednesday, April 22 Heth 045 3:50 pm-4:10 pm

**The Joys and the Journey****Rachel Salanova**

Faculty Mentor(s): Pam Frasier Health and Human Performance  
Wednesday, April 22 Heth 043 4:30 pm-6:00 pm

**My Resolve and Resilience: My New Reality at Radford University****Haley Parnell**

Faculty Mentor(s): Pam Frasier Health and Human Performance  
Wednesday, April 22 Heth 043 4:30 pm-6:00 pm

### **Interdisciplinary Poster Session**

#### **A Comparison of Lithic and Ceramic Artifacts From Two Adjacent Late Woodland Villages**

**Corey Frasca**

**Carlton Gover**

**Michael Carlson**

Faculty Mentor(s): Clifford Boyd

Wednesday, April 22 Heth 014

Anthropological Sciences

5:00 pm-7:00 pm

The later Late Woodland period (A.D. 1200-1650) in Southwest Virginia saw the development of circular palisaded villages as the common settlement type. Two of these villages 44PU8 and 44PU72 are located 300 meters apart along the floodplain of the New River in Pulaski County, Virginia. Survey and limited test excavations of these sites between 2011 and 2014 defined the site boundaries and resulted in the identification of several features and the recovery of substantial samples of lithic and ceramic artifacts as well as bone and shell ecofacts. This poster compares the lithic and ceramic artifacts from major contexts at these sites by examining the attributes of raw material and manufacturing stage for lithics and vessel portion, temper, and surface treatment and decoration for ceramics. Because of their spatial proximity, this study provides an opportunity to compare sites in identical environmental settings. Even though 44PU72 dates earlier than 44PU8, some similarities between the classes of artifacts and ecofacts reflect a use of similar resources. However, there are notable differences in ceramic temper and lithic raw material use which may reflect temporal or cultural differences.

#### **German Students Learn About the Holocaust**

**Gabrielle Pidal**

Faculty Mentor(s): Dr. Sandra French

Wednesday, April 22 Heth 014

Communication Sciences and Disorders

5:00 pm-7:00 pm

The purpose of this project is to investigate and learn how students today in Germany learn about the Holocaust and War World II. This project is being done in part of Dr. French's current research on how Germans remember their ancestors and their country's trouble past and how German's teach their students about War World II, Hilter and the Holocaust. The research for this project will be gathered from a PBS special documentary A Jew among Germans and various independent articles and interviews. We hope to find what perspective Germans teach their country's history to their children and possibly determine how that has affected their country's pride as a whole.

#### **Culture of Honor and Defensive Violence in the American South**

**Michael Logan**

Faculty Mentor(s): Nicole Hendrix

Wednesday, April 22 Heth 014

Criminal Justice

5:00 pm-7:00 pm

The Southern region of the United States has historically high rates of violent crime, especially homicide. The current study focuses on cultural explanations of Southern violence. The culture of honor is often conceptualized as a set of values related to protecting ones' honor. This study moves beyond this framework and conceptualizes culture as a toolkit that provides individuals with strategies of action. Quantitative data obtained from an online survey of participant responses to vignettes concerning potential conflict situations are analyzed to explore to whom and when violence is an acceptable action. The common perception is that cultural values in the South encourage violence. Findings from that study demonstrate that specific cultural resources, which are unbound by region, are more likely to be associated with support for defensive violence.

## ***Interdisciplinary Poster Session***

### **Obstructive Sleep Apnea in Cardiac Rehabilitation**

**Robert Weisbeck**

Faculty Mentor(s): Adrian Aron

Doctor of Physical Therapy

Wednesday, April 22 Heth 014

5:00 pm-7:00 pm

Obstructive sleep apnea (OSA) is a sleep disorder characterized by collapse of the pharyngeal airway leading to repetitive ventilatory interruption and subsequent moments of hypoxia. Presence or absence of OSA can be measured by calculating an individual's apnea-hypopnea index (AHI). While expensive polysomnography is considered the gold standard diagnostic tool for OSA, a variety of means exist for screening of the disorder. These utilities include subjective questionnaires and objective sleep recording devices such as the ApneaLink, which make early detection more cost-effective. However, sleep apnea is often undiagnosed, precluding many patients from receiving the beneficial effects of the common continuous positive airways pressure (CPAP) treatment. Individuals suffering from obstructive sleep apnea are at greater risk for developing a range of disorders including diabetes, stroke, and in particular, cardiovascular disease (CVD). Elevated incidence of OSA in CVD patient populations has been shown with prevalence rates of 65.7% in myocardial infarction patients, 58% in congestive heart failure populations, and 64% in the resistant hypertension population. After an acute cardiac event, standard of care is often therapeutic intervention from cardiac rehabilitation (CR) facilities. Ongoing research from Radford University is evaluating OSA in cardiac rehab patients utilizing both subjective and objective assessment tools. Preliminary results reveal 78.7% of CR patients are positive for OSA (AHI), as assessed by the most objective screening tool. In addition, patients showed lack of knowledge for the disease consequences as 82.5% of them did not follow up with a sleep physician to seek treatment after being informed of their positive OSA screen.

### **Comparison of Joint Kinematic Outcomes Between Three Different Dynamic Balance Tests**

**Christopher Buschmann**

Faculty Mentor(s): Kristen Jagger

Doctor of Physical Therapy

Wednesday, April 22 Heth 014

5:00 pm-7:00 pm

Background: The Star Excursion Balance Test (SEBT) is a valid and reliable method to assess dynamic balance. Based on previous findings that three particular test directions (anterior, posterolateral, and posteromedial) out of the original eight have been validated to assess dynamic balance, a modified version of the SEBT (M-SEBT) was created. The Y Balance Test (YBT) is a tool made by Functional Movement Systems® that is modeled after the M-SEBT. It allows for quick, reliable, and repeatable assembly and assessment of dynamic balance in a manner similar to the M-SEBT. While both tests are reliable, research findings indicate differences between reach distances, particularly in the anterior direction, between the SEBT and YBT. Thus, these two tests should not be used interchangeably. Based on the physical performance differences between the two tests, a modification of the YBT (M-YBT) was created to better simulate the SEBT. Methods: 28 participants (17 males) were scored on the YBT, M-SEBT, and M-YBT in a motion capture laboratory. Data included reach distances and joint kinematic measures at the hip, knee, and ankle. Results: Statistically significant differences between the average maximum values were displayed for the posterolateral reach directions [right:  $F(2)=4.816$ ,  $p=0.011$ , left:  $F(2)=5.455$ ,  $p=0.006$ ] between the YBT, M-YBT, and M-SEBT, with M-SEBT being significantly different than the other two tests. Kinematic analyses are currently ongoing to determine the reason for the differences between the three tests. Conclusion: It is expected that varying kinematic strategies within the lower extremity joints may cause test differences.

### ***Interdisciplinary Poster Session***

#### **Comparing the Learning Strategies for Mandarin in the U.S. vs. Mandarin China**

**Kayla Burd**

Faculty Mentor(s): I-ping Fu

Foreign Languages and Literatures

Wednesday, April 22 Heth 014

5:00 pm-7:00 pm

Comparing the learning strategies for Mandarin in the U.S. vs. Mandarin in China The intended purpose of this independent study will be gathering information regarding student-learning experiences' to speak, read, and understand Mandarin. This research focuses on the different techniques used by professors at Radford University compared to those used at Beijing Language and Cultural University (BLCU). In order to gather research I will be interviewing students that have taken courses at Radford, as well as participated in the study aboard program at BLCU. The interview questions are in depth regarding both experiences to help get the most information for this department. Also, I will be evaluating the overall effectiveness displayed by both institutions based on the students' interpretation of teaching technics. I will remain objective in this display of information and unbiased to either situation. I will be under the guidance of I-ping Fu, the foreign language and literatures department chair. At the conclusion of this research, paper and project I plan on presenting this at the spring student research forum. This is in hopes that this investigation can be promoted and to further student's foreign language learning experience at Radford University.

#### **Optimized Power Transmission Protocol for Wireless Sensor Networks**

**Joe Ashley**

Faculty Mentor(s): Hwajung Lee

Information Technology

Wednesday, April 22 Heth 014

5:00 pm-7:00 pm

As a result of the recent information technology era, wireless sensor networks (WSNs) have been recognized for their importance in many military and civilian applications. These include battlefield monitoring, smart buildings, smart cities, smart farms, and wild forest monitoring. As such, WSNs have been subject to research aimed at increasing practicality. In an attempt to increase energy efficiency without sacrificing performance, we propose exploring recent advances in wireless power technology for efficient energy transfer. Highly resonant wireless power transfer (a.k.a. WiTricity) has been shown to be safe, and efficient over short to mid-range distances. Using this technology, we propose a novel multi-hop power transmission protocol which attempts to minimize energy loss while maximizing network lifetime. We then use optimization software to compare our protocol to an existing charging protocol using the WSN Greedy Perimeter Stateless Routing (GPSR) communication path.

## ***Interdisciplinary Poster Session***

### **Blogging in the 21st Century**

**Sarah Mansueti**

Faculty Mentor(s): Tammy Robinson      Interior Design and Fashion  
Wednesday, April 22      Heth 014      5:00 pm-7:00 pm

The fashion industry is known for its fast paced approach through ever changing adoption of new trends and styles. This industry has come a long way since the early 2000's when the Internet was slowly becoming the standard for various industries. Fast-forward to fifteen years later, and the Internet has created entirely new platforms for the fashion industry. The Internet has contributed to online newspapers, social media, and most importantly blogging. The fashion industry is embracing this new platform and utilizing it as an advantage. First, I will examine the different types of blogs currently available. It is important to understand blogs that are impacting the fashion industry. Second, I will examine the marketing potential of companies using blogs. Blogs are helping create customer/brand relationships that would otherwise be non-existent. I will also analyze the changing roles of the consumer and brands as a result of the blogging industry. Third, I will examine the impact of blogging on the fashion industry. Methods utilized will include looking at existing fashion blogs, writing a fashion blog, and examining other social media platforms. To gauge the effectiveness of marketing potential, I will conduct several interviews. The questions to be asked will include the role of fashion bloggers, how marketing is affected by blogging, and how blogging has impacted trends and fashion. To measure the impact that blogging has left on the fashion industry, I will look to my research, personal experience, and interviews to analyze and interpret the information gathered. The future of the fashion industry will always endure change. The Internet and social media have affected this industry. After exploring my research question, I will be able to assess just how much these platforms have impacted the fashion industry.

### **An Analysis of Human Trafficking out of the Russian Federation**

**EJ Poell**

Faculty Mentor(s): Isaac Van Patten      Criminal Justice  
Wednesday, April 22      Heth 014      5:00 pm-7:00 pm

This paper provides an analysis of every aspect of Human Trafficking out of the country of Russia. There are many aspects that cover human trafficking from why the country of Russia to the logistical operation of the traffickers. The history of human trafficking is not a very pleasant one. It has existed for thousands of years and has flourished in Russia especially since the fall of the Soviet Union. This has become such a national problem for them that they have been downgraded to a Tier 3 group in the eyes of the UN. This paper also covers other aspects as in who is to blame for this situation and who is the perfect victim for these traffickers to approach? These traffickers can be a variety of people from one to two entrepreneurs or a criminal organization like the Russian Mafia. They traffic men, women and children for a variety of needs in a variety of ways. These ways could be by truck or boat, never a plane, but depended on the route the traffickers were taking and the destination. This is a serious problem in need of serious solutions, which can start by educating the people of Russia on the issue of human trafficking. It will take a collection of the Russian Government and some of its allies to help clean up their justice department and make the changes necessary to stop this horrible crime.

## **Interdisciplinary Poster Session**

### **Objection!:The Role of Lawyers as Shown in Film**

**Evan Reid**

Faculty Mentor(s): Margaret Hrezo      Political Science  
Wednesday, April 22      Heth 014      5:00 pm-7:00 pm

Movies have the ability to reveal truths about the real world that may not seem as clear. In particular, there are some films that have highlighted and interpreted the role of a lawyer in the legal process. Lawyers perform a variety of roles with the American judicial system. These include: gatekeeper, transformer, creator, policy maker, and decision maker. This project will focus on the following films and examine their perspective on the roles lawyers play in the American system of justice. A Civil Action is a movie about a high profile defense attorney who is hired to represent families who are suing a company for dumping toxic waste. This movie reveals some of the inherent problems with tort law while also showing a witty and knowledgeable lawyer in John Travolta's character. The movie Philadelphia stars Denzel Washington as a small time lawyer who has been hired to represent Tom Hanks' character in a wrongful termination suit. Hanks' character has been terminated because of his perceived homosexuality, and, although the movie was released twenty years ago, the film provides a social commentary on an issue that is still affects the country today. My Cousin Vinny takes a comical look at the legal process. Its director, Jonathan Lynn, is a law school graduate; therefore, this cheery tone does not lack in accuracy. My presentation will cover these films along with three others.

### **Examining LinkedIn as a Tool for Developing Social Capital**

**Kristina Contreras**

**Megan Coulter**

Faculty Mentor(s): John Brummette      School of Communication  
Wednesday, April 22      Heth 014      5:00 pm-7:00 pm

LinkedIn continues to be used by university alumni as an important tool for professional development. As a result, research is needed to identify the tangible and intangible benefits of being a member of the expansive LinkedIn network. One area of research that is applicable to such an endeavor is social capital. Bourdieu (1986) defined social capital as the aggregate of the actual or potential resources which are linked to the possession of a durable network of more or less institutionalized relationships of mutual acquaintances or recognition (p. 248). Williams' (2006) developed an Internet Social Capital Scale to measure the development of social capital in online networks. His 10 item survey is comprised of multiple variables, some of which include the people I interact with onlineoffline would put their reputation on the line for me and the people I interact with onlineoffline would be good job references for me. Using Williams' (2006) Internet Social Capital Scale, this study seeks to examine whether alumni participation in the LinkedIn social network is related to the development of social capital. Findings from this study are expected to provide valuable insight into whether LinkedIn serves as an avenue for achieving professional goals.

## **Interdisciplinary Poster Session**

### **Identification and Closure**

**Kimber Cheek**

Faculty Mentor(s): Carolyn Quinn  
Wednesday, April 22 Heth 014

Women's Studies  
5:00 pm-7:00 pm

This paper looks at the arguments for and against the use of forensic identification techniques in the identification of human remains by forensic anthropologists. The two sides of the argument look at the moral and ethical issues that arise from techniques such as facial reconstruction and techniques used in the identification of perpetrators in images depicting child abuse based on hands and genitals. One side claims that these techniques are not completely accurate and can lead to the wrong conclusions being made. They argue that things like ethnicity cannot be determined by looking at the skeletal remains and that facial reconstruction by the means of CT scans is not accurate and can lead to a misidentification. They also argue that some of the techniques are an invasion of peoples' privacy. The other side argues that while imperfect, the techniques create useful information that can help investigators in the solution of crimes. They can identify the age, sex, stature, possible weight, any previous injuries or surgical procedures, and the ethnicity of a victim. Forensic anthropologists help identify people who have been dead for a very long time, people whose soft tissue is mostly destroyed or missing, or even victims of mass accidents whose bodies are no longer in one piece. Forensic anthropologists can use these techniques to bring closure to the families and communities of victims. This paper looks at both arguments and analyses each sides reasoning.

### **Career Indecision and Indecisiveness**

**Sydney Houtz**

Faculty Mentor(s): Carolyn Quinn  
Wednesday, April 22 Heth 014

Core  
5:00 pm-7:00 pm

This paper centers on career indecision and indecisiveness in young adults and intervention techniques to properly address and solve the problem. It examines several studies pertaining to its effect on an individual, as well as investigating several procedures to assist someone suffering from career indecisiveness and indecision, whether severely or not so. It also approaches the subject from a cultural perspective, taking into account results from many different ethnicities and backgrounds. Furthermore, it classifies the phenomenon of career indecisiveness and indecision as a mental disorder associated greatly with depression and anxiety in adolescents and students. Adolescent anxiety and depression are becoming increasingly common, and these can both cause and be the effect of career indecision. Not enough assistance is given to young adults struggling with this decision, as well as other big decisions in their lives, which bears a significant and frightening semblance to a lack of psychiatric intervention in people of that same age group struggling with depression and anxiety disorders (which commonly end in the worsening of symptoms and, in extreme cases, suicide). Because so few people recognize indecision (especially when related to a choice of profession in the future) as a mental disorder of its own, it receives little attention and often the symptoms of the person suffering it worsen over time, even after the patient has chosen a career path. This ignorance and lack of acknowledgement on the subject make those suffering from it susceptible to other related disorders, such as general anxiety disorder and depression.

## **Interdisciplinary Poster Session**

### **An Overview of Youth Sports-Related Concussion Assessment and Directions for Future Research**

**Jay Coble**

Faculty Mentor(s): Alex Siyufy

Brent Harper

Wednesday, April 22 Heth 014

Doctor of Physical Therapy

Doctor of Physical Therapy

5:00 pm-7:00 pm

Sports-related concussions are a major health concern in the United States, with approximately 300,000 occurrences each year. Concussions are difficult to diagnose for many reasons: irregular presentation with a variety of symptoms, lack of a gold standard for screening, and intentional misreporting of symptoms by young athletes. There are several useful screening tools used on the sideline during athletic events, each of which examines different areas of neurocognitive function. The King-Devick (KD) test is a new reliable method for concussion screening that assesses saccadic eye movements. For a more objective measurement, Head Impact Telemetry Systems can be used to measure the force applied to helmets during play. The Reebok Checklight is a more affordable alternative to this technology and has large-scale applicability for concussion management in youth football leagues. Ongoing research at Radford University examined the effectiveness of the KD and Reebok Checklight at detecting concussions in youth football players. There were 54 hits that triggered the Checklight system: 43 moderate (yellow) and 11 red (severe) events. Among these only one concussion was observed; this indicates that the Checklight is too sensitive to the age range and skill level of the players. More analysis will be performed to identify the effect of cumulative impacts on youth football players and the prevalence of undiagnosed concussions that result from several impacts during games or practices.

### **Introduction to Lymphedema Therapy**

**Amanda Cross**

Faculty Mentor(s): Julia Castleberry

Wednesday, April 22 Heth 014

Doctor of Physical Therapy

5:00 pm-7:00 pm

The lymphatic system lies parallel to the circulatory system and uses a low flow, passive mechanism without an active pump. Lymphatic circulation relies on the venous system and contractions of skeletal muscle to return accumulated fluid in the interstitial space to the circulatory system. If the body is unable to return excess fluid, lymphedema may develop. Lymphedema occurs as the result of congenital malformations of the lymphatic system, or more commonly, by surgery involving damage to lymph nodes and vessels. Lymphedema can limit range of motion, impair wound healing, and hinder mobility. To optimize outcomes, it is imperative that patients receive a multi-professional approach toward the treatment of their lymphedema diagnosis. Physical therapists work in conjunction with physicians and clients to implement appropriate therapeutic treatments, while also promoting patient and caregiver education. Each factor is necessary to facilitate improvements in function and ensure maintenance after discharge. Currently, physical therapy students receive limited exposure to resources and education regarding treatment options and management of lymphedema. To address this need, Dr. Julia Castleberry, of Radford University's Doctor of Physical Therapy (DPT) program has created a lymphedema manual that has been piloted by four DPT programs, totaling 122 students. Initial beta testing responses indicated that 65% strongly agree that this manual contributed to their clinical knowledge of lymphedema therapy. Recent efforts have been made to ensure inclusion of current material, to provide a comprehensive foundation for the application of lymphedema treatment and management. Publication of the manual is scheduled for June 2015. Key words: Lymphedema, Physical Therapy, Manual

### **Interdisciplinary Poster Session**

#### **Tourism and Technology: The Study of How Technology Has Altered the Business of Travel**

**Nicole Diambra**

Faculty Mentor(s): Carolyn Quinn      Women's Studies  
Wednesday, April 22      Heth 014      5:00 pm-7:00 pm

The idea of travel has existed for centuries. Even the early American settlers were unsatisfied with the idea that what they saw was all that existed. Due to a desire to discover, the pioneers set out on strenuous journeys to expand their horizons. Today, the idea of travel has taken on a much more relaxed implication. Vacation is seen as a privilege, and is anticipated in a culture that has grown incurably busy. Technology, while it has aided in creating the environment travelers desire to be removed from, has created a new form of travel and tourism. The travel industry has been forced to alter the way it interacts with the modern traveler, increasing skills in advertisement style, feedback retrieval, and the actually booking process. The traveler also has faced alterations in the way which travel takes place. This research will explore how the industry has adjusted to technology advancements and explore which changes have been positive and which negative. Also, research on what types of technology have had the largest impact within the tourism industry will be discussed. Finally, data addressing how technology has impacted the amount and kind of travel that takes place will be collected and examined.

#### **Exploring the Effects of Firearm Sales on State Level Gun Deaths**

**Cheryl Johnson**

Faculty Mentor(s): Nicole Hendrix      Criminal Justice  
Wednesday, April 22      Heth 014      5:00 pm-7:00 pm

This study examines the effect of gun sales on firearm death, homicide, suicide, and accidents. To better understand the role of gun sales on firearm deaths, the National Instant Check System (NICS) data and Brady Scores were examined. Both represent the gun laws and restrictions in place and their effectiveness of performing these tasks within society. The literature suggests that age, gender, and race are important factors to account for in firearm studies. This study utilizes multiple regression to determine the statistically significant predictors for firearm death. Models examining gun death, measured as standardized incidents, will be examined. The current study examined firearm-related homicides, suicides, and accidents. This study also controlled for gender, race, age, location, and Part I crimes. Concentrations of gender, race, state crime rate, and firearm laws were significant predictors of firearm death, and provide a baseline for identifying the individuals at risk of falling victim to firearms.

***Interdisciplinary Poster Session*****Education Without a Home****Emily Hiett**

Faculty Mentor(s): Carolyn Quinn      Core  
Wednesday, April 22      Heth 014      5:00 pm-7:00 pm

America promises that every child will receive a fair and equal education. This promise applies to each and every child, regardless of their home life, or lack of. By definition, homeless means having no home or permanent place of residence, which means that hotels and shelters do not meet adequate housing standards. Homeless children face exceptional difficulty when it comes to education and schools encounter countless questions of what to do when they have nowhere to live. The increase of homeless children since the economic recession has caused a push for programs that aid these children in gaining an equal education. Mental handicaps, physical disabilities and anxiety disorders all have higher chances of showing up in children without proper housing. Finding new ways to reach all children's home life problems will help our education system better meet the needs of every child. Locating these children to a permanent school poses an issue because without stable housing, it's almost impossible for families to stay in one school district for long enough periods to substantially make a difference in education. Failing to provide homeless children the benefits of education would break the American promise of equal education for all. Taking the extra time and effort to locate and meet the extra special needs of these children would not only keep them off the streets for a good part of the day, but also give them the chance to turn their lives around by getting good paying jobs and be able to support the future children to come.

