2011

Undergraduate Scholarship in the College of Arts and Sciences 2011 Book of Abstracts

Winthrop University

The College of Arts and Sciences, Winthrop University

Follow this and additional works at: https://digitalcommons.winthrop.edu/undergradresearch_abstractbooks

Recommended Citation

Winthrop University and The College of Arts and Sciences, Winthrop University, "Undergraduate Scholarship in the College of Arts and Sciences 2011 Book of Abstracts" (2011). Abstract Books. 4.

https://digitalcommons.winthrop.edu/undergradresearch_abstractbooks/4

This Book is brought to you for free and open access by the Winthrop University Undergraduate Research Program at Digital Commons @ Winthrop University. It has been accepted for inclusion in Abstract Books by an authorized administrator of Digital Commons @ Winthrop University. For more information, please contact bramed@winthrop.edu.
Winthrop University
Undergraduate Research Initiative

The Winthrop University Undergraduate Research Initiative (WUURI) supports a student-centered learning environment that fosters student research, scholarship, and creative activities. The initiative encourages students and faculty mentors to collaborate in the design and implementation of projects and the dissemination of results.
Introduction

“The art and science of asking questions is the source of all knowledge.”
—Adolf A. Berle, Jr., lawyer, educator, author, and U.S. diplomat (1895-1971)

The College of Arts and Sciences proudly presents Undergraduate Scholarship in the College of Arts and Sciences Book of Abstracts, our ninth annual issue documenting the work conducted by students in collaboration with their faculty mentors. As you will see by the depth and variety of the projects, these students successfully used their research, critical thinking, and writing skills to produce scholarship that has been recognized by the larger scholarly community.

The work documented here illustrates how effective undergraduate research is at providing valuable learning experiences to students and why it is recognized as one of the high-impact educational practices that increase the rates of student retention and engagement. Participating in undergraduate research can help students prepare for professional and graduate programs and enhance their professional and academic credentials to support applications for scholarships, awards, career employment, and entry into graduate and professional school. While engaging in undergraduate research, students develop one-on-one mentoring relationships with faculty members, clarify academic and career interests and goals, acquire additional knowledge in their academic fields that transcends classroom study, and enhance critical skills in communication, independent thinking, creativity, and problem solving. Moreover, students have the opportunity to contribute to the creation of new knowledge on the cutting edge of their academic disciplines and apply that knowledge to real world problems.

We congratulate the students for the quality of their work and their willingness to share it with the academic community through publications in refereed journals and presentations at regional, national, and international meetings. We also recognize and appreciate the quality of the mentoring by our faculty who teach the students the “art and science of asking questions,” how to interpret the results, and how to disseminate the knowledge at a professional level.

The production of the book itself is an undergraduate project; we thank Glenna Baron, a Visual Communication Design major, for her work on the cover design and interior text, and also Alyssa Baker, Annick Hernandez, and Tommy Hines, Visual Communication Design majors, for laying out the interior book text. We also thank the graduate assistant in the undergraduate research office, Joshua Bowers, for editing the abstracts. We hope you enjoy our Book of Abstracts.

Dr. Dwight Dimaculangan
Director of Undergraduate Research
College of Arts and Sciences

Dr. Debra C. Boyd
Dean of the College of Arts and Sciences
April 2011
## Contents

1. Winthrop University Undergraduate Initiative  
3. Publication Abstracts  
5. Honors Thesis Abstracts  
10. Meeting Abstracts  
57. Other Student/Faculty Collaborations  
66. Student Index  
68. Faculty Index
Winthrop University Undergraduate Research Initiative

College of Arts and Sciences
The Winthrop University Undergraduate Research Initiative (WUURI) supports a student-centered learning environment that fosters student research, scholarship, and creative activities. The Initiative encourages students and faculty mentors to collaborate in the design and implementation of projects and the dissemination of results.

Director of Undergraduate Research
Dwight Dimaculangan, Ph.D.

Undergraduate Research Advisory Committee
Carlton Bessinger, Ph.D., Human Nutrition
Marsha Bollinger, Ph.D., Chair of Environmental Sciences and Studies
Douglas Eckberg, Ph.D., Sociology and Anthropology
Christian Gartan, Ph.D., Chemistry
Teresa Justice, Director of Sponsored Programs and Research
Peter Judge, Ph.D., Chair of Philosophy and Religious Studies
Josephine Koster, Ph.D., English
Trent Kull, Ph.D., Mathematics
Robin Lammi, Ph.D., Chemistry
Cecil Leung, Ph.D., Modern Languages
Ameda Manetta, Ph.D., Social Work
Marilyn Sarow, Ph.D., Mass Communication
Merry Sleigh, Ph.D., Psychology
Jean Silagyi-Rebovich, Ph.D., Office of Assessment
Jane B. Smith, Ph.D., Director of the Writing Center
Stephen Smith, Ph.D., Political Science
Kristi Westover, Ph.D., Biology
Kimberly Wilson, Ed.D., Biology
The phenomenon of cytoplasmic male sterility (CMS) has been described and the genetics underlying the phenomenon studied in many species. The most prominent CMS effects are abnormal stamen development, aborted pollen, and reduced petal size. Similar phenotypes affecting the size and color of stamens and petals and post-tetrad degeneration of pollen are characteristic for the CMS line \textit{(CMS-pennellii)} which resulted from crosses involving \textit{Solanum peruvianum} (pistillate parent) and \textit{S. pennellii} (pollinating parent). This study has focused on the comparative analysis of the size of epidermal cells from abaxial and adaxial sides of petals and stamens of mature flowers from \textit{CMS-pennellii} line (0% stainable pollen), the maintainer species \textit{S. pennellii}, the donor of the cytoplasm \textit{S. peruvianum}, the cultivated tomato \textit{S. lycopersicum}. Petals and filaments were treated with calcofluor fluorescent brightener and imaged using a confocal laser scanning microscope. Due to the thickness of the anthers, the observations for them were carried out with the scanning electron microscope. The size of the cells was measured using ImageJ. The comparison between the size of abaxial and adaxial epidermal cells showed that the there were statistically significant differences, and the direction of the differences is both species- and structure-specific. The common feature for \textit{Solanum pennellii}, \textit{S. peruvianum} and \textit{S. lycopersicum} was that the smallest cells were observed on the epidermis of petals. The anther and filament cells in \textit{S. pennellii} were the largest compared to the other two species. Our data showed that CMS has a significant effect on the pattern of development and size of the epidermal cells. The mean size of the abaxial epidermal cells of the CMS anthers was significantly smaller than the adaxial ones opposite to the observed pattern in \textit{S. pennellii}. In comparison to \textit{S. pennellii}, the size of the epidermal cells on the CMS anthers and filaments was significantly reduced, with more extreme reduction (3.5-4.1-fold) observed in the filaments. The comparison of the size of the petal epidermal cells showed that there was no statistically significant difference between the cell size on the adaxial surface of the CMS line and \textit{S. pennellii}, while the cells on the abaxial surface of the CMS line were significantly larger.

This research shows that the size of the epidermal cells on stamens and petals differs and is a species-specific characteristic for the studied tomato species. Since \textit{CMS-pennellii} and \textit{S. pennellii} share the same nuclear genome our data demonstrates that cytoplasmic male sterility in tomatoes has a significant differential effect on the expansion and division of epidermal cell of petals, anthers and filaments.
COMPARATIVE ANALYSIS OF ADOLESCENT PREGNANCY IN SOUTH CAROLINA, MEXICO AND CENTRAL AMERICA
Presented at the Southern Regional Honors Conference, Little Rock, Ark., April 2011 and the Big South Undergraduate Research Symposium, Lexington, Va., April 2011
Student: A. Elizabeth Jenkins 2011
Honors Thesis Committee: Wendy Campbell, Ph.D., Brent Cagle, Ph.D., Susan Lyman, Ph.D.
Department of Social Work
This paper is a qualitative research project about the current initiatives implemented in order to combat high adolescent pregnancy rates in Mexico, Central America and South Carolina. The paper has a large literature review that analyzes and discusses various psychosocial causes for these exceptionally high instances of pregnancy in adolescents, including the following: little access to formal education, limited open discussion about sexual health or pregnancy prevention, the cost and availability of adequate birth control, and remote location as an impediment for access to all of these. This research paper contains current statistics and the different projects and programs already in place. It displays research about the validity and efficacy of these programs and compares the successes of different types of programs in the United States and Latin America. As the final section of the literature review, the paper addresses implications for the research and how programs that have been successful in Mexico, Central America or South Carolina could be adapted to work in the other area. In order to determine current practitioners’ views on current programs and projects’ implementation and success in Mexico, Central America and South Carolina, a survey was created and sent to various human services professionals who work with pregnant and parenting adolescents. The findings and discussion of the results of this survey are the final section of this thesis project.

AN EXPLORATION OF VARIABLES THAT PREDICT COLLEGE STUDENTS’ ATTITUDES TOWARD SERVICE LEARNING
Presented at the Southern Regional Honors Conference, Little Rock, Ark., April 2011
Student: Amanda Mcleod 2011
Honors Thesis Committee: Donna Nelson, Ph.D., Kathy Lyon, Ph.D., Merry Sleigh, Ph.D.
Department of Psychology
Our project investigated college students’ attitudes toward service learning in their college curriculum. Much of the current literature about service learning has examined the relationship between service learning and civic engagement (Prentice & Robinson, 2007; Spring, Dietz, & Grimm, 2006.) Research shows that the quality of the service experience determines the extent to which it has a favorable impact on the participant (Gallant, Smale, & Arai, 2010; Rossing, Reed, Ferrari, & Bothne, 2010). We extended this work by exploring variables that may be linked to students’ perceptions of service learning in college. Family support for community service was associated with more favorable student attitudes toward service learning in college. Positive attitudes about community service in general were linked with more favorable attitudes about service learning and greater participation in service projects as part of the college curriculum. However, the greater the number of mandatory service projects the student had participated in, the less favorable their attitudes were about service learning. No association was found between attitudes toward service learning and religiosity, age, gender or race of the student.
Previous studies in annelids suggest that these worms may possess a replicating epidermal stem cell population; however, it is unknown whether these cells correspond to previously described basal cells. This study uses EdU- and anti-Phosphorylated H3-labeling to examine epidermal S-phase and mitotic cells in Aeolosoma headleyi, an annelid known to possess basal cells. S-phase and M-phase cells were found in the epidermis both in the fusion plane and general body wall, but not all were basally located. Furthermore, some S-phase cells had the nuclear morphology of differentiated cells. Based upon progressively shortened EdU labeling times, the length of G2 was estimated to be less than 60 min. This study suggests a method of epidermal replacement dependent on dedifferentiation and the division of differentiated epidermal cells and also establishes this species as a model organism for the study of stem cells in annelids.

**TIMING AND CONTENT OF MACRONUTRIENT INTAKE BEFORE AND AFTER ENDURANCE EXERCISE FOR OPTIMAL PERFORMANCE AND RECOVERY**

Presented at the Southern Regional Honors Conference, Little Rock, Ark., April 2011

**Student: Carly Moss 2011**

Honors Thesis Committee: Julian Smith III, Ph.D., Laura Glasscock, Ph.D., Paula Mitchell, Ph.D.

Department of Biology

(BIOI 300 – Smith 2009)

The purpose of this literature review is to assess primary research studies on the appropriate timing and nutrient content of meals before and after competition and training of different intensities and durations for optimum athletic performance in endurance sports. Studies show the effects of the timing and amount of ingestion of lipids and carbohydrate before exercise on physiologic and metabolic responses and on physical performance during the exercise. Topics in this review include the effects of different types of pre-exercise fat intake and the glycemic index of pre-exercise foods on substrate availability and oxidation and exercise performance. Other studies demonstrate the effects of the timing and amount of ingestion of protein and carbohydrate after exercise on physiologic and metabolic responses during recovery and on athletic performance during subsequent training sessions. This review addresses the effects of post-exercise carbohydrate and protein intake on glycogen and skeletal muscle synthesis. This review aims to expand on the cited literature by explaining the mechanisms behind the determined metabolic and physiologic responses during exercise and recovery as well as by examining how these responses affect athletic performance. The Food Processor computer software program was utilized in the formulation of adequate pre and post-exercise meals based on conclusions drawn in the review.

**BIOINFORMATIC INVESTIGATION OF REGULATORY NETWORKS OF HMGA PROTEINS**

Presented at the Southern Regional Honors Conference, Little Rock, Ark., April 2011

**Student: Carol Perkins 2011**

Honors Thesis Committee: Takita Suntee, Ph.D., Kristi Westover, Ph.D.

Department of Chemistry, Physics, and Geology

The High Mobility Group A (HMGA) proteins - HMGA1a, HMGA1b, and HMGA2 - are elevated in human cancers and have a distinguishing role in cancer initiation and progression. Despite emerging understanding of their mechanisms of action, intricate details of exactly how these proteins trigger cancer initiation is still unclear. To better understand how the cell elevates these proteins, we are exploring the role of the Wnt signaling pathway in regulating HMGA proteins. Bioinformatic analysis of the HMGA1 and HMGA2 promoters was conducted to identify sequences and evaluate the evolutionary conservation of putative Tcf-4 sequences (5’-WWCAAAG-3’). For HMGA2, three highly conserved sequences have been identified and analysis of hmgal is underway. These studies suggest that the regulation of HMGA expression may occur via the Wnt signaling cascade and identify a potential pathway that can be targeted for the development of molecular cancer therapeutics.

**ADULTS’ PERCEPTIONS OF SAFETY ON FACEBOOK AND WILLINGNESS TO BEFRIEND A STRANGER**

Presented at the Southeastern Psychological Association Conference, Jacksonville, Fla., March 2011 and the Southern Regional Honors Conference, March 2011

**Student: Amy Rivers 2011**

Honors Thesis Committee: Merry Sleigh, Ph.D., Kathy Lyon, Ph.D., Darren Ritzer, Ph.D.

Department of Psychology

(PSYC 450H – Sleigh)

Previous research demonstrates that the popular social networking site Facebook has an impact on users’ behaviors on- and offline (Orr, Sisic, Ross, Simmering, Arsenault, & Orr, 2009; Sheldon, 2008). However, little research has been done on Facebook users’ perceptions of safety and willingness to interact with complete strangers, which has become an important issue due to Facebook’s increasing popularity and internet safety concerns. To examine these research questions, we created a two-tiered project: an experiment to investigate how individuals would react to friend requests from Facebook users they obviously did not know, and a survey, to gather information on Facebook users’ perceptions of safety and willingness to interact with online strangers. Abiding by Facebook guidelines, we created four profiles under two names on Facebook (one male profile with a real picture and one with a cartoon picture - likewise for female), randomly added a total of 400 American and Spanish users, and observed differences in acceptance rates. We also distributed a survey online. Overall, we found that users would rather accept a random friend request from a woman and from someone using a real picture instead of a cartoon. There were differences between genders and countries. Participants reported feeling generally safe on Facebook, but utilized a number of strategies to achieve that feeling of safety. We also found that factors such as length of time on Facebook, level of education, number of friends, and age affected users’ willingness to share information and interact with online strangers. These findings could be used to understand the complex interactions that take place on Facebook and potentially help to inform young users to utilize the site and perceive their actions as safe.
THE EFFECTS OF PRIMING ON PERCEPTIONS OF ALTRUISM AND NONPROFIT ORGANIZATIONS

Presented at the Southern Regional Honors Conference, Little Rock, Ark., April 2011

Student: Allison Howard 2011
Honors Thesis Committee: Donna Nelson, Ph.D., Merry Sleigh, Ph.D., Jeff Sinn, Ph.D.
Department of Psychology

Altruism, from the Latin alter or other, means in its most basic form, "for the other." Psychologists have tested for its existence for decades and the controversy of whether or not altruism, or unselfish devotion to the welfare of another, is truth, is still a relevant topic in psychology and the world at large. I drew on my experience as a volunteer intern for the More than Me Foundation, a nonprofit organization, to gauge the sustainability of the real-world application of altruism. My project explored college students’ perceptions of altruism and non-profit organizations and tested whether priming about personal experiences of altruism would change these perceptions. I also explored predictors of participants’ willingness to act altruistically. I found that priming did not significantly affect participants’ perceptions of altruism or non-profit organizations. Similarly, priming about altruism did not influence participants’ willingness to offer help. However, those with positive attitudes about the existence of altruism behaved more altruistically. Positive attitudes about non-profit organizations also predicted altruistic behavior of participants. The possibilities and implications of these results will be related to the psychological topics of modern racism, empathic altruism, the social responsibility norm, and in-group/out-group bias.
Meeting Abstracts

THE WILL OF WORDS: THE IMPLICATIONS OF WILLIE'S RHETORICAL SHIFT IN ALL THE KING'S MEN

Presented at the Sixth Annual Department of English Undergraduate/Graduate Research Conference, Winthrop University, March 2011

Student: Amanda Mayer 2012
Faculty Mentor: Kelly Richardson, Ph.D.
Department of English
(ENGL 324 – Richardson)

Throughout All the King’s Men, Willie Stark manipulates rhetorical strategy in interesting ways. I will argue that Willie’s rhetorical strategy is transformed as he immerses himself into the world of corrupt political maneuvering. At first, he relies on a calm, rational presentation of facts and figures; however his rhetoric shifts to one of fiery emotional appeals. Notably, this shift mirrors Willie’s increasing involvement in big city politics. My argument focuses primarily on the connection between rhetorical choices and character development. Whereas much of the previous research in this area has approached rhetoric as an art form to be studied independently of the thoughts and feelings of its practitioners, my paper argues that rhetorical choices can be highly personal ones with the potential to have a significant psychological impact not only on the audience, but also on the speaker himself. As Willie begins to take on the rhetorical style of the political system which he once swore to fight against, he sinks further and further into corruption and a campaign strategy which is more about promoting the candidate than actually helping his constituents. As the novel progresses, Willie begins to believe his own rhetoric and see himself as the all powerful, avenging figure he markets to his audience. Willie’s sense of his own omnipotence and the morally dubious actions his attitude inspires ultimately lead to his destruction.

THE EFFECT OF VIEWING DISNEY FILMS ON COLLEGE STUDENTS LATER LIFE PERCEPTIONS

Presented at the Southern Regional Honors Conference, Little Rock, Ark., April 2011

Student: Meagan Hogarth 2012
Faculty Mentor: Matthew Hayes, Ph.D.
Department of Psychology
(PSYC 302 – Hayes)

The present study investigated whether students who viewed Disney films as a child were more likely to stereotype relationships and people with mental illness, as well as have a high rate of aggression. Students completed a questionnaire measuring their relationship expectation, views on people with mental illness, and aligned. To date, phylogenetic reconstruction has been completed using the PB2 segment for Indonesian and Chinese swine sequences. Initial results from analysis of the PB2 segment, which plays a significant role in the polymerase enzyme during DNA replication and the initiation of transcription, show a significant relationship between the Chinese strains form the Henan and Anhui provinces and the Indonesia strains. We intend to expand the analysis to include complete genomes, as well as repeat the phylogenetic work with all Indonesian hosts. Further analysis of the swine, avian, and human H5N1 strain may give insight into the transmission of the disease in Asian countries and supply information on future strain adaptations and possible eradication.

MOOD, SELF-ESTEEM AND PERSON PERCEPTION JUDGMENTS

Presented at the Southern Regional Honors Conference, Little Rock, Ark., April 2011

Students: Elsie Comber | Samantha Bodnar | Joshua Roberston
Faculty Mentor: Matthew Hayes, Ph.D.
Department of Psychology
(PSYC 302 – Hayes)

Do mood and self-esteem influence the way we judge other people? Previous research shows that they do in independence from one another. We investigated if mood and self-esteem have a relationship that impacts judgments in a different manner than when studied in isolation. Using previous studies to design our methods, we conducted a mood manipulation and asked participants to make judgments on fictional people while also testing for self esteem. The results were insignificant and did not support our hypothesis, yet they did shed light on the need for well-developed mood manipulation techniques and attitude scales that are not loaded or leading in their presentation.

THE GREAT CHAIN OF BEING IN MACBETH AND DAEMONOLOGIE

Presented at the Big South Undergraduate Research Symposium, Lexington, Va., April 2011

Student: Amanda Mayer 2012
Faculty Mentor: Mathew Fike, Ph.D.
Department of English
(ENGL 305 – Fike)

The purpose of this paper is to use James I’s Daemonologie -- his treatise on witchcraft -- to analyze Shakespeare’s portrayal of witchcraft in Macbeth. Previous studies by feminist critics like James Schiffer and Dennis
Biggens argue that the witches represent a fear of feminine power and authority. In contrast, the present study suggests that Shakespeare’s portrayal of witchcraft engages in a dialogue about the nature and order of power that transcends sexual politics. In Macbeth, Shakespeare incorporates elements of witchcraft that subverts the hierarchy of power known as the Great Chain of Being. Since the play thus holds the very power structure that the Gunpowder Plot sought to undermine, Shakespeare’s play becomes inherently evil because it subverts the political power structure.

MUSIC AS A SELF-REGULATED STRATEGY TO CHANGE MOOD
Presented at the Southeastern Psychological Association Conference, Jacksonville, Fla., March 2011
Student: A. Nikki Williams 2011
Faculty Mentor: Merry Sleigh, Ph.D.
Department of Psychology
(PSYC 302 – Sleigh)
The purpose of this two-phase project was to see if music could be used as an intentional strategy to alter mood. In contrast to previous experiments where researchers selected and played music to participants, all participants were allowed to self-select music on their personal MP3 players. In the first study, participants listened to music that either matched or was the opposite of their current mood. We found that when participants listened to music that matched their mood, the mood was maintained. In contrast, when participants listened to music that was the opposite of their mood, they had changes in both their good/bad mood and their calm/restless state. Music majors and men were particularly prone to mood change. This finding suggests that music does have the power to maintain or change moods, and the strategy is effective even when people are aware of it. In the second study, we compared two emotional regulation strategies. Participants were first induced to have a negative mood. Half of the participants engaged in a writing assignment designed to elicit an improved mood, while half of the participants listened to self-selected music also intended to improve mood. Although both strategies resulted in mild increases in positive mood and mild decreases in negative mood, the two strategies were not significantly distinct from one another. In other words, music was as effective as a positive reframing exercise in changing mood. We also examined whether gender had any impact on the effectiveness of these two strategies. Our results revealed that there was no gender difference related to negative mood change. These two strategies were equally effective in changing negative mood for both men and women. However, women’s positive mood increased only in the writing condition, whereas men’s mood increased significantly more in the music condition. In other words, writing about an event in a positive light helped women, and listening to music helped men feel better. These findings provide much-needed experimental evidence that music may be a useful self-regulated therapeutic strategy to manage mood.

