



SOUTHEAST REGIONAL
UNDERGRADUATE RESEARCH,
SCHOLARLY AND CREATIVE ACTIVITY
CONFERENCE

Council of Public Liberal Arts Colleges

Host campus:
University of Virginia's College at Wise

Participating campuses:
Georgia College
New College of Florida
University of Montevallo
University of North Carolina Asheville
University of South Carolina Aiken
University of Virginia's College at Wise

21-22 April 2017



THE UNIVERSITY OF VIRGINIA'S COLLEGE AT WISE
OFFICE *of the* CHANCELLOR

April 21, 2017

Dear Students and Faculty Mentors:

Welcome to The University of Virginia's College at Wise! We are pleased to host the 2017 COPLAC Southeast Regional Undergraduate Research, Scholarly and Creative Activity Conference.

As an educator, there is nothing more rewarding than to witness a student's journey on the path of discovery and innovation. I treasure the spark in a student's eyes upon learning something new or spotting a puzzled yet determined expression on a student's face, signaling a special kind of engagement with the subject matter. I look forward to hearing about some of these precious moments from our student presenters.

The value of a liberal arts education is readily apparent during this conference. On display are the creative and probing minds of both students and faculty; also on display are collaboration and perseverance. Thank you in advance for sharing your hard work and your beloved projects with us over the next two days.

We appreciate our COPLAC sister institutions in the Southeast: Georgia College, New College of Florida, University of Montevallo, University of North Carolina Asheville, and University of South Carolina Aiken. Your presence gives a resounding message of support for student success and places immeasurable value on experiential learning. A special thank you is extended to the COPLAC Board of Directors that have supported this and other regional conferences since 2009.

We wish you an engaging and rewarding experience.

Best regards,

A handwritten signature in blue ink, which appears to read "Donna P. Henry".

Donna P. Henry, Ph.D.
Chancellor

Council of Public Liberal Arts Colleges
2017 Regional Undergraduate Research, Scholarly, and Creative Activity Conference
The University of Virginia's College at Wise
Leonard Sandridge Science Center

Friday, 21 April

5-5:30 pm	Conference Registration, Main Lobby
5:30-5:45 pm	Campus welcome and opening remarks, Atrium Chancellor Donna Price Henry, COPLAC Director Bill Spellman
5:45-6:45 pm	Buffet Dinner, Atrium
7-7:45 pm	Poster Session, Lobby
8 pm	“Mock and Mummery” by Kara Dotten Physical comedy and puppetry <i>Black Box Theatre, Gilliam Center for the Arts</i>

Saturday, 22 April

8-8:45 am	Continental Breakfast, Atrium
8:45-9:45 am	Interdisciplinary Oral Presentations, Session 1 Room 108: Smith, Zhou, and Bernatzky Room 109: Crowell, Holloway, and Saverse
9:45-11 am	Session 2 Room 108: Guerrero, Whitfield, Collier and Wright, and Suda Room 109: Shuler, Hagstrom, Gould, and Shaw Room 122: Souza, Niece, Smedley, and Barrie
11-11:15 am	Break, Atrium
11:15-11:30 am	Group Photo, Sculpture Garden (weather permitting)
11:30-12:45 pm	Session 3 Room 108: Wilson, Bone and Brown, Clark, and Pressley Room 109: Norris, Huntington, Holmes, and Lane Room 122: Olsen, Taylor, Strickland, and Hawcroft
12:45-1 pm	Concluding remarks, SC 122 Provost Sanders Huguenin and Bill Spellman
1 pm	Boxed Lunch, Atrium

POSTER SESSION**Lobby, Science Center****Germination in Milkweeds (*Asclepias*, *Apocynaceae*): Response to Cold Stratification and Moisture Pretreatment**

Zachary Izen

Faculty mentor: Gretchen Ionta

Georgia College & State University

The North American population of the monarch butterfly has experienced a significant decline in the past two decades, following a concurrent reduction in the availability of larval host plants such as milkweed due to recent agricultural practices. Accordingly, the reintroduction of milkweed into habitats is a high priority for monarch restoration efforts. Milkweed seed, however, has an inherent dormancy, requiring exposure to a period of cold temperatures before germination can take place. The ability to prepare seeds for planting independent of seasonal constraints would therefore provide a shortcut to restoration efforts. We set out to determine optimal cold and moisture treatments for breaking seed dormancy in three species by subjecting them to varying periods of cold stratification and moisture pretreatment prior to incubation, and recording subsequent germination rates. Unexpectedly, our results showed no statistically significant difference in germination rates as dependent on days stratified, but revealed a significant difference in germination rates based on moisture pretreatment.

Zachary Izen is a Biology major from Gwinnett, Georgia.

Measuring the Variations of the Speed of Sound within a Corrugated Tube

Aisling Power

Faculty mentor: James Perkins

University of North Carolina Asheville

This work studies how the speed of sound in a corrugated tube decreases relative to the speed in free space. Previous students at UNC Asheville have found that determining the speed of sound within the tube was undeterminable due to low sampling rate. Other experimenters have published similar experiments under the assumption that the change in the speed of sound remains constant throughout the tube. This study seeks to refine previous research by measuring possible variations in the speed along the tube's length. To accomplish this, a higher sampling rate and noise reduction procedures will be used to lower uncertainty, thereby allowing the accuracy necessary to map the change of the speed of sound as it travels through the tube. This will be done by using a 'one-shot' method in which frequency controlled bursts of sound are received by a decreasingly distant sound sensor.

Aisling Power is from Ridgewood, New Jersey and is a junior studying Physics and Math. Her plan is to pursue a doctorate in Physics after graduating in spring 2018.

