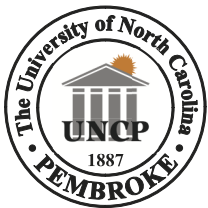


Sixth Annual UNC Pembroke Undergraduate Research and Creativity Symposium



April 20, 2012

*Program
with Abstracts*



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April 20, 2012

Dear Students and Colleagues,

The UNC Pembroke Undergraduate Research and Creativity Center cordially welcomes you to the Sixth Annual PURC Symposium, a campus-wide celebration of undergraduate research and creative endeavors. We are pleased to include 98 scholarly presentations by approximately 107 students and 48 faculty mentors, representing 18 academic departments.

The mission of PURC is to stimulate, support, and promote inquiry, discovery, and creativity in scholarship and the arts through mentored research experiences with faculty and other regional, national, and international scholars and professionals. The Center facilitates and coordinates preparation in research skills necessary for professional fields and graduate study.

This year the PURC Center expanded opportunities to support Faculty Mentored Student Scholarship/Creativity. In addition to the *Student Travel Funds (STF)* for Research or Presentation of Results, which we have traditionally offered, we added *Student Scholarship Support (SSS)* and *Undergraduate Scholar Assistantships (USA)*. So far this academic year, we have provided *STF* for 36 presentations, and *SSS* for four student projects. Finally, we awarded 9 *USA*, which are funded in part by a grant through the Department of Education- Native American Serving Non-Tribal Institutions (DOE-NASNTI).

Contributions from Progress Energy, our first corporate sponsor, help make this program possible. In particular, the prizes awarded for our student scholars are purchased with those funds. Progress Energy's commitment to higher education helps the PURC Center continue to provide UNCP students with extracurricular scholarly opportunities.

Many thanks go to all the students and faculty mentors, whose works are represented here today, to Lisa Smith, PURC's administrative assistant, to the PURC advisory council for all of the hard work they have done to help bring this event to you, the Office of Academic Affairs, Provost Kitts, and Chancellor Carter. Thanks, also, to the graduate programs represented and the former students who have contributed to the session on graduate programs.

It is our desire that the PURC Symposium will be a launching pad for student participation in research and formal presentation venues. So, please plan to take your works to local, regional, national, and international meetings.

Best wishes,

Lee Phillips, Ph.D.
Director – PURC
Associate Professor of Geology

Sixth Annual - Pembroke Undergraduate Research and Creativity

Symposium

Friday April 20, 2012

University Center - Annex

Schedule of Events

- 9:00 – 9:10 Greetings – with morning refresher**
Office of the Provost and Academic Affairs: Dr. Elizabeth Normandy
Director of the PURC Center: Dr. Lee Phillips
- 9:10 – 10:00 Importance of Undergraduate Scholarship when applying to Graduate School**
- 10:00 – 10:45 Morning Poster/Exhibit Session**
Posters and Exhibits will be present all day. Authors will be present during this time.
- 10:45 – 12:00 Morning Oral Presentations / Performance**
- 10:45 – 11:00 Contemporary Chamber Music: “*Fanfare for St. Edmundsbury for Three Trumpets*” – by Benjamin Britten
Cheri Ward, Cory William with Dr. Tim Altman (mentor)
- 11:00 – 11:15 A Comparison of Three Health Care Systems
Daniel Bougt
- 11:15 – 11:30 Food Allergy and the Quality of Life Measurement
Wei Huang
- 11:30 – 11:45 Joint Replacement and its Associate Costs
Jacob Nicholas
- 11:45 – 12:00 Washington Lafayette and the Conway Cabal
Noah Clark
- 12:00– 1:15 Deli Lunch Service**
- 12:30 – 1:15 Afternoon Poster/Exhibit Session**
Posters and Exhibits will be present all day. Authors will be present during this time.
- 1:00 – 1:15 Composed Improvisations/Child of Tree by John Cage**
Will Bradle, Ryan Friddle, Jamie Patterson and Zach Wood
- 1:15 – 2:45 Afternoon Oral Presentations / Performance**
- 1:15 – 1:30 Developing Expertise: Tutor Training in the UNCP Writing Center
Victoria Newkirk, Tank Steiner, Brittany Glenn, Cheron McMullen, and Lonnie Cox

Schedule of Events (*Continued*)

~ Afternoon Oral Presentations (*cont.*) ~

1:30 – 1:45 Katniss as an Orphan: The Effects of Absent Parents in the Hunger Games