ELUCIDATING PREFERRED STRUCTURES IN DIMERS OF ALZHEIMER’S AMYLOID-BETA PEPTIDE
Presented at the 241st American Chemical Society National Meeting, Anaheim, Calif., March 2011
Supported by the National Science Foundation Grant
Student: Abigail Bradner 2012
Faculty Mentor: Robin Lammi, Ph.D.
Department of Chemistry, Physics, and Geology
Amyloid-β (Aβ) is a protein of 39-43 amino acids that self-associates into toxic aggregates linked to Alzheimer’s disease. Although Aβ fibrils were long believed to be the disease-causing agents, recent evidence links Alzheimer’s progression to increased concentrations of Aβ dimers and trimers. We have employed Forster resonance energy transfer (FRET) to probe for preferred structures in Aβ dimers. Using single-molecule fluorescence methods, we have investigated surface-tethered Aβ 40 dimers, one at a time, identifying two characteristic FRET efficiencies. These results are consistent with the observation that the single-dimer FRET efficiencies reflect solution structures, unperturbed by surface tethering. Filtering of single-dimer intensity profiles reveals that approximately 35 percent of dimers visit two characteristic FRET efficiencies, likely indicative of time-dependent structural dynamics. Collectively, these results are consistent with the observation of two characteristic dimer structures that may interconvert over time.

GEOCHEMICAL ALTERATION OF ENDOMYCORRHIZAL FUNGAL SPORES AT ELEVATED TEMPERATURES
Presented at the Geological Society of America National Meeting, Denver, Colo., October 2010
Supported by a Winthrop University Research Council Grant and the Dalton Endowment
Student: Adam Balint 2010
Faculty Mentor: Scott Werts, Ph.D.
Department of Chemistry, Physics, and Geology
The objective of this study is to identify and categorize the organic and inorganic transformations of various endomycorrhizal fungal spores collected from the high semi arid plains of Arizona and a temperate forest of Maryland at varying temperatures in an effort to better quantify the effects of surface fire on mineral soils. Prior research from a typical eastern US forest soil has revealed that these fungal spores are structurally resistant to high temperatures (up to 500°C) and are morphologically indistinguishable from their unburned counterparts. We believe this to be, in part, due to the presence of biominerallized structures in some of the species. Carbon and nitrogen elemental and stable isotope analysis on bulk fungal spore samples from Maryland has shown a decrease in total percent carbon with a corresponding increase in δ13C between 250° and 350°C. Analysis on total percent nitrogen and δ15N percent produced similar results. There will be a continuation of this project on the Arizona samples to see if endomycorrhizal species from varying environments will portray the same characteristics.

AN EXAMINATION OF LOCATION AND TYPE OF TATTOO ON PERCEPTIONS
Presented at the Southeastern Psychological Association Conference, Jacksonville, Fla., March 2011
Students: Adrienne Galassie 2011 | Danielle Stacks 2010
Faculty Mentor: Merry Sleigh, Ph.D.
Department of Psychology
(PSYC 302 – Sleigh)
An increasing number of people are getting tattooed, and young women are the largest-growing segment of the population getting tattooed (Hawkes, Senn & Thorn, 2004; Swami & Furnham, 2007). This study sought to compare perceptions of women with tattoos to perceptions of men with tattoos, and to study whether viewers make personality attributes to people with different types of tattoos. Seventy-eight adults responded to surveys containing pictures of female and male models with tattoos. The same picture of the model was used, but the placement of the tattoo was varied using computer technology. The tattoos shown were a cross, a star, and an Asian symbol. The tattoos were placed on the back, arm, or torso. Regardless of the tattoo placement, participants rated models similarly on attractiveness, professionalism, intelligence, and obedience. However, participants who viewed the female with a cross on her back found her less interesting than a female with a cross in other locations. Participants who viewed tattoos on the back were less likely to want to get a tattoo. Democrats were more likely to agree that tattoos are a form of artwork and were more attracted to people with tattoos. For almost every variable studied, African-Americans rated the models more positively than Caucasians. African-
Americans were more likely to view tattoos as a form of artwork, were more attracted to people with tattoos, had more tattoos, and were more likely to get a tattoo in the future. It was found that participants who consid-
ered tattoos to be a form of artwork were more attracted to people with tattoos, and were more likely to have a tattoo or get one in the future. They were also more likely to have a piercing. Ultimately, women, African-
Americans, and Democrats felt more positively towards tattoos. Our study did not reveal a stigma against women with tattoos as reported in previous research. These findings reflect a possible change in perceptions of tattoos, perhaps as a result of their increasing commonness.

**ABERRANT SELF-PROMOTION, NARCISSISM, AND ACADEMIC CONFIDENCE**

*Presented at the Southeastern Psychological Association Conference, Jacksonville, Fla., March 2011*

**Student:** Adrianne Galassie 2011  
**Faculty Mentor:** Darren Ritzer, Ph.D.  
**Department:** Psychology

Aberrant Self-Promotion (ASP) is a personality construct that encompasses people who tend to act for their own self interest. These people exhibit traits like superficial charm, lack of empathy, and untruthfulness. Ritzer and Gustafson (1992) found that the ASP construct is characterized by a pattern of high narcissism and moder-
ately high psychopathy. The present study sought to target individuals who exhibit these traits. It was expected that the scales would accurately locate a population of ASPs in a nonclinical, non-criminal college sample. It was also expected that this group would show differences from the normative sample in their confidence on a difficult academic achievement test. Participants included 62 women and 24 men. Participants answered seven trivia questions created by the researcher and responded to how confident they were on each question using a four-point Likert scale. Then, participants completed the Narcissistic Personality Inventory (Emmons, 1987) and the Self-Report of Psychopathy Scale (Hare, Harpur, & Hemphill, 1989). Thirteen participants scored one standard deviation above the mean on the SRP, and thirteen people scored one standard deviation above the mean on the NPI. There were five participants that achieved these scores on both scales. It was found that those who scored high on the SRP also scored higher on the trivia quiz and were more confident in their answers. Those who scored high on the NPI also were more confident, though they did not achieve higher scores on the trivia quiz. However, these differences were not significant. Men scored higher on the NPI, as well as the SRP, than did women. Significant differences between ethnicity groups were found as well on the NPI with African Americans scoring higher than Caucasians. For the SRP, the only differences found were between the less willing they were to accept friend requests from any type of stranger (male, female, attractive, from the same school, etc.). This data can help us to better understand safety on FB, an issue that receives more media than research attention.

**PREDICTORS OF WILLINGNESS TO ACCEPT FACEBOOK FRIEND REQUESTS FROM STRANGERS**

*Presented at the Southeastern Psychological Association Conference, Jacksonville, Fla., March 2011*

**Student:** Amy Rivers 2011  
**Faculty Mentors:** Merry Singh, Ph.D. & Darren Ritzer, Ph.D., Kathy Lyon, Ph.D.

We examined people's willingness to befriend a complete stranger, their intended audiences for posts, privacy features they used, and why they used FB. Eighty-two participants (mean age = 25), recruited through FB, answered an online survey about their FB habits that included both quantitative and qualitative data. Results revealed that participants used FB mainly to interact with friends, with 94% of participants viewing their friends as the main audience of their posts on FB, and 89% of participants sending friend requests to close friends. Only 7% of participants admitted sending friend requests to strangers on FB. We also found that many participants, at one point or another, had accepted friend requests from strangers. When participants admitted accepting friend requests from strangers, they said they did so because they went to the same school as the stranger, enjoyed meeting new people, or thought they had met the stranger in the past and forgotten. For privacy, participants were most protective of their pictures and the posts they and others have made on their walls (79% of participants), although 6% of participants enacted no privacy features. We also found that the longer participants had been on FB, the more friends they had on FB, the more information they revealed about themselves, the more they agreed that they would accept a male stranger request if they had common friends, the more they agreed that they would accept a male stranger as a FB friend if he was attractive, the more friend requests they had received from an unknown male, and the younger they were. Participants felt safe about using FB, rating it as 3.94 (sd = .90) on a five-point safety scale. The more friends participants had on FB, the safer they felt using the site. No other variables affected participants' perceptions of their own safety, including age, education level, self-esteem or past victimization. However, the more educated the participants, the less willing they were to accept friend requests from any type of stranger (male, female, attractive, from the same school, etc.). This data can help us to better understand safety on FB, an issue that receives more media than research attention.
men, and 25 Spanish women. One male and one female were invited with each last name (randomly selected from common last names) to avoid duplicate requests. Only the last names of participants were recorded, and all profiles (including participants who accepted the friend request) were deleted within two weeks of their creation. Results revealed that people with more FB friends were more likely to accept the random requests, and participants were more willing to accept a friend request when an actual picture was provided rather than a cartoon. The female profile received higher acceptance rates than the male profile in both conditions (pic versus cartoon). We found that US participants accepted both of the real profiles more often than the cartoon profiles. US participants also chose to accept Kim’s profile more than Josh’s each time. US Caucasians, of all races, were most reluctant to accept the friend request from a stranger. Spanish participants did not display a preference between Josh’s profiles, but they significantly preferred Kim’s real profile to her cartoon profile. These findings expand our growing understanding of Facebook and its users. Our data show that people will accept friend requests from strangers, and that characteristics of the Facebook profile as well as characteristics of the invitation’s recipient influence people’s willingness to accept such a request.

**OUR IRON LUNG: THE EVASIVE ANTI-GLOBALIZATION MOVEMENT**

*Presented at the 40th Annual Meeting of the N.C. Political Science Association, Charlotte, N.C., February 2011*

**Student:** Andrew Davis  
**Faculty Mentor:** Jennifer Disney, Ph.D.  
**Department of Political Science**  
(PLSC 506 – Disney)

There is little doubt that the anti-globalization movement represents the most radical, yet articulable form of left-wing popular political action in the world today. However, scholars have had much difficulty examining this movement as it, like the hegemonic discourse it seeks to dismantle, offers at once the tools with which to dismantle global capitalism and at the same time arouses the type of critical left that makes radical insurgent politics efficacious. Despite the inadequacies of particular theories, this paper provides a survey of social movement literature in an effort to create an amalgamated theory which might prove resourceful in explaining this movement that has defied explanation or over-simplification thus far. This research has grown from several projects that examined quantitatively particular anti-globalization protest events. Previous research on this topic has proved rather unsuccessful due to the unquantifiable elements that both challenge researchers but also seem to lend credence to the revolutionary potential of this movement. As such, this research will also examine many qualitative elements and theoretical questions that may provide insight for future research on the anti-globalization movement.

**N.C. AND S.C. COLLEGE NEWSPAPERS’ USAGE OF THE FREEDOM OF INFORMATION ACT**

*Presented at the Big South Undergraduate Research Symposium, Lexington, Va., April 2011*

**Student:** Anna Douglas  
**Faculty Mentor:** Larry Timbus, Ph.D.  
**Department of Mass Communication**

Journalists across the country say that the Freedom of Information Act (FOIA) is important to doing their job, according to a 2002 survey by the Better Government Association and the organization of Investigative Reporters and Editors. But are student journalists filing FOIA requests before they enter the workforce? This paper will explore the extent to which student newspapers on North Carolina and South Carolina’s college and university campuses are using their state’s Freedom of Information Act. A survey of N.C. and S.C. college newspapers’ usage of the FOIA will be emailed to the editors and faculty advisers of these newspapers. (A personal phone call from the researchers will alert the respondents to the emailed survey and will explain the purpose of the study.) The survey will yield data that will reveal how student journalists use the FOIA as a tool to access newsworthy information about the state’s institutions of higher education. The survey will also be designed to provide insight into the extent to which universities, both private and public, are forthcoming with information requested. Open record laws aid the free flow of information and ideas in this state and in this country but only work when citizens, specifically journalists, file requests for information. In addition to emailing our survey, follow up interviews will be conducted with a sampling of the student editors and faculty advisers-all with the purpose of gaining a better understanding of how collegiate journalists in South Carolina and North Carolina employ their state’s Freedom of Information Act as a reporting tool.

**TRANSCRIPTIONAL ACTIVATION OF THE HMGA1 PROMOTER THROUGH THE TCF-4/B-CATENIN PATHWAY**

*Presented at the 10th Annual Biomedical Research Conference for Minority Students, Charlotte, N.C., November 2010 and the 25th Annual Ronald McNair Commemorative Celebration and 10th Annual Research Symposium, Greensboro, N.C., January 2011*  
Awarded “Excellence in Scholarly Research” at the National Ronald E. McNair Symposium  
Supported by the South Carolina IDEA Networks of Biomedical Research Excellence Grant from NIH, a Research Initiative Grant from NSF, and an Academic Research Enhancement Award from NIH  

**Student:** Ashton Brock  
**Faculty Mentor:** Takita Sumter, Ph.D.  
**Department of Chemistry, Physics, and Geology**

High Mobility Group A1 (HMGA1) proteins are biological mediators with roles in viral integration and neo-plastic transformation. HMGA1 proteins correlate with human malignancy in adults. We previously showed that mice bearing the hmga1a transgene develop aggressive lymphoid disease that resembles human T-cell acute lymphoblastic leukemia. Although this evidence supports a role for HMGA1 in malignant transformation, the molecular networks surrounding HMGA1-induced transformation are not clear. Gene expression profiling and proteomic studies suggest that the protein acts by inhibiting tumor suppressor function and driving the expression of oncogenes. Consistent with these observations, HMGA1 is a target of c-myc and transactivator of cyclonogenease-2 (COX-2) and cyclin D. Interestingly, these genes are all deregulated in colon cancer resulting from impaired tumor suppressor function of adenomatous polyposis coli (APC). Mutations in the Apo gene are associated with the earliest stages of colon carcinogenesis. These mutations activate the Wnt signaling pathway, resulting in stabilization of β-catenin which then binds to T-cell factor-4 (Tc-f4) causing increases in target gene expression. Because HMGA1 and APC expression is overexpressed in many cancers and has known interactions with several Wnt-responsive genes, we explored the involvement of HMGA1 in Wnt signaling. Our initial studies showed a direct correlation between loss of APC function and overexpression of hmga1. Here, we investigated deregulation of Tcf4/b-catenin signaling as a potential mechanism for overexpression. Bioinformatic analysis of an 8000 bp hmga1 promoter region was conducted to search for potential Tcf4 binding elements (TBE). Two highly conserved sites (TBE 1 and TBE 2) comprising the classic Tcf-4 sequence (5’WW[WWCAAG]F–3’) were identified and tested for interaction with Tc-f4 in electrophoretic mobility shift assays. TBE1 and TBE2 were able to form DNA-protein complexes with recombinant Tc-f4. These findings provide the first definitive evidence for the direct regulation of HMGA1 expression by the Tcf-4/b-catenin.
GENE EXPRESSION SILENCING OF THE LPA1 RECEPTOR BY RNA INTERFERENCE IN DF-1 CHICKEN FIBROBLASTS

Presented at the 25th Annual Ronald McNair Commemorative Celebration and 10th Annual Research Symposium, Greensboro, N.C., January 2011

Student: Brittany Stapleton 2012 (McNair Scholar)

Faculty Mentor: Kimberly Wilson, Ed.D.
Department of Biology

Lyosphosphatidic acid (LPA) functions in several ways in the cell and has been reported to be involved in multiple biological systems. The biological system that involves LPA and that was of most interest to us was the visual system. LPA has been reported to be involved in cortical growth, myelination, pain, hyperexcitability, and axon regeneration. LPA works as a repulsive molecule in axon guidance and may serve as axon guidance cue. Our aim was to test the LPA PNA vector system to determine if it could be used to silence LPA receptors in the DF-1 chicken fibroblast cells using RNAi technology. Thus, we hoped to silence the expression of LPA receptors using the LPA PNA vector and confirm this effect using real-time PCR analysis. We isolated RNA from DF-1 chicken fibroblast cells and used traditional RT-PCR to verify the presence of LPA receptors. We also observed that the gene expression of the LPA1 receptor was greatly reduced as compared to our control (pRFPRNAiC vector alone) based on real-time PCR analysis. However, these results were not statistically significant because of the variation in fluorescent intensities among the samples. These results suggest that the pRFPRNAiC vector system can be used for silencing LPA receptors in DF-1 cells; however, we conclude that further testing of the vector system is warranted.

PIETY & PERVERSION: THE INTENT AND APPLICATION OF THE FIRST CRUSADE

Presented at the Longwood Medieval Conference, April 2011

Student: Bryant Young 2011

Faculty Mentor: Josephine Koster, Ph.D.
Department of English

The crusades and their legacy may be more tangible to some than the events that actually transpired. In my writing, I wanted to explore the origins of the Crusading mentality, and the ways in which it evolved throughout the engagement. This entails understanding the social and religious dynamics of the era, and the complementary nature of religion and warfare. I considered how the conception of “divine intervention” suffused and legitimized the efforts of the Crusaders. I studied how the social hierarchy of the eleventh century adjusted and hindered the growth of the Crusade from thought to reality. Moreover, I traced the fluctuations in the resolve of the Crusaders from their earliest engagements to the siege of Jerusalem. I studied how the social order dictated the spread and success of the Crusading mentality. I addressed the motivations that existed for the Crusaders, and the social and religious implications of these events. I also addressed the impact that success and failure had in the mentality and convictions of the Crusaders, which I also approached by social divisions. I noted the revisions that warfare necessitated upon the context. I observed the impact that success and failure in battle had on the mentality and convictions of the Crusaders. I also approached by social divisions. In my writing, I wanted to explore the origins of the Crusading mentality, and the ways in which it evolved throughout the engagement. This entails understanding the social and religious dynamics of the era, and the complementary nature of religion and warfare. I considered how the conception of “divine intervention” suffused and legitimized the efforts of the Crusaders. I studied how the social hierarchy of the eleventh century adjusted and hindered the growth of the Crusade from thought to reality. Moreover, I traced the fluctuations in the resolve of the Crusaders from their earliest engagements to the siege of Jerusalem. I studied how the social order dictated the spread and success of the Crusading mentality. I addressed the motivations that existed for the Crusaders, and the social and religious implications of these events. I also addressed the impact that success and failure had in the mentality and convictions of the Crusaders, which I also approached by social divisions. I noted the revisions that warfare necessitated upon the context. I observed the impact that success and failure in battle had on the mentality and convictions of the Crusaders.
WILDE WOMEN: FEMALE SEXUALITY IN THE IMPORTANCE OF BEING EARNEST AND SALOMÉ

Presented at the 25th Annual Ronald McNair Commemorative Celebration and 10th Annual Research Symposium, Greensboro, N.C., January 2011

Student: Cayla Eagon 2012
Faculty Mentor: William Naufftus, Ph.D.
Department of English
(ENGL 503 – Naufftus)

This paper explores the female characters from two of Oscar Wilde’s plays: The Importance of Being Earnest and Salomé. Although the plays differ greatly in their subject and tone, as do the respective characters, both of them manipulate the traditional notions of gender roles. In consideration of Wilde’s use of inversion in his work, this paper argues that Wilde applies that technique in order to invert gender roles and thereby portray his female characters as sexually empowered women. In this way, the women in these works are able to exercise control over men as well as themselves. They are able to act on their own terms. This idea is supported by Wilde scholar Patrick M. Horan (The Importance of Being Paradoxical: Maternal Presence in the Works of Oscar Wilde) who writes, “Wilde constantly supported sexual equality.” Furthermore, Otto Reinter (“Saturic Strategy in The Importance of Being Earnest”) confirms that Wilde employs a “pattern of ironic inversion” throughout his IBE. And finally, Heather Marcovitch (“The Princess Persona, and Subjective Desire: A Reading of Oscar Wilde’s Salomé”) and Alan Sinfield ("Effeminacy and Femininity: Sexual Politics in Wilde's Comedies") discuss the palpable sexuality at work in Wilde’s plays that supports this argument. In conclusion, Wilde inverts typical gender roles, creating an empowered role for his female characters that liberates them from both society and men.

COLLEGE STUDENTS’ PERSPECTIVE OF THE SEXTING CULTURE

Presented at the 25th Annual Ronald McNair Commemorative Celebration and 10th Annual Research Symposium, Greensboro, N.C., January 2011

Student: Cecile Gadson 2012 (McNair Scholar)
Faculty Mentors: Tracy Griggs, Ph.D., Cheryl Former-Wood, Ph.D.
Department of Psychology

As technology advances, the way people interact and communicate evolves. Sexting, along with other digital forms of communication, has increased the opportunity for sexual expression and sexually explicit communication in today’s society. Research estimates that as many as 80% of young adults have sent or received sext messages (The National Campaign, 2008). The popularity of sexting is reflected in media including television, movies, and music, some of which glorify the behavior, despite the fact it often has negative consequences, including legal charges to minors who sext and miscommunication between the sexters. This study explored the perception of sexting, and the possible miscommunication between sexters, using eight focus groups at a medium sized university in the southeast. Most participants viewed sexting as a normal and exploratory activity used as a flirty way to communicate and establish relationships. Despite this perceived norm, most groups also believed that sexting can lead to unwanted public exposure. Seven out of eight groups suggested that there may be a miscommunication between sexters, and half of the groups mentioned danger from differences in how males and females interpret sext messages. Additional findings and implications for results will be discussed.

EPIDERMAL STEM CELLS IN NEMERTEA: LABELING OF S- AND M-PHASE

Presented at the 25th Annual Ronald McNair Commemorative Celebration and 10th Annual Research Symposium, Greensboro, N.C., January 2011
Received the Outstanding Poster Presentation Award
Supported by a Winthrop Research Council Grant

Student: Cedric Williams 2011 (McNair Scholar)
Faculty Mentor: Julian Smith III, Ph.D.
Department of Biology

Epidermal stem cells in the phylum Nemertea have been poorly characterized and their location is presently unclear. Historically, the stem cells of the epidermis were thought to be basally-located, perhaps with different stem-cell populations for the ciliated epidermal cells and epidermal gland cells. This suggestion by Coe was adopted and reinforced by Gibson in his short text on nemertine biology. However, a more recent review of nemertine ultrastructure by Turbeville pointed out that these basally-located, granule-containing cells are similar to “glial cells” in other invertebrates, and may well be associated with the nervous system. If this hypothesis is true, then exactly which population of cells in the epidermis (if any) divides to replace ciliated epidermal and gland cells is not at all clear. Accordingly, four different species of nemertean were collected and processed for S-phase (using EdU) and M-phase (using anti-phosphoH3) labeling for confocal microscopy. Both S-phase and M-phase cells were found to be located within the epidermis of all four specimens. Although labeled cells found using both techniques located both basally and suprabasally in the epidermis, the resolution afforded by confocal microscopy allowed only characterization of nuclear morphology. Thus, we conclude that nemertine possess one or more intra-epidermal stem cell populations and that such cells do not form an exclusively basal population. We are presently extending our studies to the electron-microscopic level to characterize the morphology of the replicating cells.