Central Appalachian Surface Mines: Paradise Lost or an Overlooked Hotspot for Green Salamanders

Michael Hinkle

Faculty mentor: Walter H. Smith

The University of Virginia's College at Wise

The Green Salamander (*Aneides aeneus*) is a species of high conservation concern, due to extreme habitat preferences, whose range overlaps with the central Appalachian coalfields. Surface mining activities alter landscapes, and it is commonly assumed that historical mining activities have therefore eliminated many populations. However, little work assessing the impacts of habitat disturbance on populations of this species has been performed. Such an assessment was performed in 2016 across a heavily-mined and previously unsurveyed portion of Wise County, Virginia. An analysis of similarity (ANOSIM) of habitat variables found that habitat on remnant outcrops was statistically equivalent to that on undisturbed reference sites. Contrary to assumptions about surface mining impacts on the persistence of Green Salamanders, it was found that populations do indeed persist on many former surface mines as a result of remnant habitat on mine edges and within intact portions of native habitat within larger mine complexes.

Michael Hinkle is a senior Biology major from Stickleysville, Virginia. Following graduation, he will be working in the state park system through AmeriCorps with plans to attend graduate school in an environmental science related field.

Evaluation of Wetlands Algal Communities Located North and South of the Georgia Fall Line

Sofia Sifnaios

Faculty mentor: Kalina Manoylov

Georgia College & State University

Wetlands are important aquatic habitats that provide a variety of ecosystem services such as improving water quality, storing excess water during floods, and nutrient cycling. Algae are an integral part of aquatic habitats as essential primary producers and important bioindicators of water quality. Bartram Forest and Babe + Sage wetlands are located north and south of the Georgia Fall Line respectively. This study was conducted as an assessment of water quality in the two wetlands based on algal biomass and communities. High algal biomass indicates low water quality, and high diatom presence can indicate high quality environment. Assessments and measurements were conducted in both the field and the lab. Comparisons between the wetlands data were evaluated with two-sample Hotelling's T-square tests. Significant differences in algal compositions between both geologic regions are attributed to sunlight exposure and proximity to human activities.

Sofia Sifnaios is from Atlanta, Georgia and is majoring in Environmental Sciences.

TGF β /TGF β R3 Signaling Pathways in Autoimmune Disease

Reggie Holifield

Faculty mentors: Christine Sestero, Patrizia De Sarno, and Chander Raman

University of Montevallo

This research project focuses on the effect that the TGF β /TGF β R3 immune cell signaling pathway has on antibody production in mice immunized with a T cell-independent antigen. Sera were collected from two groups of mice immunized with a trinitrophenyl (TNP) antigen: a transgenic group lacking the TGF β /TGF β R3 signaling pathway and a litter-mate control group with an intact signaling pathway. Sera were collected 0-42 days following immunization. The indirect enzyme-linked immunosorbent assay (ELISA) was utilized to detect different subclasses of anti-TNP antibodies (IgM, IgG1, IgG2b, IgG2c, and IgG3). This project contributes to investigating whether variations in the TGF β /TGF β R3 cell signaling pathway affect antibody production associated with certain types of autoimmune disease and the potential for therapies targeting this pathway as treatment for such diseases.

Reggie Holifield is a Chemistry (Biochemistry Track) and Biology student. He is from Brent, Alabama and aspires to become a licensed and practicing physician in sports medicine/orthopedics.

Effects of Interval Training on Memory Function in College Students

Matthew Young and Jennifer Spencer

Faculty mentor: Emily Simonovic

Georgia College & State University

The purpose of this study was to further investigate if exercise in the form of moderate intensity interval training influences memory function. The population sample included a total of 20 participants. During the study, participants engaged in both experimental and controlled conditions. During the controlled condition the participants were given three minutes to memorize a list of 15 words, followed by 15 minutes in a controlled environment, after which the participants were allowed three minutes to recall as many words as they could. The experimental portion of this study included the same methodology as the controlled apart from 15 minutes of interval training rather than a controlled environment. This study found no statistical significance between moderate intensity interval training and cognitive function, specifically short term memory. Therefore, this study failed to confirm that moderate intensity interval training evokes cognitive function benefits equivalent to those demonstrated in the previous studies.

Matthew Young is from Laurens, Georgia and Jennifer Spencer is from Tucker, Georgia; both are Exercise Science Majors.

Red Bulls and Roommates: Do Caffeine Consumption and Living Arrangements Impact Sleepiness in College Students?

Lewis E. Moore II

Faculty mentor: Alexandria M. Reynolds

The University of Virginia's College at Wise

College students are notoriously poor sleepers. The current study explored the effects of caffeine intake and living arrangements on college students' sleepiness and sleep quality. It was hypothesized that college students consuming more caffeine or living on campus would report high levels of sleepiness and poor sleep quality. Participants included 300 college students who completed online surveys that assessed their general habits, sleep quality (Pittsburg Sleep Quality

Index), sleepiness (Epworth Sleepiness Scale), and living arrangements. Overall, students reported poor sleep quality and higher than normal sleepiness levels. Unexpectedly, there were no significance differences found in sleepiness or sleep quality when examining amount of caffeine consumed or living arrangements. General caffeine consumption and time of day consumed significantly impacted sleep quality, but not sleepiness. Understanding what factors contribute to sleepiness and sleep quality is important during college as this is when college students face stress and academic pressure to succeed.

Lewis Moore is from Jonesville, Virginia and is double majoring in Psychology and Administration of Justice. He is planning to earn a doctorate in either Forensic and Legal Psychology or Behavioral Neuroscience.

Effects of Yoga on Perceived Stress Level and Cognitive Ability in College-Aged Females

Rachel Taylor

Faculty mentor: Emily Simonovic

Georgia College & State University

This study sought to determine if perceived stress levels and response inhibition scores differ in female college students who regularly participate in yoga compared to those who do not. College-aged females ranging from 19-24 years of age filled out a personal information sheet followed by a perceived stress level questionnaire to measure the amount of yoga each participant performed and assess their perceived stress level, respectively. The research project implemented a cross-sectional design, with the independent variable being past yoga experience and the dependent variables being perceived stress level and response inhibition. The study concludes that yogis reported higher perceived stress scores compared to non-yogis; however, there was no significant difference in cognitive ability between the groups. Future studies should seek to further investigate various measures of cognitive abilities in these populations. Furthermore, more research should be implemented to discern the true effects of yoga on an individual's perceived stress level.