Amelia Philbrook

1:45 – 2:00 Dynamics Processing and Equalization in Digital Audio Recording

Matthew Siegel

2:00 – 2:15 Rethinking ESL Tutoring Strategies: Lessons from Germany

Tank Steiner

2:15 – 2:30 Opium for the Masses

Dean Stephens

2:30 – 2:45 Kenneth Branagh's Henry V: Historical Accuracy Discussion

Jeremy Vargas

3:00 – 3:45 Keynote Address: *How New Media Can Keep Old School Media Live*

Mr. Thurston Briscoe

3:45 – 4:00 Awards Presentation and Closing Remarks

Mr. Thurston Briscoe



Mr. Briscoe is the Vice President of Programming and Production at WBGO JAZZ 88 in Newark, New Jersey. He is also the Executive Producer of JazzSet with Dee Dee Bridgewater, Live at the Village Vanguard, The Checkout, among other programs. Mr. Briscoe first worked in radio as a jazz announcer at KMWU-FM broadcast from the campus of Wichita State University (Wichita, Kansas) when he was a college freshman in 1965. After serving a tour of duty with the army in the late 1960's, he completed his B.A. degree in Education from WSU with major in Theatre and minor in Broadcasting in 1974. He only spent three years of that time on-the-air. In 1971, he landed a job working as a rock and blues announcer for the now defunct KFH-FM in Wichita. He didn't return to the radio world again until he was living in Eugene Oregon in 1974. At KLCC, he added news and public affairs to his developing announcing skills. Attendance in one of the satellite NPR production seminars and a month residency in Washington, D.C. helped pave the way for him to get a job as production assistant in the Arts Unit for NPR's Morning Edition. He spent ten years at NPR. During that time he became an associate producer for "Jazz Alive" hosted by Ben Sidran and a features producer, interviewer (mostly of jazz, blues and pop musicians) and assignment editor for morning edition. After ten years, Mr. Briscoe was the Senior Arts producer for NPR's News and Information Division. At that point, he was ready for a change and subsequently was hired as the program director of WBGO JAZZ 88 in Newark, New Jersey (the jazz station for the New Jersey and New York City area). He is responsible for the broadcast sound of the station. His is also responsible for activities and technical support, providing inspiration so that his staff is more creative, and developing innovative ways to present the music, news and information.

PURCS Abstracts

Poster / Exhibit Session

1. Origins

Presenter: Abir Abumohsen

Faculty Advisor: Mr. David Hicks

Discipline: *Art*

To define a human being in its purest state I created this ceramic sculpture as a projection. This sculpture represents a human embedded into these organic/plant forms. The concept here was to take away the individual from materialism, societies, systems, and values and place them in calm state where the enjoyment becomes focused on the state of being. This project was way of studying meditation and the characteristic of humanity within relationship to nature. This allows more of an understanding on what is some of the essentials to our existents and how our internal energy corresponds and shares characteristics with nature. The idea here is intended to bring of what I think is the core that elicits the beauty that defines us as human beings. These organic forms can be a projection of fertility, of personal growth, or even connectivity to some other elements around us. It is created to celebrate its pure state of creation and implying this idea to the origins of humanity.

2. Self Portrait

Presenter: Abir Abumohsen

Faculty Advisor: Mr. Brandon Sanderson

Discipline: *Art*

This project was an exploration of the painting material as well as my response and cognitive processing to it. With learning about the basic elements such as value, texture, line, and movement I also learned a whole lot about what the eyes see and what the mind imply while you are replicating a visual. The challenge with doing my personal picture was that it became too personal in the process of making it to the point where my mind starts to fool me about certain things. This opened my mind to how do we psychological think we look like rather than what we actually look like. The project became an exploration of its creation as well as of the self.

3. From the Cosbys to the Kyles

Presenter(s): Alisha M. Alston

Faculty Advisor: Dr. Judith Curtis

Discipline: *Mass Communications*

This paper is focused on the evolution of the portrayal of African American families in two situation comedies (The Cosby Show and My Wife and Kids) over a two decade period. A qualitative analysis reveals that

the The Cosby Show family is more supportive, nurturing, compassionate, and encouraging than the My Wife and Kids family. The Cosby family had a more positive outlook on situations and had a light-hearted comedic tone. The My Wife and Kids family was more negative, detached, self-centered, and independent than the Cosby family. The Kyles had a more judgmental outlook on situations with a, sometimes, harsh and sarcastic comedic tone. Between the two shows, the father and mother figures vary from honored and respected on the one hand, to feared and rebelled against on the other. The children also became less of a focus, as attention was drawn more closely to the patriarch's daily experiences and survival of his family. These results suggest that the media's portrayal of the black family may have shifted toward a unit that is more divided than together. Since the media have been proven to affect the learning and acceptance process of viewers (Gerbner, Gross, Signorielli, 2002), their concept only reveals their limited knowledge on the true African American family. Though the family home structure is identical, the lifestyle within the home only showcases a comedic undertone of the disregard of the unity and strength of the African American family.