**Thursday, April 23<sup>rd</sup>****Primate Behavior at the NC Zoo****Heth 016            10:00 am-12:00 pm****Honors Academy Capstone Oral Presentations****Heth 022            3:00 pm-5:30 pm****Honors Academy Capstone Poster Session****Heth 022            5:30 pm-6:30 pm****Exhibitions as Creative Research****Covington Art Museum 2:00-4:00 pm****Psychology Oral Presentations****Heth 016            2:20 pm-4:00 pm****Psychology Poster Session I****Heth 014            4:00 pm-5:00 pm****Psychology Poster Session II****Heth 043            5:00 pm-6:00 pm****Art History Symposium****Heth 016            4:00 pm-6:00 pm**

## **Primate Behavior at the NC Zoo**

### **The Ratio of Affiliative and Agonistic Behaviors Observed in Captive Lemur catta**

**Carlton Gover**  
**Lauryn Pulliam**  
**Taylor Fay**  
**Leia King**

Faculty Mentor(s): Cassady Urista      Anthropological Sciences  
Thursday, April 23      Heth 016      10:00 am-10:12 am

The social structure of the endangered ring-tailed lemurs (*Lemur catta*), differs from most other primate groups, seeing that the females within Ring Tailed lemur troops are the dominant sex. This unique social structure led us to the question of do the ring-tail lemurs exhibit a significant ratio of affiliative and agonistic behaviors. It was predicted that the ring-tail lemurs would display a high ratio of affiliative behaviors due to the social structure of the ring-tail lemurs. We observed five captive ring-tailed lemurs, at the Asheboro Zoo in Asheboro, North Carolina on October 18, 2014. We observed the ring-tail lemurs over the course of five hours and event behaviors were recorded. We distinguished affiliative and agonistic behaviors between the individual ring-tail lemurs and produced a ratio to reflect the observations made. The majority of the behaviors amongst the ring-tail lemurs were affiliative with a ratio of 11.9:1. This displays a ninety-two percentile of affiliative behaviors. The result of this experiment is supported by others in the scientific community especially in regards to the display of the agonistic behaviors and the potential causes of these behaviors and how they are affected by mating periods and feeding times. Due to the social hierarchy of the ring-tailed lemurs, female dominance appears to play a significant role in the ratio of affiliative and agonistic behaviors exhibited by the sample taken for this experiment. The results of this experiment provides a ratio that is reflective of the species social structure and how periods of mating and feeding may affect their behaviors.

### **Sexual Dominance Expression in Captive Lemur catta**

**Ricky Orose**  
**Michael Carlson**  
**Brooke Preaseau**  
**Shane Carper**

Faculty Mentor(s): Cassady Urista      Anthropological Sciences  
Thursday, April 23      Heth 016      10:12 am-10:24 am

The concept of female dominated primate groups has intrigued and puzzled many scientists to this day. In return, this has led to a plethora of research on how females display their dominance amongst their peers. The ring-tailed lemur, *Lemur catta*, is one of the few prosimians that exhibits this unique social structure. The primary objective of our study was to outline and observe how females display their dominance in a captive environment. We conducted our research at the North Carolina Zoo in Asheboro, North Carolina at a small island enclosure that housed 5 ring-tailed lemurs. We found that the lemurs remained inactive for a large portion of the day until feeding time had come. Once feeding had commenced, we were able to observe and quantify a significant increase in agonistic behaviors with regard to dominance. We determined that captive female lemurs display most of their dominance during feeding times by mainly chasing or fighting subordinate members of the group.

### **Primate Behavior at the NC Zoo**

#### **Polyspecific interactions of red ruffed lemurs and ring-tailed lemurs in a captive environment**

**Pham Tien  
Sara Lupino  
Robert Reanud  
Chad Cassar**

Faculty Mentor(s): Cassady Urista      Anthropological Sciences  
Thursday, April 23      Heth 016      10:24 am-10:36 am

Red ruffed lemur (*Varecia rubra*) and ring-tailed lemurs (*Lemur catta*) do not typically interact in the wild due to physical barriers on the island of Madagascar. In nature, lemurs often interact through behaviors such as grooming, holding, and other physical contact between individuals within their groups. The North Carolina State Zoo has 5 ring-tailed lemurs and 2 red ruffed lemurs in a captive environment known as Lemur Island. This study investigated the polyspecific interactions between the two species on the island. Emphasis was directed to the comparison of behavioral interactions between members of the same species, and interactions between members of different species. Many intraspecific interactions occurred between ring-tailed individuals, while few were observed between red ruffed lemurs. Very few polyspecific interactions were observed between species, yet were always in an aggressive fashion. It is possible that the captive nature of these lemurs and their small group size affects the frequency of polyspecific interactions. Additional research is required to determine the extent to which these factors affect polyspecific behaviors of lemur species.

#### **Social interaction and aggressive behaviors between male hamadryas baboons (*Papio hamadryas hamadryas*)**

**Alex Pearce  
Caley McCoy  
Mark Zegarra  
Jessica Johnstone**

Faculty Mentor(s): Cassady Urista      Anthropological Sciences  
Thursday, April 23      Heth 016      10:36 am-10:48 am

Baboons are primates that use aggression to assert dominance and maintain social interaction. However hamadryas males typically respect another males place in the hierarchy if there is familiarity or kinship between the two. The focus of this study was on aggressive behaviors of dominant males and how they compare to those observed both in the wild and in captivity. Our research was conducted on a 25-member population of hamadryas baboons housed in captivity. Instantaneous scan samples of the baboons were taken at 15-second intervals over a five minute span. Focal animal sampling was also performed throughout the duration of our study. We observed males to use aggressive tactics, such as nape biting, to condition females and chasing to correct juveniles and infants. However we observed no aggression behaviors directed from one dominant male to another. This suggests that dominant males in captivity experience levels of familiarity between them and therefore respect the social status of each other, limiting the occurrences of aggression.

## **Primate Behavior at the NC Zoo**

### **Aggression Tendencies of Hamadryas Baboons in a Captive Environment (Papio hamadryas)**

**Alexandra Lopez  
Ryan Angelopulos  
Shannon Johnson  
Stephanie Nicholas**

Faculty Mentor(s): Cassady Urista      Anthropological Sciences  
Thursday, April 23      Heth 016      10:48 am-11:00 am

Primate aggression has often been the focus of primate behavioral studies. Hamadryas baboons are particularly interesting due to their unique social structure. Harems of the hamadryas baboons consist of one dominant leader male and several reproductive females and their children. Hamadryas baboon harems are interesting for studying aggressive behaviors because the leader male in the harem will engage physically with the females to maintain their presence in the group. To better understand aggressive behaviors elicited by male hamadryas baboons, we conducted a study at the Asheboro Zoo in North Carolina to determine whether male hamadryas baboons were more aggressive with females or other males. We found that male hamadryas baboons tended to be more aggressive towards females, most likely due to herding.

### **Effects of Social Grooming on Male Dominance Hierarchy in Chimpanzees**

**Morgan Sullivan  
Caitlin Annear  
Corey Frasca**

Faculty Mentor(s): Cassady Urista      Anthropological Sciences  
Thursday, April 23      Heth 016      11:00 am-11:12 am

Our initial question was to find out about male dominance hierarchies. After doing background research we hypothesized that grooming is the most indicative behavior of the dominance hierarchy. We planned to study chimpanzees at the North Carolina Zoo through focal animal studies of the adult males in the group. We spent two days at the zoo taking observations of the available groups. The chimpanzees are only available in two separate groups where one group contains one adult male and the other group contains three. Most of the relevant data was collected on day two. Our results from day two support our hypothesis. Our statistical analysis shows that Sokoto did receive the most data and he is labeled at the dominant male in the group.

## **Primate Behavior at the NC Zoo**

### **Chimpanzee Relationships in Captivity**

**Rhiannon Cocke**  
**Shanellie Estrella**  
**Seth Harrison**  
**Matthew Wertz**

Faculty Mentor(s): Cassady Urista      Anthropological Sciences  
Thursday, April 23      Heth 016      11:12 am-11:24 am

Common Chimpanzees are a species of primate with strong community bonds and high social interactions in the wild. In the wild, adult male chimpanzees typically have the strongest social bonds, whereas females just interact with their offspring. We conducted research to see if this pattern was true for captive population at the Asheboro, North Carolina Zoo. We used focal animal sampling over a period of 5 hours. Though the chimpanzees in captivity are managed by humans; they still hold some of the social interactions and behaviors that one would observe in the wild. We found that the strongest social interaction occurred between the female chimpanzees and their offspring, next most common was interactions between juveniles. Adult males were not seen interacting as frequently, but this is largely due to the sample population on display during data collection, and may not be a reflection of true chimpanzee group dynamics.

### **Juvenile Behavior in Western Lowland Gorillas**

**Holly Wood**  
**Matthew Danielson**  
**Brianna Curry**

Faculty Mentor(s): Cassady Urista      Anthropological Sciences  
Thursday, April 23      Heth 016      11:24 am-11:36 am

Male gorillas tend to live in groups containing at least one male, multiple females, and offspring. This is sometimes referred to as a harem. If the dominant male dies, juveniles (or other adult males) have the opportunity to replace him, or just to mate with new females. After visiting the Ashville Zoo website, we found out that the dominant male Nkosi passed away. Upon his death, 3 adult female gorillas and 2 juvenile males remained. This brings about a great question for our group project. We wanted to see if captive male western lowland gorillas show any dominant male characteristics in their juvenile years. Both juveniles are just over 2 years old, and live with their mothers in captivity. Our groups plan was to observe these gorillas using focal animal sampling, and all occurrences sampling as well, to see if they displayed any early signs of dominance in their juvenile years. Various behaviors include: beating of the chest-which shows rivalry between males, grunting-which shows disapproval or rejection, or roaring- which is a hostile behavior. The dominant adult male is basically the decision maker for the group. He will lead them to food, protect them, and even settle any disputes among the group. Since the juvenile gorillas are being held in captivity, there is far less of a chance for infanticide. Our group will be looking for signs of leadership among the juveniles at the zoo. If they do not display any signs of dominant behavior, it is safe to say that we can reject our hypothesis.

## **Primate Behavior at the NC Zoo**

### **Social Dynamics and Interrelationships of Captive Western Lowland Gorillas**

**David Foley**

**Crystal Lopez**

**Ashley Sherertz**

Faculty Mentor(s): Cassady Urista

Anthropological Sciences

Thursday, April 23 Heth 016

11:36 am-11:48 pm

The following research was conducted on October 18th 2014 at North Carolina Zoo in Asheboro, North Carolina. The research presented in this paper discusses the relationships between five members of a captive group of Western Lowland Gorillas and reasons as to why certain relationships may exist. Both focal animal sampling and scan sampling were utilized to gather behavioral data for a total of approximately six observational hours. During this time a variety of different relationships and social interactions were observed including; adult female-female, juvenile male-male, juvenile male-respected mother, and juvenile male- non mother interactions.

### **Determining female Western Lowland gorilla (*Gorilla gorilla gorilla*) dominance hierarchies within a captive population in the absence of an adult silverback male**

**Robin Taylor**

**Brenna Hyzy**

**Kaitlin Gauthier**

Faculty Mentor(s): Cassady Urista

Anthropological Sciences

Thursday, April 23 Heth 016

11:48 am-12:00 pm

The dominance hierarchy in place in the Western Lowland gorilla population at the North Carolina Zoo was assessed, evaluated, and tentatively explained based on preliminary data collected over the span of 7 hours. The goal was to determine how the dominance hierarchy would be determined amongst the adult females in the absence of a silverback male. Additional information obtained from a zookeeper transformed this study from an exploratory investigation to a conformational analysis of dominance situation between the adult female gorillas. By the end of our data collection period, we found that our data did not accurately answer our research question, but gave us insight into how to improve for future studies.

## *Honors Academy Capstone Presentations*

### **Theodora: A Woman All Her Own**

**Ciara Banks**

Faculty Mentor(s): Carlee Bradbury      Art  
Thursday, April 23      Heth 022      3:00 pm-3:20 pm

It is said that behind every great man is an even greater woman; this is especially true for Empress Theodora and her husband Justinian I Emperor of the Byzantine Empire. Theodora was a very intelligent, strong, and religious woman and she used all these qualities to rule alongside her husband; not as a figure head queen but as his closest advisor. She had so much influence in Justinian's reign that it is widely believed that she was the orchestrator behind many of Justinian's triumphs and legislations. Theodora came from very humble beginnings she was not born into high society but instead was a part of the undesirable class of the social cast system. Her father was a circus performer, a bear trainer to be exact and after her father died her mother started Theodora's career as an actress which later evolved to prostitution and her becoming Hecebolus's mistress. It is clear that Empress Theodora pressed boundaries and made herself a woman that was held in high respect; she was a modern day idealized woman of her time much like the idealized image of the Virgin Mary.

### **Career Paths of Radford University Journalism Alumni**

**Taylor Newman**

Faculty Mentor(s): Lynn Zoch      School of Communication  
Thursday, April 23      Heth 022      3:20 pm-3:40 pm

Landing a job in the journalism field isn't easy. There's no instruction manual on how to go about it. For this Honors Capstone project, a literature review on the current state of the journalism field was conducted. This secondary research helped to form the questions asked during qualitative interviews with RU journalism alumni. The Radford University School of Communication has not before conducted a study of journalism graduates that focused on what pros and cons of their college experience steered their career paths. The expectation is the information collected will benefit future Radford University students pursuing a career in journalism as well as school faculty as they attempt to revamp or align coursework and outside related experiences (such as internships, participation in RU student media, volunteer work) to the choice of a future job, as well as of job success.

## **Professional Attitudes and Perceptions of Consumer Use of Mobile Hearing Health Applications on Smart Technology**

**Elizabeth Bowen**

Faculty Mentor(s): Lauren Flora

Communication Sciences and Disorders

Thursday, April 23

Heth 022

3:40 pm-4:00 pm

Technology is continuously evolving and modifying the way that nearly everything is done. While these advances are often advantageous, the value and validity of some technological innovations must be questioned, especially when they involve an individual healthcare. One such technological advancement includes mobile health (mHealth) applications, which allows an individual to access medical information from his or her personal mobile device and use that information to self-diagnose, monitor a health condition, or change current health management behaviors (Klasnja & Pratt, 2011; Free et al., 2010; Jimison et al., 1999). Increasingly, mHealth apps are embraced by the medical community due to its innovative and cost-effective means for the healthcare professional to deliver services and/or educational support to positively influence patient health management behaviors. Currently, however, there is little to no professional oversight required for app development before hitting the market. Therefore, there is no regulation on whether or not the apps use evidence-based practice or validated clinical procedures for assessment or screening to ensure the consumer is provided with accurate information. Additionally, if these apps are found to produce valid and reliable results, there is the fear of extinction from the professional perspective. This research project will investigate the potential advantages and disadvantages of mHealth self-administered hearing screening applications with specific attention to the professional audiologist perception of their use not only by the consumer but by the professional as well. A survey will be administered to local professional audiologists exploring how consumer use of these apps has influenced provision of services, if the audiologist would embrace the technology to enhance provision of service, and the overall effects of mHealth apps on the professional audiologist mindset. As mHealth is a new and growing trend in the field of audiology, very little research has been done investigating the effects mHealth has on patient behaviors and professional provision of service. Therefore, this research project will further the literature on how mobile applications are positively or negatively impacting the field of audiology and the healthcare that individuals are receiving.

## **An Analysis of the Business Practices of La Tienda**

**Emma Paulsen**

Faculty Mentor(s): Blas Hernandez

Foreign Languages and Literatures

Thursday, April 23

Heth 022

4:00 pm-4:20 pm

In this paper I have completed an analysis of the business La Tienda. I decided to research this business because I believed it would combine my Communication major with my Spanish major well, while allowing me to learn more about the Spanish culture before journeying there this summer. La Tienda, located in Williamsburg, VA, is an authentic Spanish store that sells genuine Spanish food and tableware, hosts wine tastings in their event space and, of course, serves tapas (tapas are small Spanish dishes, usually served with wine). The Harris family, an American family who spent time in Spain while in the military, runs the business. The Harris family lived in Spain in the 70s and decided that they wanted to share the Spanish food, culture and warmth with family and friends. So, La Tienda was born. The Harris' travel to Spain often, communicating with small businesses there to receive the finest products for their customers. Bringing authentic food and products to customers is not the only thing the Harris' strive towards. They have created a family friendly environment in Williamsburg, and also succeeded in allowing Spanish families across the nation once again receive a taste of their homes. The purpose of this paper is to identify how the business began, the struggle of staying authentic in the United States, and a how the Spanish culture has influenced the business, family and surrounding area. It also analyzes the business practices of the store, and delves into how they receive authentic products, and how they showcase these products to their customers. Through this research I am striving to better understand the influence that Spain can have on the United States, and the influence it has already given us.

## **Honors Academy Capstone Presentations**

### **The Influence of the Mexican Drug Culture on Music**

**Michaela Horvath**

Faculty Mentor(s): Blas Hernandez  
Thursday, April 23 Heth 022

Foreign Languages and Literatures  
4:20 pm-4:40 pm

Written in Spanish, this paper is about the Mexican drug culture and the songs that have come about in popular culture in Mexico as a result. The drug culture has a large impact on the rest of the Mexican society, and music is one area that has been greatly influenced. In Spanish, these songs are known as *Únarcocorridos*. They are a form of ballad that can be traced back to the Mexican Revolution, but the true form of the narcocorrido is credited to Juan RamŁrez-Pimienta in the 1930s. The lyrics of these songs include references to real events, places, and people and talk approvingly of illegal activities relating to the drug culture. Ideas for narcocorridos come from a variety of sources, such as stories heard in town and read on the Internet. This music has become an integral part of the culture and life in Mexico and has even spread to parts of the United States due to the fact that the both are affected by the drug culture. Known for narcocorridos, Los Tigres del Norte is one of the most popular bands in Mexico. Although nowhere near as popular, narcocorridos are in the American culture as well, such as in the popular television show *Breaking Bad*. The show is about a high school chemistry teacher in New Mexico who travels across the border to earn money by making methamphetamines. In the episode *Negro y azul*, a narcocorrido, is featured. Being such a popular show, this has helped narcocorridos become known in America.

### **Enhancing Communication and Education Through the Use of Sign Language and Deaf Culture.**

**Kenzie VanDerwerker**

Faculty Mentor(s): Patricia Rossi  
Cynthia Ptak  
Thursday, April 23 Heth 022

Communication Sciences and Disorders  
Education  
4:40 pm-5:10 pm

Sign language is an example of a low-tech AAC (an alternative augmentative communication) device that can be used to assist in the communication of many different population. This presentation will present information about how the use of sign language can be beneficial for students who are enrolled in speech therapy treatment. Additionally, there will be information about the Deaf culture (and the use of Deaf culture history in the classroom). Finally, the use of sign language in other aspects of life (including an interactive brief introduction to a physical theatre gestural communication) will be presented. This presentation is beneficial to those who will be working with special populations that can benefit from the use of sign language. Information will be available for learning materials on Helen Keller and Deaf culture (designed for grades 3-4), links to sign language learning videos, and more.

## *Honors Academy Capstone Presentations*

### **Message, Media, and Movements: Populism of the Great Depression and Recession**

**Kyle Rosner**

Faculty Mentor(s): Matt Oyos

History

Thursday, April 23

Heth 022

5:10 pm-5:30 pm

The similarities between the Great Depression and Great Recession are striking on many levels. The economy plummeted, democratic presidents rode promises of change into the white house, and reform was enacted. Yet the most remarkable similarity between the two periods was the loss of trust by the American people and the movements that arose in the midst of the chaos. The political and financial institutions Americans came to rely on betrayed them and shook the public's collective foundation. What filled this gaping political and emotional void was populist movements. Populist movements post-Depression and Recession rectified the public's anger and aimed it squarely at the establishment, mainly personified by the president and Wall Street. These movements utilized the new media of their eras to disseminate their messages and to organize. In the 1930s, Huey Long and Father Coughlin spoke to millions via radio, and rhetoric transformed into action. Post-Recession, the Tea Party and Occupy Wall Street used social media and Internet resources to spread their message and organize as well. Through message and media, a renewed individualism blossomed in American politics, but this individualism left the movements without consensus. Eventually, the very nature that allowed populism to rise led to its own demise. Yet whether they dissipated or were absorbed, these populist movements succeeded in shining a spotlight on the establishment and sparking activism amongst everyday Americans.

### **Honors Academy Capstone Poster Session**

#### **Telling Stories: Phonological Awareness Intervention, Final Consonant Deletion, and Past Tense Marking**

**Ashley Light**

Faculty Mentor(s): Karen Arndt

Communication Sciences and Disorders

Thursday, April 23

Heth 022

5:30 pm-6:30 pm

For children with phonological disorders and concomitant language impairment, improvement in phonological awareness can benefit both production of speech sounds and production of grammatical morphology (e.g. marking of regular past tense). The proposed study is a case study of a 3 year, 10 month old male who exhibits deficits in production of speech sounds as well as who has an expressive language delay. The client of focus struggles with final consonant deletion. The student clinician will engage the client in an elicited language task focused on marking of past tense, over 5 therapy sessions. In order to mark regular past tense, the phonemes t or d must be added to the end of the root verb. Intervention will include explicit instruction of the sounds d and t in relation to marking past tense, as well as instruction on the nature of tense marking. A pre- and post-intervention language narrative language sample will be collected to examine growth in marking of final consonants d and t in relation to marking past tense. As this study is just beginning data collection, results are unknown. Implications for utilizing phonological awareness to target both speech and language deficits will be addressed.

#### **Hippocampal Neurogenesis in Long-Evans Rats: Does Gender Matter?**

**Emily Tenshaw**

**Anastasia Formica**

Faculty Mentor(s): Dayna Hayes

Psychology

Thursday, April 23

Heth 022

5:30 pm-6:30 pm

Adult neurogenesis is the process in which new neurons are formed in the brain. Studies have shown that neurogenesis occurs throughout the lifespan in many species, including humans, but that gender differences are often found in the extent of neurogenesis (Kalkan et al, 2013; Chow et al., 2013). The neurogenesis-related gender differences have been shown to be due to numerous factors including brain plasticity potential and the estrous cycle (Simpson & Kelly, 2012). Importantly, most studies of adult neurogenesis have utilized male Sprague-Dawley rats. The current study expands the knowledge base to include an investigation of male and female rats of a separate yet equally prominent rat strain, Long-Evans (LE) rats. Adult Long-Evans rats of both genders were allowed to grow up in the psychology department rat facility. After approximately 6.5 months, the animals were perfused and their brains collected in order to determine baseline levels of hippocampal neurogenesis. Hippocampal tissue sections will be stained for Ki-67 immunoreactivity, a measure of actively dividing cells. Cells counts of neurons expressing Ki-67 will be conducted using an Olympus BX-43 microscope with 1000 X magnification. We hypothesize that there will be baseline differences between the genders of LE rats and that the level of neurogenesis will be altered when compared to the Sprague Dawley rats. The results of this study may be able to help determine if one gender or strain is more favorable than another depending on the nature of future studies.

**Honors Academy Capstone Poster Session****Prevalence of Glenohumeral Internal Rotation Deficit in Female vs. Male Athletes****Erika Worthley**

Faculty Mentor(s): JP Barfield

Health and Human Performance

Thursday, April 23

Heth 022

5:30 pm-6:30 pm

Overhead athletes (e.g., baseball players) have an increased risk of shoulder injury compared to other athletes. Glenohumeral Internal Rotation Deficit (GIRD) is the standard measure of shoulder injury in athletes but little research has examined this variable in female populations. The objective is to compare GIRD in baseball and softball players at the collegiate level over the course of a non-competitive season. GIRD was assessed on 57 NCAA athletes (38 baseball, 19 softball players; ages 18-23). We took measurements to test for GIRD at two instances, pre-fall and post-fall season. We calculated GIRD as a fifteen-degree difference between the dominant and non-dominant shoulder internal rotation measurements. IRB approval was obtained. Our pre-fall measurements identified more players with GIRD (n=9) than our post-fall measurements (n=5). At pre-fall, 10% of baseball players demonstrated GIRD. Fortunately, zero percent demonstrated GIRD at post-fall, indicating a major risk reduction. Twenty-six percent of softball players were positive for GIRD at baseline measurements. The same percentage demonstrated GIRD at follow-up, however, two players decreased their risk whereas two different players demonstrated GIRD. Results clearly indicate that GIRD is a bigger concern in female overhead college athletes compared to males. This conclusion is supported by the higher percentage of players at risk for shoulder injury (through presence of GIRD) and the reduced ability to decrease player risk across the sport season.