Rachel Taylor, from Warner Robins, Georgia, is majoring in Exercise Science.

The Effects of Academic Performance and Stress Management on the Development of Internalizing Symptoms

Alex Cantrell

Faculty mentor: Madelynn D. Shell

The University of Virginia's College at Wise

Poor academic performance and poor stress management predict higher internalizing symptoms. Furthermore, students who have high expectations for academic performance and stress management, but cannot meet those expectations, may experience greater internalizing symptoms. The current study explored the link between academic performance, stress management, and internalizing symptoms during the college transition. First year students reported on internalizing symptoms, actual and expected stress management, and expected and actual GPA in the fall and spring. Lower first-year GPA predicted higher internalizing symptoms, possibly a result of learned helplessness. Poor stress management, and a greater discrepancy between actual and expected stress management predicted greater internalizing symptoms. Students may have greater difficulty

adjusting when managing stress is more challenging than anticipated, which could lead to more internalizing symptoms. The results for the stress management discrepancy are consistent with self-discrepancy theory. First-year college advising should focus on creating and implementing realistic stress management goals.

Alex Cantrell is from Pound, Virginia and is currently a senior Psychology major. He hopes to attend medical school and go into a MD/PHD program to begin studying Alzheimer's disease.

Activity Recall Board: A Visual Cue for Children with Language Delays

Emily E. Miller

Faculty mentor: Linda Murdock

University of Montevallo

This study sought to determine if utilizing visual cue was an effective method of stimulating recall in a child with Down syndrome. While there is a wide array of research on the effects of visual aids in children with Autism Spectrum Disorders, there is a gap in research concerning the impacts visual aids have on children with Trisomy Twenty-One. This study implemented a visual aid which depicted activities completed in therapy to determine if the visual stimulation would aid in the client's ability to recall events of that day's therapy session. Effectiveness of a model, reinforcement, and generalization to new settings were also assessed through six phases of research. After the introduction of a model and reinforcement, the visual aid was effective in increasing the number of activities which the client could correctly recall. This was supported by the findings in each subsequent phase, including the phases of generalization.

Emily Miller is from Pace, Florida. She is graduating with a Bachelor's degree in Communication Science and Disorders and is going on to attain a Master's degree in Speech-Language Pathology.

The Effect of Medication, Diet, and Exercise Adherence on Quality of Life in Adult Patients with Type Two Diabetes

Daniel G. Deane

Faculty mentor: Cathleen Collins

The University of Virginia's College at Wise

The specific research question for this study is: In adults living in Southwest Virginia with type two diabetes, how does adherence to treatment affect quality of life? We focused on the type two diabetes (T2DM) population, because roughly 90-95% of all diabetics are type two. The prevalence of diabetes in Southwest Virginia was upwards of 11.7% and these statistics are expected to grow. Participants were asked to complete a survey regarding their diabetic history, quality of life, and any treatment used for their diabetes. The survey includes items from the Michigan Diabetes Research and Training Center's Diabetes Care Profile 2.0, the Summary of Diabetes Self-Care Activities, and the World Health Organization Quality of Life Survey. Pearson's r correlation coefficient was used. Preliminary data shows a correlation between quality of life and adherence to the various treatment options.

Daniel Deane is from Charlottesville, Virginia. He is a senior Nursing student who will be working after graduation at Memorial Medical Center located in Mechanicsville, Virginia.

ORAL PRESENTATIONS

SESSION 1

8:45 to 9:45 am

Room 108, Science Center

Consuming Communism: Korea's Taking of America through Soft Power

Leslie Smith

Faculty mentor: Deborah Lowry

University of Montevallo

South Korea has grown into a global welterweight through the course of the past decade, competing with Asia's heavyweight nations of China and Japan with soft power alone. Korea grew into this standing through centuries of invasions and cultural unrest, taking their home economy and growing it in a revolutionary wave. By investing in the entertainment sector and creating what is known as the Hallyu Wave, Korea pulled themselves from debt and created a new industry. This entity has had four recorded and researched "waves". The fourth of these waves is recorded as lasting from the late 2000s to the present. However, this is not accurate. Beginning in 2012 Hallyu entered a fifth wave. This wave is definable by its increased usage of rap and hip-hop elements and its consumption by American markets.

Leslie Smith hails from Wilsonville, Alabama and is majoring in English and Sociology with a concentration in East Asian studies. She has ambitions to pursue higher degrees in Sociology and Korean studies and begin a publishing house focusing on Southern literature and a nonprofit that addresses literacy in the South.

Does the Circular Economic Model Boost Development and Diversification of Single-Industry Cities?

Ning Zhou

Faculty mentor: Zafar Khan

The University of Virginia's College at Wise

China has implemented a new type of economic model since 2005, called circular economy, to meet the challenge of paucity of resources and environment degradation in single-industry cities. The CE model is consistent with the concept of sustainable development and economic growth, and proposes reduction of waste, reuse, and recycling as principles. Successful practices of the CE model bring new force, energy, and improvement to the single-industry cities. This research study used Daqing, a typical resource-based single-industry city in the north of China, as a case study and analyzed how the CE model has affected economic development and industrial diversification in that city. In addition, the research proposes a few relevant policies leading to implementation of a similar economic model for America's single-industry cities, such as those in the Appalachian region, since all such resource-based cities currently face the same challenge all over the world.

Ning Zhou is an international student from Beijing, China majoring in Accounting. After graduation, she plans to obtain a master's degree in finance from the University of Illinois at

Chicago.