4. Separating Oligomeric $A\beta_{42}$ Peptide from $A\beta_{42}$ can help test for a drug that can prevent Alzheimer disease

Presenter(s): Vivian Anunobi
Pamela Quizon,

Faculty Advisors: Dr. Ben Bahr
Dr. Megan Wisniewski

Discipline: *Biology/Chemistry*

Alzheimer's disease (AD) is the leading cause of dementia in which progressive cognitive impairment correlates with synaptic pathology. The small 4 kDa $A\beta_{42}$ peptide comes from the larger amyloid precursor protein (APP) and the accumulation of the small $A\beta_{42}$ peptide is thought to be the cause of the disease. The peptide appears to become more toxic when it forms oligomers as part of the disease process. The $A\beta_{42}$ oligomers cause synaptic dysfunction of Alzheimer disease which leads to memory loss. In order to characterize monomers and toxic oligomers, we are trying to separate them on gradients. This peptide can be studied on a gradient. Gradients were run by ultra-centrifugation with peptide that was allowed to aggregate for four days and ones that were not. Early result indicates that there is more $A\beta_{42}$ peptide in the heavier density fraction after four days of aggregation. Through the experiment a method was developed to separate $A\beta_{42}$ on a discontinuous gradient of iodixanol. Accordingly, screening of $A\beta_{42}$ -interacting compounds has begun using immunoblot methods and a panel of antibodies against $A\beta_{42}$ conformations. The tendency of $A\beta_{42}$ to form high molecular weight species and the dimers being the first oligomeric pool to be correspondingly depleted has important implications for the treatment of AD. If we can understand how non aggregated peptide goes to aggregated state and if we can monitor it with gradients then we can test drugs to see if we can block that process.

5. Animal Kidney Stone Analysis

Presenters: Sarah Arcara
Ashley Leviner

Faculty Advisors: Dr. Siva Mandjiny
Mrs. Shanna Harrelson

Discipline: *Chemistry and Physics*

The kidney is an amazing organ for human and animals as it has many valuable functions. The main purpose of it is to excrete waste metabolites from the body and to re-circulate the valuable nutrients and other ions back into the blood stream. There are certain ions such as oxalates and phosphates that are potentially dangerous ions in the system as it can combine with calcium or with magnesium to form calcium oxalates, calcium phosphates and ammonium magnesium phosphates. These salts are not at all soluble as the solubility product is very low at the given condition. If the concentration is high as it is concentrated in the urine these two salts could form in the kidney and passed into the bladder through the ureter. This study focuses on the analytical part of various stones obtained from various animals such as dogs and cows. The stones have been analyzed for oxalates, phosphates, calcium and magnesium content of it. Also, the contour map of calcium and magnesium has been done for these stones by Microprobe Analysis.

6. TMAH-catalyzed Biodiesel Production for Greater Energy Independence

Presenters: Trey Archer
Rebecca F. Panter

Faculty Advisor: Dr. Rachel Smith

Discipline: *Chemistry and Physics*

The University of North Carolina at Pembroke is located in an economically depressed yet agriculturally rich region of eastern North Carolina. Local farmers would benefit from the savings and independence gained by the ability to grow their own fuel stock crops during the off-season to be used to produce biodiesel for farming equipment and vehicles. This project is part of a larger one, which aims to design a bench-top prototype for a cost-effective biodiesel reactor using a variety of fuel stock. Optimization of conditions for the production of biodiesel from oil and methanol in the presence of the basic phase-transfer catalyst tetramethylammonium hydroxide (TMAH) were determined. This process has been found to be highly successful, with near 100% conversion rates at reflux in less than two hours.

7. The Future Lies With Him

Presenter: Desarae Ashley

Faculty Advisor: Dr. Michele Fazio

Discipline: *English and Theater*

In the sixty-year difference between George Stewart's *Earth Abides* (1949) and Cormac McCarthy's *The Road* (2006), we see a shift in the father-son paradigm by how this relationship is affected by the lack of maternal influence, the setting in which these novels are placed, and the type of apocalypse that has fallen upon these characters. Post-apocalyptic literature often portrays how "the end" affects the father-son relationship and by comparing and contrasting these two novels, we find that they both deal with very different circumstances, especially considering the ways in which both fathers treat their son as a savior to a lost age. In *Earth Abides*, Ish and Joey remain rooted to one place, establishing a close knit society with other survivors. However, McCarthy chooses not to name his characters and places them in a

world where it is dangerous to stay in one place or trust anyone other than each other. While Ish's people just have to go to the store and find some old food on the shelf, McCarthy's characters do not have that luxury because there is nothing left on the shelves to gather that has not been burned away or scavenged by other survivors. Each father pushes their son to learn from them either through intellect or spirituality to aid them in their pilgrimage to explore what life used to be like or what now makes life worth living.