## **Psychology Oral Presentations**

### **School Psychology Response to Intervention (RTI) Practice**

**Alexandra Munsey**

Faculty Mentor(s): Eric Mesmer                      Psychology  
Thursday, April 23                      Heth 016                      2:20 pm-2:40 pm

Schools implement Response to Intervention (RTI) practices as a preventative and early intervention measure for students experiencing learning difficulties. There is an assumption that school psychologists are impacted by the implementation of RTI. Currently there is little research about the specifics of RTI practices in schools and the extent to which school psychologists are involved in these practices. Also, no research has disaggregated data by state, which is likely important given the impact of state regulations and policies on educational practice. Our research aims to describe the extent to which school psychologists self report to be involved with universal screening, instructional assessment, intervention design, and progress monitoring. The research will also compare school psychologists' self-reported practices to school psychologists' perceptions of the RTI practices of other school personnel. In addition, this study will compare the RTI practices of those school psychologists who are housed within special education units versus those whose positions are administered within general education departments. Finally, this research will compare RTI practices in state supported sites with those that were not part of the pilot division.

## **Psychology Documentary**

### **The Wannsee Protocol: A Turning Point in the Annihilation of European Jews**

**Audra VanDerwerker**

Faculty Mentor(s): Niels Christensen                      Psychology  
Thursday, April 23                      Heth 016                      2:40 pm-3:00 pm

The Wannsee Protocol: A Turning Point in the Annihilation of European Jews is a short documentary. The Wannsee Protocol was a turning point in the Holocaust from murder to genocide. While the Jewish people (and others considered unworthy) were murdered in large numbers prior to the Wannsee Conference, it wasn't until after this ninety-minute meeting, that murder on the level of genocide was implemented. This meeting established how many Jews remained in Germany and Europe and outlined a solution for exterminating them all. At the invitation of Reinhard Heydrich, Head of the Security Police and SD, the meeting took place at the Wannsee Villa on January 20, 1942. The participants pledged full cooperation of their departments. The result of this meeting was the beginning of the organized, systematic, and deliberate physical annihilation of the European Jews. This meeting established who was counted as a Jew, how many Jews were left in Europe, and how long it would take to exterminate all of them. Heydrich indicated that approximately 11,000,000 Jews in Europe would fall under the provisions of the "Final Solution." The Wannsee Protocol (the minutes of this meeting) was a turning point in the Holocaust from murder, which had been happening to the Jewish people and others deemed unworthy, to full genocide. The mass use of gas chambers, established under the T-4 program which exterminated people with disabilities, was put into place to rid Europe of all Jews. Concentration camps with permanent gas chambers were established. In the end, six million Jewish men, women, and children were exterminated. While certainly many would have died without the Wannsee Conference having taken place, this meeting accelerated, organized and systematized the murder to be more efficient, more deadly, and more heinous, thus, making the Wannsee Conference a turning point from murder to mass genocide.

### ***Psychology Oral Presentations***

#### **Childhood Victimization, Polyvictimization, and Mental Health Functioning in Jail-Incarcerated Women**

**Lora Wagner**

Faculty Mentor(s): Ann Elliott                      Psychology  
                                  Isaac Van Patten                      Criminal Justice  
                                  Thomas Pierce                      Psychology  
 Thursday, April 23                      Heth 016                      3:00 pm-3:20 pm

With a sample of 126 incarcerated women, this study used hierarchical regression to examine the relationship between polyvictimization (i.e., high cumulative levels of victimization), six aggregate categories of childhood victimization (property crime, physical assault, peersibling, witnessed indirect, sexual, and child maltreatment), and psychological distress. Results indicated that 97.6% of the participants endorsed at least one of the 34 broadly defined types of victimization assessed by the Juvenile Victimization Questionnaire. Furthermore, more than 50% of the women in the sample experienced victimization from five or more of the six aggregate categories. Results of the regression analyses revealed that polyvictimization was a significant predictor of psychological distress, beyond the proportion of distress predicted by any of the six categories of childhood victimization alone. A second set of hierarchical regressions showed that the categories of childhood victimization contributed very little variance beyond that accounted for by polyvictimization. These results are consistent with previous findings in samples of children (e.g., Finkelhor et al., 2005b; Finkelhor et al., 2005a; Finkelhor et al., 2007a; Finkelhor et al., 2007b) and college students (Richmond et al., 2009). Findings emphasize the importance of investigating multiple sources of victimization, in order to avoid overly simplistic and misleading conclusions about the impact of a specific category (e.g., sexual) victimization on psychological distress.

#### **An Ironic Rebound Effect: Dismissing Attachment and the Suppression of Negative Childhood Memories**

**Amanda Lessard**

**Theresa Leasure**

**Deb Goodnow**

**Jamie Reumont**

**Shameka Hylton**

**Jessica Compton**

**Abby VanDivier**

**Rachel Marble**

Faculty Mentor(s): Jeff Aspelmeier                      Psychology  
 Thursday, April 23                      Heth 016                      3:20 pm-3:40 pm

Individuals with dismissing attachment are thought to use defensive deactivating strategies to manage attachment related thoughts and emotions, which are subject to breakdown under conditions of extreme stress and cognitive load (Mikulincer & Shaver, 2012). Self-regulatory processes (Muraven, Tice, & Baumeister, 1998) may play a role in these deactivating strategies. This present study investigates self-regulation depletion and the breakdown of deactivating strategies among individuals with a dismissing-avoidant attachment after activation of the attachment system. In a mixed experimental-correlational design, approximately 150 undergraduates completed the adult romantic attachment measures (Bartholomew & Horowitz, 1991; Fralley, Waller, & Brennan, 2000; Brennan, Clark, & Shaver, 1998) and were randomly assigned to one of three writing conditions: 1) an essay task activating the attachment system, 2) an essay task depleting self-regulatory resources, 3) a control condition. Participants also completed other measures as part of a larger study. Finally, participants completed early emotional memory task, which measures the time it takes participants to retrieve memories from childhood associated with each of the following emotions: anger, anxiety, sadness, happiness, excitement, and warmth. It is hypothesized that dismissing participants will show increased accessibility of negative emotions in the attachment and self-regulation depletion essay conditions, compared to dismissing participants in the control condition and secure participants in all other conditions.

## **Psychology Oral Presentations**

### **Effects of Gender Stereotypes on Test Performance**

**Alyssa Dorfman**  
**Courtney Hurley**  
**Marija Vjestica**  
**Jenna McCutchen**

Faculty Mentor(s): Pamela Jackson      Psychology  
Thursday, April 23      Heth 016      3:40 pm-4:00 pm

There are many existing gender stereotypes, basically claiming that males are better at certain tasks than females and vice versa. A very intriguing aspect of stereotypes is how they can affect test performance. For instance, since it is said that women are not as good at math as men, will indicating their gender before they take a math test affect how well they perform? At Radford University, participants will take a survey with varying test questions (math, science, reading, etc.). Each participant will get a random questionnaire, some asking that they state their gender before they answer the questions and others will be asked at the end. The participants taking this survey will be 18+. It is expected that participants will be affected by stating their gender and their test performance will vary.

## **Psychology Poster Session I**

### **Cost of Avoidance: Attachment and Depletion of Self-Regulatory Resources**

**Abigail Vandivier**  
**Jessica Compton**  
**Shameka Hylton**  
**Rachel Marble**  
**Amanda Lessard**  
**Theresa A. Leasure**  
**Debbie Goodnow**  
**Jamie Reumont**

Faculty Mentor(s): Jeffery Aspelmeier      Psychology  
Thursday, April 23      Heth 014      4:00 pm-5:00 pm

Self-regulation, an individual's capacity to choose outcomes to promote long-term goal pursuit rather than more appealing short-term alternatives (Baumeister, 1997), is thought to be a mechanism that dismissing individuals use to uphold their attachment style (Kohn, Rholes, & Schmeichel, 2012). However, self-regulatory mechanisms are capable of exhaustion after prolonged use (Muraven, Tice, & Baumeister, 1998). Approximately, 250 participants were given measures to determine their adult romantic attachment style. Subsequently, participants were randomly assigned to one of three 5 minute essay writing conditions. The attachment essay condition, which activates the attachment system, asked participants to pick and explain how 5 adjectives describe their relationship with their mother. The ego-depletion essay, which uses self-regulatory resources, required participants to describe a trip they took without using certain letters. The control essay asked participants to describe a trip they took without limitations. Participants then attempted to complete a series of unsolvable anagrams. Persistence time indicated the level of self-regulatory exhaustion, with shorter persistence times indicating more depletion. A 4 x 3 factorial ANOVA will be run to test the hypothesis that dismissing individuals who have completed the attachment or the self-regulation depletion essays will quit the anagram task sooner, compared to other participants in the attachment essay condition and all participants in the control condition.

## **Psychology Poster Session I**

### **Social Adjustment of College Students with ADHD**

**Brett Yarbrough**

Faculty Mentor(s): Jeffrey Willner  
Thursday, April 23 Heth 014

Psychology  
4:00 pm-5:00 pm

People suffering from Attention Deficit Hyperactivity Disorder (ADHD) have difficulty maintaining sustained attention and organizing their behavior. Much of the research on ADHD has focused on children and the detrimental effects of the condition on their academic performance, with relatively less attention given to other aspects of functioning. The data that are available, however, indicate that ADHD also has negative effects on the social skills and social adjustment of children with the disorder. What is unknown at this time is whether these problems of social adjustment continue to be an issue for children with ADHD as they develop, or whether the problems improve as they mature into adulthood. The present study was undertaken in an attempt to provide some data on this issue. Students with and without ADHD at Radford University are being recruited to complete an anonymous on-line survey asking about symptoms of ADHD, legal difficulties, social skills, prescription and nonprescription drug use, work history, and past and present social relationships. The data collected will be analyzed using SPSS, looking for differences between students with and without ADHD. Data collection is still underway, but we anticipate that young adults with ADHD will report more problems with social adjustment and managing their social relationships than those who do not have ADHD. Data relevant to these questions will be presented at the forum and its implications for understanding the needs of students with ADHD will be discussed.

### **Caffeine, Sugar, and Aspartame: Using Open Field Testing to Investigate Anxiety, Activity, and Spatial Recognition in Rats**

**Emily Tenshaw**

**Mark Call**

**Hannah MacDonald**

**McCauly Cacioppo**

**Ashley Rigdon**

Faculty Mentor(s): Pamela Jackson  
Thursday, April 23 Heth 014

Psychology  
4:00 pm-5:00 pm

Non-nutritive sweeteners (NNS) replace the sugar in many products labeled sugar-free or diet. Diet sodas are a common drink in which non-nutritive sweeteners are found. Research shows that a common NNS, aspartame, could alter the behavior of rats in an open-field task by decreasing motor activity (Ashok et al., 2014). It has also been shown that the addition of sugars to the diet of rats may impair spatial memory and learning (Hsu et al., 2014). Similarly, caffeine is a prominent addition to many soft drinks. Caffeine is a drug that has been shown to increase the activity level in rats (Loke & Meliska, 1984), as well as produce anxiety (Bhattacharya et al., 1997). Research suggests that caffeine improved spatial memory at lower doses (Angelucci et al., 2002). The current study examined the relationship between aspartame, sugar, and caffeine on anxiety and spatial memory in rats. Forty experimentally naïve rats were separated into four groups of ten and received aspartame, sugar, aspartame plus caffeine, or sugar plus caffeine, in place of their drinking water. Rats were given 6 ounces of their designated drink daily. On day 24 of the drink exposure, each rat was tested for one trial on an open-field in order to obtain measures of anxiety and activity. The second part of the open field task occurred 24 hours later, and involved a recognition test for the location of a 3-dimensional object after it was moved between trials 1 and 2. Data collection is in progress. Based on previous research, the groups of rats consuming the aspartame may not recognize that an object moved, and the caffeine rats may be hyperactive as well as more anxious.

## **Psychology Poster Session I**

### **Hippocampal Neurogenesis in Long-Evans Rats: Does Gender Matter?**

**Anastasia Formica**

**Emily Tenshaw**

Faculty Mentor(s): Dayna Hayes

Psychology

Thursday, April 23

Heth 014

4:00 pm-5:00 pm

There is a comprehensive body of research indicating that neurogenesis, a process by which new neurons are born and integrated into existing brain circuitry, continues throughout adulthood. One of the primary regions where this occurs is the hippocampus, which plays an extensive role in learning and memory (van Praag et al., 2002). Because of this evidence, investigators have looked at how various experimental interventions might affect neurogenesis, typically using Sprague-Dawley rats (SD; Elliott & Grunberg, 2005). A majority of this research has focused solely on male rather than female rats despite the fact that research suggests there are differences related to gender (Simpson & Kelly, 2012). To date there has not been a comprehensive study to examine whether significant baseline gender differences in hippocampal neurogenesis exist. To that end, adult (~6.5 months old) male and female SD rats were perfused without exposure to experimental conditions. Brains were collected, sliced, and stained for Ki-67 immunoreactivity, a common indicator of cell proliferation. Cells expressing Ki-67 will be counted and compared using an Olympus BX-43 with 100X objective, but results are ongoing. It is predicted that there will be a significant difference in cell proliferation between males and females. Results from this study will be compared to a similar study conducted using Long-Evans rats in order to investigate potential strain differences. The results may indicate a need for researches to expand the field and increase generalizability by including various strains and both genders in future studies.

### **Personality and Cell Phone Use**

**Wilmer Angulo**

**Alex Camm**

**Arica Clark**

**Jordan Shell**

**Kathryn Rehberg**

Faculty Mentor(s): Jeff Willner

Psychology

Thursday, April 23

Heth 014

4:00 pm-5:00 pm

The explosive growth of social media creates a need to understand how it impacts people, and the mechanisms that mediate its effects on people. A number of studies have already examined the relationship between the Big Five Personality Traits and social media use. However, relatively little research has been done on the relationship between cell phone behaviors and personality traits. To address this question, the present study will use the Big Five Inventory (BFI) and the Mobile Phone Dependence Questionnaire (MPDQ), to examine the relationship between varying personality traits and cell phone dependence (e.g., extroversion and introversion; John & Srivastava, 1999; Toda, Monden, Kubo, & Morimoto, 2006). It is hypothesized that certain personality traits will be more highly correlated with cell phone use and social media dependence.

## **Psychology Poster Session I**

### **Cell Phone Dependence: Examination of Media Behaviors**

**Susan Gibbs**  
**Hailey Kitchen**  
**Morgan Wood**  
**Kathryn Rehberg**

Faculty Mentor(s): Jeff Willner                      Psychology  
Thursday, April 23                      Heth 014                      4:00 pm-5:00 pm

The explosive growth of cell phone use and social media, is attracting the attention of researchers in a variety of fields . The present study aims at adding to the body of knowledge by conducting a descriptive analysis of cell phone dependence and social media behaviors in college undergraduates. The rationale behind studying college undergraduates is to analyze a generation that has been immediately impacted by the technology revolution, and better comprehend how these new inventions have impacted their behaviors. To analyze these questions, the Mobile Phone Dependence Questionnaire (MPDQ) will examine cell phone behaviors (Toda, Monden, Kubo, & Morimoto, 2006). Additionally, this study will test the reliability and validity of the Cell Phone Inventory Checklist, which is a measure created by Psychology 302 students last semester. The examination of these measures will add to the relatively slim literature concerning cell phone and social media behaviors.

### **Personality Factors: The Impact of Self-Control**

**Kelci Falls**  
**Alison Hatcher**  
**Hailey Kitchen**  
**Morgan Wood**  
**Kathryn Rehberg**

Faculty Mentor(s): Jeff Willner                      Psychology  
Thursday, April 23                      Heth 014                      4:00 pm-5:00 pm

Self-control is a widespread construct in the literature, and has already generated a plethora of research (e.g., fewer reports of psychopathology, higher self-esteem & higher grade point average). The present study seeks to better understand self-control in a more descriptive function, by examining the relationship between measures of self-control, delay of gratification, procrastination, and impulsivity. It is hypothesized that self-control and delay gratification should be positively correlated, and that procrastination and impulsivity will also be positively correlated. Conversely, individuals' higher in both self-control and delay gratification should have lower procrastination and impulsivity scores. To test these research questions, responses from the 36-item Self-Control Scale, Delay Gratification Inventory, Dysfunctional Impulsivity Scale-Revised, & the Multidimensional Experiential Avoidance Questionnaire (MEAQ) will be correlated (Di Milia, 2013; Gámez, Chmielewski, Kotov, Ruggero, & Watson, 2011; Hoerger, Quirk, & Weed, 2011; Tangney, Baumeister, & Boone, 2004). The results of this study should add to pre-existing knowledge about self-control's scope, and its relation to other salient personality factors.



### **Psychology Poster Session I**

#### **Adolescent Cannabinoid Exposure and Feeding Behavior: Activity, Weight and Anxiety in Adult Long Evans Rats**

**Kayla Petzold**

**Emily Hilton**

**Matthew Ostrander**

Faculty Mentor(s): Pamela Jackson

Psychology

Thursday, April 23

Heth 014

4:00 pm-5:00 pm

Previous research on the effects of Cannabinoid exposure in rats may be overlooking one important confound, food intake. When administered intraperitoneally, CP 55,940 (a synthetic cannabinoid) reduces feeding behavior in rodents which compounds the effect of marijuana exposure with diminished developmental growth on performance. The current study examined diminished food intake as a result of cannabinoid exposure during adolescence on body weight, anxiety, and activity levels in adulthood. A group of yoked-control rats were fed the same amount of food as a group of cannabinoid rats in order to control for the loss in weight gain. In order to test for activity and anxiety the rats were tested in the elevated plus maze and open field. Our findings suggest the cannabinoid exposure may actually have a neuroprotective effect on rats when compared to the yoked-control group. When measured in the open field, yoked-control rats showed reduced activity and higher anxiety levels than the drug and control rats. The study also compared male and female rats in order to measure possible sex differences from which we found females to be more active and anxious than the males.

#### **Caffeine, Sugar, and Aspartame: The Effects of Common Sweeteners on Weight Gain and Anxiety in Rats**

**Megan Pittman**

**Glenna Dickerson**

**Sarah Fraley**

**Lori Witt**

**Ashley Rigdon**

Faculty Mentor(s): Pamela Jackson

Psychology

Thursday, April 23

Heth 014

4:00 pm-5:00 pm

In today's society items such as coke, coffee, hot chocolate, and other caffeinated products have become a novelty to the human population. While individuals consume these products almost daily, most people do not stop to think about the harmful effects they can have on the body. This study investigates the effects of artificial sweeteners, in particular, aspartame, as well as caffeine and sucrose, on weight gain and anxiety levels in rats. Forty male Long-Evans rats were used in the study. The rats were divided into eight cohorts with each cohort containing five rats each. Each of the forty rats was orally given either: an aspartame solution, a sugar solution, a caffeine plus aspartame solution, or a caffeine plus sugar solution (in a 2 X 2 design). Baseline weights along with solution consumption were recorded every day for each rat for the duration of the study. After ten days of exposure to the drink condition, the rats were tested on the Elevated Plus Maze to assess anxiety levels. Data collection is still underway. It is expected that the findings will show significant effects such that the rats given caffeine and or aspartame may exhibit more anxiety on the task, but more importantly, that the aspartame groups may gain more weight than the sugar groups.

### **Psychology Poster Session I**

#### **Elected in Seconds: Does Cognitive Load Moderate the Relationship Between Political Success and Inferred Facial Competence?**

**Tia Compton**

**Danielle Carr**

**Sara Burley**

**Grayson Padgett**

Faculty Mentor(s): Niels Christensen      Psychology  
Thursday, April 23      Heth 014      4:00 pm-5:00 pm

Voting is the cornerstone of democracy, but previous research has demonstrated that voting decisions are explained to a surprisingly large degree by the facial appearance of the candidate (Todorov, 2005). Although it is accepted that voters should be making informed and thoughtful decisions, non-conscious and seemingly superficial processes play a major role. The present study investigated whether the influence of facial competence on electoral success is stronger when a hypothetical voter has fewer available cognitive resources. Undergraduate participants were randomly assigned to either simply rate a series of faces (control condition) or rate the faces while simultaneously performing a numerical memory task (cognitive load condition). Although unknown to the participants, the pictures were past winners and losers of elections from other states. Each face was rated by participants on attractiveness, competence, and intelligence. We hypothesized that cognitive load would moderate the relationship between a candidate's political success and inferred facial competence. We predicted that participants under higher cognitive load would have facial competence ratings that more accurately predicted the election results. If these hypotheses are supported, it could provide insight for voting behaviors in elections and the mechanisms involved in choosing the winners of political races.

#### **Monkey See, Monkey Do: Does Positive Affect Moderate The Relationship Between Mimicry and Helping Behavior?**

**Jason Milton**

**Lydia Bradshaw**

**Taylor Lambert**

**Jasmine Kelso**

**Victoria Griffith**

Faculty Mentor(s): Niels Christensen      Psychology  
Thursday, April 23      Heth 014      4:00 pm-5:00 pm

Many people consider themselves to be moral and altruistic individuals. However, when another person needs help, numerous individuals remain bystanders and assume someone else will help. Past research suggests that participants who are mimicked were more helpful towards other people than were non-mimicked participants (van Baaren et al., 2004). Yet it is unclear whether this mimicry effect is moderated by the helper's mood. Given that mimicking behaviors often occur unintentionally, the present research examines whether individuals induced into a positive mood become more susceptible to the mimicry manipulation. Undergraduates were randomly assigned to watch a positive mood-inducing video or no video (control) and then completed an interview on daily behaviors. During the interview the experimenter either mimicked the participant or not, based on random assignment. Finally, levels of prosocial behavior was assessed by having the experimenter accidentally spill a box of pens and seeing how many were picked-up. It is hypothesized that positive mood increases the effect of mimicry on helping behavior. If these hypotheses are supported, the findings will further specify the complex personal and contextual variables the underly the decision to help. Ultimately, understanding and promoting prosocial behaviors support the growth of civilized communities.

## **Psychology Poster Session II**

### **Tailor Your Tinder Profile to the Times: Do System Threats Affect Attraction to Benevolent-Sexist Stereotypes For Women Too?**

**Caroline Markley  
Cody Harless  
Jennifer Kramer  
Alexa Danza**

Faculty Mentor(s): Niels Christensen      Psychology  
Thursday, April 23      Heth 043      5:00 pm-6:00 pm

Conflict ranging from interpersonal disagreements to societal change can challenge the legitimacy of a person's meaning system and evidence suggests that such meaning threats generate a compensatory response. In an interesting demonstration of this threat-compensation process, Lau et al.(2008) found that when a man's meaning system has been threatened, he is more likely to become attracted to women who embody benevolent sexist stereotypes. Yet it is unknown whether such effects extend to women's attraction of men following a system threat because the original study included an exclusively male sample. In the present study, both male and female undergraduates were randomly assigned to read an article that supports their university (control) or an article that implies the university is subpar (system threat). Participants then rated their romantic interest in eight profiled people of the opposite sex. Half of these profiles had descriptions of a person embodying benevolent sexist stereotypes and the other half were inconsistent with those stereotypes. It is hypothesized that both men and women who feel threatened are more attracted to potential partners who embody benevolent sexist stereotypes than those who do not. If these hypotheses are supported, it could add to our understanding about why people find a person attractive and, in turn, how singles promote themselves as potential romantic partners.