Chadao and Chanoyu: A Comparative Analysis of the Use of Tea Culture by Chinese and Japanese Elite Society as a Prestige Tool

Alex Bernatzky

Faculty mentors: Tracey Rizzo and Grant Hardy

University of North Carolina at Asheville

From the 8th-17th centuries, elite society in both China and Japan used tea culture to enhance their own prestige amongst their similarly elite peers. What is meant by “elite society” in this context is members of imperial governments, poets, and Buddhist clergy. However, in Japan, certain merchants of the 16th century made huge contributions to tea culture despite their ostensibly low status in traditional society. These merchants used the refinement of tea culture to increase their prestige in a society that assumed that they were the lowest class, despite their wealth. While historical East Asian tea culture has received increased scholarly attention since the 1980’s, comparisons between Chinese and Japanese aspects of tea culture are usually overlooked. The purpose of this paper is to show the link between the two cultures’ tea cultures, though much work remains to be done.

Alex Bernatzky has recently graduated with an undergraduate degree in History, and is currently studying Chinese history and language in Asheville to prepare for applying to graduate schools and possibly returning to China.

Room 109, Science Center

Identification of Algal Species in Southern Appalachian Freshwater via Microscopy and DNA Barcodes

Anna Crowell

Faculty mentor: Bruce Cahoon

The University of Virginia's College at Wise

This project’s goal was to understand the known diversity of protists in the southern Appalachian region. Protist diversity is presumably high in freshwater environments; however, most studies come from oceanic environments. Two strategies were used to accomplish this: single cell capture and culturing. Single cells from pond water were isolated, photographed, and DNA was extracted to PCR amplify and sequence the 23S rRNA barcode region. Many images were collected but this approach produced poor quality sequences. In the culture approach, cells were pelleted from water samples and cultured on a medium made of pond water, pond sediment, and dilute defined nutrients. With this approach, over 20 individual algal species were isolated, DNA was extracted from these cells, and 18S and 23S rRNA barcodes were PCR amplified and successfully sequenced. With the culturing method, 2-4 new DNA barcode sequences and potential new species were characterized.

Anna is a Biology major from Marion, Virginia. She hopes to attend optometry school after graduation.

Indoor Cultivation of *Piptoporus betulinus* (Bull. ex Fr.) (Birch Polypore) P. Karst. on Nitrogen-Enriched *Betula* sp. Substrate

W. Pierce Holloway

Faculty mentor: Jonathan Horton

University of North Carolina Asheville

Birch polypore (*Piptoporus betulinus*) has been used medicinally by many cultures for centuries. Recently, compounds extracted from this fungus have been shown to have anticancer activities, prompting an interest in cultivation. However, birch polypore only fruits seasonally and is difficult to cultivate, with only one study describing indoor cultivation success. Improving indoor cultivation techniques will allow for greater harvests increasing the production of medicinal compounds for medicinal research. This research was designed to refine the current indoor cultivation method developed in Poland to improve the biological efficiency (amount of fruit biomass per unit substrate), by manipulating levels of nitrogen supplementation to the substrate. I predict increasing biological efficiency in fruiting body production with increasing nitrogen additions and predict biological efficiencies greater than 16% at the highest level.

Pierce Holloway grew up in Fuquay-Varina, North Carolina and now lives in Asheville. He majors in Environmental Studies with a concentration in Ecology and Evolutionary Biology and plans to pursue mycology field research positions post-graduation.

This United Us: The Power of Word of Mouth Marketing

Madden Saverse

Faculty mentor: Amiee Mellon

University of Montevallo

Social media has drastically changed how marketing is conducted. Specifically, Word of Mouth Marketing, which is considered the most powerful marketing tool, is now able to be used at a faster rate than ever before. After conducting a social media campaign for United Way of Central Alabama, the effectiveness of Word of Mouth Marketing grew apparent. Also, this project was able to show how word of mouth was effective and the importance of grass root campaigns.

Madden Saverse is a Marketing major from Boston, Massachusetts. Currently, he wishes to work in the field gaining experience before becoming a professor of marketing.

SESSION 2

9:45 to 11:00 am

Room 108, Science Center

The Racial Disparities and Influences within the Art and Life of Jean-Michel Basquiat

Mia-Ashley Guerrero

Faculty mentor: Leisa Rundquist

The University of North Carolina Asheville

Jean-Michel Basquiat was a prominent neo-expressionist artist within the 1970s until his early death in 1988. His work brought the culture of graffiti and street art into fine art galleries and elite museums around the world, building opportunities for black and other minority artists that would follow him in years to come. Although Basquiat did not see himself as an activist, this paper argues that messages in his art attacked cultural appropriations by mainstream society as well as expressed the struggles of black and Latino communities. Specifically, works entitled “Irony of a Negro Policeman” (1981) and “Defacement (Death of Michael Stewart)” (1983) addressed the issues of racial and social inequality for these same groups. Looking at Basquiat’s work against laws and police practices of the 1980s, such as racial profiling and “stop and frisk,” one finds that his art has become even more relevant today.

Mia Guerrero is from Queens, New York. She is an Art History major and will be applying to graduate school at Georgia State University and City College of New York.

Demographic Predictors of Inmate Early Release

Savannah Whitfield

Faculty mentor: Gregory Longo

University of Montevallo

In today’s society prisoners are more likely to be released earlier than their original sentencing date. This is primarily due to the inability to house the growing number of inmates. It is important to consider what demographic factors contribute to the early release of prisoners. Data were analyzed from the National Archive of Criminal Justice Data (NACJD) website. The data set surveyed demographic information from all prisoners in the majority of counties in the United States. Linear regression using dummy variables was conducted with demographic information as predictors in the statistical program R. It was found that race and region were predictive of the rate to which criminals stay in prison for their entire sentence, such that an increase in percentage of White prisoners decreases the percentage of early release, while the Northwest region had the highest percentage of early release.

Savannah Whitfield is a junior originally from Moody, Alabama. She is majoring in Psychology, and following graduation she plans on attending graduate school in the field of Forensic Psychology.