8. I Have a Dream of an End ... to the End of the World: Survival Strategies in Post-Apocalyptic Literature

Presenter: Kathryn Baker

Faculty Advisor: Dr. Michele Fazio

Discipline: *English and Theater*

Survival is a common theme of post-apocalyptic literature, specifically as a means to end- the end of the world. This survival comes in several forms, including emotional void as a coping mechanism and a symbol of the future world to inspire hope. In both George Stewart's *Earth Abides* (1949) and Cormac McCarthy's *The Road* (2006), a fight or flight mentality is necessary to ensure survival. This conflict is illustrated through the two father figures whose actions to remain in place or continue a cross-country journey shape their future. However, it is the symbols they use—the hammer and fire—that allow for the survival of humanity to be passed on. The survival methods that the characters choose are important regardless of time and setting since they ensure the growth of humanity rather than reducing survivors to empty vessels roaming a ravaged, empty Earth.

9. Many Concepts Made the Monster: The Importance of Relationships in Mary Shelley's *Frankenstein*

Presenter: Justin Baldwin

Faculty Advisor: Dr. Susan Cannata

Discipline: *English and Theater*

In the novel *Frankenstein*, Mary Shelley demonstrates the idea that ignorance is a monster. My purpose is to help demonstrate how the novel shows that relationships are important and that ignorance can be dangerous. Victor's isolation from society helped mold him into a man who fell from a stable man to an incompetent man. He was a man who focused intensely on his work and forgot about the outside world. When his creation was "born" he realized how much of life was gone. The "new Victor" grew more into an ignorant person and had more drastic unhealthy social characteristics. Portions of the novel that support this point are when Victor blamed one for a murder without proof, when Victor judged his creation as disgusting from the beginning, and when the creature begged for understanding from Victor and never received it. His lack of relationships and his ignoring the advice of others were a building block towards his unstable mentality. Victor's death demonstrated that one needs the companionship of others. I will research various ideas consisting of the ways that Victor valued life, what was Mary Shelley's purpose in forming Victor's character into one that is mentally unstable, and how the birth of the creation helped destroy Victor's life.

10. Self Portrait

Presenter: Marcy Bishop

Faculty Advisor: Mr. Brandon Sanderson

Discipline: *Art*

The theme behind my self portrait is happiness. I wanted my self portrait to depict me in every sense of being happy, I also wanted the things that make me feel this delightful to be depicted in my print. If you look at some paintings from the 1600's you will find that artists loved making self portraits with there animals. I found that an inspiration for the piece. As you can see from the work I have a small dog in my arms and green leaves in the background. If there is something that brings me pure bliss, it is my dog. I wanted to show how important she is in my print. The leaves behind us are a symbol of nature and the beauty of color and importance of nature and coexisting.

11. New Tools for Microscale Chemical Analyses

Presenter: David Blake

Faculty Advisor: Dr. Paul Flowers

Discipline: *Chemistry and Physics*

Microscale analysis techniques are those used in the analysis of very small sample volumes. These techniques are essential for the analysis of samples that are intrinsically small, of limited availability, or so hazardous as to be problematic in regard to personnel exposure and safe disposal. This research is directed towards the development of new devices that permit simultaneous electrochemical and optical measurements ("spectroelectrochemistry") on sub-microliter sample volumes. We have modified a commercially available electrode assembly designed for macroscale samples to yield an apparatus suitable for microscale analyses. A standard chemical system was analyzed using the electrode assembly in both its originally intended large volume configuration and our microscale adaptation. The results obtained demonstrate the modified apparatus to be effective in the analysis of sample volumes significantly lesser than one microliter, a ten-fold improvement over any previously reported similar device.

12. Physical Methods to Improve Plant Germination Revisited

Presenter: David Blake

Faculty Advisor: Dr. Maria Pereira

Discipline: *Biology*

Population growth statistics project that the increasing global demand for food is steadily outpacing supply. Additives are often used to enhance plant growth, but public suspicion has been cast upon their impact on human health. Many fertilizers use nutrients derived from recycled industrial waste; however, there are alternative techniques to enhance crop yield that do not introduce potentially harmful exogenous substances to the plant and soil. Research from developing countries suggests that the use of mag-

nets and ultrasound have an impact on the development of crop plants, and in appropriate dose, may have a positive influence. In a previous study the impact of ultrasound and magnetic fields on the germination and growth of *Phaseolus lunatus*, the lima bean, were reported. The experiment was repeated using a commercially available brand of *Solanum lycopersicum*, tomato seed, and in a greenhouse environment. Data suggest, given the new experimental parameters, that ultrasound and magnetic field exposure to seeds did not have an obvious impact on the germination and growth of the tomato plants. Results from the previous experiment on lima beans are revisited with improved statistical analyses and further conclusions are drawn.

13. Cultural Immersion Experience

Presenter: Anna Blue

Faculty Advisor: Mr. Frederick Stephens

Discipline: *Social Work*

Two subpopulations of African Americans will be contrasted: a young bicultural female and a male teacher math teacher who was a first generation college student. The first person is a young woman of African American and Native American descent. Key factors in the research will be what it was like for her to grow up as a part of two separate minorities and cultures. Her cultural heritage is extremely rich and diverse. As a college student living in Robeson County, it will be discovered how and why she ended up where she is now, and to contrast her experiences with that of the researcher and of the other person being including in this immersion experience.