YOUNG ADULTS’ CONFLICT RESOLUTION WITH SAME-SEX VERSUS OPPOSITE-SEX FRIENDS

Presented at the Southeastern Psychological Association Conference, Jacksonville, Fla., March 2011

Faculty Mentor: Merry Sleigh, Ph.D.
Department of Psychology
(PSYC 302 – Sleigh)

We examined how men and women resolve conflict with their same-sex versus opposite-sex friends. Seventy-seven young adults were primed to think of their closest same-sex friend and then asked to respond to a ‘Conflict Resolution Scale’ (Downey, 2006) specifically in reference to that friendship. Participants were then primed to think of their closest opposite-sex friend and responded to the same questions in reference to that friendship. Results revealed that men were more likely than women to use competing/arguing as a strategy for conflict resolution with their same-sex and opposite-sex friends. Men also were more likely to use avoiding as a strategy with their opposite-sex friends; however; this finding did not apply to same-sex friends. There were no gender differences for compromising, accommodating, and collaborating strategies. Compared to women, men were more satisfied with their opposite-sex friends. Compared to African Americans, Caucasians were more likely to use accommodating as a strategy with their same-sex friends and with their opposite-sex friends. Compared to Caucasians, African-Americans reported having more power in their opposite-sex friendships. The more satisfied participants were with their opposite-sex friends, the more likely they were to use an avoidant strategy with those friends. This finding did not hold true for same-sex friendships. The higher the participants’
self-esteem, the more likely they were to compete/argue their same-sex friends, the more likely they were to collaborate with their same-sex friends, and the more satisfied they were with their opposite-sex friends. In such cases, this suggests that men are more willing to support their same-sex friend’s gender; however, with their female friends, a second strategy men preferred was to avoid conflict. Women were less confrontational, but did not choose to avoid conflict with their male friends. Ironically, conflict avoidance predicted satisfaction in opposite sex friendships. African-American participants responded with a pattern of more power and less accommodation in their friendships. Gender, race, self-esteem and attractiveness emerged as variables that influence conflict resolution in friendships. These findings may help us better understand the complex social dynamics underlying friendship.

PERSONAL RESPONSIBILITY: RHETORIC OR REALITY?  
South Carolina Political Science Association Annual Conference, March 2011  
Student: Courtney Glenn  
Faculty Mentors: Jennifer Disney, Ph.D., Adolphus Belk, Ph.D.  
Department of Psychology  
Department of Political Science  
Faculty Mentors: Jennifer Disney, Ph.D., Adolphus Belk, Ph.D.  
2011  
2012

The purpose of social welfare has been increasingly contested since the dawn of the twentieth century. America is thought to be a place of infinite possibility for every individual, and subsequently, many believe that government assistance programs should be eliminated entirely. During the Clinton administration, a bipartisan attempt to drastically change public assistance was launched. This desire for change was caused by numerous factors, but ideological opposition was the major force. Myths of systemic abuse and sloth among aid recipients fueled the campaign for change and its supporters successfully redesign public assistance in 1996 with the Personal Responsibility and Work Opportunity Reconciliation Act. It is my goal to explore the extent to which receipt of Temporary Assistance for Needy Families is connected to or disconnected from government assistance programs should be eliminated entirely. This paper seeks to determine if PRWROA was more effective in establishing dependency in the United States. This paper seeks to determine if PRWROA was more effective in establishing individual agency as it pertains to employment and self-sufficiency. In order to answer this question, I will use statistical methods from the Department of Health and Human Services, the Department of Labor, the Census Bureau and independent organizations to analyze levels of employment, exits from recipient rolls and post-program income in relation to cost of living. With this information success or failure will be measured by consistent positive or negative changes over time. In addition to providing statistical evidence for my claims, I will discuss the theoretical basis for terms such as "responsibility," "opportunity" and "self-sufficiency" which have been largely influential in the rhetoric regarding the subject.

DREAMS AND GOALS OF LOW-INCOME MOTHERS  
Presented at the Southeastern Psychological Association Conference, Jacksonville, Fla., March 2011  
Student: Crystal Tiedt  
Faculty Mentor: Merry Sleigh, Ph.D.  
Department of Psychology  
2011  
2012

The least popular requests were linked to preventative health issues. In general, when asked to focus on goals for their children, all mothers wanted their dreams, most mothers answered in reference to themselves rather than their child and two did not respond. Mothers were also more likely to cite their families as their source of strength rather than something about themselves. These findings may be useful when designing interventions and/or support programs for low-income mothers and their children.

AFRICAN-AMERICAN AND CAUCASIANS’ SAME-RACE AND CROSS-RACE STEREOTYPES OF CRIMINALS  
Presented at the Southeastern Psychological Association Conference, Jacksonville, Fla., March 2011  
Students: Crystal Tiedt  
Faculty Mentor: Merry Sleigh, Ph.D.  
Department of Psychology  
2011  
2012

We examined criminal stereotyping in today’s young adults. Participants were 58 Caucasian and African-American adults. Participants were provided with three criminal scenarios (for crimes of stealing weapons, murder for prescription drugs, and a family murder-suicide) and asked to guess the race of the criminal and the punisher of the crime. Participants also provided human services, the Department of Labor, the Census Bureau and independent organizations to analyze levels of employment, exits from recipient rolls and post-program income in relation to cost of living. With this information success or failure will be measured by consistent positive or negative changes over time. In addition to providing statistical evidence for my claims, I will discuss the theoretical basis for terms such as “responsibility,” “opportunity” and “self-sufficiency” which have been largely influential in the rhetoric regarding the subject.
TEACHING ROLE DICHOTOMY: SUPERHEROES AND THEIR SECRET IDENTITIES

Presented at the 33rd Annual National Institute on the Teaching of Psychology, St. Pete Beach, Fl., January 2011

Student: Daniel Selvey 2012 (McNair Scholar)
Faculty Mentor: Tracy Griggs, Ph.D.
Department of Psychology

The purpose of this study was to create a media-oriented teaching strategy for work-nonwork conflict concepts and theories within an industrial/organizational psychology classroom. It is becoming increasingly important to integrate media into college classrooms in order to connect with students. Franzenzi and Atzaz (2010) found that, when combined with lecture-style teaching methods, the use of electronic media engaged students more readily, and helped them retain information far more efficiently than lecture alone. This study presents one possible venue in which film—one of the many types of electronic media—could be brought into the collegiate classroom to supplement learning. Films based on DC Comics and Marvel Comics were chosen due to the explicit nature of the work-nonwork conflict(s) presented therein. For example, Peter Parker/Spider-Man’s conflicts in an overt way in the Spider-Man films, making him an ideal model to be used in a classroom. The chosen group of protagonists exemplifies common aspects of work-nonwork conflict taken in I/O psychology classes, and an I/O psychologist with expertise in work-nonwork conflict was consulted to compile the list of concepts to be studied alongside the films. A student could be asked to review classroom material and then lead a discussion relating theory to the conflicts present in the life of a given hero (e.g., Superman, Batman). The next step for this study will be to, in conjunction with faculty at Winthrop University, apply it in a classroom setting to test its effectiveness. Future studies will extend both the concept list and the film sample to broaden applicability into other areas of psychology.

HOMER AND VIRGIL REBORN: CATCH-22 AS A POSTMODERN EPIC

Presented at the Sixth Annual Department of English Undergraduate/Graduate Research Conference, Winthrop University, March 2011

Student: Edward Sennan 2012
Faculty Mentor: Leslie Bickford, Ph.D.
Department of English (ENGL 300 – Bickford)

While studying Joseph Heller's Catch-22 for Winthrop’s English 300 and simultaneously working with Homer and Virgil's epics in English 208, with inspiration from creative articles by Julian Mitchell, Minna Doskow, Clinton Burbans Jr., I began to recognize many similarities between Catch-22 and the ancient epics. Once I looked deeper, the similarities were too many and too important to overlook. My purpose for this paper is to prove, and am confident that I do so by its conclusion, that Catch-22 fits the definition of an epic as set forth by William Harmon, Hugh Holman, and Northrop Frye while also utilizing characteristic postmodern techniques and components in its form and structure. Three of main elements of Catch-22 on which I focus are the structuring of time, the divine presence, and the epic hero. Burhans’ article, “Spindrift and the Sea: Structural Patterns and Unifying Elements in Catch-22,” provides the groundwork for a comparison of the chronology of the structural elements of Heller's novel and the epics. I utilize Dostoks’ “The Night Journey in Catch-22” to support claims for several of the novel's officers as god-like figures. Finally, I draw from elements of Northrop Frye’s “Anatomy of Criticism” to argue for the novel’s protagonist, Captain Yossarian, as an epic hero.

EXPRESSION, PIGMENTATION, AND CRYSTALLIZATION OF BINDING SITE MUTANTS OF BACILLUS SUBTILIS XYLANASE C

Presented at the Big South Undergraduate Research Symposium, Lexington, Va., April 2011

Student: Elizabeth Bales 2012
Faculty Mentor: Jason Hallbert, Ph.D.
Department of Chemistry, Physics, and Geology

Bacillus subtilis xylanase C (BsXynC) catalyzes the hydrolysis of the xylan component of plant hemicellulose. Xylans are composed of β-1,4-linked xylopyranose units and are often decorated with other sugars such as L-arabinofuranose and glucuronoxypuranose that significantly limit enzymatic access to the xylopyranose backbone, thereby preventing degradation of the polymer. Previous work with BsXynC has revealed that the protein requires such substitutions for enzymatic catalysis, making it an ideal candidate for inclusion into the cadre of enzymes found within bacteria engineered to be biosynthetic agents for ethanol production. Analysis of the x-ray crystallographic structure of the enzyme has implicated tyrosine 231, serine 235, arginine 272 and tyrosine 274 in the binding of glucuronic acid substitutions found along the substrate. Based upon this observation, PCR mutagenesis was used to mutate each of these residues to alanine, thereby disrupting the hydrogen bonds between the binding residues and the substrate. In the present study, the mutated BsXynC isoforms were expressed, purified by metal chelating affinity chromatography and the optimal conditions for protein crystallization were determined. The purity of each preparation was determined by SDS-PAGE and MALDI-TOF mass spectrometry. Preparations demonstrating >90% homogeneity were concentrated and dialyzed into a low ionic strength buffer (20 mM HEPES pH 7.2) prior to crystallization trials. Using the crystallization conditions of the wild type protein as a base, crystallization conditions for the BsXynC mutants were explored by grid screening. Crystals of BsXynC S235A suitable for x-ray diffraction studies were grown in 0.25 M Malonate, 0.25 M trisaraate, 23 %polyethylene glycol and pH 7.0. Crystals of Xylanase C Y274A suitable for x-ray diffraction studies were grown in 0.2 M malonate, 0.2 M trisaraate, 23/25 %polyethylene glycol and pH 6.0. Crystallization trials of the R272A and Y231A mutant proteins are continuing. Once conditions are identified for all 4 proteins, the crystals will be soaked with substrate analogs and reaction products and data will be collected and refinement will start and then subjected to x-ray diffraction analysis to determine the effect of the mutation. Identification of the residues responsible for the unique substrate requirements of this enzyme will enhance our understanding of this unique class of enzymes.

OBSERVING THE DIURNAL CYCLE OF MITOSIS OF STEM CELLS PRESENT IN AEOLOSOMA

Presented at the Big South Undergraduate Research Symposium, Lexington, Va., April 2011

Student: Emily Bowie 2012
Faculty Mentor: Julian Smith III, Ph.D.
Department of Biology (BIOL 300 – Smith)

Numerous experiments have been conducted on the diurnal light variation and cellular response. Present conclusions on this topic are twofold. Cells appear to go into a “resting” period during the night after carrying out most of their aerobic activities during the day; suggesting that this “resting” period is linked to the cells regenerating. Also, in general, cellular processes, including the cell cycle, do respond to changes in light, especially with their mitotic cycles. I believe that the stem cells present in Aeolosoma will conduct mitosis more at night than during the day. Aeolosoma is a small annelid species that reproduces asexually in culture. Aeolosoma has proven useful in our lab for studying stem cells and the mitotic cycle. Aeolosoma were cultured under a clock-shifted photoperiod of 12L/12D, with artificial “noon” being around 5-00PM. After the Aeolosoma acclimated for 24 Meeting Abstracts

Meeting Abstracts 25
twelve days to their new diurnal rhythm, they were killed by freezing, which provided a way to preserve any cells currently undergoing mitoses at the time of death. One group was frozen at relative 3:00AM (dark group) and the second group was frozen at relative 3:00PM (light group). Mitoses were labeled with anti-phosH3, the nuclei of the cells were stained with Hoechst_33342, and the cells undergoing mitosis were counted with a confocal microscope. Mitoses were 77% higher in the dark group. These results show that the stem cells are more likely to undergo mitosis at night than during the day. Future studies will include more samples at differing times to find the maximum time of mitosis, and the use of EdU labeling to observe S-phase.

A PICTURE IS WORTH A THOUSAND WORDS OF FEEDBACK: VIDEOTAPEING STUDENT PRESENTATIONS
Presented at the 35th Annual National Institute on the Teaching of Psychology, St. Pete Beach, Fla., January 2011
Student: Erin Sim 2012
Faculty Mentor: Merry Sleigh, Ph.D.
Department of Psychology
Oral presentation skills are valued in both college and the real world. Although many teachers include a public speaking component to their class requirements, they may be unaware of the additional benefits that can be achieved by videotaping oral presentations. This project evaluated a class exercise where students were videotaped during an oral presentation and then immediately afterward given the opportunity to watch sections of the videotape and discuss their performance. Assessment data revealed that the majority of students (74%) felt nervous about being videotaped and would not look forward to doing it again, especially introverts. However, most students reported learning something about themselves (95%) and feeling more confident about their speaking abilities (78%) after watching the video, especially students who had high sensitivity to criticism. Seventy-four percent of students felt the videotaping experience was better than they expected, and nobody thought it was worse than they expected. The more nervous students felt before the videotaping, the better they felt after watching themselves on video. Students were asked to identify their own strengths and weaknesses when giving their presentation. Introverts were more likely than extraverts to be unaware of their strengths prior to the exercise. Thirty-two percent of students reported being surprised by a weakness revealed on the video. Most students (63%) said they had come up with a strategy to overcome the weakness revealed on the video based on feedback from the teacher and their classmates. Taken together, these data indicate that this exercise might be worth the effort and may be particularly beneficial to students who dislike public speaking.

QUALITY OF RELATIONSHIP PREDICTS ADULT CHILDREN’S POLITICAL SIMILARITY TO THEIR PARENTS
Presented at the Southeastern Psychological Association Conference, Jacksonville, Fla., March 2011
Student: Erin Sim 2012
Faculty Mentor: Merry Sleigh, Ph.D.
Department of Psychology
Oral presentation skills are valued in both college and the real world. Although many teachers include a public speaking component to their class requirements, they may be unaware of the additional benefits that can be achieved by videotaping oral presentations. This project evaluated a class exercise where students were videotaped during an oral presentation and then immediately afterward given the opportunity to watch sections of the videotape and discuss their performance. Assessment data revealed that the majority of students (74%) felt nervous about being videotaped and would not look forward to doing it again, especially introverts. However, most students reported learning something about themselves (95%) and feeling more confident about their speaking abilities (78%) after watching the video, especially students who had high sensitivity to criticism. Seventy-four percent of students felt the videotaping experience was better than they expected, and nobody thought it was worse than they expected. The more nervous students felt before the videotaping, the better they felt after watching themselves on video. Students were asked to identify their own strengths and weaknesses when giving their presentation. Introverts were more likely than extraverts to be unaware of their strengths prior to the exercise. Thirty-two percent of students reported being surprised by a weakness revealed on the video. Most students (63%) said they had come up with a strategy to overcome the weakness revealed on the video based on feedback from the teacher and their classmates. Taken together, these data indicate that this exercise might be worth the effort and may be particularly beneficial to students who dislike public speaking.

QUALITY OF RELATIONSHIP PREDICTS ADULT CHILDREN’S POLITICAL SIMILARITY TO THEIR PARENTS
Presented at the Southeastern Psychological Association Conference, Jacksonville, Fla., March 2011
Student: Erin Sim 2012
Faculty Mentor: Merry Sleigh, Ph.D.
Department of Psychology
Oral presentation skills are valued in both college and the real world. Although many teachers include a public speaking component to their class requirements, they may be unaware of the additional benefits that can be achieved by videotaping oral presentations. This project evaluated a class exercise where students were videotaped during an oral presentation and then immediately afterward given the opportunity to watch sections of the videotape and discuss their performance. Assessment data revealed that the majority of students (74%) felt nervous about being videotaped and would not look forward to doing it again, especially introverts. However, most students reported learning something about themselves (95%) and feeling more confident about their speaking abilities (78%) after watching the video, especially students who had high sensitivity to criticism. Seventy-four percent of students felt the videotaping experience was better than they expected, and nobody thought it was worse than they expected. The more nervous students felt before the videotaping, the better they felt after watching themselves on video. Students were asked to identify their own strengths and weaknesses when giving their presentation. Introverts were more likely than extraverts to be unaware of their strengths prior to the exercise. Thirty-two percent of students reported being surprised by a weakness revealed on the video. Most students (63%) said they had come up with a strategy to overcome the weakness revealed on the video based on feedback from the teacher and their classmates. Taken together, these data indicate that this exercise might be worth the effort and may be particularly beneficial to students who dislike public speaking.

THE STATISTICAL ANALYSIS ON THE CHOREOGRAPHIC PROCESSES OF M.F.A. STUDENTS
Presented at the 25th Annual Ronald McNair Commemorative Celebration and 10th Annual Research Symposium, Greensboro, N.C., January 2011
Student: Everett Johnson 2012 (McNair Scholar)
Faculty Mentors: Cheryl Fortner-Wood, Ph.D., Karen Stock, Ph.D.
Department of Psychology
What do the trends in the choreographing process indicate? Through an online survey that was distributed to institutions under the National Association Schools of Dance banner that provide M.F.A. degrees, a preliminary sample of 20 student choreographers was analyzed. The purpose of this research was to look at the numerical and statistical trends in the overall choreographic process; research thus far in choreography has a theoretical focus. It was hypothesized that Listening to Music was the most preferred choice of Inspiration Foundation at the beginning of this research. So far, the statistical trends show that Research on a Topic is most preferred, followed by Movement, and finally Literature. Sixty-six percent hold B.A. or B.F.A. degrees, eighty-seven percent have professional experience, and eighty percent of participants are over the age of 26. All student choreographers seek the opportunity of owning their own company. Most wish to teach at the collegiate level, work in their immediate community, and collaborate and commission works. Anticipated projects include exploiting current conventions of modern/contemporary dance, re-staging classical ballet with modern storytelling and music, and incorporation of multimedia. Participants also commented on choreographers, past and present, that inspire them (Alvin Ailey, Isadora Duncan, Matthew Bourne, Bill T. Jones, and Jerome Bel, to name a few). Statistical trends will be revised and updated as more surveys are completed.
THE CASKETS IN THE MERCHANT OF VENICE AS AN EVER-PRESENT THREAT OF CASTRATION

Presented at the Big South Undergraduate Research Symposium, Lexington, Va., April 2011

Student: Greg Larson 2011
Faculty Mentor: Matthew Fike, Ph.D.
Department of English
(ENGL 305 – Fike)

Whereas previous critics of Shakespeare’s The Merchant of Venice have considered the caskets and castration anxiety separately, this paper addresses both together in order to argue that the lead casket represents reproductive anxiety, whereas the gold and silver caskets represent reproductive death. In short, the caskets are a projection of the suitors’ castration anxiety. Freud’s “Inhibitions, Symptoms and Anxiety” suggests that a castration anxiety was strong for his mother eventually yields to fear of castration by the father. In a contrasting way, the suitors, as potential fathers, feel castration anxiety because, if they choose the wrong casket, they will forfeit the chance to beget an heir. Moreover, Shakespeare’s references to gold and their association with reproductive death are especially relevant to castration. Portia’s “snaky golden locks” (3.2.99), as James Stone suggests, allude to the phallic effect of viewing Medusa’s snaky head. Similarly, Freud considers the fear of being periﬁd as a metaphor for castration. As well, Morocco’s discovery of a skull in the golden casket reinforces the emphasis on reproductive death. Shakespeare thus presents strong evidence that the gold and silver caskets represent the suitors’ castration anxieties. Ultimately, then, the paper add an overlooked Ordinal dimension to Freud’s view in “The Theme of the Three Caskets” that the caskets represent the female types encountered in the course of a man’s life.

HEMISPHERIC DOMINANCE AND LEADERSHIP

Presented at the Southeastern Psychological Association Conference, Jacksonville, Fla., March 2011

Student: Heather Ernst 2011
Faculty Mentor: Darren Ritzer, Ph.D.
Department of Psychology
(PSYC 471/472 – Ritzer)

Most introductory psychology textbooks outline specific abilities that are predominantly controlled by either the right or left hemisphere. For example, language, logical and literal thinking reside in the left hemisphere while creativity and holistic thinking are right brain phenomena. People can favor one hemisphere over another, or rely on both equally. For example, right brained individuals tend to be more creative and emotionally sensitive. Right brained college students favor majors such as advertising, journalism, art, English, music, oral communications, interior design and architecture, whereas left brained dominate individuals chose majors such as business, criminal justice, accounting, finance, and mathematics/computer science. The vocational choices of left hemisphere and right hemisphere individuals suggest that those who are left hemisphere dominant might be stronger leaders than those individuals that are right brained. This research was designed to see if there was a relationship between hemisphere dominance and leadership ability. We hypothesized that left hemisphere dominant individuals would show stronger tendencies towards strong leadership and right hemisphere dominant individuals would show weaker leadership tendencies. Ninety undergraduates completed hemisphere dominance and leadership scales. Results revealed that right and left brained individuals did not differ in their strong leadership scores or in their weak leadership scores. Similarly, we found gender differences in leadership scores. Additional results showed that psychology majors, compared to other majors, were less likely to categorize themselves as weak leaders. There were no differences between majors in relation to strong leadership. Although our hypothesis was not supported, the data showed a trend in that direction, arguing for further exploration.