Threatening or Attractive Images of Individuals of the Same or Different Sex and Race have Differential Influence on Neural Activity

Cheyenne Tierra Collier and Austin Alan Wright

Faculty mentor: James E. Horton

The University of Virginia's College at Wise

Research has shown that women display more internal motivation to express less prejudice whereas men displayed more internal and external motivation to express more prejudice, and that Caucasians displayed prejudice towards African Americans implicitly more than explicitly. It was suggested that implicit prejudice is due to changing cultural norms restricting explicit prejudice. We recorded and analyzed neuroimaging data of African American and Caucasian Male and Females viewing photographs of Male and Female African American and Caucasian individuals that were either attractive or threatening. Neuroscan neuroimaging hardware and software recorded the data and presented the stimuli. Analysis of ERP components representing stimulus identification (innate response) and stimulus decisions (socialized response) indicated significant differential neural response with ERP components in prefrontal and anterior frontal areas of the brain (i.e. FP1 & FP2 significance from $p=.01$ to $p=.008$). Source analyses indicated different brain areas activated for ERP components.

Cheyenne Tierra Collier is a Psychology major. She is from Tombstone, Arizona and plans to work on her research for a year after graduation and then continue her education in a graduate program.

Austin Alan Wright is also a Psychology major. He is from Bristol, Virginia and after graduation plans to continue his education in a graduate program.

Has Affirmative Action Affected Female or Minority Leadership of Manufacturing Firms?

Justin Suda

Faculty mentor: JJ Arias

Georgia College & State University

Over the last 55 years, the federal government has implemented legislation intended to increase minority and female involvement in the labor force. Despite efforts intended to fight discrimination, there are still only 21 female and 5 black CEOs among Fortune 500 firms. Affirmative Action legislation is enforced specifically on firms with government contracts. Utilizing firm level data from the National Establishment Time Series, I estimate the effect government contracts have on female or minority leadership of manufacturing firms via a linear probability model with a robust set of controls. My results have shown that affirmative action laws and regulations have led to a 1.5 percentage point increase in the likelihood of having a female in a leadership position and a 5.0 percentage point increase in minority ownership which supports the findings found in previous literature on the subject.

Justin Suda is from Fulton County, Georgia and is majoring in Economics.

Room 109, Science Center

The Effect of Integration on the Negro Leagues

Robert Shuler

Faculty mentor: Brian McKnight

The University of Virginia's College at Wise

The integration of African Americans into Major League Baseball (MLB) has always been perceived as positive because it began to erode segregation. Even though the majority of attention is given to the positive aspects of integration on MLB, this dealt a blow to the Negro Leagues that they could not overcome. I will be researching the negative effects that integration had on the black community and the eventual demise of the Negro Leagues. I will be researching both primary and secondary sources for this paper, with mainly secondary sources that are from scholarly journals or books. I expect to find that integration led to the demise of the Negro Leagues and hurt the black community as well.

Robert Shuler is from Pennington Gap, Virginia. He is a History major who is also minoring in Secondary Education, hoping to become a middle or high school history teacher after graduation.

Imperial Masculinity and the Masculinity of Resistance: The Mau Mau Rebellion

Amanda Joy Hagstrom

Faculty mentor: Tracey Rizzo

University of North Carolina at Asheville

The colonization of Kenya by British settlers was rooted in the emasculation of indigenous black men. Universal doctrines of masculinity are associated with land, ability to protect womanhood, and to reproduce. The British settlers used violent dominance to debilitate the masculinity of indigenous men. The Mau Mau Uprising formed in the late stages of colonialism to dismantle colonial structures and to violently force the evacuation of British settlers.

Amanda Joy Hagstrom is majoring in Sociology and International Studies with a minor in Africana Studies. She will pursue a doctorate in either Sociology or African & African Diaspora Studies at the University of Texas at Austin.

From Malintzin to Doña Marina: Aiding the Conquest

Victoria Gould

Faculty mentor: John Bawden

University of Montevallo

The goal of this research was to understand Malintzin's political role and how her status as a native woman aided in the acquisition of native allies and domination of native enemies which led to the eventual conquest of Tenochtitlan. It also argues that Malintzin adopted a Hispanic identity quickly, possibly due to a lack of allegiance to other natives because she was traded frequently. Malintzin, by the end of the conquest, would be better known as Doña Marina by the Spaniards and therefore, more Spanish in her mindset and persona than an indigenous person. She learned Spanish, converted to Christianity, and never wavered in her loyalty to Cortés. She made alliances with Tlaxcala, kept Cortes from being ambushed by Cholulans, and helped throughout the process

of conquering Tenochtitlan. Malintzin became one of the most important assets to Cortés during his conquest.

Victoria Gould, a History major, is a senior at the University of Montevallo. She is from Helena, Alabama and plans on going to graduate school to pursue library and information studies.

“The Story of the Right Angled Monster”

Kaitlyn Shaw

Faculty mentor: Bridget Coleman

University of South Carolina Aiken

This children’s story is a creative work of fiction that was designed as a context for engaging young learners in the study of angles. What started as an elementary mathematics lesson plan developed into a piece of children’s literature intended to introduce the concepts of right, obtuse, and acute angles. The story connects the mathematics concepts to young learners to enhance meaning and understanding. The story is designed to share elements of angles in a relatable context for young learners. This work is intended to be a tool leading to further explorations, discoveries, and activities of the obtuse, right, and acute angles that surround the learners every day.

Kaitlyn Shaw is a degree candidate in the Elementary Education Program and is currently completing a field experience in a public elementary school where she is teaching Mathematics and Social Studies. Her research and creative endeavors focus on an interdisciplinary approach to teaching and learning.