### **Same "We" But Different Setting: Do Variations in Gender Composition Determine Self-Perceptions of Relational Interdependence?**

**Emily Timbrook  
Courtney Leonarkis  
Hannah Roark  
LaTore Middleton**

Faculty Mentor(s): Niels Christensen      Psychology  
Thursday, April 23      Heth 043      5:00 pm-6:00 pm

Men and women both maintain social relationships, but the forms of their interdependence with others seems quite different to the other gender. Indeed, past research demonstrated that women think about themselves in terms of "relational" interdependence (i.e., dyads), whereas men identify with "collective" forms of interdependence (i.e., groups). Yet it is unclear whether these gender-types self-perceptions are influenced by the immediate social context. The present study randomly assigned undergraduate participants to one of three priming conditions: a female-congruent social setting, a male-congruent social setting, or a neutral setting (e.g., landmarks). After the priming manipulation, participants completed the Relational-Interdependent Self-Construal (RISC) questionnaire to measure how they view themselves in relationships. We hypothesized a replication of past findings such that, when placed in a neutral setting, women would be more relationally interdependent than men. However, when placed in a female-congruent setting, men would be more relationally interdependent than women. If our hypotheses are supported, it would be evidence of the interplay between individual characteristics and social context determines how people conceptualize themselves in terms of social relationships.

## ***Psychology Poster Session II***

### **Adolescent Cannabinoid Exposure and Feeding Behavior: Spatial Memory and Search Strategy Deficits in Adult Long Evans Rats**

**MaCauly Cacioppo**

**Ashley Rigdon**

**Matthew Ostrander**

Faculty Mentor(s): Pamela Jackson

Psychology

Thursday, April 23

Heth 043

5:00 pm-6:00 pm

The reduced feeding behavior caused by prolonged use of cannabinoids, especially during formative years, can lead to major deficits in memory, emotions, and search skills. The current study focuses on the Open Field Object Location Recognition and the Morris Water Maze. In the Object Location Recognition task, the rats were placed in an open box apparatus with two identical objects in a fixed position and were allowed to inspect the objects for 5 minutes. Following a ten minute break period, the rats were placed into the maze again with one of the objects in a novel location. The Morris Water Maze task utilizes a large tub filled with non-toxic paint mixed into water and an escape platform. The objective of this task is to measure their searching skills and spatial recognition capabilities. Following task learning, the escape platform is removed and the activity of the rats is measured to determine the change in search strategies. Rats who demonstrate any kind of deficit will usually exhibit thigmotaxis, a change in orientation in response to contact with the outer wall of the maze. Our results suggest reduced feeding behavior, but not necessarily cannabinoid exposure, may be responsible for deficits in spatial recognition and lead to increased thigmotaxis during probe trials.

### **Treating Trauma in Rural Areas**

**Emily Keller**

Faculty Mentor(s): Ruth Riding-Malon

Psychology

Thursday, April 23

Heth 043

5:00 pm-6:00 pm

The innate isolation of rural locations contributes to a shortage of mental health professionals and limits opportunities for care, leading to delays or even avoidance of mental health care in rural areas. To confront these concerns, therapists must selectively implement treatments that will be effective in serving the unique needs of these clients, including those who are affected by traumatic experiences. This issue is particularly poignant when considering the 5.3 million rural veterans who may be experiencing symptoms of acute stress disorder or posttraumatic stress disorder due to their traumatic wartime experiences. Trauma can also impact rural civilians, particularly vulnerable women who have been raped or sexually assaulted. In a recent study, rural women who were separated from their spouses experienced intimate partner rape or sexual assault at rates that were three times higher than comparable urban women and 1.6 times higher than similar suburban women. Thus, trauma appears to be a widespread issue in rural areas and should receive special treatment considerations. The current researchers conducted a review of the literature and found a dearth of research regarding identifiable trauma treatments in rural areas. Accordingly, an array of literature searches was performed to provide a compilation of possible rural trauma treatments. The therapeutic interventions include cognitive behavioral therapies, psychopharmacological treatments, and nontraditional psychotherapies. The potential effectiveness of these interventions in treating rural trauma populations will be discussed in order to offer a selection of treatment options suited for clients affected by health care access limitations.

## **Psychology Poster Session II**

### **Science in Schism: Competing Psychologies of the West and the USSR in the 20th Century**

**Brian Carle**

**Matthew Ostrander**

Faculty Mentor(s): Thomas Pierce  
Thursday, April 23 Heth 043

Psychology  
5:00 pm-6:00 pm

The historical development of psychology as a field has been influenced by international cultural, social, and political contexts. Accordingly, psychology and its theories throughout the 20th century have reflected the schism between America and the Western World, and the Soviet Union. Russian theories of mind and behavior from this period of isolation have been re-evaluated in recent decades for unique and neglected insights. As well, the Cold War itself fueled and otherwise influenced the growth of psychology, as it was used to reinforce political ideologies and weaponized in the form of psychological warfare. Through the lens of the works of major Soviet psychologists such as Pavlov, Vygotsky, and others, this presentation reveals and contrasts some of the previously inaccessible works of Soviet psychology shrouded by Stalin's counter-globalistic mentality. Additionally, the reintegration and evolution of psychology in the previous Soviet states after the perestroika reform of the USSR and the fall of the Soviet Union will be explored to help shed light on how these previously unfamiliar works have become part of modern psychology around the world.

### **Eugenics: The Science of Good Birth in the History of Psychology**

**Katherine Bishop**

**Boglarka Vizy**

Faculty Mentor(s): Thomas Pierce  
Thursday, April 23 Heth 043

Psychology  
5:00 pm-6:00 pm

Humans have long searched for ways to manipulate and improve the living environment around us. We have bred plants and animals for desirable and advantageous traits. More recent advancements in science have allowed us a more complete understanding of human genetics. This led to the development of the science of eugenics, a word originating from the Greek word for good birth, which its inventor, Francis Galton, defined as the science which deals with all influences that improve the inborn qualities of a race; also with those that develop them to the utmost advantage. This poster will examine the history of eugenics including the influence of eugenics on Nazi Germany and the negative effects of eugenics on society today. This poster will specifically look at early supporters of the eugenics movement, and the now rejected methods utilized in the form of euthanasia programs, the Better Baby Contest, promoting contraception, and the sterilization of criminals and the mentally challenged. We will emphasize the role of psychology in eugenics, looking at the power and influence of personality and intelligence testing. We will focus on three prominent individuals in psychology in the support of eugenics: Sir Francis Galton, Raymond Cattell and Henry Goddard. Lastly, our poster will stress the ongoing effects of eugenics today by discussing current issues like egg donation, embryo selection, gene therapy, genetic engineering, and prenatal diagnosis of genetic disorders and pregnancy terminations as a result.

## ***Psychology Poster Session II***

### **The Reminiscence Bump Effect in Published Autobiographies**

**Grace Flood**

**Courtney Hurley**

Faculty Mentor(s): Tom Pierce

Psychology

Thursday, April 23

Heth 043

5:00 pm-6:00 pm

Research on autobiographical memory shows that older adults are especially likely to recall events from their teens, twenties, and early thirties. This effect is referred to as the reminiscence bump. To date, data in this area have been collected from individuals asked to recall as many events in their lives as they can within a limited period of time (e.g., 10 minutes). One question which has not received attention is whether the reminiscence bump effect is observed with an unlimited amount of time to recall life events, specifically, in published autobiographies. Autobiographies are almost always published by persons famous for events occurring in one or more periods of their lives, which makes these records of previous meaningful events potentially different in nature from those provided by non-famous persons. In this pilot study, we examined the published autobiographies of eight persons to record the age of the author at which each identifiable event in the autobiography occurred. All authors were at least 50 years of age when the autobiography was written. A frequency distribution was generated for the ages of authors at recorded events. It was observed that a greater proportion of events occurred during the reminiscence bump period than for other periods of life (childhood, middle age, later life). This pattern replicates the findings of studies by using different methods to study the reminiscence bump effect.

### **Development, Utility, and Practicality of The Diagnostic and Statistic Manual of Mental Disorders I (DSM-I)**

**Rachel Turk**

**Bethany Hall**

Faculty Mentor(s): Thomas Pierce

Psychology

Thursday, April 23

Heth 043

5:00 pm-6:00 pm

The standards used to classify mental disorders were once not as comprehensive and thorough as they are today. The purpose of this project is to examine more closely the history of developing a mental health classification standard and how the necessity originated for implementing a unified system for psychological diagnostics. The Diagnostic and Statistical Manual of Mental Disorders I (DSM-I) focused on collecting statistical data on mental illness and created categories and characteristics essential for diagnosis. Mental illness was not always accepted or understood, as observed from displays of discrimination existing the past. At the time of creation, the DSM-I was controversial, but the impact of a unified diagnostic system changed the practices of psychiatry and clinical psychology and the stigma associated with psychological distress. A review of information, past and present, displays the process of development, the utility for diagnosis, and the imprecise knowledge of the DSM-I as compared with what is regarded today as valid, as examined by the changes published in the DSM-V.

## ***Psychology Poster Session II***

### **A Meta-Analysis of Cardiovascular Responsivity to Stress in Studies Comparing Groups with High and Low Blood Pressure**

**Kathryn De Meglio**

Faculty Mentor(s): Thomas Pierce

Psychology

Thursday, April 23

Heth 043

5:00 pm-6:00 pm

A meta-analysis comparing groups with high blood pressure and those with normal blood pressure in regards to increases in systolic blood pressure, diastolic blood pressure, and heart rate while they performed challenging or stressful tasks. This meta-analysis consists of information from published studies that were analyzed for differences among the two groups. The differences in participant reactions to challenging task conditions were measured by the mean changes in systolic blood pressure, diastolic blood pressure, and heart rate. In order to get the change scores from each study the reported group mean baselines for: each physiological measure were subtracted from the reported group means that were taken after the challenging task condition was presented. A regression analysis will be conducted that will predict mean change scores for high blood pressure groups from the mean change scores for the normal blood pressure groups. A slope of the line of 1.0 would indicate that the two groups display equivalent increases in a physiological measure across the range of stressfulness associated with the different types of tasks used in these studies. We will conduct a test of whether the slope of the line for each physiological measure is significantly different from 1.0 and we will also perform tests to determine if the slopes of these lines change as a function of the gender, age, or race or the groups examined in these studies.

### **Cardiovascular Reactivity Differences Between White and Black Subjects May Be Moderated by Stressor Magnitude**

**Brian Carle**

Faculty Mentor(s): Thomas Pierce

Psychology

Thursday, April 23

Heth 043

5:00 pm-6:00 pm

A meta-analysis was conducted of cardiovascular reactivity studies comparing White and Black subjects' reactions to experimental stressors on heart rate, diastolic, and systolic blood pressure. The study investigates how differences in reactivity between White and Black subjects may be moderated the magnitude of stressful stimuli. Specifically, it was hypothesized that Black subjects would exhibit higher reactivity compared to White subjects on low magnitude (i.e., mild) stressors, but would exhibit lower reactivity than White subjects to high magnitude (i.e., intense) stressors. The inability to modulate responses to stressful stimuli based on how mild or intense they are may be related to development of hypertension, or, alternatively, be a symptom of it. The study attempts to qualify and refine findings that Black Americans show elevated cardiovascular reactivity to stress and higher rates of cardiovascular disease, compared to White Americans. Considering Black Americans higher rates of hypertension, the study also looks at the whether magnitude of stressor still moderates group differences in reactivity when controlling for hypertension status. Implications of elevated and blunted reactivity in the etiology of cardiovascular disease are discussed.

## ***Psychology Poster Session II***

### **Investigation of Supervisor Age And Gender in Perceived Ethical Behavior in Sexual Harassment Scenarios**

**Katarina Mandiola**

**Boglarka Vizedy**

Faculty Mentor(s): Jenessa Steele  
Thursday, April 23 Heth 043

Psychology  
5:00 pm-6:00 pm

Bureau of Labor Statistics (2008) reported a 101% increase in workers over age 65 between 1977-2007. Men increased workforce participation by 75% and women by 147%. Building a functional and supportive intergenerational community within the workplace can be jeopardized by situations that promote or overlook sexual harassment. Sexual harassment is legally categorized in two forms Quid Pro Quo (QPQ) and Hostile Work Environment (HWE). QPQ is the most common form of sexual harassment in which job benefits are contingent on sexual favors by an authority figure with decision-making power. Hostile work environment involves sexual behaviors that negatively impact the victim's work performance, thereby creating a threatening, adverse, or offensive work environment. Very little is known about the role of age and sexual harassment within the workplace. This study implemented an experimental, between subjects study design 2 (Gender: male-female) x 3 (Age: 23-45-65) to investigate the role of age and gender on participant perceptions of the ethical supervisor behavior and likelihood to help an employee in vignettes representing sexual harassment. Only age and gender were manipulated across vignette conditions. Analyses on 303 undergraduate college student participants (67.3% female) indicated gender differences in perceived ethical behavior by supervisor. Consistent with the literature, participants perceived the ethical behaviors (e.g., behaviors were just, moral, fair, acceptable) of male supervisors as more unethical compared to the female supervisors. Analyses also indicated that participants' perception of supervisor behavior differed based on the type of sexual harassment scenario (e.g., QPQ or HWE). Particularly, participants evaluated supervisors as more unethical in QPQ scenarios than HWE. Although a main effect for age was not significant, analyses indicated a significant interaction between age and gender of the supervisor. Future implications for understanding the role of age in sexual harassment within the workplace will be addressed.

### **You Received Your Degree from What School?: Employer Perceptions of Online Degrees**

**Caitlyn Foley**

Faculty Mentor(s): Nora Reilly  
Thursday, April 23 Heth 043

Psychology  
5:00 pm-6:00 pm

This present study would investigate hiring professionals' perceptions of online degrees and of the individuals that hold them. Various studies have shown a strong preference for graduates of traditional degree programs over those obtained solely through an online provider (Fogle & Elliott (2013), Columbaro & Monaghan (2009), Adams & DeFleur (2006), Bristow, Sheperd, Humphreys, & Ziebell (2011)). The belief is that online degrees do not result in the same value of education as traditional degrees. The major areas of concern when discussing online degrees are the quality of the education received and the lack of social interactions between students and their peers and professors. However, one aspect that these studies have not discussed is whether there is a systematic difference between degree preferences based on the degree held by the hiring manager. This study would aim to examine these areas of concern to determine if there has been a change in online degree perceptions since these previous studies were conducted. This study would also examine if the degree preference changes if companies offer post-baccalaureate support.

## **Psychology Poster Session II**

### **Changes in Blood Corticosterone Levels Following Co-Administration of Alcohol and Nicotine in Rats**

**Justin Asbee**

**Ryan Lingg**

Faculty Mentor(s): Dayna Hayes

Jason Davis

Thursday, April 23

Heth 043

Psychology

Biology

5:00 pm-6:00 pm

Alcohol and nicotine are both legal in the United States, and as such are two of the most commonly co-abused psychoactive substances. An exposure paradigm for the co-administration of these substances has been developed in our lab in order to assess potential biological and behavioral alterations as a result of exposure. However, it is believed that the paradigm, which involves subcutaneous injection of nicotine and oral gavage of alcohol, could be a significant source of stress. As such, the primary stress hormone in the hypothalamic-pituitary-adrenal axis, corticosterone (CORT), will be extracted from blood samples and examined using an Enzyme-Linked Immunosorbent Assay (ELISA) to assess potential long lasting differences in stress responses following drug administration. Specifically, adult male Sprague-Dawley rats were administered nicotine (0.3. mg/kg; s.c.) or saline every 8 hours for 10 days. At the same times as nicotine administration, animals were also administered ethanol (25% w/v in nutritionally complete diet) or isocaloric dextrose diet via oral gavage on the final 4 days of injections. Following cessation of drug administration, rats experienced either 2 or 4 weeks of abstinence before blood samples were collected, allowing for the completion of a test of spatial learning and memory. It is hypothesized that the administration paradigm and behavioral testing will lead to significantly elevated CORT blood levels in all groups compared an unhandled, age and calorie matched control group.

### **A Demonstration of Introspectionist Methodology**

**Ivan Zuidhoek**

**Ryan Lingg**

Faculty Mentor(s): Thomas Pierce

Heth 043

Thursday, April 23

Psychology

5:00 pm-6:00 pm

Introspection refers to the process of looking inward to observe one's own mental processes. Introspectionist methods were widely used in early schools of psychology, and its proponents included influential figures such as Wilhelm Wundt, Edward Titchener and William James. Introspectionist techniques were used by early psychologists to examine a broad range of phenomena including attention, memory, and perception. While the term introspectionism has long since gone out of favor, introspection based techniques such as speak aloud protocols still enjoy contemporary use by some cognitive psychologists. Most students of Psychology are somewhat familiar with introspectionism, but the specifics of how individuals actually used this method are less well known. Because of its historical importance, and continued relevance to some fields of psychology, the purpose of this project is to provide an introduction and demonstration of these techniques. Specifically, the project will give students the opportunity to walk through the steps of two experiments that depend on introspection. The first will utilize a light discrimination box wherein participants will be shown two lights that will gradually differ in intensity; subjects will be required to detect at what point the two lights are perceived to differ. The second experiment will involve the participant actively attempting to rate a set of prompted imagined sensations in terms of their vividness and stability. This will be done for different sensory domains, including vision, touch, and olfaction. Participants can then attempt to draw conclusions from the introspective data they have generated.

## ***Psychology Poster Session II***

### **The All-Consuming Self: Edward Bernays Exploitation of Irrational Emotions in Mass Decision Making**

**Amanda Lessard**

Faculty Mentor(s): Thomas Pierce      Psychology  
Thursday, April 23      Heth 043      5:00 pm-6:00 pm

Sigmund Freud's theory suggests that human nature and its primitive sexual and aggressive forces could lead individuals and societies into chaos and destruction. Edward Bernays, Freud's nephew, used these theories to control the dangerous crowd in an age of mass democracy. Bernays was influential during the twentieth century because he was the first person to test Freud's theories about human nature in order to manipulate the masses. He helped American advertisers learn how they could make people want things they did not really need by linking mass produced goods with individual's unconscious desires. When people's innermost desires are satisfied, people become happy and docile. This gave birth to a new political idea of how to control the masses. After promoting America's war aims to bring democracy to the whole of Europe, Bernays was invited by President Woodrow Wilson to attend the 1919 Paris Peace Conference. It was during the peace conference when Bernays became overwhelmed by how propaganda can be a powerful tool to control the masses in peacetime. Due to propaganda's unpopularity, Bernays created the new term public relations. This poster will show how Bernays and his ideas about public relations helped his clients and other advertisers capitalize on the exploitation of individual's and group's irrational emotions connected to their decision making.

### **Alterations in Anxiety Related Behaviors Following Protracted Withdrawal from Dual Binge Ethanol and Chronic Nicotine Exposure**

**Ryan Lingg**

**Analise Roccaforte**

Faculty Mentor(s): Dayna Hayes      Psychology  
Thursday, April 23      Heth 043      5:00 pm-6:00 pm

Alterations in behavioral functioning resulting from binge ethanol or chronic nicotine abuse are common neuropsychological phenomena. However, the effects of protracted withdrawal from combined exposure have not been extensively explored. Despite demonstrated anxiolytic effects of both binge alcohol and chronic nicotine, research has shown that following protracted withdrawal from either substance, anxiogenesis may occur. As alcohol and nicotine are the most commonly co-abused substances, further elaboration regarding the behavioral correlates of their combined abuse is critical. Sprague-Dawley rats were administered injections of a nicotine solution (0.3 mg/kg) or saline every 8 hours for 10 days. For the final four days of exposure, rats also received intragastric intubations of an ethanol-containing diet (25% EtOH in Ensure®) or isocaloric dextrose on the same schedule as the nicotine injections. Following extinction of acute withdrawal behaviors (~18hrs) anxiogenesis was analyzed using a Morris Water Maze task (days 5 - 30 postadmin). Anxiogenesis was identified as percent time spent distance swam in the peripheral zone, in addition to wall hug time (i.e. thigmotaxis). Preliminary results suggest that ethanol and nicotine receiving animals spent significantly less time exploring the inner zone on day 10 ( $p < .05$ ). Further, an effect approaching acceptable levels of significance was identified in ethanol receiving animals showing a greater amount time spent in the outer zone on day 8 ( $p = .058$ ), this was supported by a notable trend of increased time spent in thigmotaxis on day 8 ( $p = .102$ ) These results suggest further exploration of anxiety related behaviors across protracted withdrawal periods, as effects are inconclusive at present.

## **Psychology Poster Session II**

### **The Effects of Dual Exposure of Alcohol and Nicotine on Spatial Learning and Memory**

**Analise Roccaforte**

**Ryan Lingg**

Faculty Mentor(s): Dayna Hayes

Psychology

Thursday, April 23 Heth 043

5:00 pm-6:00 pm

Alcohol and nicotine are two of the most commonly co-abused substances in the United States with estimates suggesting that 46.2 million Americans are dual alcohol and tobacco users (Falk, et al, 2006). Further, nicotine use has been reported to escalate with increasing amounts of alcohol consumption such that chronic, binge alcohol drinkers are reported to be responsible for nearly half of all tobacco consumption in this country (Miller and Gold, 1998; SAMHSA, 2012). Importantly, alcoholics suffer from learning and memory impairments and cognitive dysfunction (Obernier, et al, 2002). However, the acute effects of nicotine have been shown to be neuroprotective, but chronic exposure may also lead to deficits in learning and memory (Abrous, et al, 2002). The purpose of the proposed study then was to investigate the effects of combined binge level alcohol and nicotine exposure on spatial learning and memory. To that end, adult male Sprague-Dawley rats were administered nicotine or saline subcutaneously (0.3mg/kg) three times daily (7am, 3pm, 11pm) for 10 days. The final four days of exposure also included three intragastric intubations per day of ethanol (25% wv in Vanilla Ensure Plus) or isocaloric dextrose solution. Following drug administration, animals were monitored until extinction of withdrawal behaviors (~18hrs). The Morris water maze task was then used to investigate spatial learning and memory (Morris, 1984). Preliminary findings suggest that concomitant administration of alcohol and nicotine results in differential impairments to the learning process.

### **Gender and Social Media Usage**

**Kaitlyn Coran**

**Kristina Durnil**

**Michael La Brie**

**Kira Miller**

Faculty Mentor(s): David Townsend

Psychology

Ashley Rigdon

Psychology

Thursday, April 23 Heth 043

5:00 pm-6:00 pm

The focus of this study was to determine if there was a correlation between gender and different aspects of social media usage. The three specific social networking sites used in this study were Facebook, Twitter and Instagram. The three social media sites were chosen because they were in the top five social media used, according to Forbes. Other studies have found that gender has not had a correlation with social media usage. Three previously used surveys were combined and reconstructed to measure social media usage as well as demographic questions. The survey was constructed and made available electronically through Qualtrics, Inc. This survey was linked to SONA systems in order for Radford University undergraduate psychology students to be able to participate in the survey. A total number of 150 undergraduate students ages seventeen and higher who are currently attending Radford University located in South West Virginia participated in the survey. Three students were dropped from the survey for incomplete data. The total amount of student responses analyzed was 147. The study looked to see if one gender participated more than the other in these social media sites. Preliminary results suggest that the hypotheses were correct, by showing that females do use social media sites more prevalently. Preliminary results suggest that gender differences do exist between male and females in not only in how often they use social media but also in how they participate in social media.