THE ROAD TO ECONOMIC PROSPERITY

Presented at the 40th Annual Meeting of the North Carolina Political Science Association, Charlotte, N.C., February 2011

Student: Hector Espinal
Faculty Mentor: Dr. Jennifer Disney, Ph.D.
Department of Political Science

The Road to Economic Prosperity provides a strategy for the transformation of a country with low economic growth and negative balance of payments into one with a highly developed economy and positive current account balance. These improvements will enhance the country’s standard of living, promote “sustainable development” and reduce its “population below poverty line” metric. Because every country’s situation is unique, the paper describes an implementation plan for the Caribbean country where Christopher Columbus first landed on his voyage in 1492. The country’s economic problems are found to be centered on the fact that imports are substantially larger than exports (in dollars) and thus the country is experiencing negative balance of payments, increasing foreign debt and related currency devaluations. The paper divided into three supporting phases: Economic Infrastructure, Educational Partnership and Effective Governance. For each phase, specific recommendations applicable to the Dominican Republic are provided, and conceptually a similar approach could be adopted for any country experiencing low economic growth and relatively high level of poverty in its population.

SHAKESPEARE’S USE OF HOMOEROTICISM IN AS YOU LIKE IT

Presented at the Big South Undergraduate Research Symposium, Lexington, Va., April, 2011

Student: Jade Stuckey 2011
Faculty Mentor: Matthew Fike, Ph.D.
Department of English
(ENGL 305 – Fike)

The purpose of this paper is to investigate the homoerotic nature of Orlando and Rosalind/Ganymede’s relationship in Shakespeare’s As You Like It and to suggest that their sexual tension is a necessary prerequisite for their love to mature and succeed. The present study advances the inquiry into cross-dressing by critics such as Stephen Lynch and Jay Halio by investigating its implications for the theme of love and for the meaning of the play’s title. Given the original all-male cast, then, audience and characters alike are encouraged to “feed [themselves] with questioning” of their own sexual natures. Ultimately Orlando and Rosalind, the only couple who fully explore their sexualities and achieve a balanced representation of love, emerge as a model for us all.

PUBLIC PROFESSOR ASSESSMENTS: EXPLORING THE VALIDITY OF COMMENTS ON RATE MY PROFESSORS.COM

Presented at the Southeastern Psychological Association Conference, Jacksonville, Fla., March 2011

Student: James Graham 2011
Faculty Mentor: Jessie Bickley | Carmen Dagegheart | Liz/Kea Dowkins | Sydney Hendrick
Department of Psychology
(PSYC 302 – Hayes)

The hypotheses for the study were that student participants will indicate that comments relate to different qualities of teaching: clarity, helpfulness, seriousness, grades, and overall quality, and student participants will
THE ROLE OF P13K/AKT SIGNALING IN THE DEVELOPMENT OF CIONA INTESTINALIS

Presented at the Undergraduate Seminar in Biology at Winthrop University, December 2010. The Winthrop University Department of Biology Poster Competition, December 2010, and The Summer Undergraduate Research Fair at Winthrop University, 2010

Supported by a National Heart, Lung, and Blood Institute Grant from NIH

Student: James Tucker 2011
Faculty Mentor: Heather Evans-Anderson, Ph.D.
Department of Biology
(BIOL 472 - Evans-Anderson)

Ciona intestinalis is an invertebrate animal model system that provides many advantages in the study of heart development due to the relatively simple heart design, reduced genetic redundancy, and the possession of numerous genes homologous to those found in vertebrates. Cardiac myocytes in Ciona are reported to have the ability to regenerate new cells in order to replace old or damaged cells throughout the lifespan of the adult Ciona, an ability which does not occur in postnatal mammals. In vertebrates, the regulation of cardiac myocyte proliferation has been attributed to FOXO transcription factors, which are mediated by P13K/AKT signaling. The aim of this study was to identify the effects of altered P13K/AKT signaling on heart development and regeneration in Ciona. The hypothesis is that inhibition of the P13K/AKT signaling pathway will result in disrupted heart formation as well as a reduction in the regenerative ability of cardiac myocytes in adult Ciona hearts. In order to determine the developmental impact of altered P13K/AKT signaling, Ciona larvae were generated via timed in vitro fertilization of gametes and then treated with drugs to specifically alter P13K/AKT signaling. The inhibitors used were LY294002 (Sigma), a P13K-specific inhibitor, and an AKT kinase inhibitor (Invitrogen). Ciona larvae were treated for 48 hours to encompass the period of morphogenesis, during which the heart is formed. Resulting juveniles were assayed. Preliminary results show altered morphogenesis and increased morbidity in Ciona juveniles treated with the PI3K-specific inhibitor compared to non-treated controls. Future directions include the use of real time RT-PCR to generate via timed in vitro fertilization of gametes and then treated with drugs to specifically alter P13K/AKT signaling. The inhibitors used were LY294002 (Sigma), a P13K-specific inhibitor, and an AKT kinase inhibitor (Invitrogen). Ciona larvae were treated for 48 hours to encompass the period of morphogenesis, during which the heart is formed. Resulting juveniles were assayed. Preliminary results show altered morphogenesis and increased morbidity in Ciona juveniles treated with the PI3K-specific inhibitor compared to non-treated controls. Future directions include the use of real time RT-PCR to assay FOXO transcriptional activity and the utilization of immunohistochemistry to detect proliferation and apoptosis rates in treated specimens.

OTAKUS VERSUS COLLEGE STUDENTS ON LITERARY HABITS

Presented at the Southeastern Psychological Association Conference, Jacksonville, Fla., March 2011

Student: Jasmin Sanders 2012
Faculty Mentor: Kelly James, Ph.D.
Department of Sociology and Anthropology
(WRIT 300 – Smith)

Originating from Japan, manga are graphic novels with detailed plots, in-depth characterization, and a unique style of comic etiquette. People who regularly engage in reading manga are called otakus. For Western readers, reading manga requires their full attention because manga structure is different from that of a novel. For example, manga are read from right to left. This includes the page order as well as the dialogue on each page. Because Western students are not used to this reading order or the non-linear reading style, they have to think more critically while they read. Previous research found that middle school students who were assigned to read manga showed increased motivation to read and better understanding of the writing process (Cirillo, 2009; Seyfried, 2005). The purpose of our study was to compare the reading habits of otakus and adults. We hypothesized that otakus would read more literature for pleasure and of a greater variety than college students who do not read manga. Participants were 60 young adults, 35 college students recruited from an anime convention (otakus) and 25 recruited from college classrooms (college students). Participants responded to a survey to assess the quantity and variety of their reading, as well as their motivation to read. Results revealed that otakus read significantly more novels monthly than college students, x² (1, 57) = 15.46, p < .001. Thirty-two of the 35 otakus reported reading novels and other forms of literature for enjoyment, while the rest focused on mangas only. In contrast, only 11 of the 25 college students reported reading novels, the rest 14 reported reading nothing outside of school. All otakus said in the survey that they would read more if they could, while less than half (11) of the college students sample said the same. The results support our hypothesis that otakus enjoy reading, read more, and are more willing to read than college students. This study, combined with previous research might indicate that encouraging students to read manga could have a positive effect on their literary habits both in and outside of school.

THE POWER OF A FOLK TALE IN A POLITICAL SETTING: THE APPLICABILITY OF V FOR VENDETTA IN A RHETORICAL SITUATION

Presented at the Big South Undergraduate Research Symposium, Lexington, Va., April 2011

Student: Jessica Barber 2012
Faculty Mentor: Jane Smith, Ph.D.
Department of English
(WRIT 300 – Smith)

In this paper, I examine a speech given by the character V in V for Vendetta, directed by James McTeigue, through the lens of research done by Terrel Young, et al, and Roderick P. Hart and Suxanne M. Daughton in rhetoric power. This speech is unique to the movie because it is much more simplistic, yet more effective, than the sophisticated and verbose speech given by V earlier in the movie. I sought to answer whether V’s speech simplicity and effectiveness coincide here. I found that V structures the simpler speech as a folk tale, thereby creating an understandable message for the common man and allowing for the speech to retain its rhetorical power through characteristics such as disarming the audience, creating simplistic characters, and maintaining brevity. This research is applicable to any rhetorical situation because it provides insight into how speakers can simplify and extend the rhetorical power and influence of their work, making a lasting change in the minds of their audience members.

COUGHING, SNEEZING, OR SIGHING, HE’S STILL ‘THE WILD W’: A MARXIST CRITIQUE OF USER-GENERATED CONTENT ON PUNDITKITCHEN.COM

Presented at the Sixth Annual Department of English Undergraduate/Graduate Research Conference, Winthrop University, March 2011

Student: Jessica Barber 2012
Faculty Mentor: Jane Smith, Ph.D.
Department of English
(WRIT 300 – Smith)

The Internet has opened many doors to different forms of expression, most notably websites that allow for user-generated content. But these questions remain: what does this democratization of news and information do to the ideology and effectiveness in a political context? In this paper, I critique a speech given by the character V in V for Vendetta, directed by James McTeigue, through the lens of research done by Terrel Young, et al, and Roderick P. Hart and Suxanne M. Daughton in rhetoric power. This speech is unique to the movie because it is much more simplistic, yet more effective, than the sophisticated and verbose speech given by V earlier in the movie. I sought to answer whether V’s speech simplicity and effectiveness coincide here. I found that V structures the simpler speech as a folk tale, thereby creating an understandable message for the common man and allowing for the speech to retain its rhetorical power through characteristics such as disarming the audience, creating simplistic characters, and maintaining brevity. This research is applicable to any rhetorical situation because it provides insight into how speakers can simplify and extend the rhetorical power and influence of their work, making a lasting change in the minds of their audience members.

31
of a nation? And, if the user-generated content impacts the ideology, does it set up a meaningful conversation? I will answer these questions and more in "Coughing, Sneezing, or Sighing, He's Still ‘The Wild W’: A Marxist Critique of User-Generated Content on PunditKitchen.com." I applied these questions to a user-generated artifact called ‘The Wild W’ in light of Jane Singer and Ian Ashman's along with Stephen A. Banning and Susan Billingsley's work. My methods included examining the visual as well as textual elements present in the artifact. My conclusions are that HipHopSoccer, the generator of ‘The Wild W’, intends for the artifact to be a Marxist critique of the president, separating him from the press. HipHopSoccer tries to use animal imagery to lower former president George W. Bush, but the very act of playing on a ‘photo-op’ kind of environment reduces what impact that critique could have had; the user simply adds to the zoo-like chaos and facetiousness that he or she is trying to ridicule. If the democratization of the news is to have any meaningful impact, the relationship between politics, news, the press, and the Internet needs to be examined in a more serious environment.

RETHINKING GENDER: H. D.'S TRANSFORMATION OF FEMALE ARCHETYPES  
Presented at the Sixth Annual Department of English Undergraduate/Graduate Research Conference, Winthrop University, March 2011
Student: Joanna Tepper 2012  
Faculty Mentor: Leslie Bickford, Ph.D.
Department of English
(ENGL 504 - Bickford)
Throughout H. D.'s poetry, she addresses the traditional role of women in society. In poems such as "Mid-Day," "Oread," "The Pool," and "Helen," H. D. presents female characteristics as inferior in order to bring about a change that takes place in poems such as "Sea Rose" and "Praise to the Angels." H. D.'s Imagist background allows her to transform the reader's ideas about these female symbols and rewrite them into female archetypes of power through descriptive imagery. Susan Friedman, in her book Psyche Reborn: The Emergence of H.D., discusses the masculine and feminine characteristics given to nature to demonstrate the submissive role of women. Female figures attempting to step out of their given roles are seen in poems such as "The Pool" and "Helen," but these figures are either covered up or reduced to ashes for doing so. H. D. also addresses a series of poems about different sea flowers. The imagery of the flowers goes from images of fragility into those of strength and the ability to weather the harshest elements. As another image transformed, the Virgin Mary of Helen of Troy, and the Virgin Mary, and attempts to turn them into archetypes of female power, setting herself apart from fellow Imagist poets of her time period while at the same time continuing to follow fellow Imagist Ezra Pound's slogan "make it new."  
EDUCATION CONTINUATION AFTER UNDERGRADUATE STUDY  
Presented at the Big South Undergraduate Research Symposium, Lexington, Va., April 2011
Students: Joelle Shipp 2011 | Shaniqua Chinnis 2013  
Faculty Mentor: Matthew Hayes, Ph.D.
Department of Psychology
(PSYC 302 – Hayes)
The present study examined the different factors that motivate students from single-parent homes and students from two-parent homes to continue their education after undergraduate study. These factors included financial aid, grades, the location of the university or program, and the type of program that would be most likely to

CARDIAC MYOCYTE PROLIFERATION ASSAY IN CIONA INTESTINALIS  
Presented at the South Carolina Academy of Science Conference, April 2011
Supported by the South Carolina IDeA Networks of Biomedical Research Excellence Grant from NIH
Student: John Samies 2011  
Faculty Mentor: Heather Evans-Anderson, Ph.D.
Department of Biology
DNA-binding transcription regulators function as interpreters of the genome's regulatory code by binding to specialized regions of DNA called promoters. Since gene expression is dependent on specific promoter regions, properly identifying the sequence and size of the promoter region is necessary when trying to elucidate tissue-specific gene expression patterns. Here we seek to identify the cis-regulatory region of a known heart specific gene in Ciona intestinalis (Aniseed database ci0100139114). As a urochordate, Ciona intestinalis is a primitive vertebrate and provides an intriguing animal model system to study the conserved regulatory mechanisms that direct heart development. Morphogenesis of the Ciona heart is very similar to early vertebrate heart development presumably due to conserved, regulatory genetic programs. Once identified the heart specific promoter will be cloned into a vector that encodes for a fluorescent fusion protein (TdTomato, Invitrogen). The resulting construct will be a useful tool for further analyses. Specifically, this construct will be electroporated into Ciona embryos to generate a fluorescently-defined heart so that we can make morphometric measurements during heart development.

CARDIAC MYOCYTE PROLIFERATION ASSAY IN CIONA INTESTINALIS  
Presented at the South Carolina Academy of Science Conference, April 2011
Supported by the South Carolina IDeA Networks of Biomedical Research Excellence Grant from NIH
Student: John Samies 2011  
Faculty Mentor: Heather Evans-Anderson, Ph.D.
Department of Biology
Cardiac myocytes in Ciona intestinalis are reported to have the ability to regenerate new cells in order to replace old or damaged cells throughout the lifespan, an ability which does not occur in postnatal mammals. However, regeneration of cardiac myocytes in Ciona has not been verified using modern techniques. Here, we have developed an assay to identify proliferating cardiac myocytes in the myocardiun of Ciona. This assay is critical in order to definitively demonstrate the validity of our regeneration model that we are developing for
related studies. In order to assay proliferating cardiac myocytes, whole-mount and section immunohistochem-
istry using proliferation markers phosphohistone H3 (PHH3), Bmi1, and EdU along with sarcomeric muscle
marker desmin was used to identify regions of cardiac myocytes in the heart to determine the baseline rate
of proliferation in the Ciona. Mysocardial regeneration was stimulated by subjecting adult Ciona hearts to crys-
injury. Injured hearts were incubated for 24 and 48 hours and then assayed for cardiac myocyte proliferation.
Preliminary data show distinct regions of proliferation in the differentiated cardiac myocytes of the myocar-
dium. Furthermore, TEM analysis was used to examine alterations in ultrastructure in injured versus control
hearts; however, we are still waiting for these results.

GENETIC VARIABILITY IN THE INFLUENZA A H5N1 HEMAGGLUTININ PROTEIN
IN EGYPTIAN HUMAN AND AVIAN HOSTS

Presented at the Big South Undergraduate Research Symposium, Lexington, Va., April 2011

Supported by the South Carolina IDeA Networks of Biomedical Research Excellence Grant from NIH and a
Winthrop University Research Council Grant.

Student: Jenny Mead
2010
Students: Jordan McElroy
2011
Department of Biology

Influenza A H5N1, more commonly known as bird flu, is one of the deadliest viruses under surveillance by
the World Health Organization (WHO). Since 2003, H5N1 has infected 518 humans, killing 308 (59.5%
overall mortality rate). The primary animal host is avian, and though most cases in humans occur from dealing with
infected birds, human to human transmission poses the greatest potential pandemic risk to human populations.
Currently there have been large numbers of documented human infections of H5N1 in Egypt (121 cases with
40 fatalities; 30% mortality). We collected all available (375) influenza A H5N1 hemagglutinin (HA) nucleo-
tide sequences from Egyptian avian and human hosts to examine phylogenetic relationships among the strains.
Complete sequences were aligned at the amino acid level and phylogenetic trees have to date been generated by
maximum parsimony (MP), maximum likelihood (ML), minimum evolution (ME), and neighbor-joining
(NJ) methods using the uncorrected proportion of amino acid differences (p). Our results indicate that all one
studied H5N1 strain is basal to a clade containing all Egyptian human sequences (bootstrap = 97%). Further-
work will be completed to examine mutations in hemagglutinin antigenic regions to identify the nucleotide
associations with the transmission of avian flu to humans in Egypt.

THE EFFECT OF JOINT PET OWNERSHIP ON RELATIONSHIP SATISFACTION AND STRESS

Presented at the Southeastern Psychological Association Conference, Jacksonville, Fla., March 2011
Jordon McElroy received aPsi Chi Travel Award

Students: Jordan McElroy 2012 | Courtney Gregory 2011 | Jenny Mead 2010
Faculty Mentor: Merry Sleigh, Ph.D.
Department of Psychology (PSYC 302 – Sleigh)

We examined the impact of joint pet ownership on satisfaction and stress in young adults’ relationships.
Seventy-three participants responded to a survey that assessed their current living situation, pet ownership, pet
attachment, stress levels, and relationship satisfaction. Participants were asked specifically about joint pet own-
ership, which could include joint ownership of a pet with roommates, significant others, or family members.

We compared participants who reported joint ownership of a pet with another person with participants who had
no joint pet ownership. Participants with pets reported greater relationship satisfaction than participants in re-

KATAPLANA CELETRIX n. sp. (TURBELLA: OTOPLANIDAE) FROM THE EASTERN
COASTLINE OF NORTH CAROLINA, USA AND THE UTILITY OF CONFOCAL MICROSCOPY
IN SPECIES DESCRIPTIONS

Presented at the Big South Undergraduate Research Symposium, Lexington, Va., April 2011
Student: Joseph Buserly 2011
Faculty Mentor: Julian Smith III, Ph.D.
Department of Biology (BIOL 471 – Smith)

Kataplana celetrix is a new species of turbellarian belonging to the family Otoplanidae. This species was abun-
dantly found in sediments taken from the shoreline of Emerald Isle Beach, North Carolina. The use of confocal
laser scanning microscopy (CLSM) in the identification of this organism provided a unique view of the external
sensory and motile cilia (anti-acetylated Tubulin) and dividing cells (anti-phospho Histone 3) which gave un-
matched visualizations of morphological features. CLSM proved to be a remarkable complement to traditional
methods. K. celetrix fits neatly into Kataplana due to morphological similarities to other species in this genus;
however it differs from members of its genus largely due to similarities to Kata of the subfamily Otoplaninae
and may be a bridge between the genera Kataplana and Kata. This suggestion is backed by previous molecular
study which showed some errors to be present in the classification of the Family Otoplanidae. Members of
both genera are now known to have sehkolben, a bivaginate species, possible lack of kittdrusen, and cylindrical
pharynges ciliated on the inner and outer sides.

YOUNG ADULTS’ PERCEPTIONS OF TRADITIONAL AND NON-TRADITIONAL PARENTING
SITUATIONS

Presented at the Southeastern Psychological Association Conference, Jacksonville, Fla., March 2011
Students: Katheryn Dixon 2012 | Chauntice Bucker 2013
Faculty Mentor: Merry Sleigh, Ph.D.
Department of Psychology (PSYC 302 – Sleigh)

The purpose of our study was to examine young adults’ perceptions of different parenting situations. We
hypothesized that participants would react most positively to a traditional parenting situation that included

lationships who had no pets. Two these groups did not differ on self-esteem or stress levels. We compared men
and women who jointly owned a pet with a partner. Women were more likely than men to agree that the pet
was like a child to them, and that the pet had brought them closer together and how much they discussed the pet. The two genders
held similar views about how much financial stress and arguments their pet caused, as well as how much the
pet brought them together and how much they discussed the pet. We divided participants with pets based on
pet ownership: participants who felt primary ownership of the pet, participants who felt their partner owned the pet (typically because the partner had owned the pet prior to the start of the relationship), and participants who felt that they and their partner had equal ownership. Participants who felt that their partner owned the pet
were less likely to see the pet as a child, were less likely to agree that the pet brought them closer together, and
were more likely to agree that the pet had caused stress. The higher the pet attachment, the more participants
agreed that the pet brought them closer; however, pet attachment and relationship satisfaction were not signifi-
cantly correlated. Agreeing that the pet had brought them closer together related to feeling more jealousy about
their partner’s feelings for the pet. These findings reveal that pet ownership can enhance individuals’ relation-
ship satisfaction, not just their life satisfaction as had been demonstrated in previous studies.

YOUNG ADULTS’ PERCEPTIONS OF TRADITIONAL AND NON-TRADITIONAL PARENTING
SITUATIONS

Presented at the Southeastern Psychological Association Conference, Jacksonville, Fla., March 2011
Students: Katheryn Dixon 2012 | Chauntice Bucker 2013
Faculty Mentor: Merry Sleigh, Ph.D.
Department of Psychology (PSYC 302 – Sleigh)

The purpose of our study was to examine young adults’ perceptions of different parenting situations. We
hypothesized that participants would react most positively to a traditional parenting situation that included

lationships who had no pets. Two these groups did not differ on self-esteem or stress levels. We compared men
and women who jointly owned a pet with a partner. Women were more likely than men to agree that the pet
was like a child to them, and that the pet had brought them closer together and how much they discussed the pet. The two genders
held similar views about how much financial stress and arguments their pet caused, as well as how much the
pet brought them together and how much they discussed the pet. We divided participants with pets based on
pet ownership: participants who felt primary ownership of the pet, participants who felt their partner owned the pet (typically because the partner had owned the pet prior to the start of the relationship), and participants who felt that they and their partner had equal ownership. Participants who felt that their partner owned the pet
were less likely to see the pet as a child, were less likely to agree that the pet brought them closer together, and
were more likely to agree that the pet had caused stress. The higher the pet attachment, the more participants
agreed that the pet brought them closer; however, pet attachment and relationship satisfaction were not signifi-
cantly correlated. Agreeing that the pet had brought them closer together related to feeling more jealousy about
their partner’s feelings for the pet. These findings reveal that pet ownership can enhance individuals’ relation-
ship satisfaction, not just their life satisfaction as had been demonstrated in previous studies.