Room 122, Science Center

Exchange-rate Targeting and Gold Demand by Central Banks

Adriana Souza

Faculty mentor: Tarron Khemraj

New College of Florida

This paper explores the role of gold holdings in the composition of foreign exchange reserves that would be compatible with a central bank policy that targets the exchange rate. An analytical model was developed and a numerical analysis performed of the shadow price of the exchange rate target. The shadow price is treated as a sacrifice of target precision incurred when the monetary authority chooses one more unit of variance, which is a proxy for the precautionary motive for holding international reserves. The simulations indicate a two-regime demand for gold. The multiple equilibria results indicate that increasing the demand for gold from 0 to 21 percent leads to a lower but unstable policy sacrifice. The next minimum sacrifice – probably associated with economies of scale of large gold holdings – occurs approximately at around 40 to 60 percent of gold in the reserve portfolio. These results, therefore, indicate a wide range of possibilities for a central bank targeting the exchange rate to vary its demand for gold. Moreover, the results suggest that the ability to target the exchange rate is unaffected by the higher volatility of monthly returns on gold.

Adriana Souza was born in Lisbon, Portugal and is planning to pursue a doctorate in economics.

Polynuclear Inorganic and Organometallic Complexes of Ruthenium and Their Biological Activity

Madison Niece

Faculty mentor: Floyd Beckford

The University of Virginia's College at Wise

The objective of this research is to investigate whether multinuclear ruthenium organometallic and inorganic coordination complexes may be suitable as metallodrugs. Recently, mononuclear ruthenium complexes, both inorganic and organometallic, have been studied as an alternative to platinum-based drugs. There is evidence in chemical literature to suggest that multinuclear complexes may provide a novel approach to studying potential metal-based drugs. We have synthesized a number of polynuclear organometallic complexes. The tri- and hexa-nuclear complexes are based on the (C₆H₆)Ru- and (C₁₀H₁₄)Ru- fragments and the N₂,N₂,N₄,N₄,N₆,N₆-hexa(pyridine-2-yl)-1,3,5-triazine-2,4,6-triamine (TRA) ligand system. We will report on complex characterization by elemental analyses, NMR, UV-VIS, fluorescence, powder XRD, TGA, and the results of investigations of complex biochemical and biophysical reactivity with DNA bases on DNA titrations, viscometry, Et-Br competitions, and molecular modeling/docking. Furthermore, we will report on the antimicrobial profiles of five complexes against 6 bacterium and 1 fungi based on RMDA and determination of inhibition zones.

Madison Niece is a third year Chemistry major. She is from Wise, Virginia and plans to attend graduate school with the aim of pursuing a career in biomedical research.

***The Shawshank Redemption* and Imprisonment Today**

Scott Smedley

Faculty mentor: Miriam Wallace

New College of Florida

Frank Darabont's 1994 film *The Shawshank Redemption* is, for many, a beloved moment in cinema. However, living today in an age of mass incarceration, when engaging with how our society structures punishment is crucial, it is striking that the film seems to ask us to think about ideas like hope and freedom more so than the realities of walls and bars. Using my "rehabilitative readings" model, I look at the film's use of imprisonment as a metaphor and argue that, although *The Shawshank Redemption* was made with intentions that seem to have nothing to do with those of our criminal punishment system, it is structured by the same ideologies that inform that system, and could even be called a part of it.

Scott Smedley is from Boca Raton, Florida and now majors in Literature. He is unsure of his plans after graduating, although he may work with AmeriCorps in the year to come.

Habitat of *Conocephalum conicum* (Snakeskin Liverwort) in Two Western North Carolina Streams

Simon Barrie

Faculty mentor: Irene Rossell

University of North Carolina Asheville

Aquatic liverworts are important primary producers in environments that do not contain many autochthonous sources of organic matter. They retain nutrients and contribute to the structural integrity of the mats of vascular plants and bryophytes on the boulders they inhabit. *Conocephalum conicum* (Snakeskin liverwort) is a thallose liverwort that grows throughout North America and is most commonly found in streams in mountainous environments. My objectives were to determine the habitat attributes of *Conocephalum conicum* in two western North Carolina streams. I sampled a 3/4 mile stretch of each stream by randomly selecting patches of liverwort growing on boulders. For each patch, habitat variables were collected and the horizontal spread of each patch was found. Also for each patch, a nearby random boulder was selected, and the same habitat characteristics were measured. This study will provide a better understanding of this species and the niche it occupies in mountain streams.

Simon Barrie was raised in Raleigh, North Carolina and most of his childhood was centered on exploring streams and rivers in the city and in the many streams his family found on their regular visits to the mountains. This passion for rivers and streams continues to drive him forward in his field of study (Environmental Studies/Ecology) and hopefully will land him a job in the field working as a research technician for stream and river related research projects after graduation.

SESSION 3

11:30 am to 12:45 pm

Room 108, Science Center

Parental Religion as a Moderator in the Relationship between Children with Down Syndrome's Functional Abilities and Parental Depression

Amy Wilson

Faculty mentor: Greg Longo

University of Montevallo

Religion is a widely studied concept in psychology, yet research on religiousness of minorities, such as parents of children with intellectual disabilities, has been limited. The goal of the current study is to assess whether parental religion is a moderator in the relationship between children's functional abilities and parental depression. Data were collected online through Survey Monkey from a group of Alabama families with children who have Down syndrome. To examine religion as a moderator, the data were analyzed in R. It was hypothesized that religion would act as a moderator such that those higher in religiousness would have a lower relationship between children's functional abilities and parental depression. Due to the small sample size, the hypothesis was not supported. The results of this study contribute to limited research on the religious experiences of parents with children who have Down syndrome and provide insight on religion's ability to mitigate depression.

Amy Wilson is a Psychology major from Cullman, Alabama. After graduation, she plans to attend graduate school, specializing in Clinical Psychology.

COPLAC Digital Humanities Course: Creating a Digital Narrative on the History of a Liberal Arts Institution

Julia Bone and Casey Brown

Faculty mentor: Tracey Rizzo

University of North Carolina at Asheville

This was a collaborative effort to digitize and document the history of the University of North Carolina at Asheville through research and oral histories. This project was a part of a digital humanities course through the Council of Public Liberal Arts Colleges. Our goal was to provide an in-depth look at the history of our university as told by primary sources from the time, and testimonies of those with a relationship to the campus. We will discuss our experiences taking a COPLAC course, as well as the process of designing our website that served as a digital narrative of our school's history.