***Psychology Poster Session II*****The Effects of SSRI Antidepressant Drugs in College Students****Sarah Wilson****Isabella Durham****Patrick Marshall****Rosalila Mastriano**

Faculty Mentor(s):	David Townsend	Psychology
	Ashley Rigdon	Psychology
Thursday, April 23	Heth 043	5:00 pm-6:00 pm

The purpose of this study is to explore the side effects of four common selective serotonin reuptake inhibitors prescribed to college-aged individuals. Four common antidepressants prescribed to college students are Cymbalta (Duloxetine), Pristiq (Desvenlafaxine), Prozac (Fluoxetine), and Paxil (Paroxetine). The researchers believe the individuals in the college population will experience some form of sexual dysfunction more frequently than any other side effect. Participants in the present study were undergraduates ranging from freshman to seniors at Radford University. Researchers used the Positive and Negative Affect Schedule (PANAS) to generate designs and we also prepared our own questions for the group's survey. Secondly, they prepared survey questions that would allow researchers to find out which side effects have occurred the most in the sample after they had taken their antidepressant medication. Thirdly, the survey questions were organized in the system, Qualtrics (Qualtrics Inc., Provo, UT). Researchers used their collected data they gathered to determine what side effects were the most prevalent in the SSRI medications. The statistics were analyzed by the method of an independent sample t-test. Preliminary results suggest that the hypothesis was correct, by showing that college individuals have experienced some form of sexual dysfunction more frequently than other common side effect from antidepressants.

**Drug Use and Greek Organizations****Chelsea Haefs****Jocelyn Savage****Shameka Hylton**

Faculty Mentor(s):	David Townsend	Psychology
	Ashley Rigdon	Psychology
Thursday, April 23	Heth 043	5:00 pm-6:00 pm

The proposed study examines types of drugs used in 200 Radford University students involved in social and academic Greek organizations as well as those who were not affiliated with either. The researchers hypothesize that social Greek organizations will have higher frequencies of drug usage than the other two student populations. The researchers hypothesize that alcohol will be the most abused drug among social Greek organizations and marijuana will be the most abused drug among students not involved in Greek organizations. Data was collected by using surveys that the researchers modified from previous studies. The participants were first asked if they were affiliated with any Greek organizations and if they answered yes, they were asked if the organization was predominantly social or academic. The participants then identified the drugs they consume and their frequency. The participants then completed a section of demographic questions. The researchers analyzed the data using a t-test. The independent variable in this study is whether the student were involved in an academic Greek organization, social Greek organization, or not affiliated with any Greek organization. The dependent variable in this study is the type of drugs used and frequency of use. Preliminary results suggest that the hypotheses were correct. The researchers inferred that peer pressure is a key factor in students engaging in hazardous drug consumption behaviors.

## ***Psychology Poster Session II***

### **Focused Hard or Hardly Focused: The Hidden Effects of Adderall Use**

**Valandrea Dillard**

**Alex Mackey**

**Jessica Robinson**

Faculty Mentor(s): David Townsend      Psychology  
                                 Ashley Rigdon      Psychology  
Thursday, April 23      Heth 043      5:00 pm-6:00 pm

Given the increasing prevalence of prescription stimulant misuse among members of today's younger generation, the current study seeks to examine both the use and repercussions that follow Adderall consumption. Previous research has shown that dependence on this specific psychostimulant may have serious implications on the user's overall behavior and health. Therefore, the focus of this research is to assess behavioral changes that are likely to concur with nonmedical use of the drug. In particular, the proposed study will attempt to denote the different behavioral outcomes and risks that coincide with each level of use. We expect to find that participants who consume more frequent, higher doses of Adderall to be more likely to suffer from adverse side effects, such as insomnia, loss of appetite, and lower self-esteem. As a means of obtaining data, undergraduate students of Radford University were recruited through the SONA system and instructed to take a survey. Once all of the participants completed the survey, a multifactorial ANOVA analysis was conducted. The variables pertinent to our study include the following: the independent variable being Adderall consumption while the dependent variable will measure any stated behavioral changes. Based on preceding findings, we anticipate for our results to conclude that individuals in the college setting are more likely than any other group to abuse and suffer from the unwarranted use of this drug.

### **Drug consumption and perceptions among college students**

**Catherine Gervais**

**Bertha Gheresi**

**Michaela Horvath**

**Brianna Curry**

Faculty Mentor(s): David Townsend      Psychology  
                                 Ashley Rigdon      Psychology  
Thursday, April 23      Heth 043      5:00 pm-6:00 pm

The research question is whether or not there is a difference between consumption and perceptions of alcohol, nicotine, prescription stimulants, and marijuana in college students before and after they entered college. Previous research suggests that consumption increases after entering college. Additionally, previous research suggests that students are more accepting of drug use than their parents are. Our hypothesis is that consumption of these drugs will increase and perceptions will become more accepting and tolerating. The participants were 150 students from Radford University. The group created a survey on Qualtrics and launched it on SONA system. The participants consented to the study and answered the survey questions. The group then analyzed the results in SPSS using a paired-samples t-test. The independent variable was the time period – before or after entering college. The dependent variables were perceptions or consumption of each drug. Preliminary results suggest that the hypothesis was supported, by showing that consumption increases after entering college and perceptions of use become more tolerating and accepting. The results show that the college environment has an impact on the consumption and perception of alcohol, nicotine, prescription stimulants, and marijuana.



***Psychology Poster Session II*****Personality Types and Coping with Depression****Chelsey Caldwell****Lindsay Cowen****Nathan Harper****Ethan Shores**

Faculty Mentor(s): David Townsend      Psychology  
   Amber McGetrick      Psychology  
Thursday, April 23      Heth 043      5:00 pm-6:00 pm

The research question for this study is whether personality type effect people's ways of coping with depression. Previous research showed that bipolar depressed patients were consistently more extraverted and less on judging according to the Myers-Briggs Personality Indicator (MBTI) scale. While another study found that low levels of personality traits were associated with chronicity of depression and higher levels of negative personality traits had an association with earlier onset of depression. From these studies it can be concluded that personality traits have an effect on coping and dealing with depression. Our hypothesis for this study is that the personality type of Guardian will cope with depression in the most effective positive way. Participants for this study were students enrolled at Radford University taking an entry level psychology class. The test used in this experiment are the Keirsey Temperament II (KTS II), the Beck Depression Inventory (BDI), and a self-made Coping Test. We will be using a 2-way ANOVA as our statistical test. Preliminary results suggest that the hypothesis was supported showing the Guardian personality type on the KST II coped better than their counterparts with depression. This suggest that coping strategy is dependent on personality type and that Guardians has a more positive coping ability.

## *Art History Symposium*

### **Monkeys on Edge: Their Presence and Meaning in Manuscripts from the Middle Ages**

**Kimberly Piland**

Faculty Mentor(s): Carlee Bradbury      Art  
Thursday, April 23      Heth 016      4:00 pm-4:20 pm

I will argue that there are numerous meanings to the presence and mockery of simians in illuminated manuscripts from the Middle Ages. Through the readings of various authors such as Lilian M. C. Randall, H. W. Janson, Michael Camille, Jeffrey Jerome Cohen, Herbert Friedman and Joan Barclay Lloyd, I will explore the significance of the appearance of apes and simians which adorn the borders of manuscripts and their true meaning. This paper features illuminated manuscript excerpts which are filled with the frolics of what is referred to as babooneries and babwyneries. They are the complete conception of the licentious medieval imagination played out on the pages of our past; in books fabricated for royalty and those of grand importance and stature in society. I will compare a selection of manuscript case studies, focusing on the Hours of Jeanne d'Evreux, in which marginal drawings and pictorial references of monkeys are profoundly symbolic. I will prove how they also appear to be used in addition in a gaily function of subject; mocking the written literature and even the reader. Occasionally dressed in fashionable attire, these simian subjects bountifully adorn the pages while mimicking mischievous or even malevolent human conduct and gestures. The ape and monkey have been used to represent and imitate human action as well as human follies and foibles. As a primate who is symbolically referenced and paralleled to the actions of mankind, they are the closest counterpart to humans and are therefore used to represent us, our trials and tribulations.

### **Writing in the Margins**

**Regan Chancellor**

Faculty Mentor(s): Carlee Bradbury      Art  
Thursday, April 23      Heth 016      4:20 pm-4:50 pm

Humans are internally afraid of any type of anomaly. The misunderstood are pushed away from main stream society. Art historians have for generations ignored the misunderstood or unexplained. If they seem to have no substance in contemporary culture then they must have no meaning. This idea was unaltered until art historians, like Michael Camille, started to look at the misunderstood, the grotesques and the edges of art. Camille argued that the "doodles" on the outskirts of the page are just as important as the text. Michael Camille's *Image on the Edge: the Margins of Medieval art* is looking beyond the pure text of manuscripts and burgeoning on finding the meaning of images that had been recently been deemed meaningless. Like Camille, Jeffery Jerome Cohen's *Monster Theory* pursues the concepts that have been ignored by society. Cohen explains the fundamental makeup of the modern monsters and who generated the meaning of the outcast. There topics overlap within the themes of the abnormal. Each focus on topic that had been previously forgotten and dismissed. Do Cohen and Camille have the right to say that the outcast and outskirts of fine art have meaning, when other art historian before them had deemed them meaningless? Each writing revolutionized their field and theirs peers way of thinking. In this essay both Camille and Cohen will be deciphered and compared in order to understand why their works have been so potent to their many readers. I will focus on the situating their works within the realm of traditional art historical writing.

### *Art History Symposium*

#### **Is it Art? Living Art History at the Art History Forum**

**Michael Goodson**

**Kristin Littman**

**Julie Compton**

**Michael Wilson**

**Amanda Shrewsberry**

**Ashley Boots**

Faculty Mentor(s): Roann Barris

Art

Thursday, April 23

Heth 016

5:00 pm-6:00 pm

This presentation includes two projects. The first project, with four student actors, is a reenactment of a 1927 trial in which Edward Steichen and Constantin Brancusi sued the United States for classifying Brancusi's sculpture *Bird in Space* as a utensil and therefore charging a high tariff to import it. The case involves several art critics and artists who tried to convince the judge that the work should be called art (or should not). The students in this project are re-creating the court trial and playing the roles of the judge, lawyers, witnesses for and against the prosecution. The second project is another form of living art. In this project, with two students from art216, two works of art by Picasso will come to life. This reenactment does not have a plot but is based on the Monterey Art festival living tableaux. Although not uncommon, it is an unusual way to experience a work of art. Together, both presentations raise the question of what is art and who gets to decide.

**Addair, Austin**

Title: Research, Curricula Development, & Grant-Writing Support For Roots with Wings: Floyd County, Virginia, Place-Based Education Oral History Project: A Youth Resiliency Effort  
Session: Appalachian Studies Oral Presentations  
Day & Time: Tuesday 2:40 pm-3:00 pm  
Location: Heth 022

**Agyeman, Valerie**

Title: Is There Enough Evidence to be able to Recommend Consumption of Lycopene to Prevent Prostate Cancer?  
Session: Nutrition Poster Session  
Day & Time: Wednesday 10:30 am-12:00 pm  
Location: Heth 022

**Alderman, Amy**

Presentation: Dating Violence Research  
Session: Scholar Citizen ePortfolio Showcase  
Day & Time: Wednesday 5:50 pm-6:20 pm  
Room: Heth 022

**Alls, Jarrod**

Title: Anthocyanins and Heart Disease  
Session: Nutrition Poster Session  
Day & Time: Wednesday 10:30 am-12:00 pm  
Location: Heth 022

**Amofah, Bismark**

Title: Low Cost High Performance Parallel Processing Molecular Modeling  
Session: Chemistry Poster Session  
Day & Time: Tuesday 6:00 pm-7:30 pm  
Location: Heth 043

**Angelopoulos, Ryan**

Title: Aggression Tendencies of Hamadryas Baboons in a Captive Environment (Papio hamadryas)  
Session: Primate Behavior at the NC Zoo Oral Presentations  
Day & Time: Thursday 10:48 am-11:00 am  
Location: Heth 016

**Angulo, Wilmer**

Title: Personality and Cell Phone Use  
Session: Psychology Poster Session I  
Day & Time: Thursday 4:00 pm-5:00 pm  
Location: Heth 014

**Annear, Caitlin**

Title: Relationships Between Nest Density, Parental Care, and Corticosterone Levels of Eastern Bluebirds (*Sialia sialis*)  
Session: Biology Poster Session  
Day & Time: Tuesday 6:00 pm-7:30 pm  
Location: Heth 014

**Annear, Caitlin**

Title: Effects of Social Grooming on Male Dominance Hierarchy in Chimpanzees  
Session: Primate Behavior at the NC Zoo Oral Presentations  
Day & Time: Thursday 11:00 am-11:12 am  
Location: Heth 016

**Arias, Diego**

Title: Relationships Between Nest Density, Parental Care, and Corticosterone Levels of Eastern Bluebirds (*Sialia sialis*)  
Session: Biology Poster Session  
Day & Time: Tuesday 6:00 pm-7:30 pm  
Location: Heth 014

**Asbee, Justin**

Title: Changes in Blood Corticosterone Levels Following Co-Administration of Alcohol and Nicotine in Rats  
Session: Psychology Poster Session II  
Day & Time: Thursday 5:00 pm-6:00 pm  
Location: Heth 043

**Ashley, Joe**

Title: Optimized Power Transmission Protocol for Wireless Sensor Networks  
Session: Interdisciplinary Poster Session  
Day & Time: Wednesday 5:00 pm-7:00 pm  
Location: Heth 014

**Ayalew, Eyob**

Title: Extraction of Alkaloids from *Diefenbachia*  
Session: Biology Poster Session  
Day & Time: Tuesday 6:00 pm-7:30 pm  
Location: Heth 014

**Ayalew, Eyob**

Title: Impacts of exercise on college student salivary IgA levels  
Session: Biology ePortfolio Presentations  
Day & Time: Tuesday 6:00 pm-7:30 pm  
Location: Heth 014

**Aydin Burakgazi, Zeynep**

Title: Transcription and splicing of CYP4F3 in HepaRG cells  
Session: Biology Poster Session  
Day & Time: Tuesday 6:00 pm-7:30 pm  
Location: Heth 014

**Bailey, Lauren**

Title: Roots With Wings: Floyd County Place-based Education Oral History Project  
Session: Roots with Wings Presentation  
Day & Time: Wednesday 5:50 pm-6:20 pm  
Location: Heth 022

**Banks, Ciara**

Title: Theodora A Woman All Her Own  
Session: Honors Academy Capstone Oral Presentations  
Day & Time: Thursday 3:00pm-3:20pm  
Location: Heth 022

**Barfield, Stirling**

Title: From the Bottom Up: Baconian Inductivism and Grounded Theory  
Session: Psychology Poster Session I  
Day & Time: Thursday 4:00 pm-5:00 pm  
Location: Heth 014

**Bass, Jessie**

Session: Health and Human Performance Oral Presentations  
Day & Time: Tuesday 4:40 pm-5:30 pm  
Location: Heth 022

**Batson, Jordan**

Title: Curcumin: A Natural Cancer Preventative Agent?  
Session: Nutrition Poster Session  
Day & Time: Wednesday 10:30 am-12:00 pm  
Location: Heth 022

**Bell, Hannah**

Title: How Do Fullerenes Form? The Top-Down versus Bottom-Up Mechanism  
Session: Chemistry Poster Session  
Day & Time: Tuesday 6:00 pm-7:30 pm  
Location: Heth 043

**Bishop, Katherine**

Title: Eugenics: The Science of Good Birth in the History of Psycho  
Session: Psychology Poster Session II  
Day & Time: Thursday 5:00 pm-6:00 pm  
Location: Heth 043

**Bishop, Danielle**

Title: The Impact of Alcohol Consumption and Its Effect on  
Depression, Suicide Ideation and Attempt in Adolescents  
Session: Health and Human Performance Oral Presentations  
Day & Time: Tuesday 4:40 pm-5:30 pm  
Location: Heth 022

**Boerstler, Cassandra**

Title: Transcription and splicing of CYP4F3 in HepaRG cells  
Session: Biology Poster Session  
Day & Time: Tuesday 6:00 pm-7:30 pm  
Location: Heth 014

**Boerstler, Cassandra**

Title: Impacts of stress associated with college major in immune  
response  
Session: Biology ePortfolio Presentations  
Day & Time: Tuesday 6:00 pm-7:30 pm  
Location: Heth 014

**boots, ashley**

Title: Is It Art? Living Art History at the Art History Forum  
Session: Art History Symposium  
Day & Time: Thursday 4:00 pm-5:00 pm  
Location: Heth 016

**Bowden, Heather**

Title: Exploring the Interaction between Hospice Work and Social  
Worker Spirituality  
Session: Social Work Oral Presentations  
Day & Time: Tuesday 2:40 pm-3:10 pm  
Location: Heth 022

**Bowen, Elizabeth**

Title: Professional Attitudes and Perceptions of Consumer Use of  
Mobile Hearing Health Applications on Smart Technology  
Session: Honors Academy Capstone Oral Presentations  
Day & Time: Thursday 3:40 pm-4:00 pm  
Location: Heth 022

**Bowling, William**

Title: Developing a Land Use Management Plan for Rural Areas  
within Radford City Limits  
Session: Geospatial Science and Geology Poster Session  
Day & Time: Wednesday 1:00 pm-3:30 pm  
Location: Heth 014

**Bradshaw, Lydia**

Title: Monkey see, monkey do: Does positive affect moderate the  
relationship between mimicry and helping behavior?  
Session: Psychology Poster Session I  
Day & Time: Thursday 4:00 pm-5:00 pm  
Location: Heth 014

**Brandes, Shane**

Title: Relationships Between Nest Density, Parental Care, and  
Corticosterone Levels of Eastern Bluebirds (*Sialia sialis*)  
Session: Biology Poster Session  
Day & Time: Tuesday 6:00 pm-7:30 pm  
Location: Heth 014

**Britton, Jacob**

Title: Dendroclimatology study of Virginia pine in New River  
Gorge, WV  
Session: Geospatial Science and Geology Poster Session  
Day & Time: Wednesday 1:00 pm-3:30 pm; Location: Heth 014

**Brocker, Stefanie**

Title: Lutein, Zeaxanthin, and Age Related Macular Degeneration  
Session: Nutrition Poster Session  
Day & Time: Wednesday 10:30 am-12:00 pm  
Location: Heth 022

**Brown, Elise**

Title: Geochemistry of Rhyolite Clasts from the Lower Mount  
Rogers  
Session: Geospatial Science and Geology Poster Session  
Day & Time: Wednesday 1:00 pm-3:30 pm  
Location: Heth 014

**Burd, Kayla**

Title: Comparing the learning strategies for Mandarin in the U.S. vs.  
Mandarin China  
Session: Interdisciplinary Poster Session  
Day & Time: Wednesday 5:00 pm-7:00 pm  
Location: Heth 014

**Burley, Sara**

Title: Elected in seconds: Does cognitive load moderate the  
relationship between political success and inferred facial  
competence?  
Session: Psychology Poster Session I  
Day & Time: Thursday 4:00 pm-5:00 pm  
Location: Heth 014

**Buschmann, Christopher**

Title: Comparison of Joint Kinematic Outcomes Between Three  
Different Dynamic Balance Tests  
Session: Interdisciplinary Poster Session  
Day & Time: Wednesday 5:00 pm-7:00 pm  
Location: Heth 014

**Cacioppo, MaCauly**

Title: Adolescent cannabinoid exposure and feeding behavior:  
Spatial memory and search strategy deficits in adult Long Evans  
rats  
Session: Psychology Poster Session II  
Day & Time: Thursday 5:00 pm-6:00 pm  
Location: Heth 043

**Cacioppo, MaCauly**

Title: Caffeine, Sugar, and Aspartame: Using Open Field Testing to  
Investigate Anxiety, Activity, and Spatial Recognition in Rats  
Session: Psychology Poster Session I  
Day & Time: Thursday 4:00 pm-5:00 pm  
Location: Heth 014

**Call, Mark**

Title: Caffeine, Sugar, and Aspartame: Using Open Field Testing to  
Investigate Anxiety, Activity, and Spatial Recognition in Rats  
Session: Psychology Poster Session I  
Day & Time: Thursday 4:00 pm-5:00 pm  
Location: Heth 014

**Camm, Alex**

Title: Personality and Cell Phone Use  
Session: Psychology Poster Session I  
Day & Time: Thursday 4:00 pm-5:00 pm  
Location: Heth 014

**Cardenas, James**

Title: Synthesis of novel magnetic iron/carbon nano-composites  
for environmental applications  
Session: Chemistry Poster Session  
Day & Time: Tuesday 6:00 pm-7:30 pm  
Location: Heth 043

**Carle, Brian**

Title: Science in Schism: Competing Psychologies of the West and the USSR in the 20th Century  
Session: Psychology Poster Session II  
Day & Time: Thursday 5:00 pm-6:00 pm  
Location: Heth 043

**Carle, Brian**

Title: Cardiovascular Reactivity Differences Between White and Black Subjects May Be Moderated by Stressor Magnitude  
Session: Psychology Poster Session II  
Day & Time: Thursday 5:00 pm-6:00 pm  
Location: Heth 043

**Carlson, Michael**

Title: Sexual Dominance Expression in Captive Lemur catta  
Session: Primate Behavior at the NC Zoo Oral Presentations  
Day & Time: Thursday 10:12 am-10:24 am  
Location: Heth 016

**Carlson, Michael**

Title: A comparison of lithic and ceramic artifacts from two adjacent Late Woodland villages  
Session: Interdisciplinary Poster Session  
Day & Time: Wednesday 5:00 pm-7:00 pm  
Location: Heth 014

**Carpenter, Zachary**

Title: Potential antiviral effects of Phenazine derivatives on the La Crosse Virus  
Session: Chemistry Poster Session  
Day & Time: Tuesday 6:00 pm-7:30 pm  
Location: Heth 043

**Carper, Shane**

Title: Sexual Dominance Expression in Captive Lemur catta  
Session: Primate Behavior at the NC Zoo Oral Presentations  
Day & Time: Thursday 10:12 am-10:24 am  
Location: Heth 016

**Carr, Danielle**

Title: Elected in seconds: Does cognitive load moderate the relationship between political success and inferred facial competence?  
Session: Psychology Poster Session I  
Day & Time: Thursday 4:00 pm-5:00 pm  
Location: Heth 014

**Carrell, Skyler**

Title: Calcium Oxalate in Petioles of Deciduous Leaves  
Session: Biology Poster Session  
Day & Time: Tuesday 6:00 pm-7:30 pm  
Location: Heth 014

**Chancellor, Regan**

Title: Writing in the Margins  
Session: Art History Symposium  
Day & Time: Thursday 4:20 pm-4:50 pm  
Location: Heth 016

**Cheek, Kimber**

Title: Identification and Closure  
Session: Interdisciplinary Poster Session  
Day & Time: Wednesday 5:00 pm-7:00 pm  
Location: Heth 014

**Clark, Arica**

Title: Personality and Cell Phone Use  
Session: Psychology Poster Session I  
Day & Time: Thursday 4:00 pm-5:00 pm  
Location: Heth 014

**Coble, Jay**

Title: An Overview of Youth Sports-Related Concussion Assessment and Directions for Future Research  
Session: Interdisciplinary Poster Session  
Day & Time: Wednesday 5:00 pm-7:00 pm  
Location: Heth 014

**Cocke, Rhiannon**

Title: Chimpanzee Relationships in Captivity  
Session: Primate Behavior at the NC Zoo Oral Presentations  
Day & Time: Thursday 11:12 am-11:24 am  
Location: Heth 016

**Collier, Megan**

Title: How Stress Levels in College Students Studying in the Library Vary Depending on the Time of Day  
Session: Biology ePortfolio Presentations  
Day & Time: Tuesday 6:00 pm-7:30 pm  
Location: Heth 014

**Compton, Tia**

Title: Elected in seconds: Does cognitive load moderate the relationship between political success and inferred facial competence?  
Session: Psychology Poster Session I  
Day & Time: Thursday 4:00 pm-5:00 pm  
Location: Heth 014

**Compton, Jessica**

Title: Cost of Avoidance: Attachment and Depletion of Self-Regulatory Resources  
Session: Psychology Poster Session I  
Day & Time: Thursday 4:00 pm-5:00 pm  
Location: Heth 014