The second person is a male high school math teacher and also a varsity basketball coach. Questions will center on what his life was like prior to his career as a high school teacher and coach. His upbringing and educational and life experiences as an African American man and as someone born at the peak of the Civil Rights Movement will provide unique insight. Both of these subgroups are culturally diverse and intriguing topics for a cultural immersion experience. The objective of this experience is to widen horizons and knowledge about African American cultural differences for an inexperienced researcher in this field. The research will be gathered through personal dialogue with both members of each subpopulation as well as through observations gathered during interaction activities.

14. The New Mobile Learning Landscape: Using iPads to solve problems in preservice teachers' classrooms

Presenter: Amanda Boyd

Faculty Advisors: Dr. Rita Hagevik,
Dr. Irina Falls
Dr. Heather Higgins

Discipline: *Biology*

iPads are responsible for more than 97 percent of all tablet traffic in the U.S. and the Apple iOS platform for more than 58 percent of all mobile traffic (August, 2011, comScore report). To this extent, this re-

search focused specifically on the use of iPads in the classrooms of six preservice teachers; one birth-kindergarten, two secondary science, and three elementary special education. The preservice teachers received minimal instruction on how to use iPads to solve problems and were subsequently issued one iPad each for their use during their student teaching semester, which was approximately ten weeks. Before and after the experience, the participants took three online surveys. The surveys consisted of the following; perceived problem-solving, prior technology use, and sense of self-efficacy. The preservice teachers were asked to document and reflect on how they used the iPad to solve problems in their classrooms through the use of the Apps available, such as Google Docs, notes, sticky notes, and iCanDoIt! The preservice teachers submitted their artifacts and were interviewed at the completion of the study. The purpose of the study was to determine how these preservice teachers used the iPads to help them solve problems in their classrooms. Preliminary results showed that the iPads were exploited to help find different applications to solve the preservice teachers' dilemmas. For example, one of the dilemmas consisted of teaching preschoolers their phone number. The preservice teacher searched for an application about phones. She came across an application called "Phone4Kids." The application resembled a giant colorful phone; allowing the children to practice typing their personal phone number. This is one example of the process of documenting classroom dilemmas, which allowed the preservice teachers' to self-reflect immediately and to distinguish, plan, and solve problems. In this study, it was found that mobile learning devices such as the iPad hold potential for use in teachers' classrooms as a management and problem-solving aid. By learning how to cope with and face challenging situations or dilemmas, it is hoped that teachers will be able to more immediately and successfully address problems in their classrooms.

15. The Recovery of Dextromethorphan Using Solid Phase Extractions and High Performance Liquid Chromatography

Presenter: Meghan Brady

Faculty Advisor: Dr. Meredith Storms

Discipline: *Chemistry and Physics*

Dextromethorphan, a cough suppressant, is found in a number of common over-the-counter cough medicines. Even though dextromethorphan has been established as an effective drug when fighting a cough that accompanies the common cold, it has also been found to be a drug that is abused by over two million adolescents across the United States every year. In response to this problem, a research effort is being made to validate a method to maximize the recovery of dextromethorphan from biological samples, such as human hair, using a procedure involving solid-phase extraction (SPE) and high-performance liquid chromatography (HPLC). Various solid-phase extraction procedures were explored and the percent recovery from SPE was determined by HPLC – (mobile phase of 70% 6.25mM (pH 3.2) sodium phosphate : 30% acetonitrile) on a C-18 column (4.6x150 mm) at a flow rate of 1.0 mL/min with UV detection. The optimized SPE-HPLC procedure will be utilized to extract dextromethorphan from hair, and subsequently conclude if cosmetic treatments affect the amount of dextromethorphan recovery from hair.

16. The Leadership Imperative for Women in American Indian Elementary and Secondary Education

Presenter: Courtney Brayboy

Faculty Advisor: Dr. Charles Harrington

Discipline: *Management*

Findings from the latest federal Schools and Staffing survey reveals that just over half of principals at BIE schools are Native, and fewer than half female. the Presenter will discuss survey findings, leadership strengths of Native women, and offer suggestions on increasing the representation of Native women in principalships.

17. Molar Absorptivity of Riboflavin

Presenter: Davita Brockington

Faculty Advisor: Dr. Siva Mandjiny

Discipline: *Chemistry and Physics*

Riboflavin (Vitamin B2) is a precursor to the coenzyme necessary to produce FAD, which is a vital component of the citric acid cycle and fat metabolism. In this experiment, the molar absorptivity (ε) of riboflavin was measured at a wavelength of 444nm. ε was measured by preparing solutions of varying concentrations of riboflavin and recording the absorbance of each solution at 444nm using a UV-Vis spectrophotometer. Manipulation of Beer-Lambert's law produced a molar absorptivity of 11876M⁻¹cm⁻¹.