KATAPLANA CELETRIX n. sp. (TURBELLA: OTOPLANIDAE) FROM THE EASTERN
COASTLINE OF NORTH CAROLINA, USA AND THE UTILITY OF CONFOCAL MICROSCOPY
IN SPECIES DESCRIPTIONS

Presented at the Big South Undergraduate Research Symposium, Lexington, Va., April 2011
Student: Joseph Buserly 2011
Faculty Mentor: Julian Smith III, Ph.D.
Department of Biology (BIOL 471 – Smith)

Kataplana celetrix is a new species of turbellarian belonging to the family Otoplanidae. This species was abun-
dantly found in sediments taken from the shoreline of Emerald Isle Beach, North Carolina. The use of confocal
laser scanning microscopy (CLSM) in the identification of this organism provided a unique view of the external
sensory and motile cilia (anti-acetylated Tubulin) and dividing cells (anti-phospho Histone 3) which gave un-
matched visualizations of morphological features. CLSM proved to be a remarkable complement to traditional
methods. K. celetrix fits neatly into Kataplana due to morphological similarities to other species in this genus;
however it differs from members of its genus largely due to similarities to Kata of the subfamily Otoplaninae
and may be a bridge between the genera Kataplana and Kata. This suggestion is backed by previous molecular
study which showed some errors to be present in the classification of the Family Otoplanidae. Members of
both genera are now known to have sehkolben, a bivaginate species, possible lack of kittdrusen, and cylindrical
pharynges ciliated on the inner and outer sides.
ADULTS’ MATERIALISM, ENTITLEMENT, AND ATTITUDE TOWARD CHARITABLE GIVING

Presented at the Southeastern Psychological Association Conference, Jacksonville, Fla., March 2011

Students: Katie Boseman 2012 | Amanda Patterson 2012

Faculty Mentor: Merry Sleigh, Ph.D.
Department of Psychology
(PSYC 302 – Sleigh)

We examined young adults’ attitudes toward charitable giving along with their materialism and sense of entitlement, two variables that had not been previously examined. Sixty young adults first were presented with a scenario giving them responsibility for distributing $500 among four charities: a US charity focused on providing food (US-Food), a Tanzania charity focused on providing food (TZ-Food), a US charity focused on mental health assistance (US-Medical), and a Nicaraguan charity focused on medical assistance (NG-Medical). Participants then responded to a survey. Results revealed that US-Food received the highest donation, followed by US-Medical, TZ-Food, and NG-Medical. The more participants gave to US-Food, the less money their parents had given to charity when they were growing up and the older they were. Those who had the highest entitlement score, the less participants reported having given to charities in the past, and yet the more they perceived their parents had given to charities when they were growing up. Participants who read the mom-dad scenario were more likely to agree that they had strong family support, and the more they agreed that they planned to raise their children in the way that they were raised. In sum, our hypothesis was not supported. Young adults’ held similarly positive perceptions across different family structures, perhaps as a result of non-traditional families becoming more commonplace in today’s society. Love emerged as a more important variable than family structure. Although young adults’ perceptions of the parenting situations were similar, young adults were more satisfied with their own upbringing if they were raised in a traditional, two-parent household.

OVERCOMING FIRST WORLD DOMINATION: VENEZUELA AND EL BANCO DEL SUR

Presented at the 40th Annual North Carolina Political Science Association Meeting, Charlotte, N.C., February 2011

Student: Katrina Jorsch 2011

Faculty Mentor: Jennifer Disney, Ph.D.
Department of Political Science
(PSLC 506 – Disney)

The First World has maintained much control over the economic development of other countries in the world, especially with the establishment of such organizations as the International Monetary Fund and World Bank. Regions comprised of developing nations are finally recognizing the problems with this situation and are coming together to take a stand. This paper looks at a case study of Venezuela and discusses the economic changes the country has experienced and the interactions the country has had with international financial institutions. After explaining these shifts, the recent stand against neoliberal development ideology - the “Bank of the South” or Banco del Sur - is discussed and described in order to analyze both the discontent of developing regions and the possibility of alternative development solutions.

EFFECT OF POSITIVE REFRAMING ON NEGATIVE FAMILY, RELATIONSHIP AND SCHOOL RELATED EVENTS

Presented at the Southeastern Psychological Association Conference, Jacksonville, Fla., March 2011 and the Big South Undergraduate Research Symposium, Lexington, Va., April 2011

Received a Psi Chi Regional Research Award

Students: Katie Messier 2011 | Kristin Smoak 2011

Faculty Mentor: Merry Sleigh, Ph.D.
Department of Psychology
(PSYC 302 – Sleigh)

Positive reframing is the process of changing the view or emotional conception of an experience, and to place it in a positive frame in order to change the entire meaning of the original experience (Kraft, Claborn & Dowd, 1985). Although this strategy has much potential as a way to promote positive change, the empirical evidence regarding its effectiveness is more limited. We experimentally examined the effect of positive reframing of a negative event on subsequent mood. Participants (n = 85) were first asked to spend three minutes writing a story about a negative event in their past. Participants were randomly divided into one of three conditions. One third of participants were asked to focus on a positive event related to their family, 1/3 were asked to focus on a school-related event, and the remaining participants were asked to focus on a romantic relationship event. After writing for three minutes, participants completed the PANAS (Clark & Watson, 1988) to assess their mood. Participants were then instructed to write about the same negative event for three minutes but this time to frame it in a positive light, emphasizing positive aspects or outcomes related to the event. After the positive reframing exercise, participants completed the PANAS for a second time. Results revealed that participants’ mood improved following the positive reframing exercise, but the extent of improvement did not depend on the specific focus of their story. Young adults with strong self-esteem and who spend time reflecting on past events especially benefitted from this technique. In contrast, race, gender, year in school, grade point average, self-assessment as a good storyteller, flexibility in emotions, self-control over emotions, and age did not predict the degree of mood change. These findings provide experimental evidence to support the theoretical argument that positive reframing can be an effective strategy to improve mood and that this strategy appears to be equally effective across different types of negative past events (family, school, and relationship) and across different types of people.

Meeting Abstracts

Meeting Abstracts
DESIGN AND SYNTHESIS OF ZONE 4 MODIFIED SPHINGOSINE KINASE INHIBITORS

Presented at the Big South Undergraduate Research Symposium, Lexington, Va., April 2011

Supported by the South Carolina iDeA Networks of Biomedical Research Excellence Grant from NIH and a Winnthrop Research Council Grant

Student: Kevin Mays 2012
Faculty Mentor: T. Christian Grattan, Ph.D.
Department of Chemistry, Physics, and Geology

Sphingolipids have historically been known as key components of cellular rigidity and cytoplasmic functional- ity; recently, however, several sphingolipid derivatives have been characterized as dual structural components and intracellular messengers. Of particular interest are sphingosine-1-phosphate (S1P), an oncogenic and car- cinogenic stress-mediated growth factor, and ceramide, a sphingolipid derivative believed to mediate apoptotic processes. The phosphorylation of ceramide into S1P is catalyzed by the enzymes Sphingosine Kinase 1 and II (SPK1/2); the inhibition of this activity has been demonstrated to slow carcinogenesis, metastasis and angio- genesis in cancerous tissues. A number of novel SPK1/2 inhibitors have been identified by Smith et al and show promising antitumor effects in vitro (below); this project specifically focused on the characterization, design and synthesis of inhibitor derivatives to facilitate their production and improve upon their purities. Through synthetic modification of zone 4, we have begun to assess not only the pharmacophoric nature of this zone to the inhibitory effectiveness as well as the oral bioavailability of the derivatives themselves.

MALVOLIO’S ENANTIODOROMIA AND PURITANISM IN SHAKESPEARE’S TWELFTH NIGHT

Presented at the Big South Undergraduate Research Symposium, Lexington, Va., April 2011

Student: Kevin Pope 2013
Faculty Mentor: Matthew Fike, Ph.D.
Department of English

The paper examines Malvolio from Shakespeare’s Twelfth Night as a vehicle for anti-Puritan satire. Whereas previous critics like J. L. Simmons and Maurice Hunt assert that the character either is or is not a Puritan, the present study considers such a binary to be moot. Malvolio, whether a Puritan or not, satirically represents Puritanism. Instead, Malvolio’s journey through the play is considered from a Jungian psychological perspec- tive. Whereas his encounter with the fool Feste leads to enantiodromia (a transformation into the opposite), his failure to achieve a proper consinuncio (integration) makes him a satire on Elizabethan Puritanism. This enantiodromia is a three-stage process consisting of a swing from precision to passion, a satirical augmentation (with dressing in colorful cross-garters), and a swing back toward rationality in the scene with Feste disguised as Sir Topas. Ultimately, Malvolio’s final words, “I’ll be revenged on the whole pack of you,” illustrate the failure to achieve consinoncito and, as Russ McDonald observes, eerily foreshadow the Puritans’ role in the English Civil War in the 1640s.

EXAMINING COLLEGE STUDENT HOOK UPS USING A SCRIPT ANALYSIS APPROACH

Presented at the Big South Undergraduate Research Symposium, Lexington, Va., April 2011

Faculty Mentor: Tracy Griggs, Ph.D.
Department of Psychology

Recently on college campuses traditional dating has been largely replaced by what is termed, “hooking up.” Hooking up, which is a type of one-night stand (Bowell & Spade, 1996; Paul, McManus, & Hayes, 2000), involves a woman and a man who are casual acquaintances, or who have just met that evening, deciding to engage in sexual behaviors for which there will likely be no future commitment. The couple usually does not communicate about what sexual behaviors they will or will not engage, and frequently both parties have been drinking alcohol prior to hooking up (Paul et al., 2000). While several studies document this behavior, few studies have taken a qualitative approach to understanding the social correlates of hooking up behavior, and in particular, the ways that partners communicate their limits during a hookup. 127 female and 29 males partici- pated by answering both closed- and open-ended survey questions related to their own hooking up experiences. Each participant wrote a script describing a “typical hookup.” Scripts were analyzed by two raters and coded for factors such as the relationship between partners, the intentionality of the hookup, the setting, the presence or implied use of alcohol or drugs, the sexual activities included in the hookup, reasons expressed for hooking up, how limits are communicated during a hookup, and descriptions of what makes a bad hookup. With the rise in the number of acquaintance rapes on college campus in recent decades, this study has implications for awareness and education campaigns regarding college sexual assaults.

CONFIDENCE IN THE SOURCE: WHO DO STUDENTS WANT TO LEARN FROM?

Presented at the 33rd Annual National Institute on the Teaching of Psychology, St. Pete Beach, Fla., January 2011

Student: Krysten Sobus 2011 (McNair Scholar)
Faculty Mentor: Merry Sleigh, Ph.D.
Department of Psychology

The current project examined students’ confidence in different sources of information in the college classroom. Young adults, surveyed online, were told to imagine that they were signing up for college classes. For several psychology classes, they were offered a short description of professors with varied qualifications and asked to rank them from most to least preferred. Results revealed that in some cases, professors that were most popu- lar with students were not necessarily the ones who were most successful in the field. For example, students preferred a developmental psychologist who had children over one with a highly respected animal research pro- gram in development and, preferred to be taught I/O by a social psychologist rather than by an I/O psycholo- gist who worked as a consultant. Participants were then asked to rank sources as those they were most to least willing to teach them about psychological disorders. Students preferred to learn from professional sources rather than from people who had experienced a psychological disorder, and in general, believed that they already knew more about psychological disorders than the average person. The more students felt they already knew about psychological disorders, the less interested they were in learning about disorders from a personal perspective. Ironically, students who had taken Abnormal Psychology and listened to personal experiences selected words such as “informational, inspiring, interesting” to describe them and were more aware that individuals with psychological disorders experience stigma. These findings suggest that students may have a unique and often contradictory perception of “reliable sources,” an insight that may help teachers better understand the way that students receive information presented in the classroom.

A CLASS STIGMA EXERCISE FOR ABNORMAL PSYCHOLOGY: DOES AN ASSIGNED DIAGNOSIS INCREASE EMPATHY?

Presented at the 33rd Annual National Institute on the Teaching of Psychology, St. Pete Beach, Fla., January 2011

Student: Krysten Sobus 2011 (McNair Scholar)
Faculty Mentor: Merry Sleigh, Ph.D.
Department of Psychology

Previous research has clearly established that stigma exists for individuals with psychological disorders (e.g., Dannette, 2008; Klein, 2008; Lundberg, 2009). Abnormal psychology teachers have a responsibility to discuss
and reduce stigma. Our project was to evaluate a class exercise intended to increase understanding and knowledge of psychological disorders. Young adults (n = 125) participated in this simulated classroom exercise via www.surveymonkey.com. Each person was randomly assigned to one condition: schizophrenia, bipolar, clinical depression, or typical college student stressors (e.g., time management). Participants read a paragraph describing the life issues associated with their assigned condition and were told to imagine living with these issues. The participants then were asked to imagine themselves in an Abnormal Psychology classroom and answer questions that addressed comfort levels with professors, class participation, disclosure of personal information, and classroom seating, based on their assigned condition. Participants who were told to imagine having a psychological disorder perceived the college classroom as less comfortable than students who were told to imagine themselves dealing with typical college issues, suggesting that even imagining a disorder helped participants realize some of the stigma and social distance that accompanies psychological disorders. Participants who were assigned schizophrenia or depression seemed to feel most uncomfortable, suggesting that there may be a hierarchy in the stigma and social distance that accompanies psychological disorders. The purpose of this research is to examine if factors such as support of abortion, religion, region, dwelling type, age at which first child was born, and political views influence people’s views on teenage pregnancy prevention. The sample used for this research came from the year 2008 of the cumulative General Social Survey. The N of the sample is 13.41 years. The mean level of education of the sample is 47.71% of the sample, married people 48.17%, and whites 87.73%. The results of this research suggest a positive relationship between acceptance of premarital teenage sex and support for teenage pregnancy prevention. There also appears to be a positive relationship between acceptance of premarital teenage sex and support of teenage pregnancy prevention. If a person favors the acceptability of premarital teenage sex, then he or she will likely favor teenage pregnancy prevention. In conclusion, political views and acceptability of teenage premarital sex are both positively related to teenage pregnancy prevention. Other factors certainly influence teenage pregnancy prevention. When teenage pregnancy prevention programs are being made, policy makers should be sensitive to the complex nature and multiple influences that affect people’s views on teenage pregnancy prevention.

FACTORS THAT IMPACT THE ACADEMIC EXPERIENCE OF FIRST GENERATION COLLEGE STUDENTS

Presented at the 25th Annual Ronald McNair Commemorative Celebration and 10th Annual Research Symposium, Greensboro, N.C., January 2011

Student: LaWana Reed 2011
Faculty Mentor: Jennifer Solomon, Ph.D.
Department of Sociology and Anthropology
(SOCL 516 – Solomon)

The purpose of this research is to examine the difficulties that not equipped academically, emotionally, and socially. Many underlying factors contribute to the success FGCS can have in college. All students have to function in all areas of their lives to do well academically, emotionally, and socially. For FGCS, they do not necessarily know how to transition into college because they do not have a solid support system. FGCS’ experiences are different and more challenging because of the lack of knowledge of college life. Academically, FGCS do not know how to transition into college or operate under the university’s expectations. The university’s expectations may seem very demanding and unreachable. Emotionally, FGCS may make decisions based on family and influences and not handle stress or college satisfaction well. Family members who never went to college may cause stressors on the student that may be reflected in their school work. Socially, FGCS may have trouble building relationships with faculty, staff, and other students of the university. Not having understanding and knowledge about college can keep FGCS from getting the necessary help they need to successfully complete assignments. This study examines these three areas of FGCS’ lives rigorously by conducting a thorough review of literature and methodology.

ENVIRONMENTALISM SEDUCED: NEOLIBERALISM AND THE ENVIRONMENTAL MOVEMENT IN THE UNITED STATES

Presented at The Annual Meeting of the South Carolina Political Science Association, March 2011
Student: Lorena Hildebrand 2011
Faculty Mentors: Michael Lipscomb, Ph.D., Tim Boylan, Ph.D., Jennifer Disney, Ph.D.
Department of Political Science (PLSC 490)

This paper examines the connections between environmentalism and neoliberalism by analyzing the history of economic restructuring in the United States from Keynesianism to neoliberalism in conjunction with the history of 20th and 21st century environmentalism in the United States. I look at the internal shifts within the environmental movement from its ideological beginnings and then nonprofit institutionalization, and how mainstream environmentalism has developed ties with corporate interests within the neoliberal framework.

Finally, I speculate on the trajectory of the environmental movement and offer a blueprint for the future in the youth climate movement. My title is taken from Hester Eisenstein’s work on political economy about the seduction of the feminist movement by global capitalism (*Feminism Seduced* 2009). Like Eisenstein, I make a similar argument that mainstream environmentalism has been seduced by the political and economic strength of neoliberalism.

CRACKING THE CALCULUS CODE

Presented at the Mathematical Association of America Conference, April 2011

Student: Matthew Neal 2013
Faculty Mentor: Joseph Razinko, Ph.D.
Department of Mathematics

The calculus classroom has relied almost solely on applications to physics and business in order to create meaningful, real-world examples for students. However, relying too heavily on the applications to these disciplines can lead students to have a narrow view of calculus and mathematics as a whole. This presentation introduces cryptography as a tool to teach, and reinforce, basic differentiation methods through highlighting calculus techniques involved in a Diffie-Hellman key exchange on an elliptic curve.
Students' adjustment to college affects their performance. One factor that influences students' adjustment is how well college matches their expectations. We surveyed 115 undergraduate students to discover what information presented in their psychology classes they remembered and believed to be the most important. Results revealed that the most common response categories for upperclassmen were as follows: explanations of a specific human behavior, career information about psychology, stats and research methods, psychological disorders, and function of brain structures. In contrast, lowerclassmen rated facts about human development and sleep as more important than research methods or psychological disorders. Women were more likely than men to rate facts related to human development as important. Upperclassmen and women reported that they based their answer on the fact they found most useful. In contrast, lowerclassmen and men based their answer on what they found most interesting. Seventy percent of students believed that professors focus on what is important in the field of psychology while 30% felt that professors teach what they personally enjoy (regardless of its importance). However, almost every participant reported that whether professors thought their "important fact" was important or not was irrelevant to them. These data might be interesting to psychology teachers who most certainly have their own ideas about what students should be remembering and why.

In 2011, students were asked to recall their perceptions of college while they were high school seniors and then to describe their current perceptions of college. Results revealed that in some arenas, their expectations were correct. For example, participants reported writing more papers, having close relationships and having the option to take summer classes. In contrast, there were areas where students indicated that their expectations were incorrect. Upperclassmen reported that they expected to have more. Seventy percent of students believed that professors focus on what is important in the field of psychology while 30% felt that professors teach what they personally enjoy (regardless of its importance). However, almost every participant reported that whether professors thought their "important fact" was important or not was irrelevant to them. These data might be interesting to psychology teachers who most certainly have their own ideas about what students should be remembering and why.

**IF I KNEW THEN WHAT I KNOW NOW: STUDENTS’ EXPECTATIONS BEFORE AND AFTER ENTERING COLLEGE**

Presented at the 53rd Annual National Institute on the Teaching of Psychology (PSYC 471/472 – Sleigh)

Students: Meagan Burns 2011 | Heather Ernst 2011

Faculty Mentor: Darren Ritzer, Ph.D.

Department of Psychology

Participants were asked to recall their perceptions of college while they were high school seniors and then to describe their current perceptions of college. Results revealed that in some arenas, their expectations were correct. For example, participants expected the same amount of homework as they reported doing each week. They also were aware that they would be choosing their own classes, picking their own major, and having the option to take summer classes. In contrast, there were areas where students indicated that their expectations were incorrect. For example, participants reported writing more papers, having close relationships with more professors, paying more for books, and having more female professors than they expected. Participants were asked to recall their feelings toward college while they were still high school seniors and then to assess the accuracy of those feelings. Participants rated a list of factors from the ones that they were most nervous about prior to college to the ones about which they were least nervous. Students were most nervous about getting good grades, picking the right major, paying for college, and making their parents proud. These were the same factors that students, having now experienced college, said they should have been most nervous about. However, the higher the students' college GPA, the less students felt they should have been worried about getting good grades in college. In addition, the more educated their parents were, the more students said they underestimated how worrisome college finances were going to be. "Interacting with professors" was rated as the variable participants worried about the least prior to attending college; however, when students were asked about what they should have been nervous about, interacting with professors rose from eighth (last) place to fourth place, the only variable that shifted position in the list. We found many gender differences. Thirty-six percent of men expected to have fewer relationships with professors than they actually have, and 29% expected to have more. When we examined women only, 60% expected to have fewer relationships than they actually expected to have more. Men who found college to be harder than they expected also reported that they felt like faculty were less approachable than they expected them to be. Dad's level of education did not predict daughter's feelings. In contrast, sons of fathers with less college experience expected college to be more difficult than they actually found it to be. Finally, having positive feelings toward college prior to arrival was associated with having a higher college GPA.

**COLLEGE STUDENTS’ PERCEPTIONS OF THE PRE-ADMISSION PERCEPTIONS USE AT DIFFERENT AGE**

Presented at the Southeastern Psychological Association Conference, Jacksonville, Fla., March 2011

Students: Meagan Grant 2011 | Evan Glasscock 2011

Faculty Mentor: Matthew Hayes, Ph.D.

Department of Psychology

This study examines the perceptions of college students on the acceptability of alcohol use at different ages by drinkers that were 10, 15, 20, and 25 years old. We conducted a survey that consisted of 25 scenarios for the participant to rate highly unacceptable (1) to highly acceptable (6). Our hypothesis was that at age 10, alcohol use would be highly unacceptable, at age 15 alcohol use would be unacceptable, at age 20 alcohol use would be
acceptable and at age 25 alcohol use would be highly acceptable. We found that at age 10 alcohol use is highly unacceptable regardless of gender; at age 15 alcohol use for males is significantly more acceptable than for females; and for age 25 alcohol use is significantly more acceptable for males than for females.

A ESQUERDA BRASILEIRA: THE IMPACT OF BRAZIL’S LEFT ON LATIN AMERICAN POLITICS

Presented at the South Carolina Political Science Association, March 2011

Student: Meredith Edlin 2011
Faculty Mentors: Jennifer Disney, Ph.D., Adolphus Belk, Ph.D.
Department of Political Science
(PLSC 490 – Disney & Belk)

Not only will Brazil become a major player economically, it will also be a political powerhouse in that it is active regionally and globally; it has strong ties with other world powers and has an advanced military that it does not really need to use (Armitage and Sotero). The growth of Brazil should remain on the United States’ radar because of its regional popularity, power, and left-leaning ideological trends.