**compton, julie**

Title: Is It Art? Living Art History at the Art History Forum  
Session: Art History Symposium  
Day & Time: Thursday 4:00 pm-5:00 pm  
Location: Heth 016

**Compton, Jessica**

Title: An Ironic Rebound Effect: Dismissing Attachment and the Suppression of Negative Childhood Memories  
Session: Psychology Oral Presentations  
Day & Time: Thursday 3:20 pm-3:40 pm  
Location: Heth 016

**Contreras, Kristina**

Title: Examining LinkedIn as a tool for developing social capital  
Session: Interdisciplinary Poster Session  
Day & Time: Wednesday 5:00 pm-7:00 pm  
Location: Heth 014

**Cooper, Diamond**

Title: The Effects of Cardiorespiratory or Yogic Exercise on Salivary Immunoglobulin Levels  
Session: Biology ePortfolio Presentations  
Day & Time: Tuesday 6:00 pm-7:30 pm  
Location: Heth 014

**Coulter, Megan**

Title: Examining LinkedIn as a tool for developing social capital  
Session: Interdisciplinary Poster Session  
Day & Time: Wednesday 5:00 pm-7:00 pm  
Location: Heth 014

**Creany, Samuel**

Title: Determining the Correlation Between Land-Use and Water Quality in the James River  
Session: Geospatial Science and Geology Poster Session  
Day & Time: Wednesday 1:00 pm-3:30 pm  
Location: Heth 014

**Cromer, Faith**

Title: Suicide Prevention on College Campuses  
Session: Scholar Citizen ePortfolio Digital Showcase  
Day & Time: Wednesday 5:05 pm-5:10 pm  
Location: Heth 043

**Cross, Amanda**

Title: Introduction to Lymphedema Therapy  
Session: Interdisciplinary Poster Session  
Day & Time: Wednesday 5:00 pm-7:00 pm  
Location: Heth 014

**Currier, Mary**

Title: Impacts of smoking on human salivary IgA levels  
Session: Biology ePortfolio Presentations  
Day & Time: Tuesday 6:00 pm-7:30 pm  
Location: Heth 014

**Curry, Brianna**

Title: Juvenile Behavior in Western Lowland Gorillas  
Session: Primate Behavior at the NC Zoo Oral Presentations  
Day & Time: Thursday 11:24 am-11:36 am  
Location: Heth 016

**Curtis, Victoria**

Title: Research, Curricula Development, & Grant-Writing Support for Roots with Wings: Floyd County, Virginia, Place-based Education Oral History Project: A Youth Resiliency Effort  
Session: Appalachian Studies Oral Presentations  
Day & Time: Tuesday 2:40 pm-3:00 pm  
Location: Heth 022

**Curtis, Victoria**

Title: Roots With Wings: Floyd County Place-based Education Oral History Project  
Session: Roots with Wings Presentation  
Day & Time: Wednesday 5:50 pm-6:20 pm  
Location: Heth 022

**Daidone, Elizabeth**

Title: Friendship, Personality, and Happiness: Do Happier People Make Friends Easier?  
Session: Psychology Poster Session I  
Day & Time: Thursday 4:00 pm-5:00 pm  
Location: Heth 014

**Dalton, Devin**

Title: Analyzing Hydrologic Alterations Caused by Dam Construction in the Eastern United States  
Session: Geospatial Science and Geology Poster Session  
Day & Time: Wednesday 1:00 pm-3:30 pm  
Location: Heth 014

**Daniels, Jesse**

Title: Using land use history and site conditions to predict invasive plant distribution in central Appalachia  
Session: Honors Academy Capstone Oral Presentations  
Day & Time: Thursday 5:10 pm-5:30 pm  
Location: Heth 022

**Danielson, Matthew**

Title: Juvenile Behavior in Western Lowland Gorillas  
Session: Primate Behavior at the NC Zoo Oral Presentations  
Day & Time: Thursday 11:24 am-11:36 am  
Location: Heth 016

**Danza, Alexa**

Title: Tailor Your Tinder Profile to the Times: Do System Threats Affect Attraction to Benevolent-Sexist Stereotypes For Women Too?  
Session: Psychology Poster Session II  
Day & Time: Thursday 5:00 pm-6:00 pm  
Location: Heth 014

**De Carvalho, Manuella**

Title: Impacts of smoking on human salivary IgA levels  
Session: Biology ePortfolio Presentations  
Day & Time: Tuesday 6:00 pm-7:30 pm  
Location: Heth 014

**De Meglio, Kathryn**

Title: Title: A Meta-Analysis of Cardiovascular Responsivity to Stress in Studies Comparing Groups with High and Low Blood Pressure  
Session: Psychology Poster Session II  
Day & Time: Thursday 5:00 pm-6:00 pm  
Location: Heth 043

**Diambra, Nicole**

Title: Technology and Tourism  
Session: Interdisciplinary Poster Session  
Day & Time: Wednesday 5:00 pm-7:00 pm  
Location: Heth 014

**Dickerson, Glenna**

Title: Caffeine, sugar, and aspartame: the effects of common sweeteners on weight gain and anxiety in rats  
Session: Psychology Poster Session I  
Day & Time: Thursday 4:00 pm-5:00 pm  
Location: Heth 014

**Dickerson, Bianca**

Title: Roots With Wings: Floyd County Place-based Education Oral History Project  
Session: Roots with Wings Presentation  
Day & Time: Wednesday 5:50 pm-6:20 pm  
Location: Heth 022

**Doherty, Claire**

Title: My sport's team has been discontinued: What do I do next?  
Session: Health and Human Performance Oral Presentations  
Day & Time: Tuesday 4:20 pm-4:40 pm  
Location: Heth 022

**Dorfman, Alyssa**

Title: Effects of gender stereotypes on test performance  
Session: Psychology Oral Presentations  
Day & Time: Thursday 3:40 pm-4:00 pm  
Location: Heth 016

**Dowd, William**

Title: Developing a Visitor Map and Brochure Based On User Opinion for Selu Conservancy  
Session: Geospatial Science and Geology Poster Session  
Day & Time: Wednesday 1:00 pm-3:30 pm  
Location: Heth 014

**Dowd, Will**

Title: Development of Strategic Land Use Plan for Selu Conservancy  
Session: Geospatial Science and Geology Poster Session  
Day & Time: Wednesday 1:00 pm-3:30 pm  
Location: Heth 014

**Dudley, Erin**

Title: Relationships Between Nest Density, Parental Care, and Corticosterone Levels of Eastern Bluebirds (*Sialia sialis*)  
Session: Biology Poster Session  
Day & Time: Tuesday 6:00 pm-7:30 pm  
Location: Heth 014

**Durham, Marleigh**

Title: How stress levels in college students studying in the library vary depending on the time of day  
Session: Biology ePortfolio Presentations  
Day & Time: Tuesday 6:00 pm-7:30 pm  
Location: Heth 014

**Durham, Marleigh**

Title: Measuring and Comparing Immunocompetence in Native vs. Invasive Bird Species using Heterophil: Lymphocyte Ratios  
Session: Biology Poster Session  
Day & Time: Tuesday 6:00 pm-7:30 pm  
Location: Heth 014

**Durham, Marleigh**

Title: Growth of *Gromphadorhina portentosa* (Madagascar hissing cockroach) from royalactin produced by transgenic *Escheria coli*.  
Session: Biology Poster Session  
Day & Time: Tuesday 6:00 pm-7:30 pm  
Location: Heth 014

**Dwyer, Dylan**

Title: Effects of Terrain Modification on Surface Water Runoff from the Blueberry Cottages Watershed at Mountain Lake, Giles County, Virginia  
Session: Geospatial Science and Geology Poster Session  
Day & Time: Wednesday 1:00 pm-3:30 pm  
Location: Heth 014

**Dwyer, Dylan**

Title: Potential Auxiliary Water Sources for Mountain Lake, Giles County, Virginia  
Session: Geospatial Science and Geology Poster Session  
Day & Time: Wednesday 1:00 pm-3:30 pm  
Location: Heth 014

**Edwards, Halle**

Title: A Quantitative Chemical Analysis of Tea  
Session: Chemistry Poster Session  
Day & Time: Tuesday 6:00 pm-7:30 pm  
Location: Heth 043

**Engledove, Dustin**

Title: Geographic Information System-Based Statistical Prediction Model to Identify Water Mains at Risk of Failure  
Session: Geospatial Science and Geology Poster Session  
Day & Time: Wednesday 1:00 pm-3:30 pm  
Location: Heth 014

**Estrella, Shanellie**

Title: Chimpanzee Relationships in Captivity  
Session: Primate Behavior at the NC Zoo Oral Presentations  
Day & Time: Thursday 11:12 am-11:24 am  
Location: Heth 016

**Falls, Kelci**

Title: Personality Factors: The Impact of Self-Control  
Session: Psychology Poster Session I  
Day & Time: Thursday 4:00 pm-5:00 pm  
Location: Heth 014

**Fay, Taylor**

Title: The Ratio of Affiliative and Agonistic Behaviors Observed in Captive Lemur catta  
Session: Primate Behavior at the NC Zoo Oral Presentations  
Day & Time: Thursday 10:00 am-10:12 am  
Location: Heth 016

**Fisher-Hewett, Angelina**

Title: Personality Factors: The Impact of Self-Control  
Session: Psychology Poster Session I  
Day & Time: Thursday 4:00 pm-5:00 pm  
Location: Heth 014

**Fitch, Carissa**

Title: Alcohol in mouthwash  
Session: Chemistry Poster Session  
Day & Time: Tuesday 6:00 pm-7:30 pm  
Location: Heth 043

**Flood, Grace**

Title: The Reminiscence Bump Effect in Published Autobiographies  
Session: Psychology Poster Session II  
Day & Time: Thursday 5:00 pm-6:00 pm  
Location: Heth 043

**Foley, David**

Title: A Comparability Study of Radiographic, Macroscopic, and Microscopic Digital Evidence Of Bone Repair in the Diagnosis of Child Abuse  
Session: Innovations in Forensic Science Oral Presentations  
Day & Time: Wednesday 9:00 am-12:00 pm  
Location: Heth 043

**Foley, David**

Title: Social Dynamics and Interrelationships of Captive Western Lowland Gorillas  
Session: Primate Behavior at the NC Zoo Oral Presentations  
Day & Time: Thursday 11:36 am-11:48 am  
Location: Heth 016

**Foley, Caitlyn**

Title: You Received Your Degree from What School?: Employer Perceptions of Online Degrees  
Session: Psychology Poster Session II  
Day & Time: Thursday 5:00 pm-6:00 pm  
Location: Heth 043

**Folsom, Charles**

Title: Mutagenic Analysis of Bacterial Loop Binding Selectivity of *E. Coli* Beta-Glucuronidase  
Session: Chemistry Oral Presentations  
Day & Time: Tuesday 5:45 pm-6:00 pm  
Location: Heth 045

**Ford, Dominique**

Title: Effect of Experience on Accuracy of Metric and Nonmetric Ancestry Estimation Methods  
Session: Innovations in Forensic Science Oral Presentations  
Day & Time: Wednesday 9:00 am-12:00 pm  
Location: Heth 043

**Formica, Anastasia**

Title: Hippocampal Neurogenesis in Sprague-Dawley Rats: Does Gender Matter?  
Session: Psychology Poster Session I  
Day & Time: Thursday 4:00 pm-5:00 pm  
Location: Heth 014

**Formica, Anastasia**

Title: Hippocampal Neurogenesis in Long-Evans Rats: Does Gender Matter?

Session: Honors Academy Capstone Poster Session

Day & Time: Thursday 5:30 pm-6:30 pm

Location: Heth 022

**Foster, Stephanie**

Title: Exploring the Interaction between Hospice Work and Social Worker Spirituality

Session: Social Work Oral Presentations

Day & Time: Tuesday 3:20 pm-3:40 pm

Location: Heth 022

**Fraley, Sarah**

Title: Caffeine, sugar, and aspartame: the effects of common sweeteners on weight gain and anxiety in rats

Session: Psychology Poster Session I

Day & Time: Thursday 4:00 pm-5:00 pm

Location: Heth 014

**Franklin, Sara**

Title: Assessing the Accuracy of Radiographic Imaging in Death Investigations: A Forensic Anthropologist's Perspective

Session: Innovations in Forensic Science Oral Presentations

Day & Time: Wednesday 9:00 am-12:00 pm

Location: Heth 043

**Franklin, Sara**

Title: Learning Chinese in the U.S. vs. Study Abroad in China and Taiwan

Session: Interdisciplinary Oral Presentations

Day & Time: Wednesday 11:00 am-11:20 pm

Location: Heth 016

**Frasca, Corey**

Title: A comparison of lithic and ceramic artifacts from two adjacent Late Woodland villages

Session: Interdisciplinary Poster Session

Day & Time: Wednesday 5:00 pm-7:00 pm

Location: Heth 014

**Frasca, Corey**

Title: Effects of Social Grooming on Male Dominance Hierarchy in Chimpanzees

Session: Primate Behavior at the NC Zoo Oral Presentations

Day & Time: Thursday 11:00 am-11:12 am

Location: Heth 016

**Frazier, Haley**

Title: Roots With Wings: Floyd County Place-based Education Oral History Project

Session: Roots with Wings Presentation

Day & Time: Wednesday 5:50 pm-6:20 pm

Location: Heth 022

**Gallas, Steve**

Title: Growth of *Gromphadorhina portentosa* (Madagascar hissing cockroach) from royalactin produced by transgenic *Escheria coli*.

Session: Biology Poster Session

Day & Time: Tuesday 6:00 pm-7:30 pm

Location: Heth 014

**Gallas, Steve**

Title: The Effects of Cardiorespiratory or Yogic Exercise on Salivary Immunoglobulin Levels

Session: Biology ePortfolio Presentations

Day & Time: Tuesday 6:00 pm-7:30 pm

Location: Heth 014

**Galloway, Kristy**

Title: Transcription and splicing of CYP4F3 in HepaRG cells

Session: Biology Poster Session

Day & Time: Tuesday 6:00 pm-7:30 pm

Location: Heth 014

**Gauthier, Kaitlin**

Title: Determining female Western Lowland gorilla (*Gorilla gorilla gorilla*) dominance hierarchies within a captive population in the absence of an adult silverback male

Session: Primate Behavior at the NC Zoo Oral Presentations

Day & Time: Thursday 11:48 am-12:00 pm

Location: Heth 016

**Gerard, Angela**

Title: Composite layer-by-layer films formed using functionalized carbon nanoparticles and cationic *moringa oleifera* protein

Session: Chemistry Poster Session

Day & Time: Tuesday 6:00 pm-7:30 pm

Location: Heth 043

**Gerig, Caitlin**

Title: My sport's team has been discontinued: What do I do next?

Session: Health and Human Performance Oral Presentations

Day & Time: Tuesday 4:20 pm-4:40 pm

Location: Heth 022

**Gibbs, Susan**

Title: Personality and Cell Phone Use

Session: Psychology Poster Session I

Day & Time: Thursday 4:00 pm-5:00 pm

Location: Heth 014

**Gibbs, Susan**

Title: Cell Phone Dependence: Examination of Media Behaviors

Session: Psychology Poster Session I

Day & Time: Thursday 4:00 pm-5:00 pm

Location: Heth 014

**Gilbert, Sarah**

Title: Lutein, Zeaxanthin, and Age Related Macular Degeneration

Session: Nutrition Poster Session

Day & Time: Wednesday 10:30 am-12:00 pm

Location: Heth 022

**Goodnow, Deb**

Title: An Ironic Rebound Effect: Dismissing Attachment and the Suppression of Negative Childhood Memories

Session: Psychology Oral Presentations

Day & Time: Thursday 3:20 pm-3:40 pm

Location: Heth 016

**Goodnow, Debbie**

Title: Cost of Avoidance: Attachment and Depletion of Self-Regulatory Resources

Session: Psychology Poster Session I

Day & Time: Thursday 4:00 pm-5:00 pm

Location: Heth 014

**Goodson, Michael**

Title: Is It Art? Living Art History at the Art History Forum

Session: Art History Symposium

Day & Time: Thursday 4:00 pm-5:00 pm

Location: Heth 016

**Gover, Carlton**

Title: The Ratio of Affiliative and Agonistic Behaviors Observed in Captive Lemur catta

Session: Primate Behavior at the NC Zoo Oral Presentations

Day & Time: Thursday 10:00 am-10:12 am

Location: Heth 016

**Gover, Carlton**

Title: A Comparison Of Lithic And Ceramic Artifacts From Two Adjacent Late Woodland Villages  
Session: Interdisciplinary Poster Session  
Day & Time: Wednesday 5:00 pm-7:00 pm  
Location: Heth 014

**Grandy, Elizabeth**

Title: A Study on Studying: Which is better for stress: Studying in groups, or studying alone?  
Session: Biology ePortfolio Presentations  
Day & Time: Tuesday 6:00 pm-7:30 pm  
Location: Heth 014

**Greene, Jana**

Title: Scoliosis in teenagers and common treatment and intervention methods a systematic review of SportDiscus and AMED literature  
Session: Health and Human Performance Poster Session  
Day & Time: Tuesday 5:00 pm-5:30 pm  
Location: Heth 022

**Griffith, Victoria**

Title: Monkey see, monkey do: Does positive affect moderate the relationship between mimicry and helping behavior?  
Session: Psychology Poster Session I  
Day & Time: Thursday 4:00 pm-5:00 pm  
Location: Heth 014

**Guise, Emily**

Title: My ePortfolio: An online identity for professional gain  
Session: Biology Oral Presentations  
Day & Time: Tuesday 5:15 pm-5:30 pm  
Location: Heth 014

**Guise, Emily**

Title: Trouble with Trenbolone? The effects of a common runoff pollutant  
Session: Scholar Citizen ePortfolio Digital Showcase  
Day & Time: Wednesday 4:05 pm-4:10 pm  
Location: Heth 043

**Gullickson, Hannah**

Title: Mutagenic characterization of the bacterial loop of E. coli Beta Glucuronidase  
Session: Chemistry Oral Presentations  
Day & Time: Tuesday 5:30 pm-5:45 pm  
Location: Heth 045

**Hall, Bethany**

Title: Development, Utility, and Practicality of The Diagnostic and Statistic Manual of Mental Disorders I (DSM-I)  
Session: Psychology Poster Session II  
Day & Time: Thursday 5:00 pm-6:00 pm  
Location: Heth 043

**Hamed, Matti**

Title: Assessing Herpetofaunal Diversity at Selu Conservancy  
Session: Biology Oral Presentations  
Day & Time: Tuesday 5:30 pm-5:45 pm  
Location: Bonnie Auditorium

**Hamed, Matti**

Title: Matti Hamed's ePortfolio: Scientific Outreach  
Session: Scholar Citizen ePortfolio Digital Showcase  
Day & Time: Wednesday 4:15 pm-4:20 pm  
Location: Heth 043

**Hamed, Matti**

Title: Matti Hamed's ePortfolio: Scientific Outreach  
Session: Scholar Citizen ePortfolio Digital Showcase  
Day & Time: Wednesday 4:15 pm-4:20 pm  
Location: Heth 043

**Hami, Nima**

Title: Potential antiviral effects of Phenazine derivatives on the La Crosse Virus  
Session: Chemistry Poster Session  
Day & Time: Tuesday 6:00 pm-7:30 pm  
Location: Heth 043

**Harden, Jesse**

Title: Boris Pasternak: The Poet Behind Doctor Zhivago  
Session: English Oral Presentations  
Day & Time: Tuesday 5:20 pm-5:50 pm  
Location: Heth 044

**Hardin, Madison**

Title: Roots With Wings: Floyd County Place-based Education Oral History Project  
Session: Roots with Wings Presentation  
Day & Time: Wednesday 5:50 pm-6:20 pm  
Location: Heth 022

**Harless, Cody**

Title: Tailor Your Tinder Profile to the Times: Do System Threats Affect Attraction to Benevolent-Sexist Stereotypes For Women Too?  
Session: Psychology Poster Session II  
Day & Time: Thursday 5:00 pm-6:00 pm  
Location: Heth 014

**Harris, Henry**

Title: Impacts of ethanol and nicotine withdrawal on fecal immunoglobulin A levels in rats  
Session: Biology Poster Session  
Day & Time: Tuesday 6:00 pm-7:30 pm  
Location: Heth 014

**Harris, Henry**

Title: Impacts of exercise on college student salivary IgA levels  
Session: Biology ePortfolio Presentations  
Day & Time: Tuesday 6:00 pm-7:30 pm  
Location: Heth 014

**Harrison, Seth**

Title: How stress levels in college students studying in the library vary depending on the time of day  
Session: Biology ePortfolio Presentations  
Day & Time: Tuesday 6:00 pm-7:30 pm  
Location: Heth 014

**Harrison, Seth**

Title: Chimpanzee Relationships in Captivity  
Session: Primate Behavior at the NC Zoo Oral Presentations  
Day & Time: Thursday 11:12 am-11:24 am  
Location: Heth 016

**Harry, Haley**

Title: A Comparison of Macroscopic and Microscopic Methods of Identification of Tool Class and Type in Incidents of Sharp Force Trauma  
Session: Innovations in Forensic Science Oral Presentations  
Day & Time: Wednesday 9:00 am-12:00 pm  
Location: Heth 043

**Hatcher, Alison**

Title: Personality Factors: The Impact of Self-Control  
Session: Psychology Poster Session I  
Day & Time: Thursday 4:00 pm-5:00 pm  
Location: Heth 014

**hayes, spencer**

Title: Nanostructured functionalized carbon based materials for improved water purification  
Session: Chemistry Poster Session  
Day & Time: Tuesday 6:00 pm-7:30 pm  
Location: Heth 043

**Heishman, Hannah**

Title: Determination of Bisphenol-A in Thermal Printing Receipts  
Session: Chemistry Poster Session  
Day & Time: Tuesday 6:00 pm-7:30 pm  
Location: Heth 043

**Hickling, Skye**

Title: Mutagenic characterization of the bacterial loop of E. coli Beta Glucuronidase  
Session: Chemistry Oral Presentations  
Day & Time: Tuesday 5:30 pm-5:45 pm  
Location: Heth 045

**Hilton, Emily**

Title: Adolescent cannabinoid exposure and feeding behavior: Activity, weight and anxiety in adult Long Evans rats  
Session: Psychology Poster Session I  
Day & Time: Thursday 4:00 pm-5:00 pm  
Location: Heth 014

**Horvath, Michaela**

Title: The Influence of the Mexican Drug Culture on Music  
Session: Honors Academy Capstone Oral Presentations  
Day & Time: Thursday 4:20 pm-4:40 pm  
Location: Heth 022

**Huneycutt, Daniel**

Title: Using the Error-Band Geometry Model to Classify Uncertainty in Cell Phone Collected Spatial Data of Man-made Features using an iPhone 5S  
Session: Geospatial Science and Geology Poster Session  
Day & Time: Wednesday 1:00 pm-3:30 pm  
Location: Heth 014

**Hurley, Courtney**

Title: Effects of gender stereotypes on test performance  
Session: Psychology Oral Presentations  
Day & Time: Thursday 3:40 pm-4:00 pm  
Location: Heth 016

**Hurley, Courtney**

Title: The Reminiscence Bump Effect in Published Autobiographies  
Session: Psychology Poster Session II  
Day & Time: Thursday 5:00 pm-6:00 pm  
Location: Heth 043

**Hylton, Shameka**

Title: Cost of Avoidance: Attachment and Depletion of Self-Regulatory Resources  
Session: Psychology Poster Session I  
Day & Time: Thursday 4:00 pm-5:00 pm  
Location: Heth 014