Julia Bone is a History and Mass Communication double major from Pinehurst, North Carolina. Her intended post-graduation plans are to teach English in Japan and to go to graduate school to earn a Master of Library and Information Science degree.

Casey Brown is a junior from Granite Falls, North Carolina. He is currently studying History, with a focus on World History.

"Home," "The Past," "Whispers of the Wind"

Payton Clark

Faculty mentors: Jeff Priest and Andrew Geyer

University of South Carolina Aiken

All of my poems focus on nature, specifically the forest around my childhood home, as well as the connections to mine and my family's heritage. This collection of poems in particular is inspired by my grandmother and my father, both of whom filled my childhood with stories of their youth.

Payton Clark is an English major from Aiken, South Carolina and is planning to continue onto graduate school.

Hell on Earth: The Lisbon Earthquake of 1755

Jameson Pressley

Faculty Mentor: James Sanders Day

University of Montevallo

The Lisbon Earthquake of 1755 is one of the most remarkable watershed moments in European history. This disaster facilitated the rise of a man with a reformist agenda, who shook the inveterate pillars of Portugal's social order to their very foundation. On November 1, 1755, earth, sea, and fire laid waste to the Portuguese capital. Following the calamity, the Minister of Foreign Affairs and War, Sebastião José de Carvalho e Melo, organized the first documented natural disaster relief effort. He commissioned a post-damage survey, created commercial guilds designed to regulate trade, and sought to rebuild what Lisbon had lost. Under the direction of Carvalho, Lisbon rose like a phoenix from the ashes. This event gave birth to the study of seismology and earthquake-resistant Pombaline architecture, introduced secular education to Portuguese society, and demonstrated that hope can prevail after tragedy.

Jameson Pressley grew up in Kennesaw, Georgia, which is located just outside of Atlanta. He is a History major, with plans to obtain graduate and doctoral degrees in history (focus undecided).

Room 109, Science Center

"Him and Her"

Kristin (Anna) Norris

Faculty mentors: Andrew Geyer and Jeff Priest

University of South Carolina Aiken

"Him and Her" focuses on a young woman's internal struggle with religion, death, and questionable love. The short short is the first of several stories written for an ongoing short story cycle project. The cycle as a whole questions what role religion plays in the lives of several, and often interconnected, Southern characters.

Kristin (Anna) Norris moved from Germany to America when she was eight years old, and has lived in Aiken, South Carolina for the last decade. She is a junior English major with an interest in Southern American literature, which she hopes to focus on in graduate school.

Pérotin to Pärt: Developing the Composing Mind

Ryan Huntington

Faculty mentor: Donald Sorah

The University of Virginia's College at Wise

This paper investigates the development of the young composer through study and composition of periodic styles in music. The goal is to prove that through the in-depth study of music from the medieval, renaissance, baroque, classical, romantic, modern, and post-modern musical stylistic periods a student can compose music of quality and merit. The hymn “Close to Thee” by Fanny Crosby was rearranged into completely original music based on the styles and practices of composers from these time periods. Specifically, Pérotin the Great, Guillaume DuFay, Antonio Vivaldi, Wolfgang Amadeus Mozart, Franz Schubert, Maurice Ravel, and Arvo Pärt were studied. The creative process, the method with which the research was conducted, and the music then composed will be discussed. The result is seven pieces of original classical music which show that with independent study, basic training, and with the right motivation any music student can become a composer.

Ryan Huntington is from Bealeton, Virginia where he attended Liberty High School. He is a Music Education major expecting to graduate in the spring of 2017 with plans to pursue a career in music education and composition.

College Students' Attitudes towards Mental Health Treatment

Rachel Holmes

Faculty mentors: Gregory Longo and Kristen Gilbert

University of Montevallo

There is a stigma associated with mental health treatment. While there is a large amount of research on this stigma, very little of this research has focused on college students. In this research, attitudes towards various mental health treatments were assessed using a survey completed by the participant. The goal of the survey was to assess differences in attitudes towards psychiatric and psychological treatment between religions and genders. These surveys were handed out to college students during class at the University of Montevallo. The results indicated a marginally significant difference between genders in opinions on treatment options, but there was no significant difference between religions and attitudes towards different mental health treatments. Additionally, there was no correlation between attitudes toward psychiatric and psychological treatments. These findings are important so that college students' attitudes towards mental health treatment can be better understood.

Rachel Holmes is from Pinson, Alabama and is a senior Psychology student. Post-graduation, she intends to pursue a master's degree in counseling.

Masculinity and Ambition in the Baltic Adventure

Christian Lane

Faculty mentor: Tracey Rizzo

University of North Carolina at Asheville

This research studies the *Freikorps*, paramilitary organizations formed in Germany after World War I, and specifically discusses their invasion of the Baltic that they called the “Baltic Adventure”. The main focus will be to examine the motivations for individuals joining a *Freikorps*, as well as the political and strategic goals of the leading commanders during the Baltic Adventure. Additionally, a focus will be made on the connections between earlier and later events. Primary sources including personal accounts as well as secondary sources will help to shed light on the motivations and goals of both members and leaders of the *Freikorps*. Overall, these sources will show how personal reactions to the German defeat in World War I, particularly the effect on masculinity, were used to further political goals by *Freikorps* leadership. These political goals were of dire consequence, including overthrowing the democratic government.

Christian Lane is originally from Durham, North Carolina. He is a History major and plans to pursue a teacher licensure and become a high school history teacher.

Room 122, Science Center

Frankenstein, Volney, and the French Revolution

Sarah Olsen

Faculty mentor: Miriam Wallace

New College of Florida

Among the key books that educate the creature in Mary Shelley’s *Frankenstein* is Volney’s book *The Ruins of Empires*, a work with a profound relationship to the French Revolution. I explore *The Ruins of Empires* in relationship with the novel and its context, arguing that the ideologies Volney presents—including anti-absolutism, enlightenment thinking, and the Law of Nature—illuminate the underlying revolutionary themes that are presented throughout *Frankenstein*. These ideologies help explain the failed relationship between characters, who fail to recognize each other as having legitimate needs and viewpoints. I conclude with the argument that the creature himself is presented as a revolution.