With all this potential international power and sagacious regional influence, how does Brazil’s current tendency toward the left affect the politics of its neighboring countries in Latin America? In this paper, I will examine the shift to the left in Brazil, also the relationship between Brazil and its neighbors, and how these relationships are impacted by the leftist politics of Brazil. I will end my research with a gaze towards the future and hypothesize how the left turn of Latin-American politics could create repercussions that span the globe.

SCHOOL PSYCHOLOGY AND SCHOOL COUNSELING GRADUATE PREPARATION: SIMILARITIES AND DIFFERENCES


Student: Mari Mata 2011 (McNair Scholar)
Faculty Mentor: Joseph Pusz, Ph.D.
Department of Psychology
(MCNR 300 - Former-Wood)

The fields of school psychology and school counseling make unique and important contributions to educational and mental health services in schools. However, the related nature of the two, and changes that have occurred since special education and pupil personnel work were first introduced in American schools have resulted in some ambiguity about each field’s specific expertise, roles, and functions. The National Association of School Psychologists (NASP) and the Council for Accreditation of Counseling and Related Educational Programs (CACREP) review and accredit school psychology and school counseling programs, respectively. The required curricula of 68 school counseling and school psychology master’s/specialist level programs were randomly selected from CACREP and NASP’s approved lists. Programs were analyzed using information obtained from program websites and a curriculum analysis spreadsheet consistent with national standards for each field containing eleven basic curriculum categories with several specific content areas in each. Courses were placed based on their titles, but course descriptions were also examined when course titles were not sufficiently descriptive to allow a determination of content. Courses covering more than one content area were only counted in one area for statistical purposes. The credit hours for each course were also recorded. The overall difference based on program type and curriculum category for mean required credit hour was statistically significant, MANOVA Wilk’s $\eta^2 = .157, F(11, 56) = 137.7, p < 0.001, \eta^2 = .931$. No significant differences were found in the overall amount of preparation in educational foundations, professional foundations, and human diversity/multicultural issues. The results of the curriculum analysis also showed similarities in the preparation. Both types of programs were likely to have coursework in human/child development, general assessment, behavioral/social intervention, an introductory seminar class, and at least one research methods course, and practicum and internship. It is important to note that because school counselors and psychologists are trained in similar and different areas, collaboration among them should be more easily facilitated.

VARIATION IN BORE HOLE MORPHOLOGY AND DETERMINATION OF GASTROPOD PREDATORY SPECIES

Presented at the Geological Society of America Southeast Section - 60th Annual Meeting, Wilmington, N.C., March 2011

Student: Nicholas Scarborough 2013
Faculty Mentor: Gwen Dally, Ph.D.
Department of Chemistry, Physics, and Geology
(GEOG 351 – Dally)

Gastropod borehole data are used to analyze paleoecologic and evolutionary patterns of predator/prey interactions preserved in the fossil record. Variation in frequency and morphology of boreholes found on prey species may be due to differences in either the predator or prey behavior or morphology. For temporally similar assemblies, morphologic differences in predators are likely to be caused by having had different dominant predatory gastropod species. Determining that different predatory gastropod species were responsible for the predatory traces is therefore important. This determination is relatively straightforward for gastropod species that produce bore holes with different gross morphologies. Determining such differences among species that produce similar bore hole morphologies is more difficult. We attempted to make this determination for Ochthis paradoxolodes bore holes from the three most abundant species of bored bivalves (Chione elevata, Costellamara florides, and Anadara transversa) from collections at the Caloosa Shell Quarry (Hillsborough County, Florida) of the Pleistocene Fort Thompson and Bermont Formations. Previous research uncovered significant differences in bore hole frequencies on these prey species between the two formations, but the data collected for that research was not useful in determining whether the differences were due to different dominant predators or some other factor. Therefore, we collected new data to allow us to determine whether or not it is likely that two different species were responsible for the other observed variation. We measured the inner and outer bore hole diameter, the distance between the bore hole and the prey’s umbo and other morphological variables for several hundred bored specimens and compared the variation within individual species found in the different formations. The results of these analyses will be presented.

THE DUKE’S STRUGGLE FOR ORDEAL: THESEU’S CHOICE OF EVENING ENTERTAINMENT

Presented at the Big South Undergraduate Research Symposium, Lexington, Va., April 2011

Student: Nicole Abbott 2012
Faculty Mentor: Matthew Fike, Ph.D.
Department of English
(ENGL 305 – Fike)

This paper investigates Duke Theseus’s choice of evening entertainment in Shakespeare’s A Midsummer Night’s Dream. These choices include the battle with the Centaurs from Ovid’s Metamorphoses, Orpheus’s death at the
hands of “tipsy Bacchanals,” the nine muses’ lamentation for the loss of learning (a possible allusion to Edmund Spenser’s The Tears of the Muses), and finally the death of tragic lovers Pyramus and Thisbe. Whereas previous critics like Ralph Berry and D’Orsay Pearson have emphasized the duke’s character and his attitude we created a survey that we gave to students at a southern university. The sample includes 119 African American students and 547 Caucasian students. The survey questions for this study are one component in a broader study at the university. The particular research at hand includes questions about students’ preferred skin tone, about whether one has worked to lighten his or her skin, and about their thoughts on skin lightening. We also assess variables that are correlated with these items.

EXAMINING THE MATHEMATICAL SUB-SYMBOLIC REGISTERS USING CRYPTOLOGY
Presented at the South Carolina Council of Teachers of Mathematics Conference, Greenville, N.C., November 2010
Students: Rachel Webster 2012 | Heather Martin 2012
Faculty Mentor: Joseph Rasiniko, Ph.D.
Department of Mathematics
We define the mathematical symbolic register as a situationally defined collection of individual symbols in the math context. We subdivide this register into three sub-registers: the English letters sub-symbolic register, the commonly used mathematical symbols sub-symbolic register, and the abstract symbols sub-symbolic register. In order to test students’ ability to work with each sub-register, we made cryptograms using the three sub-symbolic registers and had college students attempt to complete them. No significant difference was found when students worked with any of these three registers. We conclude that the choice of sub-register used to pose mathematical problems does not significantly contribute to the difficulty students have performing mathematical tasks.

A CROSS-CULTURAL COMPARISON: AMERICANS AND NEW ZEALANDERS’ PERCEPTIONS OF AND ATTITUDES TOWARD HOMOSEXUALS
Presented at the Southeastern Psychological Association Conference, Jacksonville, Fla., March 2011
Faculty Mentor: Merry Sleigh, Ph.D.
Department of Psychology
We define the mathematical symbolic register as a situationally defined collection of individual symbols in the math context. We subdivide this register into three sub-registers: the English letters sub-symbolic register, the commonly used mathematical symbols sub-symbolic register, and the abstract symbols sub-symbolic register. In order to test students’ ability to work with each sub-register, we made cryptograms using the three sub-symbolic registers and had college students attempt to complete them. No significant difference was found when students worked with any of these three registers. We conclude that the choice of sub-register used to pose mathematical problems does not significantly contribute to the difficulty students have performing mathematical tasks.

UNDERGRADUATE ATTITUDES ON SKIN LIGHTENING
Presented at the Big South Undergraduate Research Symposium, Lexington, Va., April 2011
Student: Portia Watson 2011
Faculty Mentor: Douglas Eckberg, Ph.D.
Department of Sociology and Anthropology
This research addresses two main questions. One: How much of a bias in favor of lighter skin exists among African Americans and among Caucasians? Two: What percent of African Americans actually use products or practices to lighten their skin? Past research suggests that skin lightening is practiced because of a deep rooted unconscious self hate, but how much does this still exist? There has not been much research on attitudes and reasons behind skin bleaching even though there is much research on colorism and skin color stratification in the community. To do this, we have used a sample of students at a southern university. The sample includes 119 African American students and 547 Caucasian students. The survey questions for this study are one component in a broader study at the university. The particular research at hand includes questions about students’ preferred skin tone, about whether one has worked to lighten his or her skin, and about their thoughts on skin lightening. We also assess variables that are correlated with these items.

EXAMINING THE MATHEMATICAL SUB-SYMBOLIC REGISTERS USING CRYPTOLOGY
Presented at the South Carolina Council of Teachers of Mathematics Conference, Greenville, N.C., November 2010
Students: Rachel Webster 2012 | Heather Martin 2012
Faculty Mentor: Joseph Rasiniko, Ph.D.
Department of Mathematics
We define the mathematical symbolic register as a situationally defined collection of individual symbols in the math context. We subdivide this register into three sub-registers: the English letters sub-symbolic register, the commonly used mathematical symbols sub-symbolic register, and the abstract symbols sub-symbolic register. In order to test students’ ability to work with each sub-register, we made cryptograms using the three sub-symbolic registers and had college students attempt to complete them. No significant difference was found when students worked with any of these three registers. We conclude that the choice of sub-register used to pose mathematical problems does not significantly contribute to the difficulty students have performing mathematical tasks.

A CROSS-CULTURAL COMPARISON: AMERICANS AND NEW ZEALANDERS’ PERCEPTIONS OF AND ATTITUDES TOWARD HOMOSEXUALS
Presented at the Southeastern Psychological Association Conference, Jacksonville, Fla., March 2011
Faculty Mentor: Merry Sleigh, Ph.D.
Department of Psychology
We define the mathematical symbolic register as a situationally defined collection of individual symbols in the math context. We subdivide this register into three sub-registers: the English letters sub-symbolic register, the commonly used mathematical symbols sub-symbolic register, and the abstract symbols sub-symbolic register. In order to test students’ ability to work with each sub-register, we made cryptograms using the three sub-symbolic registers and had college students attempt to complete them. No significant difference was found when students worked with any of these three registers. We conclude that the choice of sub-register used to pose mathematical problems does not significantly contribute to the difficulty students have performing mathematical tasks.

UNDERGRADUATE ATTITUDES ON SKIN LIGHTENING
Presented at the Big South Undergraduate Research Symposium, Lexington, Va., April 2011
Student: Portia Watson 2011
Faculty Mentor: Douglas Eckberg, Ph.D.
Department of Sociology and Anthropology
This research addresses two main questions. One: How much of a bias in favor of lighter skin exists among African Americans and among Caucasians? Two: What percent of African Americans actually use products or practices to lighten their skin? Past research suggests that skin lightening is practiced because of a deep rooted unconscious self hate, but how much does this still exist? There has not been much research on attitudes and reasons behind skin bleaching even though there is much research on colorism and skin color stratification in the community. To do this, we have used a sample of students at a southern university. The sample includes 119 African American students and 547 Caucasian students. The survey questions for this study are one component in a broader study at the university. The particular research at hand includes questions about students’ preferred skin tone, about whether one has worked to lighten his or her skin, and about their thoughts on skin lightening. We also assess variables that are correlated with these items.
GENDER, SOCIAL ENGAGEMENT, AND SEXUAL ORIENTATION PREDICT ATTITUDES TOWARD HOMOSEXUALS IN AMERICA AND NEW ZEALAND
Presented at the Southeastern Psychological Association Conference, Jacksonville, Fla., March 2011 and the Big South Undergraduate Research Symposium, Lexington, Va., April 2011
Faculty Mentor: Merry Sleight, Ph.D.
Department of Psychology
(PSYC 471/472 – Sleight)
This two-phased project examined factors that influence attitudes toward homosexuals. Phase I was a continuance of online data collection assessing American and New Zealanders’ perceptions of homosexuality (n = 928). Results revealed that male homosexuals had more positive and positive toward homosexuality than did male heterosexuals. Women’s attitudes were more positive and did not depend on the sexual orientation of the woman. United States homosexuals had more positive attitudes toward homosexuality than did US heterosexuals. New Zealanders’ attitudes were more positive and did not depend on the sexual orientation of the individual. We also found that, for predictions for attitudes toward homosexuality depending on the country. For example, in the United States, voting behavior did not predict attitudes toward homosexuality, whereas in New Zealand, people who were likely to vote also had more positive attitudes toward homosexuality. In Phase II, 283 participants were divided among three conditions. One group took a survey in a group setting with the survey administrator wearing a pro-gay shirt, one group viewed a pro-bi-sexual shirt, and one group viewed a neutral shirt. Results revealed that attitudes toward homosexuality were lower when the researcher wore either of the pro-homosexuality shirts. Across conditions, women were always more positive toward homosexuality than men, with the exception that both genders had equal agreement to the notion that “homosexuality is a sin.” African-American and Caucasian participants had similar attitudes toward homosexuality; however, when questioned about having a homosexual son or daughter, African-Americans were more positive and accepting than Caucasians, while at the same time being more likely to view homosexuality as a sin. The more participants reported attending religious services, the more negative their attitudes toward homosexuality, the more likely they were to vote, and the less confident they were regarding laws relating to homosexuality. These findings suggest that a combination of cultural, situational, and personal factors may contribute to an individual’s perceptions of homosexuality.

ANIMUS POSSESSION: FEMININE ARCHETYPES IN KING LEAR
Presented at the Big South Undergraduate Research Symposium, Lexington, Va., April 2011
Student: Rebecca Ayers 2011
Faculty Mentor: Matthew Pike, Ph.D.
Department of English
(ENGL 305 – Pike)
Goneril and Regan, the eldest daughters in Shakespeare’s King Lear, illustrate the Jungian condition known as animus possession. Previous Jungian critics like H. R. Coursen have noticed that they exhibit much more masculine traits than their younger sister Cordelia. This paper furthers the inquiry by concluding that both genders had equal agreement to the notion that “homosexuality is a sin.” African-American and Caucasian participants had similar attitudes toward homosexuality; however, when questioned about having a homosexual son or daughter, African-Americans were more positive and accepting than Caucasians, while at the same time being more likely to view homosexuality as a sin. The more participants reported attending religious services, the more negative their attitudes toward homosexuality, the more likely they were to vote, and the less confident they were regarding laws relating to homosexuality. These findings suggest that a combination of cultural, situational, and personal factors may contribute to an individual’s perceptions of homosexuality.

Presented at the 40th Annual Meeting of the North Carolina Political Science Association, Charlotte, N.C., February 2011
Student: Robert Ralston
Faculty Mentor: Jennifer Diney, Ph.D.
Department of Political Science
Global poverty is a pandemic that is caused by the internal factors within a country and the external factors of globalization. Post-colonial countries in particular have failed to develop at the same rate as their Western counterparts, and this is in part due to the neocolonialism: the International Financial Institutions of the World Bank, World Trade Organization, and International Monetary Fund. In a format similar to a court case, this paper aims to analyze the impact of neoliberalism on developing nations, in particular, how the International Financial Institutions are mechanisms used by those who believe in neoliberalism to, perhaps unwittingly, destroy the economic possibilities of the developing nations of the world. A case study of Ghana is utilized in order to offer empirical evidence of the theoretical claims made.

IN VITRO CHARACTERIZATION OF THE DNA BINDING PROPERTIES OF A NOVEL VARIANT OF HIGH MOBILITY GROUP A1 (HMGAI)
Ronald Nelson Jr., Amy Deng, Cameron Whitnack, Dr. Taktia Sumter
Presented at the Annual Biomedical Research Conference for Minority Students, November 2011, the 25th Annual Ronald McNair Commemorative Celebration, and 10th Annual Research Symposium, Greensboro, N.C., January 2011
Supported by a Research Initiation Grant from NSF, a National Cancer Institute Grant from NIH, and a South Carolina IDEA Networks of Biomedical Research Excellence Grant from NIH
Student: Ronald Nelson Jr., 2011 (McNair Scholar)
Faculty Mentors: Taktia Sumter, Ph.D., Cheryl Fortner- Wood, Ph.D.
Department of Chemistry, Physics, and Geology
The High Mobility Group A protein (HMGGA) family is involved in neoplastic cell transformation and metas- tasis in cancerous cells. The protein family - consisting of HMGAA1 and HMGAB1, and HMGCA2 - possesses structural similarities that including their nuclear presence and association with various human malignancies. Consistent with the presence of three domains bearing a Proline-Arginine-Glycine-Arginine (PRGR) motif, these proteins act by binding to the minor groove of A-T rich DNA sequences. Because arginines at the center of the PRGR DNA binding motifs are subject to covalent modification in some cancers, we investigated the impact of arginine substitutions on the ability of HMGAA1 to bind DNA. We assessed the DNA binding affinities of HMGAA1 bearing arginine to alanine (R25) and arginine to lysine (R25K) substitutions using the A-T rich portion of untranslated region upstream of the kit ligand coding sequence. The binding affinity of HMGAA1 for this A-T rich sequence was comparable to that observed in previously published studies by XXX et al. Conversion of R25 to both A and K compromised the ability of HMGAA1 to interact with the kit ligand
promoter. The specific binding affinity will be quantitatively determined in future studies. Nonetheless, this finding suggests that the presence of a positively charged side chain does not preserve the ability of HMGA1 to bind to DNArich sequences within the kit ligand promoter. Current studies are underway to evaluate the binding of R25K to other HMGA1 targets as well as evaluate the oncogenic potential of this mutant in vivo. It is predicted that the evaluation of arginine’s role in HMGA1 function could provide a better understanding of the role played by posttranslational modifications in regulating the oncogenic pathways.

**REVEALING MALVOLIO’S HYPOCRISY IN SHAKESPEARE’S TWELFTH NIGHT**

*Presented at the Sixth Annual Department of English Undergraduate/Graduate Research Conference, Winthrop University, March 2011*

**Students: Sarah Besson 2012**
Faculty Mentor: Matthew Pike, Ph.D.
Department of English (ENGL 305 – Pike)

This paper Santaizes the hypocrisy of the Early Modern Puritans through the character Malvolio in Shakespeare’s Twelfth Night. The play’s original audience would have disliked the Puritans due to their opposition to the theater as well as their desire to convert everyone to Puritanism. Therefore, playgoers were primed to understand Malvolio, who ultimately turns all the characters against him, as a self-righteous Puritan. Previous critics such as R. W. Connolly and T. Scott-Jones have commented on some of the relevant details, particularly as Malvolio’s disapproval of festivity versus his outrageous behavior following his discovery of the forged letter. The present study argues that Shakespeare uses Malvolio to satirize the hypocrisy of the Early Modern Puritans through his desire for worldly objects, romantic love, and increased social status. In the final analysis, Malvolio demeans himself by revealing his hidden worldly desires, and his sworn vengeance at the end of the comedy suggests that he has made no psychological progress.

**SENSATION SEEKING AND OTHER FACTORS AFFECTING STUDENTS’ DECISION TO STUDY ABROAD**

*Presented at the Southeastern Psychological Association Conference, Jacksonville, Fla., March 2011*

**Students: Sataria Douglas 2012 | Shalaya Davis 2012 | Jessica Lockhart 2012**
Faculty Mentor: Merry Sleigh, Ph.D.
Department of Psychology (PSYC 302 – Sleigh)

We examined whether sensation seeking predicted college students’ willingness to study abroad. We also examined other factors that influence a student’s decision regarding study abroad. Sixty undergraduates completed a survey that assessed their perceptions of study abroad, factors affecting their interest in studying abroad, their sensation-seeking score, and demographics. Results revealed that the higher the participants’ sensation-seeking score, the more likely they would regret not studying abroad and the greater their desire to travel. We ranked participants’ responses to the question, “What are the benefits of studying abroad?” The highest ranked benefit was to gain maturity and insight into self, followed by meeting new people, improving employment prospects, opportunity to travel, independence, fulfilling graduation requirements, learning a new language, and taking interesting classes. We ranked participants’ responses to the question, “What are the risks of studying abroad?” The highest ranked risk was running out of money, followed by the dangers of a country, not graduating on time, language barriers, not being able to adjust, feeling alone, accidents or injuries, losing relationships back home, and unknown teaching methods. We compared men and women. Women rated ‘to aid in graduation’ as a more important factor for study abroad than did men, and ‘meeting with the study abroad advisor’ as more important than did men. There were no other gender differences in factors related to study abroad, including the financial considerations. We compared African Americans and Caucasians. African Americans were more likely to rate ‘to aid in graduation’ as a more important factor in studying abroad. Caucasians were more likely to agree that they would regret if they did not study abroad. We compared freshmen to all other students and found no differences between these two groups in reasons to study abroad. In sum, we found that sensation seeking students did have an increased desire to study abroad. In addition, we found that students had fairly similar perceptions of studying abroad, regardless of their age, gender, race, or class status. These data may be useful to students who are considering studying abroad and to college advisors who want to most effectively market the study abroad experience.

**GENE EXPRESSION IN A 3-D CARDIAC TISSUE CULTURE MODEL OF ISCHEMIA: A COMPARISON OF MICROARRAY AND REAL-TIME PCR ANALYSIS**

*Presented at the Annual Biomedical Research Conference for Minority Students, Charlotte, N.C., November 2010.*

**Students: Shanesqua Bryant 2010 (McNair Scholar)**
Faculty Mentor: Kimberly Wilson, Ed.D
Department of Biology

Reduced blood flow to the heart from myocardial infarction can lead to many serious consequences including cellular death. To better understand the mechanisms and characteristics of cellular response to cardiac injury after myocardial infarction we investigated the effects of atmospheric (21%), physiological (6%), and hypoxic (1.5%) oxygen levels in a 3-D in vitro model of cardiac ischemia. Our aim was to categorize and compare the expression levels of genes identified as significant in the oxidative stress response of ischemia using microarray analysis and to validate the expression levels of these significant genes using real-time PCR analysis. RNA was isolated from cardiac tubes exposed to different oxygen levels and used to make microarray hybridization probes for the GeneChip® Rat Genome 230 2.0 Array. Gene clustering analysis was based on four oxygen level combinations: 6%, 1.5%, and 21%; 6% vs. 1.5%; 6% vs. 21%; and 1.5% vs. 21%. Our results revealed that only 341 out of 31,099 genes were identified as significant based on ANOVA. Comparative analysis of 341 genes revealed that the genes were involved in cardiac myocyte apoptosis, hypoxia, cell cycle and signaling, angiogenesis, immune response, extracellular matrix, cell adhesion, wound response, development, and muscle contraction. Heatmap analysis indicated that the majority genes were upregulated in cardiac tubes grown in 21% O2 compared to those grown in 6% O2. We selected eight of significant genes from the microarray analysis and two other genes (HIF-1 and IL-6) well known to be involved in cardiac ischemia to validate using real-time PCR analysis. Our results indicated that only four (BNIP3, PKU1, HIG1, and Aldoc) genes identified as being significant using microarray analysis were determined to be significant based on real-time PCR analysis. These results showed that the expression levels of HIF-1, PKU1, and HIG1 were significantly higher in the cardiac tubes grown in 21% O2 compared to those grown in 6% O2. These results suggest real-time PCR is a useful and necessary tool to validate microarray analysis. Also, these results further suggest that 21% O2 used for physiological conditions might not be the ideal condition for cardiac models of ischemia because of increased oxidative stress.
A MULTIGENRE APPROACH TO “THE LADY OF SHALOTT”
Presented at the Sixth Annual Department of English Undergraduate/Graduate Research Conference, Winthrop University, March 2011
Student: Stephanie Thompson 2012
Faculty Mentor: Casey Cothran, Ph.D.
Department of English
(ENGL 200 – Cothran)
I am examining Alfred Lord Tennyson’s “The Lady of Shalott” through the lenses of three different genres: literature, art, and music. This topic is important because it exemplifies the benefits of exploring a piece of literature through more perspectives than just that of the English scholar. Using the scholarly research of Shuli Barzilai, Arthur L. Simpson, and others, we combine the insights of Tennyson, Emily Autumn, Lopossa McKennitt, and William Waterhouse, I explore the connections and interpretations between these disparate genres in reaction to the poem. This paper attempts to explain the divergent and yet inter-connected represen-
tations of the psychology of the lady and her patriarchal society in multiple modes of expression: literature, art, and music.