**Hylton, Shameka**

Title: An Ironic Rebound Effect: Dismissing Attachment and the Suppression of Negative Childhood Memories  
Session: Psychology Oral Presentations  
Day & Time: Thursday 3:20 pm-3:40 pm  
Location: Heth 016

**Hyzy, Brenna**

Title: Monitoring the Status of Gray bats, 2009-2014, since the onset of White-Nose Syndrome  
Session: Biology Poster Session  
Day & Time: Tuesday 6:00 pm-7:30 pm  
Location: Heth 014

**Hyzy, Brenna**

Title: Determining female Western Lowland gorilla (Gorilla gorilla gorilla) dominance hierarchies within a captive population in the absence of an adult silverback male  
Session: Primate Behavior at the NC Zoo Oral Presentations  
Day & Time: Thursday 11:48 am-12:00 pm  
Location: Heth 016

**Imburg, David**

Title: Effects of Terrain Modification on Surface Water Runoff From the Blueberry Cottages Watershed at Mountain Lake, Giles County, Virginia  
Session: Geospatial Science and Geology Poster Session  
Day & Time: Wednesday 1:00 pm-3:30 pm  
Location: Heth 014

**Iqbal, Mohammad**

Title: A Study on Studying (hehehe .. but really %00Û\_) Which is better for stress: Studying in groups, or studying alone?  
Session: Biology ePortfolio Presentations  
Day & Time: Tuesday 6:00 pm-7:30 pm  
Location: Heth 014

**Jackson, Kelby**

Title: Assessing the Student Body Knowledge of and Attitudes Toward the Student Athletic Fee  
Session: Health and Human Performance Oral Presentations  
Day & Time: Tuesday 4:00 pm-4:20 pm  
Location: Heth 022

**James, Phillip**

Title: Relationships Between Nest Density, Parental Care, and Corticosterone Levels of Eastern Bluebirds (Sialia sialis)  
Session: Biology Poster Session  
Day & Time: Tuesday 6:00 pm-7:30 pm  
Location: Heth 014

**Jessee, Renee**

Title: Behavioral and Physiological Correlates of Snake Feeding Performance Based on Ingestion Ratio  
Session: Biology Poster Session  
Day & Time: Tuesday 6:00 pm-7:30 pm  
Location: Heth 014

**Johnson, Charnele**

Title: Computational Molecular Modeling of Plant Proteins  
Session: Biology Poster Session  
Day & Time: Tuesday 6:00 pm-7:30 pm  
Location: Heth 014

**Johnson, Shannon**

Title: Aggression Tendencies of Hamadryas Baboons in a Captive Environment (Papio hamadryas)  
Session: Primate Behavior at the NC Zoo Oral Presentations  
Day & Time: Thursday 10:48 am-11:00 am  
Location: Heth 016

**Johnstone, Jessica**

Title: Social interaction and aggressive behaviors between male hamadryas baboons (Papio hamadryas hamadryas)  
Session: Primate Behavior at the NC Zoo Oral Presentations  
Day & Time: Thursday 10:36 am-10:48 am  
Location: Heth 016

**Jones, Sara**

Title: How stress levels in college students studying in the library vary depending on the time of day  
Session: Biology ePortfolio Presentations  
Day & Time: Tuesday 6:00 pm-7:30 pm  
Location: Heth 014

**Justice, Brittany**

Title: Establishing DNA Barcoding Protocol for Identification of Unknown Species  
Session: Biology Poster Session  
Day & Time: Tuesday 6:00 pm-7:30 pm  
Location: Heth 014

**Keller, Emily**

Title: Treating Trauma in Rural Areas  
Session: Psychology Poster Session II  
Day & Time: Thursday 5:00 pm-6:00 pm  
Location: Heth 043

**Kelso, Jasmine**

Title: Monkey see, monkey do: Does positive affect moderate the relationship between mimicry and helping behavior?  
Session: Psychology Poster Session I  
Day & Time: Thursday 4:00 pm-5:00 pm  
Location: Heth 014

**King, Leia**

Title: The Ratio of Affiliative and Agonistic Behaviors Observed in Captive Lemur catta  
Session: Primate Behavior at the NC Zoo Oral Presentations  
Day & Time: Thursday 10:00 am-10:12 am  
Location: Heth 016

**King, Leia**

Title: Impacts of smoking on human salivary IgA levels  
Session: Biology ePortfolio Presentations  
Day & Time: Tuesday 6:00 pm-7:30 pm  
Location: Heth 014

**Kitchen, Hailey**

Title: Personality and Cell Phone Use  
Session: Psychology Poster Session I  
Day & Time: Thursday 4:00 pm-5:00 pm  
Location: Heth 014

**Kitchen, Hailey**

Title: Cell Phone Dependence: Examination of Media Behaviors  
Session: Psychology Poster Session I  
Day & Time: Thursday 4:00 pm-5:00 pm  
Location: Heth 014

**Knutson, Shannon**

Title: Dendroecology  
Session: Geospatial Science and Geology Poster Session  
Day & Time: Wednesday 1:00 pm-3:30 pm  
Location: Heth 014

**Koonce, Kurt**

Title: Roots With Wings: Floyd County Place-based Education Oral History Project  
Session: Roots with Wings Presentation  
Day & Time: Wednesday 5:50 pm-6:20 pm  
Location: Heth 022

**Kouzel, Susan**

Title: Curcumin: A Natural Cancer Preventative Agent?  
Session: Nutrition Poster Session  
Day & Time: Wednesday 10:30 am-12:00 pm  
Location: Heth 022

**Kramer, Jennifer**

Title: Tailor Your Tinder Profile to the Times: Do System Threats Affect Attraction to Benevolent-Sexist Stereotypes For Women Too?  
Session: Psychology Poster Session II  
Day & Time: Thursday 5:00 pm-6:00 pm  
Location: Heth 014

**Lackney, Stephen**

Title: Isolation of AS-1 and AS-2 from arabidopsis  
Session: Chemistry Poster Session  
Day & Time: Tuesday 6:00 pm-7:30 pm  
Location: Heth 043

**Lackney, Stephen**

Title: Calcium Oxalate in Petioles of Deciduous Leaves  
Session: Biology Poster Session  
Day & Time: Tuesday 6:00 pm-7:30 pm  
Location: Heth 014

**Lambert, Angel**

Title: Optimization of density functionals for endohedral metallofullerenes  
Session: Chemistry Poster Session  
Day & Time: Tuesday 6:00 pm-7:30 pm  
Location: Heth 043

**Lambert, Taylor**

Title: Monkey see, monkey do: Does positive affect moderate the relationship between mimicry and helping behavior?  
Session: Psychology Poster Session I  
Day & Time: Thursday 4:00 pm-5:00 pm  
Location: Heth 014

**Lane, Michael**

Title: Development of Strategic Land Use Plan for Selu Conservancy  
Session: Geospatial Science and Geology Poster Session  
Day & Time: Wednesday 1:00 pm-3:30 pm  
Location: Heth 014

**LaPrade, Taylor**

Title: Research, Curricula Development, & Grant-Writing Support for Roots With Wings: Floyd County, Virginia, Place-based Education Oral History Project: A Youth Resiliency Effort  
Session: Appalachian Studies Oral Presentations  
Day & Time: Tuesday 2:40 pm-3:00 pm  
Location: Heth 022

**LaPrade, Taylor**

Title: Roots With Wings: Floyd County Place-based Education Oral History Project  
Session: Roots with Wings Presentation  
Day & Time: Wednesday 5:50 pm-6:20 pm  
Location: Heth 022

**Lattanze, Danielle**

Title: How stress levels in college students studying in the library vary depending on the time of day  
Session: Biology ePortfolio Presentations  
Day & Time: Tuesday 6:00 pm-7:30 pm  
Location: Heth 014

**Leasure, Theresa**

Title: An Ironic Rebound Effect: Dismissing Attachment and the Suppression of Negative Childhood Memories  
Session: Psychology Oral Presentations  
Day & Time: Thursday 3:20 pm-3:40 pm  
Location: Heth 016

**Leasure, Theresa A.**

Title: Cost of Avoidance: Attachment and Depletion of Self-Regulatory Resources  
Session: Psychology Poster Session I  
Day & Time: Thursday 4:00 pm-5:00 pm  
Location: Heth 014

**Leggett, Caroline**

Title: Dead Deadly Food  
Session: Appalachian Studies Oral Presentations  
Day & Time: Tuesday 2:00 pm-2:20 pm  
Location: Heth 022

**Leggett, Caroline**

Title: Research, Curricula Development, & Grant-Writing Support for Roots With Wings: Floyd County, Virginia, Place-based Education Oral History Project: A Youth Resiliency Effort  
Session: Appalachian Studies Oral Presentations  
Day & Time: Tuesday 2:40 pm-3:00 pm  
Location: Heth 022

**Leggett, Caroline**

Title: Roots With Wings: Floyd County Place-based Education Oral History Project  
Session: Roots with Wings Presentation  
Day & Time: Wednesday 5:50 pm-6:20 pm  
Location: Heth 022

**Leonarkis, Courtney**

Title: Same "We" But Different Setting: Do Variations in Gender Composition Determine Self-Perceptions of Relational Interdependence?  
Session: Psychology Poster Session II  
Day & Time: Thursday 5:00 pm-6:00 pm  
Location: Heth 043

**Lessard, Amanda**

Title: An Ironic Rebound Effect: Dismissing Attachment and the Suppression of Negative Childhood Memories  
Session: Psychology Oral Presentations  
Day & Time: Thursday 3:20 pm-3:40 pm  
Location: Heth 016

**Lessard, Amanda**

Title: The All-Consuming Self: Edward Bernays's Exploitation of Irrational Emotions in Mass Decision Making  
Session: Psychology Poster Session II  
Day & Time: Thursday 5:00 pm-6:00 pm  
Location: Heth 043

**Lessard, Amanda**

Title: Cost of Avoidance: Attachment and Depletion of Self-Regulatory Resources  
Session: Psychology Poster Session I  
Day & Time: Thursday 4:00 pm-5:00 pm  
Location: Heth 014

**Lesure, Lindsay**

Title: Characterization of the mutated bacterial loop of E. coli Beta Glucuronidase  
Session: Chemistry Poster Session  
Day & Time: Tuesday 6:00 pm-7:30 pm  
Location: Heth 043

**Light, Ashley**

Title: Telling Stories: Phonological Awareness Intervention, Final Consonant Deletion, and Past Tense Marking  
Session: Honors Academy Capstone Poster Session  
Day & Time: Thursday 5:30 pm-6:30 pm  
Location: Heth 022

**Lingg, Ryan**

Title: Alterations in anxiety related behaviors following protracted withdrawal from dual binge ethanol and chronic nicotine exposure  
Session: Psychology Poster Session II  
Day & Time: Thursday 5:00 pm-6:00 pm  
Location: Heth 043

**Lingg, Ryan**

Title: Changes in Blood Corticosterone Levels Following Co-Administration of Alcohol and Nicotine in Rats  
Session: Psychology Poster Session II  
Day & Time: Thursday 5:00 pm-6:00 pm  
Location: Heth 043

**Lingg, Ryan**

Title: Impacts of ethanol and nicotine withdrawal on fecal immunoglobulin A levels in rats  
Session: Biology Poster Session  
Day & Time: Tuesday 6:00 pm-7:30 pm  
Location: Heth 014

**Lingg, Ryan**

Title: The Effects Of Dual Exposure Of Alcohol And Nicotine On Spatial Learning And Memory  
Session: Psychology Poster Session II  
Day & Time: Thursday 5:00 pm-6:00 pm  
Location: Heth 043

**Lingg, Ryan**

Title: A Demonstration of Introspectionist Methodology  
Session: Psychology Poster Session II  
Day & Time: Thursday 5:00 pm-6:00 pm  
Location: Heth 043

**Littman, Kristin**

Title: Is It Art? Living Art History at the Art History Forum  
Session: Art History Symposium  
Day & Time: Thursday 4:00 pm-5:00 pm  
Location: Heth 016

**Logan, Michael**

Title: Culture of Honor and Defensive Violence in the American South  
Session: Interdisciplinary Poster Session  
Day & Time: Wednesday 5:00 pm-7:00 pm  
Location: Heth 014

**Lopez, Alexandra**

Title: Aggression Tendencies of Hamadryas Baboons in a Captive Environment (Papio hamadryas)  
Session: Primate Behavior at the NC Zoo Oral Presentations  
Day & Time: Thursday 10:48 am-11:00 am  
Location: Heth 016

**Lopez, Crystal**

Title: Social Dynamics and Interrelationships of Captive Western Lowland Gorillas  
Session: Primate Behavior at the NC Zoo Oral Presentations  
Day & Time: Thursday 11:36 am-11:48 am  
Location: Heth 016

**MacDonald, Hannah**

Title: Caffeine, Sugar, and Aspartame: Using Open Field Testing to Investigate Anxiety, Activity, and Spatial Recognition in Rats  
Session: Psychology Poster Session I  
Day & Time: Thursday 4:00 pm-5:00 pm  
Location: Heth 014

**Mahoney, Thomas**

Title: Anthocyanins and Heart Disease  
 Session: Nutrition Poster Session  
 Day & Time: Wednesday 10:30 am-12:00 pm  
 Location: Heth 022

**Mandiola, Katarina**

Title: Investigation of supervisor age and gender in perceived ethical behavior in sexual harassment scenarios.  
 Session: Psychology Poster Session II  
 Day & Time: Thursday 5:00 pm-6:00 pm  
 Location: Heth 043

**Mann, Judy**

Title: Dream of a Nation: Scholar Citizen CORE 102 Student Calls to Action

Session: Video Presentations  
 Day & Time: Wednesday 6:20 pm-7:00 pm  
 Location: Heth 043

**Mansueti, Sarah**

Title: Blogging in the 21st Century  
 Session: Interdisciplinary Poster Session  
 Day & Time: Wednesday 5:00 pm-7:00 pm  
 Location: Heth 014

**Marble, Rachel**

Title: Cost of Avoidance: Attachment and Depletion of Self-Regulatory Resources  
 Session: Psychology Poster Session I  
 Day & Time: Thursday 4:00 pm-5:00 pm  
 Location: Heth 014

**Marble, Rachel**

Title: An Ironic Rebound Effect: Dismissing Attachment and the Suppression of Negative Childhood Memories  
 Session: Psychology Oral Presentations  
 Day & Time: Thursday 3:20 pm-3:40 pm  
 Location: Heth 016

**Markley, Caroline**

Title: Tailor Your Tinder Profile to the Times: Do System Threats Affect Attraction to Benevolent-Sexist Stereotypes For Women Too?  
 Session: Psychology Poster Session II  
 Day & Time: Thursday 5:00 pm-6:00 pm  
 Location: Heth 014

**Markowitz, Hannah**

Title: Impacts of exercise on college student salivary IgA levels  
 Session: Biology ePortfolio Presentations  
 Day & Time: Tuesday 6:00 pm-7:30 pm  
 Location: Heth 014

**Marks, Jeremy**

Title: The Basel, Switzerland Drumming Tradition  
 Session: Interdisciplinary Oral Presentations  
 Day & Time: Wednesday 11:20 am-11:40 pm  
 Location: Heth 016

**McCoy, Caley**

Title: Social interaction and aggressive behaviors between male hamadryas baboons (*Papio hamadryas hamadryas*)  
 Session: Primate Behavior at the NC Zoo Oral Presentations  
 Day & Time: Thursday 10:36 am-10:48 am  
 Location: Heth 016

**McCutchen, Jenna**

Title: Friendship, Personality, and Happiness: Do Happier People Make Friends Easier?  
 Session: Psychology Poster Session I  
 Day & Time: Thursday 4:00 pm-5:00 pm  
 Location: Heth 014

**McCutchen, Jenna**

Title: Effects of gender stereotypes on test performance  
 Session: Psychology Oral Presentations  
 Day & Time: Thursday 3:40 pm-4:00 pm  
 Location: Heth 016

**McGregor, Cari**

Title: Does infection of the freshwater snail *Helisoma trivolvis* by trematode parasites induce behavioral changes?  
 Session: Biology Poster Session  
 Day & Time: Tuesday 6:00 pm-7:30 pm  
 Location: Heth 014

**McNeilly, Kayla**

Title: The ingestible size of snake's  
 Session: Biology Poster Session  
 Day & Time: Tuesday 6:00 pm-7:30 pm  
 Location: Heth 014

**Metz, Daniel**

Title: A systemic parasitic infection of the lined shore crab, *Pachygrapsus crassipes*, by an unknown scuticociliate  
 Session: Biology Oral Presentations  
 Day & Time: Tuesday 5:00 pm-5:15 pm  
 Location: Bonnie Auditorium

**Middleton, LaTore**

Title: Same "We" But Different Setting: Do Variations in Gender Composition Determine Self-Perceptions of Relational Interdependence?  
 Session: Psychology Poster Session II  
 Day & Time: Thursday 5:00 pm-6:00 pm  
 Location: Heth 043

**Miller, Trenton**

Title: White-Tailed Deer Forage Assessment of Managed and Unmanaged Food Plots  
 Session: Geospatial Science and Geology Poster Session  
 Day & Time: Wednesday 1:00 pm-3:30 pm  
 Location: Heth 014

**Miller, Christopher**

Title: Research, Curricula Development, & Grant-Writing Support for Roots With Wings: Floyd County, Virginia, Place-based Education Oral History Project: A Youth Resiliency Effort  
 Session: Appalachian Studies Oral Presentations  
 Day & Time: Tuesday 2:40 pm-3:00 pm  
 Location: Heth 022

**Milton, Jason**

Title: Monkey see, monkey do: Does positive affect moderate the relationship between mimicry and helping behavior?  
 Session: Psychology Poster Session I  
 Day & Time: Thursday 4:00 pm-5:00 pm  
 Location: Heth 014

**Munsey, Alexandra**

Title: School Psychology Response to Intervention (RTI) Practice  
 Session: Psychology Poster Session I  
 Day & Time: Thursday 4:00 pm-5:00 pm  
 Location: Heth 014

**Murrie, Allison**

Title: Geochemistry Of Rhyolite Clasts From The Lower Mount Rogers  
 Session: Geospatial Science and Geology Poster Session  
 Day & Time: Wednesday 1:00 pm-3:30 pm  
 Location: Heth 014

**Muse, Mary**

Title: Is There Enough Evidence to be able to Recommend Consumption of Lycopene to Prevent Prostate Cancer?  
Session: Nutrition Poster Session  
Day & Time: Wednesday 10:30 am-12:00 pm  
Location: Heth 022

**Neely, Kasey**

Title: Impacts of stress associated with college major in immune response  
Session: Biology ePortfolio Presentations  
Day & Time: Tuesday 6:00 pm-7:30 pm  
Location: Heth 014

**Newman, Taylor**

Title: Career Paths of Radford University Journalism Alumni  
Session: Honors Academy Capstone Oral Presentations  
Day & Time: Thursday 3:20 pm-3:40 pm  
Location: Heth 022

**Nicholas, Stephanie**

Title: Aggression Tendencies of Hamadryas Baboons in a Captive Environment (Papio hamadryas)  
Session: Primate Behavior at the NC Zoo Oral Presentations  
Day & Time: Thursday 10:48 am-11:00 am  
Location: Heth 016

**Nicholas, Otis**

Title: Development of Strategic Land Use Plan for Selu Conservancy  
Session: Geospatial Science and Geology Poster Session  
Day & Time: Wednesday 1:00 pm-3:30 pm  
Location: Heth 014

**Oliver, Joshua**

Title: Developing a Land Use Management Plan for Rural Areas within Radford City Limits  
Session: Geospatial Science and Geology Poster Session  
Day & Time: Wednesday 1:00 pm-3:30 pm  
Location: Heth 014

**Oliver, Joshua**

Title: Analyzing Different Remote Sensing Models to Locate and Identify Temporal Changes of Wetlands in Southwest, Virginia  
Session: Geospatial Science and Geology Poster Session  
Day & Time: Wednesday 1:00 pm-3:30 pm  
Location: Heth 014

**Oliver, Josh**

Title: Using land use history and site conditions to predict invasive plant distribution in central Appalachia  
Session: Honors Academy Capstone Oral Presentations  
Day & Time: Thursday 5:10 pm-5:30 pm  
Location: Heth 022

**Orose, Ricky**

Title: Sexual Dominance Expression in Captive Lemur catta  
Session: Primate Behavior at the NC Zoo Oral Presentations  
Day & Time: Thursday 10:12 am-10:24 am  
Location: Heth 016

**Ostrander, Matthew**

Title: Science in Schism: Competing Psychologies of the West and the USSR in the 20th Century  
Session: Psychology Poster Session II  
Day & Time: Thursday 5:00 pm-6:00 pm  
Location: Heth 043

**Ostrander, Matthew**

Title: Adolescent cannabinoid exposure and feeding behavior: Spatial memory and search strategy deficits in adult Long Evans rats.  
Session: Psychology Poster Session II  
Day & Time: Thursday 5:00 pm-6:00 pm  
Location: Heth 043

**Ostrander, Matthew**

Title: Adolescent cannabinoid exposure and feeding behavior: Activity, weight and anxiety in adult Long Evans rats  
Session: Psychology Poster Session I  
Day & Time: Thursday 4:00 pm-5:00 pm  
Location: Heth 014

**Padgett, Grayson**

Title: Elected in seconds: Does cognitive load moderate the relationship between political success and inferred facial competence?  
Session: Psychology Poster Session I  
Day & Time: Thursday 4:00 pm-5:00 pm  
Location: Heth 014

**Parker, Fallon**

Title: Testing And Rehabilitating Stream Ecosystems In Knoxville, Tennessee, 2014  
Session: Biology Poster Session  
Day & Time: Tuesday 6:00 pm-7:30 pm  
Location: Heth 014

**Patterson, Ashleigh**

Title: My Journey of Discovering Who I am  
Session: Scholar Citizen ePortfolio Digital Showcase  
Day & Time: Wednesday 4:20 pm-4:25 pm  
Location: Heth 043

**Paulsen, Emma**

Title: An Analysis of the Business Practices of La Tienda  
Session: Honors Academy Capstone Oral Presentations  
Day & Time: Thursday 4:00 pm-4:20 pm  
Location: Heth 022

**Paulson, Marta**

Title: Microscopic Comparison of Perimortem Blunt Force Trauma and Postmortem Bone Breakage  
Session: Innovations in Forensic Science Oral Presentations  
Day & Time: Wednesday 9:00 am-12:00 pm  
Location: Heth 043

**Pearce, Alex**

Title: Social interaction and aggressive behaviors between male hamadryas baboons (Papio hamadryas hamadryas)  
Session: Primate Behavior at the NC Zoo Oral Presentations  
Day & Time: Thursday 10:36 am-10:48 am  
Location: Heth 016

**Pearce, Alex**

Title: The Computational Modeling and Comparative Analysis of Histone-binding Proteins  
Session: Biology Poster Session  
Day & Time: Tuesday 6:00 pm-7:30 pm  
Location: Heth 014

**Penven, Stacy**

Title: The impact of gender on women's contributions to urban Appalachian environmental activism  
Session: Appalachian Studies Oral Presentations  
Day & Time: Tuesday 2:20 pm-2:40 pm  
Location: Heth 022

**Petzold, Kayla**

Title: Adolescent cannabinoid exposure and feeding behavior: Activity, weight and anxiety in adult Long Evans rats  
 Session: Psychology Poster Session I  
 Day & Time: Thursday 4:00 pm-5:00 pm  
 Location: Heth 014

**Pfautz, Jennifer**

Title: Lutein, Zeaxanthin, and Age Related Macular Degeneration  
 Session: Nutrition Poster Session  
 Day & Time: Wednesday 10:30 am-12:00 pm  
 Location: Heth 022