18. Assignment of ¹H and ¹³C Resonances in α -cis [Co(ampy)₂(NO₂)₂]NO₂

Presenter(s): Sandra Buffkin

Faculty Advisor: Dr. Mark McClure

Discipline: *Chemistry and Physics*

α -cis [Co(ampy)₂(NO₂)₂]NO₂ was studied by a series of two-dimensional NMR experiments. The experiments performed included DEPT, COSY, homonuclear J-resolved, and heteronuclear correlation (HETCOR). The J-resolved experiment was used to determine the centers and multiplicities of the ¹H resonances. The COSY was used to established connectivities between sets of coupled protons. Last, the HETCOR was used to assign the ¹³C peaks. The use of these two-dimensional techniques allowed for the complete assignment of the ¹H and ¹³C resonances in this compound.

19. The Upper Big Branch Mining Disaster: Lessons Learned

Presenter: Joseph Cherry

Faculty Advisor: Dr. Rick Crandall

Discipline: *Management, Marketing and Int. Business*

Underground coal mining has always been a hazardous occupation. The job is dangerous because of the potential for explosions from methane gas, air quality issues arising from coal dust, and the potential collapse of the mine itself. Miners must proceed deep inside of the mountain with heavy equipment to extract the supply of coal. They accomplish this task by digging into the coal ore seams. If proper precautions are not taken, explosions, health problems, and collapsing of the ceiling of the mining operation could occur. However, each of these conditions can be prevented with proper management of the mine and a focus on following safety precautions.

The Upper Big Branch mine is located outside of Beckley, West Virginia. It is owned and operated by the Massey Energy Company, one of the nation's largest coal mining operations. This branch of Massey's coal empire faced a fatal explosion in April, 2010, in which 29 miners lost their lives. The cause of the explosion was determined to be a mixture of coal dust and methane gas. One of the major reasons why this tragedy occurred was because of the numerous safety violations committed by Massey Energy Company. Rather than spend the money for fixing the violations, Massey Energy management decided to pay fines rather than abide by industry safety regulations, putting the miners' lives in jeopardy.

This case study examines the circumstances surrounding the explosion that occurred in the Upper Big Branch mine. I look at who and what was at fault, including what Massey management did before and after the explosion. Finally, I look into the lessons learned and what safety conditions should have been addressed differently to prevent these 29 hard working men from losing their lives when they were trying to provide for their families.

20. Biodiesel production from vegetable oils by using TMAH as a catalyst

Presenters: Armando Corona
MJ Estigoy
D Hedrick
R Panter

Faculty Advisor: Dr. Cornelia Tirla

Discipline: *Chemistry and Physics*

Biodiesel is an alternative fuel that is both environmentally friendly and usable in diesel engines. Farmers can reduce their expenses by growing fuel stock crops during off-seasons to use for biodiesel production. This research is part of a project designed to help local farmers produce biodiesel by constructing a bench-top biodiesel reactor for individual use. Optimum conditions for using tetramethylammonium hydroxide (TMAH) as a phase transfer catalyst for producing biodiesel from soybean and used vegetable oils were investigated. Reactions involved different reactions times for the scale up process. Also different glass-ware apparatus was used with the purpose of designing a prototype reactor. Analyses of each reaction were performed using NMR and GC spectroscopy, and results confirm that biodiesel was effectively produced using these methods.

21. Japanese 'Spiritualism' and American 'Exceptionalism': The Unavoidable Road to Destruction in WWII

Presenter: Lonnie Cox

Faculty Advisors: Dr. Annika Culver
Dr. Jaime Martinez

Discipline: *History*

In this short research paper, the conflict that became between the United States during World War II is focused on. There have been several opinions as to whether or not the conflict was unavoidable, and when the conflict became unavoidable. Most historians argue that the conflict was unavoidable because of the incompatibility of the two driving forces, but at what point did it become unavoidable? As to when the conflict became unavoidable, some argue that a conflict became unavoidable in 1853 upon Perry's arrival, while others argue that the conflict became unavoidable when Japan chose to become more aggressive during the 1930s. From Perry's Arrival in Japan in 1853 to Japan's attack on Pearl Harbor in 1941, the ongoing tensions are examined in an effort to find the point or timeframe in which this conflict became unavoidable. . In addition, the two driving forces, Japanese 'spiritualism' and American 'exceptionalism,' are examined so that any reader will be able to truly understand why this conflict became unavoidable.