POSITIVE AND NEGATIVE REINFORCEMENT EFFECTS ON MOTIVATION
Presented at the Big South Undergraduate Research Symposium, Lexington, Va., April 2011
Students: Stephanie Willburn 2011 | Valerie Sturm 2011
Faculty Mentor: Matthew Hayes, Ph.D.
Department of Psychology (PSYC 302 – Hayes)
This study examined positive and negative reinforcement’s effects on motivation. Participants were 60 female undergraduate students. They were each given a survey containing 30 positive or negative reinforcement sce-
narios. Each scenario included a household task and a monetary amount. The positive reinforcement scenarios were phrased in terms of payment while the negative reinforcement scenarios were phrased as a cancelled debt. Participants rated their motivational level for each scenario on a scale of 1, not at all motivated, to 10, extremely motivated. A 3 (money) x 2 (reinforcement) mixed analysis of variance (ANOVA) was used to assess if there was a difference between amount of money given or owed (within-subjects) and type of reinforcement (between-subjects) on the level of motivation. The interaction was not significant, F (2, 1.485) = 1.281, p > .05. Participants in the positive reinforcement group (M= 5.85, SD=1.36) did not differ significantly in mo-
tivation compared to the negative reinforcement group, (M=6.05, SD=1.01), F (1, 58) = .606, p > .05. These results did not support our hypothesis that negative reinforcement would be a higher motivator than positive reinforcement. The levels for money were divided into groups of small, medium, and large. There was a signifi-
cant main effect for amount of money, F (1.485, 86.106) = 223.395, p < .05, η²= .956. Motivation was cant main effect for amount of money, F (1.485, 86.106) = 223.395, p < .05, η²= .956. Motivation was
also reported more experiences of flow in small classes (fewer than 25 students) and moderate sized classes (25-45 students) compared to larger classes. Respondents rated their own intrinsic interest and preparation as well as student engagement as equally important to their experience of flow and more important than student ability. We also found the following variables to be unrelated to flow: gender of the professor, undergraduate versus graduate class, introductory versus upper-level class, and type of class activity.

HUMOROUS PRESENTATION OF INFORMATION FACILITATES LEARNING AND MEMORY

Presented at the Southeastern Psychological Association Conference, Jacksonvile, Fla., March 2011

Students: Tiffany Piccolo 2012 | Dustin McCully 2011
Faculty Mentor: Merry Sleigh, Ph.D.
Department of Psychology (PSYC 302 – Sleigh)

The purpose of our study was to examine the effect of humor on young adults’ ability to learn and recall new information; in this case, the material to be learned was presented to the participants without involving an “instructor.” Participants were 111 young adults. Participants first were given a list of little-known facts about cats and were allowed six minutes to study the material. Half of the participants received a cat fact sheet that included a variety of cat-related cartoons, while the other half of the participants received the same facts with no cartoons. Immediately following, participants completed a survey that assessed their memory for the cat facts, attitudes toward humor as a teaching tool, and demographics. Some of the questions about the cat facts were presented at the beginning of the survey (to assess short-term memory) and the remainder was presented at the end (after interference from the intervening questions). We computed a “Cat Knowledge One” (CAT1) score for each participant by adding the number of correct responses at the start of the survey and a CAT2 score for correct responses at the end of the survey. Participants in the humor condition scored significantly higher on the CAT1 than did participants in the no-humor condition. There were no significant differences on CAT2 scores. Cat ownership, GPA, age, and enjoyment of humor did not predict performance on the cat fact quizzes. In other words, the only variable that explained performance on CAT1 was the manner in which the cat facts were presented. Compared to women, men were more likely to agree that they learn better with humor. A 2 (condition) X 2 (gender) ANOVA revealed that men performed better than women in the humor condition, whereas women performed better than men in the no-humor condition on CAT1. Ironically, when men and women were asked to rate the importance of a college professor being funny, there were no gender differences. Taken together, these findings suggest that humor can facilitate short-term learning, especially for men.

GENDER DYNAMIC OF CELL PHONE USE: TEXTING AND TALKING

Presented at the Big South Undergraduate Research Symposium, Lexington, Va., April 2011

Students: Vitta Clawson 2012
Faculty Mentor: Matthew Hayes, Ph.D.
Department of Psychology (PSYC 302 – Hayes)

The purpose of this experiment was to examine whether college students’ academic success is affected by their romantic relationships. We measured hope in relationships and social support to uncover their effect on academic success. Our hypotheses were supported. Hope in relationships and social support were significant in predicting academic success. College students measure their success on different levels. Previous research has shown that personal factors have influenced the academic success of students. Socioeconomic factors are also associated with college performance (Kuby, White, & Arugute, 2007). For any given student, success may have different outcomes. Support that is received from relationships serves as encouragement and knowing someone is concerned with a person’s best interest. Students form an array of relationships on college campuses. College provides students with an environment in which they can meet others with similar backgrounds and common interest. They form relationships with friends, professors, and romantic partners. Being in a supportive relationship or no relationship had a more positive effect on academic success in college students. While being in nonsupportive relationships had a more negative effect on academic success. Participants were recruited from several undergraduate classes and surveys were administered. Rosenberg’s Self Esteem Scale (RSE; Rosenberg, 1965) was administered to reflect high or low self-esteem in participants. The Domain-Specific Hope Scale (DHHS, Symmon, 1997) was utilized to measure individual’s hopefulness in academics and romantic relationships. The Experiences in Close Relationships-Survey Questionnaire (ECR-R Brennan, Clark, & Shaver, 2000) measured attachment anxiety. We administered The College Success Factors Index (CSFI; Hallberg, Hallberg, & Sauer 2003) which measured academic college student readiness and success in their early years of higher education. The Social Provisions Scale (SPS; Currina & Russell, 1987) was utilized to measure perceived social support based on six provisions which included: reliable alliance, social integration, opportunity of nurturance, attachment, reassurance of worth, and guidance.

SILENT CAUSALITY: UNDERSTANDING SUICIDE SURVIVOR GROUPS & HELPING THROUGH THE GRIEF PROCESS

Presented at the Creating Caring Connections Symposium, September 2010 and the Big South Undergraduate Research Symposium, Lexington, Va., April 2011

Student: Wendy Adams 2012
Faculty Mentor: Ameda Manetta, Ph.D.
Department of Social Work

Feelings of sorrow coupled with the sudden loss of a loved one shock and a sense of hopelessness are what an estimated 180,000 people a year who are bereaved by suicide feel and experience. The societal taboo of suicide often times complicates emotions causing long term and often-complex grief symptoms that can take years to recover from. What to do next, who to talk to and who not to talk to are often questions left to the survivors to figure out on their own. Literature supports the current trend of mutual aid represented through suicide survivor groups as means of helping those bereaved by suicide. This presentation will discuss who suicide survivors are, the dynamics of suicide survivors groups, and the findings of a current study of suicide survivor groups in the southeast United States. The presentation also addresses the dynamics of suicide survivors groups, the
various types of suicide survivor groups, and how to use “narrative therapy,” a common form of intervention and treatment that many social workers can implement. Future research areas concerning the evaluation and effectiveness of this form of healing will also be presented.

IMPACT OF STEREOTYPING AND RELATIONSHIP EXPECTATIONS IN DISNEY FILMS ON YOUNG ADULTHOOD
Presented at the Southeastern Psychological Association Conference, Jacksonville, Fla., March 2011
Faculty Mentor: Matthew Hayes, Ph.D.
Department of Psychology
(PSYC 302 – Hayes)
Children, parents, and grandparents all watch and enjoy the enormous collection of Disney films that have been produced to date. In today’s society there are many different kinds of families and family relationships. Research shows that Disney films do not portray relationships in a realistic way (Tanner, Huddock, Zimmerman, & Lund, 2003). Aggression and mental illness are also recurring themes throughout many Disney films. This study was conducted to see if viewing Disney films as children would affect perceptions of aggression, mental illness, and relationship expectations in young adulthood. Participants consisted of 90 undergraduate students. Students completed a questionnaire measuring their relationship expectations, views on people with mental illness, and aggressive tendencies. Participants were also asked about their previous viewings of Disney films by ranking their top five films. All movies listed on the survey have been shown to portray stereotypes and unrealistic relationship expectations. The results suggest that watching Disney films in childhood has no effect on adult aggression, perceptions of mental illness, or relationship expectations.

THE EFFECT OF CAFFEINE ON BROWN PLANARIA (DUGESIA TIGRINA) REGENERATION
Presented at the Big South Undergraduate Research Symposium, Lexington, Va., April 2011
Student: William Gray 2011
Faculty Mentor: Lee Anne Cope, Ph.D.
Department of Biology
(BIOL 300 – Cope)
For this particular project, headless brown planaria (Dugesia tigrina) were exposed to different concentrations of caffeine to determine their range of caffeine tolerance in relation to the regeneration of eyespots. To test regeneration, the planaria were surgically cut, and the incised parts containing the thorax and abdomen were placed into separate wells containing 0, 0.1, 0.15, and 0.2 percent caffeine solutions for a 10 day period to allow full regeneration of the eyespots. After the 10 day period ended, it was clear that as the caffeine concentrations increased, the number of planaria that regenerated eyespots decreased considerably. The observed frequencies for the planaria regeneration eyespots were significantly different from the expected frequencies.

Other Student/Faculty Collaborations

SYNTHESIS OF PYRAZOLOPYRIDINES BY RING CLOSURE OF PYRIDINE N-OXIDETOSYLHYDRAZONES
Faculty Mentor: James Hanna Jr., Ph.D.
Department of Chemistry, Physics, and Geology
The pyrazolopyridine heterocyclic system is an important structural unit in a variety of antimicrobial, anti-tumor, and anti-inflammatory compounds. Because of its position as a “privileged structure” in medicinal chemistry, the synthesis of this unit continues to attract the attention of synthetic chemists. Many synthetic approaches to this ring system require functionalization of the 2-position of the pyridine ring prior to cyclization. We imagined that this requirement could be eliminated by taking advantage of the electrophilic 2-position of pyridine N-oxide using a strategy similar to the Reissert-Henze reaction. Since the introduction of a halogen to the 2-position of pyridine typically requires the formation of the N-oxide prior to halogenation, this approach would eliminate a step in the formation of this ring system, and thus be a more efficient method for the synthesis of these compounds. We have found that tosylhydrazones derived from 3-arylpypyridine N-oxide can be cyclized in high yields by treatment with an electrophile and a base. For instance, 3-benzoylpyridine N-oxide tosylhydrazone, when treated with tosyl anhydride and triethylamine, gives a mixture of 1-(4-toluene sulfonyl)-3-phenylypyrazolo[3,4-b]pyridine and 1-(4-toluene sulfonyl)-3-phenylypyrazolo[4,3-c]pyridine in an 8:1 ratio and a combined yield in excess of 90%. Use of other electrophiles has been shown to improve the selectivity to as high as 60:1, but in a lower overall yield. To explore the application of this strategy to the cyclization of 3-alkanoylpyridine N-oxide tosylhydrazones, 3-acetylpyridine N-oxide tosylhydrazone has been prepared in high yield and experiments toward the cyclization of this compound are being initiated. Future work will include the completion of the current optimization studies followed by an investigation of the scope and limitations of the method, and application of this strategy to the synthesis of other important heterocyclic ring systems.

DESIGN AND SYNTHESIS OF ZONE 1 AND 2 MODIFIED SPHINGOSINE KINASE INHIBITORS TO ENHANCE ORAL BIOAVAILABILITY
Supported by the South Carolina IDeA Networks of Biomedical Research Excellence Grant from NIH and a Winthrop Research Council Grant
Student: Amber Wallace 2011
Faculty Mentor: Dr. Richard G. LeBeau
Department of Chemistry, Physics, and Geology
Sphingosine Kinase 1 (SK1) is an overexpressed enzyme in cancer cells and phosphorylates Sphingosine (Sph) into Sphingosine-1-Phosphate (SIP). It has been found that the balance between Sph and SIP play a major role in growth and survival rate of cancer cells. SIP regulates cell proliferation so when the balance is shifted towards SIP, the cell’s growth and survival rate increases. In a normal cell where sphingosine concentrations are much higher than that of SIP, the cell is able to undergo a natural cell death. In most cancer cells, however, the balance is shifted towards SIP due to the overexpression of SK1 within the cancerous cells. As the concentration of SIP increases, the cell favors proliferation instead of natural apoptosis thereby spreading the cancer. If the concentration of SIP can be decreased then cancer treatments can become more effective in killing the targeted cells selectively. Therefore this enzyme is the target of SK1 inhibitors to reduce the production of SIP and shift
the equilibrium in the favor of the apoptotic pathway. While there are current SK1 inhibitors, many are lipid based and are not site specific to SK1. Recently researchers have discovered a non-lipid based and site specific SK1 inhibitor that has been identified as a promising drug candidate. However, this inhibitor is currently not orally bioavailable making its activity dramatically decrease during in vivo testing. Our research goal is to design and synthesize a derivative of the SK1 template inhibitor described above that has a greater oral bioavailability while maintaining its promising inhibitory activity. My specific research goal is to synthesize one zone 1 derivative and two zone 1 and 2 derivatives of the template SK1 inhibitor which may be evaluated by our collaborator in specific bioassays for improved effectiveness.

SYNTHESIS AND EVALUATION OF POTENTIAL AMYLOID-BETA AGGREGATION INHIBITORS

Students: Craig Stevens 2012 | Chelsea Brennan 2013

Faculty Mentors: James Hanna, Jr., Ph.D., Robin Lammi, Ph.D.

Department of Chemistry, Physics, and Geology

Amyloid-beta is a protein found in human brain plasma and cerebrospinal fluid comprised of 39 to 43 amino acids. It is known to assemble into fibrils containing beta-sheet structure, which are the primary component of the extracellular senile plaques characteristic of Alzheimer’s disease. It may be therapeutic to inhibit the aggregation of Aβ so as to block fibril formation. Some natural aromatic molecules, such as resveratrol and curcumin have been shown to inhibit Aβ aggregation, and therefore, three potential inhibitor molecules have been designed and synthesized, each a terphenyl-3,3′,4,4′-tetralone in the para (PTT), meta (MTT) and ortho (OTT) configurations. Each molecule contains four terminal hydroxy groups to enable hydrogen bonding, and a semi-rigid phenyl linker section. Evaluation of the inhibitor molecules was made using the Congo Red Spectral Shift Assay, with incubation and shaking of the Aβ' Congo red (CR) binds selectively to Aβ containing beta-sheet secondary structure, resulting in a red shift of its absorbance spectrum. Starting with monomeric Aβ, the aggregation profile is tracked by measuring the CR spectral shifts at specific time intervals, thus enabling quantification of the extent of aggregation. Time courses of Aβ aggregation in the presence of inhibitor are compared to those for Aβ, alone to determine the extent of inhibition. Inhibitor addition can typically increase lag time before aggregation begins, slow the aggregation rate and/or reduce the maximum degree of aggregation at equilibrium. Each molecule was evaluated at a concentration (relative to Aβ) of ten molar equivalents. Neither dosage resulted in significant change in aggregation in the presence of inhibitor compared to those for Aβ; alone to determine the extent of inhibition. Neither dosage resulted in significant change in aggregation in the presence of inhibitor compared to those for Aβ; alone to determine the extent of inhibition. Neither dosage resulted in significant change in aggregation in the presence of inhibitor compared to those for Aβ; alone to determine the extent of inhibition. Neither dosage resulted in significant change in aggregation in the presence of inhibitor compared to those for Aβ; alone to determine the extent of inhibition.
intramolecular arylation of a 2-(2-aminoarylp)pyridine N-oxide. A recent discovery by Fagoun et al. hinted that the starting material required for this reaction could be synthesized by the direct arylation of pyridine N-oxide at the 2-position with an o-bromoacetanilide. Model studies with bromoacetanilide led to the observation that the best conditions for the arylation involved microwave heating of pyridine N-oxide, p-bromoacetanilide, a phosphorus trifluoroborate and potassium carbonate in toluene solvent. These conditions led to 90% conversion of the p-bromoacetanilide (determined by 1H-NMR). Application of these conditions to the direct arylation of pyridine N-oxide with 2-bromo-4-methylacetanilide gave the desired product (2-acetamino-5-methylphenylpyridine N-oxide) in an average yield of 35% (after chromatography). In an attempt to improve this yield, multiple ligands and ligand-to-catalyst ratios were screened. This screening found that a 1:1 ligand to catalyst ratio using di-t-butylmethylphosphonium tetrafluoroborate and palladium acetate gave an 80% yield (determined by HPLC analysis). These conditions were then applied to a large scale synthesis, which gave an isolated yield of 65%. This compound was then subjected to hydrolysis, diazotization, and cyclization to produce 9-methylbenzo-[4,5]isoxazolo[2,3-a]pyridin-5-ium tetrafluoroborate in a 72% yield. This newly developed process has been used to produce 2 other benzisoxazoles, 2-3 pyridinium tetrafluoroborate by direct arylation of pyridine N-oxide with the appropriately substituted 2-bromoacetanilides gave 2-(2-acetamido-3,5-difluorophenyl)pyridine N-oxide (54%) and 2-(2-acetamidophenyl)pyridine N-oxide (76%). Cyclization of these products gave, respectively, 9-fluorobenzo-[4,5]isoxazolo[2,3-a]pyridin-5-ium tetrafluoroborate (79%) and benzo[4,5]isoxazolo[2,3-a]pyridin-5-ium tetrafluoroborate (84%). A scope and limitations study of this method is currently being conducted, and future work will involve application of this method to the synthesis of other novel heterocyclic ring systems.

CLOSING AND FUNCTIONAL CHARACTERIZATION OF NOVEL R25 VARIANTS OF HIGH MOBILITY GROUP A1 (HMGA1)

Students: Jayue Deng 2012
Faculty Mentor: Titika Sumter, Ph.D.
Department: Chemistry, Physics, and Geology

In addition to their roles in transcription, proliferation, and viral integration, evidence implicates HMGA1 proteins as mediators of oncogenic transformation. Enforced expression of HMGA1 leads to transformation in vitro and in vivo, potentially explaining the worsened outcomes in patients expressing the proteins. Although several targets of HMGA1a have been identified, the exact pathways is not well understood. The proteins are covalently modified at arginine 25 (R25) and activate transcription of kit ligand (kitL) oncogene in several targets of HMGA1. To understand the contributions of R25 to HMGA1's oncogenic potential, we generated R25 variants, R25A and R25K, and compared their affinities for kitL to that for HMGA1. The affinity of HMGA1 R25A for kitL was 47% lower than that for the wild type protein, suggesting that the arginine residue plays an important role in the DNA binding properties of the protein. The R25K variant also had a 37% lower affinity for kitL. These findings suggest that electrostatic interactions are not required for HMGA1's interactions with target genes. Studies are currently underway to correlate DNA binding affinity with oncogenic potential. Understanding the mechanisms of HMGA1-associated cancers will contribute to efforts aimed at preempting cancer during early stages of progression.

FRIEND-REQUESTING FITZGERALD: A MULTI-GENRE PROJECT USING FACEBOOK AND THE GREAT GATSBY

Student: Kelly Salyer 2011
Faculty Mentors: Amy Gerald, Ph.D., Robert Prickett, Ph.D.
Department of English

F. Scott Fitzgerald’s famous canon, The Great Gatsby, is taught all over U.S. high school classrooms and around the world. In symbolism and underlying themes have the potential to reach and move people deeply; yet, many students are averse to any type of in-depth textual study. From my experience, an introduction to any new novel is normally met with groans and sighs from students as they realize they will read yet another stuffy text. I decided to change this common reaction while teaching The Great Gatsby unit in my Rock Hill eleventh grade classroom. Instead of a paper or a large test, I chose to make a creative project be the large summative assessment at the end of the unit. Students were to create Facebook pages for each character in the book. Every Facebook page must reflect a character’s personality, traits, and also chronicle major events in the story. That way, students were able to show me their understanding of the text while individually applying the concepts of characterization, plot summary, symbolism and setting. Students were split into groups of 4-5 and they drew a name out a cup in order to prevent people from creating a Facebook page for the same character. This project retained a high interest level amongst my students and covered several state standards. The poster I presented featured student work samples, a detailed list describing the steps in creating and presenting the Facebook project, SC ELA standards, performance data (grades), and a rationale for including the project in the classroom.

FOOD, ECONOMICS, AND HEALTH: WHAT DRIVES OUR DECISIONS WHEN SHOPPING FOR FOOD?