**Pidal, Gabrielle**

Title: German Students Learn about the Holocaust  
 Session: Interdisciplinary Poster Session  
 Day & Time: Wednesday 5:00 pm-7:00 pm  
 Location: Heth 014

**Pike, Zeb**

Title: Impacts of smoking on human salivary IgA levels  
 Session: Biology ePortfolio Presentations  
 Day & Time: Tuesday 6:00 pm-7:30 pm  
 Location: Heth 014

**Piland, Kimberly**

Title: Monkeys on Edge: Their Presence and Meaning in Manuscripts from the Middle Ages  
 Session: Art History Symposium  
 Day & Time: Thursday 4:00 pm-4:20 pm  
 Location: Heth 016

**Pirino, Nathan**

Title: Arsenic Production By Environmental Bacteria And Bacteriocins  
 Session: Biology Oral Presentations  
 Day & Time: Tuesday 4:30 pm-4:45 pm  
 Location: Bonnie Auditorium

**Pirino, Nathan**

Title: The Computational Modeling and Comparative Analysis of Histone-binding Proteins  
 Session: Biology Poster Session  
 Day & Time: Tuesday 6:00 pm-7:30 pm  
 Location: Heth 014

**Pittman, Megan**

Title: Caffeine, sugar, and aspartame: the effects of common sweeteners on weight gain and anxiety in rats  
 Session: Psychology Poster Session I  
 Day & Time: Thursday 4:00 pm-5:00 pm  
 Location: Heth 014

**Potter, Matthew**

Title: Determination of malathion in soil  
 Session: Chemistry Poster Session  
 Day & Time: Tuesday 6:00 pm-7:30 pm  
 Location: Heth 043

**Preseau, Brooke**

Title: Sexual Dominance Expression in Captive Lemur catta  
 Session: Primate Behavior at the NC Zoo Oral Presentations  
 Day & Time: Thursday 10:12 am-10:24 am  
 Location: Heth 016

**Pulliam, Lauryn**

Title: The Ratio of Affiliative and Agonistic Behaviors Observed in Captive Lemur catta  
 Session: Primate Behavior at the NC Zoo Oral Presentations  
 Day & Time: Thursday 10:00 am-10:12 am  
 Location: Heth 016

**Rajashekara, Arpitha**

Title: Transcription and splicing of CYP4F3 in HepaRG cells  
 Session: Biology Poster Session  
 Day & Time: Tuesday 6:00 pm-7:30 pm  
 Location: Heth 014

**Rasnic, Chelsea**

Title: The Effects of Vespa Amino Acid Mixture (VAAM) on the common house fly, *Musca domestica*.  
 Session: Biology Poster Session  
 Day & Time: Tuesday 6:00 pm-7:30 pm  
 Location: Heth 014

**Ray, Rodney**

Title: Dream of a Nation: Scholar Citizen CORE 102 Student Calls to Action  
 Session: Video Presentations  
 Day & Time: Wednesday 6:20 pm-7:00 pm  
 Location: Heth 043

**Reed, Micah**

Title: Assessing Risk of Being Targeted by Terrorist Bombings Through OLS Regression and Spatial Analysis  
 Session: Geospatial Science and Geology Poster Session  
 Day & Time: Wednesday 1:00 pm-3:30 pm  
 Location: Heth 014

**Rehberg, Kathryn**

Title: Cell Phone Dependence: Examination of Media Behaviors  
 Session: Psychology Poster Session I  
 Day & Time: Thursday 4:00 pm-5:00 pm  
 Location: Heth 014

**Rehberg, Kathryn**

Title: Personality and Cell Phone Use  
 Session: Psychology Poster Session I  
 Day & Time: Thursday 4:00 pm-5:00 pm  
 Location: Heth 014

**Rehberg, Kathryn**

Title: Personality and Cell Phone Use  
 Session: Psychology Poster Session I  
 Day & Time: Thursday 4:00 pm-5:00 pm  
 Location: Heth 014

**Rehberg, Kathryn**

Title: Personality Factors: The Impact of Self-Control  
 Session: Psychology Poster Session I  
 Day & Time: Thursday 4:00 pm-5:00 pm  
 Location: Heth 014

**Reid, Evan**

Title: Objection!: The Role of Lawyers as Shown in Film  
 Session: Interdisciplinary Poster Session  
 Day & Time: Wednesday 5:00 pm-7:00 pm  
 Location: Heth 014

**Ren, Michele**

Title: Dream of a Nation: Scholar Citizen CORE 102 Student Calls to Action  
 Session: Video Presentations  
 Day & Time: Wednesday 6:20 pm-7:00 pm  
 Location: Heth 043

**Reumont, Jamie**

Title: An Ironic Rebound Effect: Dismissing Attachment and the Suppression of Negative Childhood Memories  
Session: Psychology Oral Presentations  
Day & Time: Thursday 3:20 pm-3:40 pm  
Location: Heth 016

**Reumont, Jamie**

Title: Cost of Avoidance: Attachment and Depletion of Self-Regulatory Resources  
Session: Psychology Poster Session I  
Day & Time: Thursday 4:00 pm-5:00 pm  
Location: Heth 014

**Rigdon, Ashley**

Title: Adolescent cannabinoid exposure and feeding behavior: Spatial memory and search strategy deficits in adult Long Evans rats.  
Session: Psychology Poster Session II  
Day & Time: Thursday 5:00 pm-6:00 pm  
Location: Heth 043

**Rigdon, Ashley**

Title: Caffeine, sugar, and aspartame: the effects of common sweeteners on weight gain and anxiety in rats  
Session: Psychology Poster Session I  
Day & Time: Thursday 4:00 pm-5:00 pm  
Location: Heth 014

**Rigdon, Ashley**

Title: Caffeine, Sugar, and Aspartame: Using Open Field Testing to Investigate Anxiety, Activity, and Spatial Recognition in Rats  
Session: Psychology Poster Session I  
Day & Time: Thursday 4:00 pm-5:00 pm  
Location: Heth 014

**Rindorf, Holly**

Title: A Study on Studying (hehehe .. but really %00Û\_) Which is better for stress: Studying in groups, or studying alone?  
Session: Biology ePortfolio Presentations  
Day & Time: Tuesday 6:00 pm-7:30 pm  
Location: Heth 014

**Roark, Hannah**

Title: Same "We" But Different Setting: Do Variations in Gender Composition Determine Self-Perceptions of Relational Interdependence?  
Session: Psychology Poster Session II  
Day & Time: Thursday 5:00 pm-6:00 pm  
Location: Heth 043

**Roccaforte, Analise**

Title: The Effects Of Dual Exposure Of Alcohol And Nicotine On Spatial Learning And Memory  
Session: Psychology Poster Session II  
Day & Time: Thursday 5:00 pm-6:00 pm  
Location: Heth 043

**Roccaforte, Analise**

Title:  
Session: Scholar Citizen ePortfolio Digital Showcase  
Day & Time: Wednesday 4:10 pm-4:15 pm  
Location: Heth 043

**Roccaforte, Analise**

Title: Alterations in anxiety related behaviors following protracted withdrawal from dual binge ethanol and chronic nicotine exposure  
Session: Psychology Poster Session II  
Day & Time: Thursday 5:00 pm-6:00 pm  
Location: Heth 043

**Roller, Sharon**

Title: Development of a Digital Antemortem Bone Fracture Healing Staging System For Use in Child Death Investigation  
Session: Innovations in Forensic Science Oral Presentations  
Day & Time: Wednesday 9:00 am-12:00 pm  
Location: Heth 043

**Rubush, Samantha**

Title: Reconstruction of Perimortem Gunshot Trauma to the Thorax  
Session: Innovations in Forensic Science Oral Presentations  
Day & Time: Wednesday 9:00 am-12:00 pm  
Location: Heth 043

**Schano, Alan**

Title: The Effects Of Cardiorespiratory Or Yogic Exercise On Salivary Immunoglobulin Levels  
Session: Biology ePortfolio Presentations  
Day & Time: Tuesday 6:00 pm-7:30 pm  
Location: Heth 014

**Schano, Alan**

Title: Arsenic Production By Environmental Bacteria And Bacteriocins  
Session: Biology Oral Presentations  
Day & Time: Tuesday 4:30 pm-4:45 pm  
Location: Bonnie Auditorium

**Schultz, Tanya**

Title: Impacts of stress associated with college major in immune response  
Session: Biology ePortfolio Presentations  
Day & Time: Tuesday 6:00 pm-7:30 pm  
Location: Heth 014

**Seager, Katelynne**

Title: The Impact of Alcohol Consumption and Its Effect on Depression, Suicide Ideation and Attempt in Adolescents  
Session: Health and Human Performance Oral Presentations  
Day & Time: Tuesday 4:40 pm-5:30 pm  
Location: Heth 022

**Self, Katharyn**

Title: Exploring the synergistic effects of estrogen-mimicking endocrine disrupters on the physiology of Gambusia holbrooki  
Session: Biology Poster Session  
Day & Time: Tuesday 6:00 pm-7:30 pm  
Location: Heth 014

**Shell, Jordan**

Title: Personality and Cell Phone Use  
Session: Psychology Poster Session I  
Day & Time: Thursday 4:00 pm-5:00 pm  
Location: Heth 014

**Shelton, Angela**

Title: Relationships Between Nest Density, Parental Care, and Corticosterone Levels of Eastern Bluebirds (*Sialia sialis*)  
Session: Biology Poster Session  
Day & Time: Tuesday 6:00 pm-7:30 pm  
Location: Heth 014

**Sheppard, Sarah**

Title: Appalachian Studies Association Conference Presentation/Travel Experience  
Session: Scholar Citizen ePortfolio Digital Showcase  
Day & Time: Wednesday 4:00 pm-4:05 pm  
Location: Heth 043

**Sherertz, Ashley**

Title: Social Dynamics and Interrelationships of Captive Western Lowland Gorillas  
Session: Primate Behavior at the NC Zoo Oral Presentations  
Day & Time: Thursday 11:36 am-11:48 am  
Location: Heth 016

**Sherertz, Ashley**

Title: Impacts of smoking on human salivary IgA levels  
Session: Biology ePortfolio Presentations  
Day & Time: Tuesday 6:00 pm-7:30 pm  
Location: Heth 014

**Sherertz, Ashley**

Title: A Study on Studying (hehehe .. but really %00Û\_) Which is better for stress: Studying in groups, or studying alone?  
Session: Biology ePortfolio Presentations  
Day & Time: Tuesday 6:00 pm-7:30 pm  
Location: Heth 014

**Sholes, Blake**

Title: Roots With Wings: Floyd County Place-based Education Oral History Project  
Session: Roots with Wings Presentation  
Day & Time: Wednesday 5:50 pm-6:20 pm  
Location: Heth 022

**Shotwell, Haley**

Title: My sport's team has been discontinued: What do I do next?  
Session: Health and Human Performance Oral Presentations  
Day & Time: Tuesday 4:20 pm-4:40 pm  
Location: Heth 022

**shrewsberry, amanda**

Title: Is it art? Living Art History at the Art History Forum  
Session: Art History Symposium  
Day & Time: Thursday 4:00 pm-5:00 pm  
Location: Heth 016

**Smith, Chris**

Title: Calcium Oxalate in Petioles of Deciduous Leaves  
Session: Biology Poster Session  
Day & Time: Tuesday 6:00 pm-7:30 pm  
Location: Heth 014

**Smith, Raven**

Title: Personality Factors: The Impact of Self-Control  
Session: Psychology Poster Session I  
Day & Time: Thursday 4:00 pm-5:00 pm  
Location: Heth 014

**Snelgrove, Jordan**

Title: Optimization of density functionals for endohedral metallofullerenes  
Session: Chemistry Poster Session  
Day & Time: Tuesday 6:00 pm-7:30 pm  
Location: Heth 043

**Sponsler, Cara**

Title: Anthocyanins and Heart Disease  
Session: Nutrition Poster Session  
Day & Time: Wednesday 10:30 am-12:00 pm  
Location: Heth 022

**Stamm, Rebecca**

Title: Gabriel Garcia Marquez  
Session: English Oral Presentations  
Day & Time: Tuesday 5:00 pm-5:20 pm  
Location: Heth 044

**Stephoe, Alexis**

Title: From 1st Generation to RU Domination-Alexis Steptoe's Journey  
Session: Scholar Citizen ePortfolio Digital Showcase  
Day & Time: Wednesday 5:00 pm-5:05 pm  
Location: Heth 043

**Sullivan, Morgan**

Title: Effects of Social Grooming on Male Dominance Hierarchy in Chimpanzees  
Session: Primate Behavior at the NC Zoo Oral Presentations  
Day & Time: Thursday 11:00 am-11:12 am  
Location: Heth 016

**Taylor, Robin**

Title: Microevolutionary Change in Femoral and Humeral Head Diameters And Its Implications for Sex Estimation in Forensic Anthropology  
Session: Innovations in Forensic Science Oral Presentations  
Day & Time: Wednesday 9:00 am-12:00 pm  
Location: Heth 043

**Taylor, Robin**

Title: Determining female Western Lowland gorilla (Gorilla gorilla gorilla) dominance hierarchies within a captive population in the absence of an adult silverback male  
Session: Primate Behavior at the NC Zoo Oral Presentations  
Day & Time: Thursday 11:48 am-12:00 pm  
Location: Heth 016

**Taylor, Karen**

Title: The Anti-Vaccination Movement: An Exploration of the Freedom of Choice Versus a Concern for Public Health  
Session: Women's Studies Oral Presentation  
Day & Time: Tuesday 4:45 pm-5:00 pm  
Location: Bonnie Auditorium

**Tenshaw, Emily**

Title: Hippocampal Neurogenesis in Long-Evans Rats: Does Gender Matter?  
Session: Honors Academy Capstone Poster Session  
Day & Time: Thursday 5:30 pm-6:30 pm  
Location: Heth 022

**Tenshaw, Emily**

Title: Caffeine, Sugar, and Aspartame: Using Open Field Testing to Investigate Anxiety, Activity, and Spatial Recognition in Rats  
Session: Psychology Poster Session I  
Day & Time: Thursday 4:00 pm-5:00 pm  
Location: Heth 014

**Tenshaw, Emily**

Title: Hippocampal Neurogenesis in Sprague-Dawley Rats: Does Gender Matter?  
Session: Psychology Poster Session I  
Day & Time: Thursday 4:00 pm-5:00 pm  
Location: Heth 014

**Thedieck, Caitlin**

Title: Is There Enough Evidence to be able to Recommend Consumption of Lycopene to Prevent Prostate Cancer?  
Session: Nutrition Poster Session  
Day & Time: Wednesday 10:30 am-12:00 pm  
Location: Heth 022

**Thomas, Andrea**

Title: The Investigation of the Severity and Frequency of Severe Thunderstorms on a Spatial and Temporal Scale in the New River Valley, Virginia  
Session: Geospatial Science and Geology Poster Session  
Day & Time: Wednesday 1:00 pm-3:30 pm  
Location: Heth 014

**Thomas, Holly**

Title: Holly Thomas' E-Portfolio  
Session: Scholar Citizen ePortfolio Digital Showcase  
Day & Time: Wednesday 4:55 pm-5:00 pm  
Location: Heth 043

**Tien, Pham**

Session: Primate Behavior at the NC Zoo Oral Presentations  
Day & Time: Thursday 10:24 am-10:36 am  
Location: Heth 016

**Timbrook, Emily**

Title: Same "We" But Different Setting: Do Variations in Gender Composition Determine Self-Perceptions of Relational Interdependence?  
Session: Psychology Poster Session II  
Day & Time: Thursday 5:00 pm-6:00 pm  
Location: Heth 043

**Tingle, April**

Title: Impacts of stress associated with college major in immune response  
Session: Biology ePortfolio Presentations  
Day & Time: Tuesday 6:00 pm-7:30 pm  
Location: Heth 014

**Titlow, Ben T**

Title: Development of Strategic Land Use Plan for Selu Conservancy  
Session: Geospatial Science and Geology Poster Session  
Day & Time: Wednesday 1:00 pm-3:30 pm  
Location: Heth 014

**Titlow, Ben**

Title: The Potential Demographic and Environmental Affects the Mountain Valley Pipeline & Atlantic Coast Pipeline projects can pose on Virginia & West Virginia  
Session: Geospatial Science and Geology Poster Session  
Day & Time: Wednesday 1:00 pm-3:30 pm  
Location: Heth 014

**Tracy, Ellisse**

Title: Roots With Wings: Floyd County Place-based Education Oral History Project  
Session: Roots with Wings Presentation  
Day & Time: Wednesday 5:50 pm-6:20 pm  
Location: Heth 022

**Trout, Patrick**

Title: Assessing Volcanism In The Mount Rogers Formation, Sw Va: Stratigraphic Placement Of The Bearpen Rhyolite  
Session: Geospatial Science and Geology Poster Session  
Day & Time: Thursday 1:00 pm-3:30 pm  
Location: Heth 014

**Turk, Rachel**

Title: Development, Utility, and Practicality of The Diagnostic and Statistic Manual of Mental Disorders I (DSM-I)  
Session: Psychology Poster Session II  
Day & Time: Thursday 5:00 pm-6:00 pm  
Location: Heth 043

**Turner, Todd**

Title: Crossfit Intensity  
Session: Health and Human Performance Oral Presentations  
Day & Time: Tuesday 4:40 pm-5:30 pm  
Location: Heth 022

**Tutwiler, Christine**

Title: Regioselective opening of propenylbenzene oxides via intramolecular N-H activation  
Session: Chemistry Poster Session  
Day & Time: Tuesday 6:00 pm-7:30 pm  
Location: Heth 043

**VanDerwerker, Kenzie**

Title: Enhancing communication and education through the use of sign language and Deaf culture.  
Session: Honors Academy Capstone Oral Presentations  
Day & Time: Thursday 4:40 pm-5:10 pm  
Location: Heth 022

**VanDerwerker, Audra**

Title: The Wannsee Protocol: A Turning Point in the Annihilation of European Jews  
Session: Psychology Oral Presentations  
Day & Time: Thursday 2:40 pm-3:00 pm  
Location: Heth 016

**Vandivier, Abigail**

Title: Cost of Avoidance: Attachment and Depletion of Self-Regulatory Resources  
Session: Psychology Poster Session I  
Day & Time: Thursday 4:00 pm-5:00 pm  
Location: Heth 014

**VanDivier, Abby**

Title: An Ironic Rebound Effect: Dismissing Attachment and the Suppression of Negative Childhood Memories  
Session: Psychology Oral Presentations  
Day & Time: Thursday 3:20 pm-3:40 pm  
Location: Heth 016

**Vizy, Boglarka**

Title: Eugenics: The Science of Good Birth in the History of Psychology  
Session: Psychology Poster Session II  
Day & Time: Thursday 5:00 pm-6:00 pm  
Location: Heth 043

**Vizy, Boglarka**

Title: Investigation of supervisor age and gender in perceived ethical behavior in sexual harassment scenarios.  
Session: Psychology Poster Session II  
Day & Time: Thursday 5:00 pm-6:00 pm  
Location: Heth 043

**Vjestica, Marija**

Title: Effects of gender stereotypes on test performance  
Session: Psychology Oral Presentations  
Day & Time: Thursday 3:40 pm-4:00 pm  
Location: Heth 016

**Wagner, Lora**

Title: Childhood Victimization, Polyvictimization, and Mental Health Functioning in Jail-Incarcerated Women  
Session: Psychology Oral Presentations  
Day & Time: Thursday 3:00 pm-3:20 pm  
Location: Heth 016

**Weaver, Kurt**

Title: Terminal Ballistics Research  
Session: Innovations in Forensic Science Oral Presentations  
Day & Time: Wednesday 9:00 am-12:00 pm; Location: Heth 043

**Weidlich, Kent**

Title: Potential Auxiliary Water Sources for Mountain Lake, Giles County, Virginia  
Session: Geospatial Science and Geology Poster Session  
Day & Time: Wednesday 1:00 pm-3:30 pm  
Location: Heth 014

**Weisbeck, Robert**

Title: Obstructive Sleep Apnea in Cardiac Rehabilitation  
Session: Interdisciplinary Poster Session  
Day & Time: Wednesday 5:00 pm-7:00 pm  
Location: Heth 014

**Wertz, Matthew**

Title: Chimpanzee Relationships in Captivity  
Session: Primate Behavior at the NC Zoo Oral Presentations  
Day & Time: Thursday 11:12 am-11:24 am  
Location: Heth 016

**Wessman, Kelsey**

Title: Wildlife Show-and-Tell: An Internship at the Discovery Center, Claytor Lake State Park  
Session: Biology Poster Session  
Day & Time: Tuesday 6:00 pm-7:30 pm  
Location: Heth 014

**Whisman, Anthony**

Title: The Effects Of Cardiorespiratory Or Yogic Exercise On Salivary Immunoglobulin Levels  
Session: Biology ePortfolio Presentations  
Day & Time: Tuesday 6:00 pm-7:30 pm  
Location: Heth 014

**Whitcraft, Haley**

Title: Factors Contributing to Retention of Social Workers in Direct Practice  
Session: Social Work Oral Presentations  
Day & Time: Tuesday 3:00 pm-3:20 pm  
Location: Heth 022

**Wilson, Michael**

Title: Is it art? Living Art History at the Art History Forum  
Session: Art History Symposium  
Day & Time: Thursday 4:00 pm-5:00 pm  
Location: Heth 016

**Witt, Andrew**

Title: Developing a Land Use Management Plan for Rural Areas within Radford City Limits  
Session: Geospatial Science and Geology Poster Session  
Day & Time: Wednesday 1:00 pm-3:30 pm  
Location: Heth 014

**Witt, Lori**

Title: Caffeine, sugar, and aspartame: the effects of common sweeteners on weight gain and anxiety in rats  
Session: Psychology Poster Session I  
Day & Time: Thursday 4:00 pm-5:00 pm  
Location: Heth 014

**Wood, Jessica**

Title: Creation of a Nonhuman vs. Human Bone Identification Digital Atlas  
Session: Innovations in Forensic Science Oral Presentations  
Day & Time: Wednesday 9:00 am-12:00 pm  
Location: Heth 043

**Wood, Holly**

Title: Juvenile Behavior in Western Lowland Gorillas  
Session: Primate Behavior at the NC Zoo Oral Presentations  
Day & Time: Thursday 11:24 am-11:36 am  
Location: Heth 016

**Wood, Morgan**

Title: Personality and Cell Phone Use  
Session: Psychology Poster Session I  
Day & Time: Thursday 4:00 pm-5:00 pm  
Location: Heth 014

**Wood, Morgan**

Title: Cell Phone Dependence: Examination of Media Behaviors  
Session: Psychology Poster Session I  
Day & Time: Thursday 4:00 pm-5:00 pm  
Location: Heth 014

**Worthley, Erika**

Title: Prevalence of Glenohumeral Internal Rotation Deficit in Female vs. Male Athletes  
Session: Honors Academy Capstone Poster Session  
Day & Time: Thursday 5:30 pm-6:30 pm  
Location: Heth 022

**Yarbrough, Brett**

Title: Social Adjustment of College Students with ADHD  
Session: Psychology Poster Session I  
Day & Time: Thursday 4:00 pm-5:00 pm  
Location: Heth 014

**Zegarra, Mark**

Title: Social interaction and aggressive behaviors between male hamadryas baboons (Papio hamadryas hamadryas)  
Session: Primate Behavior at the NC Zoo Oral Presentations  
Day & Time: Thursday 10:36 am-10:48 am  
Location: Heth 016

**Zuidhoek, Ivan**

Title: A Demonstration of Introspectionist Methodology  
Session: Psychology Poster Session II  
Day & Time: Thursday 5:00 pm-6:00 pm  
Location: Heth 043