Sarah Olsen is in her third year of undergraduate studies at New College of Florida, located in Sarasota. She is pursuing her Bachelor of Arts in English and History and plans to seek opportunities in law or publishing after graduation.

The Brontës’ Writing of the Byronic

Ryann Taylor

Faculty mentor: Samantha Webb

The University of Montevallo

This research argues that Rochester was more critically successful than Heathcliff because Rochester fits the fantasy of a Byronic Hero while Heathcliff represents the harsh reality. To prove this I first define the Byronic Hero as performed and written by Lord Byron and apply these characteristics to Heathcliff and Rochester. I then show the influence of *Blackwood’s Magazine* on determining Charlotte and Emily Brontë’s heroes and style of writing. After making this connection, I show the evolution of characters heavily based on the Byronic Hero created by Charlotte and Emily and how they become Rochester and Heathcliff. These comparisons will be made by examining their writings about the fictional worlds of Angria and Gondal. Then I

emphasize the distinctions between Heathcliff and Rochester in regard to fulfilling a fantasy of domestication and a desire for improvement to reveal why Rochester was more critically successful.

Ryann Taylor is an English major from Huntsville, Alabama. She plans to pursue her doctorate after graduating from the University of Montevallo.

Silver and Gold: The Markers of Goodness, Greed and Vanity in Chaucer's Travelers

Samantha Strickland

Faculty mentor: Craig Callender

Georgia College & State University

In the "General Prologue" to Chaucer's *Canterbury Tales*, Chaucer refers to silver and gold in three different ways: through description of the travelers' attire or looks, through reference to the literal exchange, and through metaphor. I analyze how these methods reflect on the travelers as well as on Chaucer's own musings on morality and wealth. All allow for both negative and positive evaluations of a specific traveler's character, and through this Chaucer reminds the reader that wealth itself is not inherently good or evil, but it is how one uses it that is worthy of judgement. The significance of gold and silver does not change or challenge the common interpretations of the characters within the story, but rather supports and lends more specificity to the theme of avarice and greed that we as readers see throughout the Prologue.

Samantha Strickland is an English/Literature major from Waycross, Georgia.

"To Students Frantically Finishing Homework," "On This Earth Where Drudgery is Unavoidable," "Herefords in Spring," and "Tears Before Breakfast"

Meredith Grace Hawcroft

Faculty mentor: Roy Seeger

University of South Carolina Aiken

This poetry collection describes my daily life experiences as a college student while also showing my fondness for rural scenes. Half of my poems, "To Students Frantically Finishing Homework" and "On This Earth Where Drudgery is Unavoidable," contain themes of perseverance in the university setting while also remaining brutally honest about the difficulty of being a student. Seeing my fellow students struggle daily made me realize the difficulty some of them face in their quests for higher education. The other half of my poems depict rural scenes on a cattle farm. I grew up on a farm, so I enjoy writing about the sights, smells, and farm animals with which I am familiar as is illustrated through "Herefords in Spring" and "Tears Before Breakfast." The unique combination of images throughout this collection of poems depicts the journey of a young farmer trying to survive until she receives her undergraduate degree.

Meredith Grace Hawcroft is originally from Nashville, TN, but has spent the past four years at the University of South Carolina Aiken as an English major and creative writing minor. She is currently a senior and will graduate in May; afterwards she plans to pursue a master's degree in English and hopes to work in higher education.

METAMORPHOSIS



UNDERGRADUATE RESEARCH, SCHOLARSHIP, AND CREATIVE ACTIVITY

Since 2009, the Council of Public Liberal Arts Colleges has published a bi-annual online journal of scholarship and creative activity called *Metamorphosis*. More than 100 papers, posters and performances have appeared in the journal, which is hosted on the COPLAC website at

<http://metamorphosis.coplac.org>

Work published in *Metamorphosis* is selected by faculty mentors and review committees on each member campus. Your work has been selected for presentation at the Southeast Regional Conference and is therefore eligible for publication in the spring 2017 issue. The official style sheet and instructions for publication are outlined below. **Please submit by May 1, 2017.** If you have more specific questions about the process, please speak with the COPLAC staff during the conference or email spellman@coplac.org or bailey@coplac.org.

We look forward to highlighting your work in our campus reviewed national journal.

Metamorphosis Style Sheet

We request two documents, each sent electronically to bailey@coplac.org.

DOCUMENT ONE: *Summary Document*

Document in MS Word

Title this document with your last name and school acronym (for exp: Bill Spellman at UNC Asheville would title his Summary Document spellmanunca).

In this document please list the following in this order:

Title of Presentation

Author(s)

Faculty mentor(s)

School

200-250 word abstract (submissions over the 250 word limit will be edited).

Up to 5 keywords related to your research

DOCUMENT TWO: *Research Document*

This is your actual paper, which will be posted in the form that we receive it so it should be a final, clean copy.

Document must be a PDF.

Title this document with your last name, school acronym and the letters RD (for exp: Bill Spellman at UNC Asheville would title his Research Document spellmanuncaRD)

On the first page, include paper's title, author(s), faculty mentor(s) and school name.

Document should be single-spaced text with 1" margins, 12 pt font, and a maximum of 10 single-spaced pages.

All references are to be organized as endnotes.

Your feedback helps us improve this conference. We will be sending out an online survey and would appreciate your response.

Established in 1987, the Council of Public Liberal Arts Colleges (COPLAC) is dedicated to the advancement of high-quality, liberal arts education in a public college setting. COPLAC represents a distinguished sector in higher education consisting of 30 colleges and universities in 28 states and one Canadian province. Our mission is to advance the aims of our member institutions and drive awareness of the value of a public liberal arts education in a student-centered, residential environment.



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