22. The Rise of a Hero in of Suzanne Collins's The Hunger Games

Presenter: Kimberly Darnell

Faculty Advisor: Dr. Susan Cannata

Discipline: *English and Theater*

When most people read The Hunger Games by Suzanne Collins, they immediately see Katniss Everdeen as a symbol of rebellion. And she did eventually morph into that symbol for the masses. But she had to grow into that role. In the beginning of the book, Katniss was a model citizen of District 12, with a few exceptions. The society of Panem is a one that uses the concept of 'for the greater good' to control its citizens' lives. Ruled by a single party dictatorship, the Capitol exerts an oppressive control over the citizens' lives. This control was not always widely accepted. In fact, 75 years before the events in the book there was a rebellion. Unfortunately it failed. In response to this rebellion, the Capitol destroyed District 13 and instituted the Hunger Games. This was done to show the citizens the ultimate control that the Capitol holds over their lives. At the end of the book, Katniss forces the Capitol to relinquish a little of the control they exert over the people and becomes a symbol of rebellion and a hero to the people. I will be doing research on bildungsroman criticism and what makes a hero in young adult literature. I will then analyze and compare her character to show her development.

23. Zombies as a Metaphor

Presenter: Austin Duke

Faculty Advisor: Dr. Michele Fazio

Discipline: *English and Theater*

Over the last few years, Zombies have garnered a strange, almost ubiquitous relevance that permeates popular culture. But the undead are far more than living corpses lusting after brains. They become a metaphor, representing fears of life and death, and their use as a literary device has never been more widespread than it has today. From its mystical beginnings to its contemporary connotations, the word Zombie has multiple associations--historical, cultural, and social--applicable to various facets of society. A zombie can represent a topic as relevant as mass consumerism or even the fear of scientific advancement as is evident by their ever changing means of revitalization. My project intends to examine the etymology of the phenomenon of zombies, contextualize its role in popular culture, and analyze its function as a literary device. Excerpts from *The Walking Dead* by Robert Kirkman and Tony Moore, *These Zombies Are Not a Metaphor* by Jeff Goldberg, and *The Road* by Cormac McCarthy illustrate my project's notions of the undead and accrue recognition for them as a respected and relevant metaphor that offers a critique of American contemporary society.

24. Characterization of Various Biochars Using the Microanalysis and Imaging

Presenter: Indya Evans

Faculty Advisors: Dr. Debbie Hanmer
Dr. Lee Phillips

Discipline: *Biology*

Biochar is produced by heating organic matter to high temperature in the absence of oxygen. Volatile organic molecules are driven off leaving behind a mostly carbon matrix. Biochar is of interest because it has been shown to significantly improve soil fertility, texture, and water holding capacity when added as a soil amendment. Unlike other forms of carbon added to the soil, biochar does not decompose. Thus has the potential to mitigate global warming by sequestering CO₂ in the soil. Biochar studies are still in their infancy and there are unanswered questions about which feed stock is best to use and the ideal temperature for biochar production.

We are analyzing six different biochar samples using the facilities at Southeastern North Carolina Regional Microanalytical and Imaging Consortium (SENCR- MIC). We hypothesize that there are identifiable differences between various biochars based on feed stock and highest treatment temperature. We collected samples of biochar from diverse feed stocks with different maximum highest temperatures. The samples were prepared for the microprobe analysis. Data collection is in process using the microprobe to characterize the samples.

25. The Good, The Bad, and the Hungry: Morality and Survival in The Hunger Games

Presenter: Savanna Fowler

Faculty Advisor: Dr. Susan Cannata

Discipline: *English and Theater*

In Suzanne Collins's *The Hunger Games* the protagonist, Katniss, is thrown into a game of kill or be killed known as the Hunger Games. Katniss competes in the bloody arena while competing against her own guilt in the killing of other human beings. Katniss's struggle to justify murder in order to survive the games permeates the entire novel, and her internal dilemma questions the morality involved in the struggle for her life. It is the circumstances of the Hunger Games that raises questions about the right and the wrong involved in the human experience of survival, and what the readers of *The Hunger Games* perceive to be virtuous and acceptable in their own lives. My paper will focus on the morality involved in the survival of Katniss in the Hunger Games and the society of Panem. I will examine how *The Hunger Games* questions the traditionally accepted morality or immorality of specific actions and institutions throughout the novel. I will then use the themes of maturity and social conflict in the bildungsroman to show how Katniss realizes and negotiates her own ideas of what is moral and ethical.

26. We are Troy Davis: The Protests Behind the Man of Innocence

Presenter: Jocelyn Frink

Faculty Advisor: Dr. Monika Brown

Discipline: *English and Theater*

In a Fall 2011 composition course about Protest and Activism, I wrote about the death-penalty case of Troy Davis, who was executed by the state of Georgia on September 21, 2011. "...With liberty and justice for all" is a phrase we recite each and every time the Pledge of Allegiance is said. It may seem all so simple to say the pledge and not truly embrace the meaning of justice for all. As for former death row prisoner Troy Davis, justice did not come easy for him.