Student: Melissa Starr 2011
Faculty Mentor: Sarah Quick, Ph.D.
Department of Sociology and Anthropology

Why do people make the choices they often do with a particular brand or food items? Are we becoming a product of what we put into our bodies? Does the economic status of an individual matter with food preference or food choice in a healthier lifestyle? How does marketing affect the consumer's decision on food selection? These are some of the questions I was considering in my ethnographic study on the consumer and food choice. I collected information from fourteen participants through direct shopping and post-shopping observations, questionnaires, and one-on-one interviews. I also participated in direct observation of the general public, noting their interactions with one another and the contents of their carts while blending in as the average consumer. I took into consideration what other co-shoppers were purchasing and any communication strategies with each other, as well as the effects of body language among consumers in a grocery store setting. In interviews I asked consumers about their health concerns, dietary preference, options on food choice in relation to their budget, and view on the pros and cons of a healthier dietary choice. Through my research I have found that a person's budget extensively determines whether or not they can achieve a healthier diet and that social structures of family and environment can often influence poor dietary choices.
AMY’S ABSENCE IN GRAHAM SWIFT’S LAST ORDERS

Students: Morey Reinblatt
Faculty Mentor: Stobhan Brownson, Ph.D.
Department of English (ENGJ 310 – Brownson)

This paper uses a psychoanalytical approach to examine Amy Dodds’s lack of emotion towards the death of her husband as well as her consequent refusal to carry out his last wishes in Graham Swift’s Last Orders. I begin by analyzing the initial dynamic between Jack and Amy Dodds and explaining that Amy’s decision to marry her husband was based on her unexpected pregnancy and birth of their disabled child, June. Swift initially characterizes Amy as a fragmented individual, the conflict between what she wants to do with her life and what she feels is best for her is a daily struggle that Amy must endure. As a result, Amy Dodds approaches her marriage to Jack reluctantly, and often her behavior throughout Last Orders reflects her indifferent attitude towards her husband. I contend that Amy’s moment of resolution occurs when Jack requests that she abandon June. From now on, Amy continues her marriage as if their daughter was never born. Caught between her maternal need to care for her mute daughter and her obligations to her husband, Amy begins travelling twice-weekly to June’s assisted living facility. Furthermore, Swift’s purposeful exclusion of Amy during most of the narrative serves as a parallel to Amy’s absence from the Dodds’ relationship. Jack responds to his wife’s neglect by excluding her from his final letter to his friends detailing his last wishes after his death. The paper concludes with a commentary on Amy’s final actions in Swift’s novel. Rather than assisting Jack’s friends in carrying out his last orders, Amy visits June so that she may say goodbye. I argue that Jack’s death has liberated Amy’s divided psyche and has allowed her to continue her marriage as if their daughter was never born. Graham Swift’s choice to end the narrative in Amy’s perspective allows the reader to grasp the dual nature of the Dodds’ marriage and, likewise, provides insight into Amy’s callous exterior.

ART THERAPY FOR CHILDREN WITH BEHAVIOR PROBLEMS

Student: Opal Dyson 2011
Faculty Mentor: Karenza Gray, Ph.D.
Department of Social Work

Children who present behavior problems are normally misconstrued in society because their behavior can be disruptive within various settings; however, some people may not take the time to understand what those children may be going through. Art therapy is one of many therapeutic tools that can be used to understand children with behavior problems on a deeper level in order to assist in improving the child’s behavior. The purpose of this exploratory pilot research study is to explore the profession of art therapy and discover whether this therapeutic tool is affective on children displaying behavior problems. It is anticipated that art therapy is an effective therapeutic method for this vulnerable population. This essay consists of a literature review, methodology section, data analysis, and discussion section. The literature review section contains background information on children with behavior problems, play therapy, and art therapy. This section will also provide detail on experiments that were previously conducted on children presenting behavior problems. The methodology section contains information on the participants, instruments used, and procedures implemented in this research study. The participants of this study were found through an internet search engine, contacted individually, and asked if they were willing to participate in an online survey. The findings section will detail the results of the answers to the survey questions used with the sample population. The answers are divided into the characteristics of therapy and the effectiveness of art therapy. The discussion section will compare the results of this study to the experiments from the literature review, discuss the limitations of the study, and provide suggestions for further research.

DESIGN AND SYNTHESIS OF ZONE 2 AND 3 MODIFIED SPHINGOSINE KINASE INHIBITORS

Supported by the South Carolina IDEA Networks of Biomedical Research Excellence Grant from NIH

Student: Ray Olang 2011
Faculty Mentor: T. Christian Grattan, Ph.D.
Department of Chemistry, Physics, and Geology

Cancer and the development of more efficient treatments is a major topic in the medical and science fields. In the 2008 annual report on Medicinal Chemistry, the sphingolipid metabolism is recognized as a good starting point for developing cancer treatments. The sphingolipid metabolism plays an important part in cell death or proliferation in cancerous cells. After chemotherapy, the sphingomyelin, which is the initial site of the sphingolipid metabolism pathway, loses its phosphogroup and sets up an equilibrium between ceramide which ultimately degrades to sphingosine. Ceramide is ultimately responsible for cell death and sphingosine becomes phosphorylated to produce sphingosine 1-phosphate that leads to continued cell growth and proliferation. Normally cells that are defective undergo apoptosis where they die, and therefore can’t reproduce more defec- tive cells. Cancerous cells tend to avoid this process shifting the equilibrium toward sphingosine and allowing them to continue on forming sphingosine 1-phosphate where they will eventually become angiogenic. The enzyme that is believed to be responsible for sphingosine phosphorylation is sphingosine kinase 1. There are two isoforms of this enzyme, 1 and 2, but sphingosine kinase 1 is the one that has been directly connected with cancer from further experiments of this enzyme is inhibited, the equilibrium between ceramide and sphingosine will shift toward ceramide forcing the cells to die instead of replicating. It is important for the inhibitor to be hydrophobic enough to enter the body but not so much that the inhibitor goes through the cell completely. Not only does it have to be hydrophilic and biologically compatible. Our collaborator, Dr. Smith at MUSC, has given us a template molecule from which to work with. This template failed to show oral bioavailability so we will attempt to improve this by derivatizing the template. We have used computational docking and Lipinski’s Rule of Five to determine which derivatives would be most successful. The derivative that we have chosen from these experi- ments has a modified zone 2 and 3. Once complete, the derivative will be sent back to MUSC for bioassay testing and assess its pharmacophoric effects relative to the template compound.

INVESTIGATING PREFERRED STRUCTURES OF AMYLOID-ß DIMERS

Supported by a RUI Grant from the National Science Foundation.

Student: Rebecca Mitchum 2012
Faculty Mentor: Rohin Lammis, Ph.D.
Department of Chemistry, Physics, and Geology

Amyloid-ß (Aß) is a self-associating protein linked to Alzheimer’s disease that is comprised of 39-43 amino acids. Recent research has shown that Aß oligomers as small as dimers or trimers are closely related to the disease’s progression. Experimentally, little is known about the structures of these oligomers. We have used Förster Resonance Energy Transfer (FRET) between donor- and acceptor-labeled Aß peptides to characterise dimer structures, both in bulk solution and in individual, surface-tethered dimers. A comparison study of dimers in the absence and presence of an aggregation inhibitor [Aß 16-22m, K(NMe-L)V-(NMe-F)F(NMe-A)] was also performed, to determine whether the inhibitor affected the observed FRET efficiencies (EFRET); changes in these values would be indicative of altered dimer structure. We hypothesized that dimers that are not dissociated by the inhibitor may exist in preferred structures with characteristic EFRET values. In the absence of inhibitor, fluorescence lifetime studies of Aß dimers in bulk solution reveal two ensemble-averaged FRET efficiencies. In the presence of Aß 16-22m, dimers in bulk solution exhibit only one characteristic FRET efficiency, which may represent one preferred dimer structure. Efforts to confirm this result in single, surface-tethered dimers are ongoing.

Other Student/Faculty Collaborations
Unlike fossil fuels, ethanol is a renewable energy source produced through the fermentation of sugars by bacteria. Heteroxylan, a carbohydrate polymer found in the hemicellulose fraction of plants, is an underutilized source of fermentable pentose sugar from hardwoods and crop residues. The primary component of heteroxylan, β-1,4-D-xylan, is periodically substituted with a variety of chemical moieties, including: arabino-furanose, coumaric acid, ferulic acid and 4-O-methyl-D-glucuronic acid (MeGA). Conversion of this polymer to fermentable sugars may be significantly limited by these substitutions. Recently, the family 5 xylanase (xylanases C, XynC) encoded by the ynfF gene in Bacillus subtilis strain 168 was found to hydrolyze such substituted heteroxylans, forming a mixture of oligomeric xylose products bearing MeGA substitutions on the xylose residue penultimate to the reducing terminus. The exact means by which the enzyme tolerates MeGA substitutions on the substrate during binding is unknown and catalytic modes of the enzyme may allow for the design of efficient hybrid enzymes for industrial applications. Insight into these processes can be gained by x-ray crystallographic analysis of the XynC/MeGAXn complex. We recently solved the structure of B. subtilis xylanase C in complex with xyloglucuronic acid and glucuronic acid and have identified several residues (tyrosines 231, 269 and 274, serine 235 and arginine 272) that may be involved in substrate recognition and/or binding. To define better the role of these residues in the xylanase reaction mechanism, we have begun mutagenic analyses of the protein. We have synthesized plasmids encoding XynC with point mutations of tyrosines 231, 269 and 274 to alanine. We will confirm the sequence of these mutant plasmids and synthesize more for serine 235, and arginine 272 to alanine. We have expressed and purified the tyrosine 269 to alanine mutant protein, and expression and purification of the other four mutant proteins will follow. Co-crystallization trials of the mutant proteins with glucuronoxylotriose will be initiated in parallel with enzymological studies to determine the kinetic parameters of the mutants for comparison with the wild type XynC.
<table>
<thead>
<tr>
<th>Name</th>
<th>Age(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amanda Mayer</td>
<td>10, 11</td>
</tr>
<tr>
<td>Kevin Mayes</td>
<td>38</td>
</tr>
<tr>
<td>Muri Mata</td>
<td>44</td>
</tr>
<tr>
<td>Dustin McCully</td>
<td>54</td>
</tr>
<tr>
<td>Jordan McElroy</td>
<td>34</td>
</tr>
<tr>
<td>Ashley McKnight</td>
<td>38</td>
</tr>
<tr>
<td>Amanda McLeod</td>
<td>5</td>
</tr>
<tr>
<td>Jenny Mead</td>
<td>34</td>
</tr>
<tr>
<td>Sara Merle</td>
<td>6</td>
</tr>
<tr>
<td>Karie Messier</td>
<td>37</td>
</tr>
<tr>
<td>Toniqua Mikell</td>
<td>54</td>
</tr>
<tr>
<td>Rebecca Mitchum</td>
<td>63</td>
</tr>
<tr>
<td>Megan Morris</td>
<td>38</td>
</tr>
<tr>
<td>Carly Moss</td>
<td>6</td>
</tr>
<tr>
<td>Jeffery Myers</td>
<td>59</td>
</tr>
<tr>
<td>Matthew Neal</td>
<td>41</td>
</tr>
<tr>
<td>Wendy Neff</td>
<td>56</td>
</tr>
<tr>
<td>Ronald Nelson, Jr.</td>
<td>49</td>
</tr>
<tr>
<td>Ray Olang</td>
<td>63</td>
</tr>
<tr>
<td>Darius Ollison</td>
<td>57</td>
</tr>
<tr>
<td>Alicia Owens</td>
<td>55</td>
</tr>
<tr>
<td>Deontra' Palmer</td>
<td>38</td>
</tr>
<tr>
<td>Amanda Patterson</td>
<td>36</td>
</tr>
<tr>
<td>Carol Perkins</td>
<td>7</td>
</tr>
<tr>
<td>Brooke Perry</td>
<td>38</td>
</tr>
<tr>
<td>Tiffany Piccolo</td>
<td>54</td>
</tr>
<tr>
<td>Nina Platenberg</td>
<td>46</td>
</tr>
<tr>
<td>Kevin Pope</td>
<td>38</td>
</tr>
<tr>
<td>Robert Raiston</td>
<td>49</td>
</tr>
<tr>
<td>LaWana Reed</td>
<td>40</td>
</tr>
<tr>
<td>Morey Rembhart</td>
<td>62</td>
</tr>
<tr>
<td>Amy Rivers</td>
<td>7, 15</td>
</tr>
<tr>
<td>Joshua Roberston</td>
<td>11</td>
</tr>
<tr>
<td>Kevin Ryan</td>
<td>8</td>
</tr>
<tr>
<td>Kelly Salyer</td>
<td>61</td>
</tr>
<tr>
<td>John Samies</td>
<td>33</td>
</tr>
<tr>
<td>Jasmin Sanders</td>
<td>19, 30</td>
</tr>
<tr>
<td>Nicholas Scarborough</td>
<td>45</td>
</tr>
<tr>
<td>Amy Scholer</td>
<td>8</td>
</tr>
<tr>
<td>Daniel Selvey</td>
<td>24</td>
</tr>
<tr>
<td>Nichole Shelly</td>
<td>38</td>
</tr>
<tr>
<td>Joelle Shipp</td>
<td>32</td>
</tr>
<tr>
<td>Erin Sim</td>
<td>26</td>
</tr>
<tr>
<td>Jolynn Smith</td>
<td>21</td>
</tr>
<tr>
<td>Kristin Smoak</td>
<td>37</td>
</tr>
<tr>
<td>Krysten Sobus</td>
<td>39</td>
</tr>
<tr>
<td>Danielle Stacks</td>
<td>13</td>
</tr>
<tr>
<td>Brittany Stapleton</td>
<td>18</td>
</tr>
<tr>
<td>Melissa Stark</td>
<td>61</td>
</tr>
<tr>
<td>Craig Stevens</td>
<td>58</td>
</tr>
<tr>
<td>Jade Stuckey</td>
<td>29</td>
</tr>
<tr>
<td>Valerie Sturm</td>
<td>52</td>
</tr>
<tr>
<td>Edward Szermin</td>
<td>24</td>
</tr>
<tr>
<td>Tiana Tallant</td>
<td>53</td>
</tr>
<tr>
<td>Felicia Taylor</td>
<td>29</td>
</tr>
<tr>
<td>Joanna Tepper</td>
<td>32</td>
</tr>
<tr>
<td>Crystal Tiedt</td>
<td>23</td>
</tr>
<tr>
<td>Stephanie Thompson</td>
<td>52</td>
</tr>
<tr>
<td>Cliff Torrington</td>
<td>29</td>
</tr>
<tr>
<td>James Tucker</td>
<td>30</td>
</tr>
<tr>
<td>Amber Wallace</td>
<td>57</td>
</tr>
<tr>
<td>T. Cameron Wallet</td>
<td>64</td>
</tr>
<tr>
<td>Portia Watson</td>
<td>46</td>
</tr>
<tr>
<td>Rachel Webster</td>
<td>47</td>
</tr>
<tr>
<td>Stephanie Willburn</td>
<td>52</td>
</tr>
<tr>
<td>Lisa Wilkinson</td>
<td>47, 48</td>
</tr>
<tr>
<td>A. Nikki Williams</td>
<td>12</td>
</tr>
<tr>
<td>Cedric Williams</td>
<td>21</td>
</tr>
<tr>
<td>Rachel Wood</td>
<td>47, 48</td>
</tr>
<tr>
<td>Laura Wren</td>
<td>21</td>
</tr>
<tr>
<td>Bryant Young</td>
<td>18</td>
</tr>
<tr>
<td>Catherine Zende</td>
<td>19</td>
</tr>
</tbody>
</table>

**Student Index**

Nicole Abbott, 45  
Wendy Adams, 55  
Elizabeth Allred, 59  
Rebecca Ayers, 48  
Elizabeth Bales, 25  
Adam Balint, 13  
Jessica Barber, 31  
Sarah Beeson, 50  
Jessie Bickley, 29  
Samatha Bodnar, 11  
Katie Bosman, 36  
Emily Bowie, 25  
Abigail Braddock, 12  
Chelsea Bransen, 58  
Ashlee Brock, 17  
Ashia Brown, 23  
Shanequa Bryant, 51  
Chauntice Buck, 35  
Meagan Burns, 42, 43  
Joseph Bursey, 35  
Jaclyn Cika, 59  
Vitta Clawson, 55  
Shaniqua Chinnis, 32  
Elise Comber, 37  
Carmen Dagghartha, 29  
Megan D’Angelo, 57  
Andrew Davis, 16  
Kaia Davis, 38  
Shalaya Davis, 50  
La’Kea Dawkins, 29  
Jayne Deng, 60  
Katheryn Dixson, 35  
Anna Douglas, 16  
Savatai Douglass, 50  
Laura Durfee, 46  
Opal Dyson, 62  
Cayla Eagon, 19, 20  
Meredith Edlin, 44  
Heather Ernst, 28, 42, 43  
Hector Espinal, 29  
Cecile Gadison, 20  
Adrianna Galassie, 13, 14  
Ashley Garrick, 38  
Evan Glasscock, 43  
Beth Glenn, 19  
Courtney Glenn, 22  
Charles Gore, Jr., 21  
James Graham, 29  
Meagan Grant, 43  
William Gray, 56  
Jordan Green, 34  
Courtney Gregory, 22, 34  
Jay Gwaltney, 4  
Tari Ham, 53  
Sydney Hendrix, 29  
Lorena Hildebrandt, 41  
Meagan Hogarth, 10, 56  
Rachel Hooper, 29  
Matthew Horn, 11  
Whitney Houston, 55  
Allison Howard, 9  
Laura Huffaker, 40  
A. Elizabeth Jenkins, 5  
Kenylatta Jeter, 38  
Everett Johnson, 27  
Katrina Joresch, 37  
Kiera Landrum, 23  
Greg Larson, 28  
Jessica Lockhart, 50  
Christopher Lofty, 3  
William Lominate, 57  
Heather Martin, 47  
Nicole Abbott, 45  
Wendy Adams, 55  
Elizabeth Allred, 59  
Rebecca Ayers, 48  
Elizabeth Bales, 25  
Adam Balint, 13  
Jessica Barber, 31  
Sarah Beeson, 50  
Jessie Bickley, 29  
Samatha Bodnar, 11  
Katie Bosman, 36  
Emily Bowie, 25  
Abigail Braddock, 12  
Chelsea Bransen, 58  
Ashlee Brock, 17  
Ashia Brown, 23  
Shanequa Bryant, 51  
Chauntice Buck, 35  
Meagan Burns, 42, 43  
Joseph Bursey, 35  
Jaclyn Cika, 59  
Vitta Clawson, 55  
Shaniqua Chinnis, 32  
Elise Comber, 37  
Carmen Dagghartha, 29  
Megan D’Angelo, 57  
Andrew Davis, 16  
Kaia Davis, 38  
Shalaya Davis, 50  
La’Kea Dawkins, 29  
Jayne Deng, 60  
Katheryn Dixson, 35  
Anna Douglas, 16  
Savatai Douglass, 50  
Laura Durfee, 46  
Opal Dyson, 62  
Cayla Eagon, 19, 20  
Meredith Edlin, 44  
Heather Ernst, 28, 42, 43  
Hector Espinal, 29  
Cecile Gadison, 20  
Adrianna Galassie, 13, 14  
Ashley Garrick, 38  
Evan Glasscock, 43  
Beth Glenn, 19  
Courtney Glenn, 22  
Charles Gore, Jr., 21  
James Graham, 29  
Meagan Grant, 43  
William Gray, 56  
Jordan Green, 34  
Courtney Gregory, 22, 34  
Jay Gwaltney, 4  
Tari Ham, 53  
Sydney Hendrix, 29  
Lorena Hildebrandt, 41  
Meagan Hogarth, 10, 56  
Rachel Hooper, 29  
Matthew Horn, 11  
Whitney Houston, 55  
Allison Howard, 9  
Laura Huffaker, 40  
A. Elizabeth Jenkins, 5  
Kenylatta Jeter, 38  
Everett Johnson, 27  
Katrina Joresch, 37  
Kiera Landrum, 23  
Greg Larson, 28  
Jessica Lockhart, 50  
Christopher Lofty, 3  
William Lominate, 57  
Heather Martin, 47  

Winthrop University
Undergraduate Research Initiative

The Winthrop University Undergraduate Research Initiative (WUURI) supports a student-centered learning environment that fosters student research, scholarship, and creative activities. The initiative encourages students and faculty mentors to collaborate in the design and implementation of projects and the dissemination of results.
Faculty Index

Adolphus Belk, Ph.D., 22, 44
Carlton Bessinger, Ph.D., 6
Leslie Buckford, Ph.D., 24, 32
Marsha Bollinger, Ph.D., 59
Tim Boylan, Ph.D., 8, 41
Eunestine Brown, Ph.D., 22
Suubhan Brownson, Ph.D., 62
Brent Cagle, Ph.D., 5
Clifton Callaway, Ph.D., 8
Wendy Campbell, Ph.D., 5
Lee Anne Cope, Ph.D., 56
Casey Corishan, Ph.D., 52
Gwen Daley, Ph.D., 45
Jack DeRoche, Ph.D., 19
Jennifer Disney, Ph.D., 8, 16, 22, 29, 37, 41, 44, 49
Douglas Eckberg, Ph.D., 46, 54
Heather Evans-Anderson, Ph.D., 30, 33
Matthew Fike, Ph.D., 11, 28, 29, 38, 45, 50
Cheryl Fortner-Wood, Ph.D., 20, 27, 49
Amy Gerald, Ph.D., 61
Laura Glassco, Ph.D., 6
Christine Goodner, Ph.D., 6
T. Christian Grattan, Ph.D., 38, 57, 59, 63
Karen Gray, Ph.D., 62
Tracy Griggs, Ph.D., 20, 24, 38
James Hanna, Jr., Ph.D., 57, 58, 59
Matthew Hayes, Ph.D., 10, 11, 29, 32, 43, 52, 55, 56
Jason Hurlbert, Ph.D., 25, 64
Kelly James, Ph.D., 30
Josephine Koster, Ph.D., 4, 18
Robin Lammi, Ph.D., 22, 58, 63

Michael Lipscomb, Ph.D., 8, 41
Susan Lyman, Ph.D., 5
Kathy Lyon, Ph.D., 5, 7, 15
Ameda Manetta, Ph.D., 55
Paula Mitchell, Ph.D., 6
William Naufftus, Ph.D., 20
Shebby Neely-Goodwin, Ph.D., 40
Donna Nelson, Ph.D., 5, 9, 53
Peter Phillips, Ph.D., 8
Robert Prickert, Ph.D., 61
Joseph Prus, Ph.D., 44
Sarah Quick, Ph.D., 61
Kelly Richardson, Ph.D., 10
Darren Ritzler, Ph.D., 7, 14, 15, 28, 42, 43
William Rogers, Ph.D., 8
Joseph Rusinko, Ph.D., 41, 47
Jeff Sinn, Ph.D., 9
Merry Sleigh, Ph.D., 5, 7, 9, 12, 13, 15, 19, 21,
 23, 26, 34–37, 39, 42, 43, 46–48, 50, 53, 54
Jane Smith, Ph.D., 31
Julian Smith III, Ph.D., 3, 6, 21, 25, 35
Jennifer Solomon, Ph.D., 40
Sarah Stallings, Ph.D., 6
Pravda Stojeva-Popova, Ph.D., 3
Karen Stock, Ph.D., 27
Takita Sumter, Ph.D., 7, 17, 49, 60
Larry Timbs, Ph.D., 16
Scott Werts, Ph.D., 13
Kristi Westover, Ph.D., 7, 11, 34
Kimberly Wilson, Ed.D., 18, 51