His story is one that has attracted global awareness of how the United States judicial system does not always ensure equal justice. In 1991, Troy was tried and convicted of the 1989 murder of an off duty police officer in Savannah, Georgia. What makes his case controversial yet unique is the fact that up until the day of his execution in 2011, he defended his innocence and many people believed he was unfairly convicted. Millions of protestors worldwide, from college students to Pope Benedict XVI, pleaded for his life. After all no murder weapon was ever found, forensic evidence was not collected, and those who testified retracted their original testimonies years later saying that either Troy wasn't the gunman or that he was not present at the crime scene.

The death penalty case and execution of Troy Davis relates not only to me, but my generation as a whole because it shows just how unjust the American judicial system can be. Justice did not succeed for Troy Davis, his family, or the millions of others who look to the legal system to ensure that equal and nondiscriminatory justice is served to all.

27. Product Placement in Mass Media: A content analysis of products placed in the television show "Sex and the City"

Presenter: Ellen Geanes

Faculty Advisor: Dr. Judy Curtis

Discipline: *Mass Communications*

Product placement has taken the lead in mass media as a main source in both advertising and income. In HBO's "Sex and the City," a television program with no commercial interruptions, product placement is used to not only generate income, but to also explain the fictional characters' lifestyles in the show. Major brands such as Apple, The North Face, Verizon, Motorola, Panasonic, and Marlboro are examples of products placed in the show. These products are important for both character descriptions and funding for a major television program. It has been noted that the show "Sex and the City" exemplifies the term product placement because of its varied, and major, products in each season.

28. Look! A New Solid-Phase Extraction Technique for Undergraduate Students!

Presenter: Mary Elizabeth Gonda

Faculty Advisor: Dr. Meredith Storms

Discipline: *Chemistry and Physics*

Although high-performance liquid chromatography (HPLC) is commonly integrated within the undergraduate curriculum, students are often not exposed to solid-phase extraction (SPE) which is a widely employed technique in pharmaceutical analysis. Additionally, SPE is typically used in forensic chemistry to detect drugs in biological fluids and therefore, the goal of this research is to optimize a method to measure dextromethorphan in hair. The interest in human hair has resulted since it has a longer window of detection and is therefore, becoming more common for workplace drug testing. Therefore, extraction procedures were employed using various SPE cartridges. Following the extraction, the samples were evaporated to dryness and reconstituted in a buffer solution. HPLC with UV detection at 226nm was used to quantify the recovery of dextromethorphan. Incorporating this type of methodology into the undergraduate curriculum would expose students to solid-phase extraction as well as the statistical calculations that are necessary. Additionally, students' knowledge of HPLC would be further cemented as a result of a practical, real-world application.

29. Why we play: Online gaming motivations and personality

Presenter: Christopher Green

Faculty Advisors: Dr. Kelly Charlton
Dr. Shilpa Regan

Discipline: *Psychology*

Massively Multiplayer online games (MMO; ex. WoW, Aion, Rift, Everquest) have as a component to them both socialization and entertainment. This online socialization could affect our ability to read people offline (emotional intelligence). One purpose of this study is to determine if there is a relationship between MMOs and emotional intelligence. We expected that those who spend more time in online social environments will have lower emotional intelligence than those who have not spent such time in online environments. We also predicted that the motivation for playing computer games (Yee, 2006) would be related to personality. One hundred and ninety-five introduction to psychology students (145 female, 49

male and one unknown; 54 gamers) participated for course credit. We did not find the expected difference between those who play games and those who do not for emotional intelligence. For the game motivation analyses we only looked at those participants who indicate that they play computer games. We found that several of the Big 5 personality dimensions were related to Yee's (2006) dimensions of motivation for playing computer games.

30. Social Gaming: The New Face of Video Games

Presenter: Allison Griffin

Faculty Advisor: Dr. Judith Curtis

Discipline: *Mass Communications*

Research was conducted on the integration of the social networking and online gaming. By investigating the work of three different studies done on social gaming, it was concluded that social interaction is the key factor in online gaming motivation. The three different studies were on three different types of online social gaming: social networking site games, massively-multiplayer online games, and local area network event games. Negatives were also found throughout the research, although not as consistent or compelling as the positives. Distant friendships suffered losses and "cocooning" effects were noted as some of the negatives of online gaming. The paper summarizes the methods and results used in each study and discusses the effects of this rising trend.

31. A Simple, Robust and Inexpensive Ultrasound Interference Experiment

Presenter: Austin Griffin

Faculty Advisor: Dr. William Brandon

Discipline: *Chemistry and Physics*

Sound interference experiments in the audible frequency range are notoriously annoying due to background noise. Therefore it is prudent to carry out such lab activities using ultrasound frequencies. Typically ultrasound interference experiments require either a relatively expensive kit or, at the very least, a function generator, neither of which can be easily budgeted for many high schools and some colleges. A simple, robust and inexpensive method for driving ultrasound transducers was devised. Our experimental method, which exploits the frequency doubling of PC-soundcard output voltages, can be accomplished for less than \$10, assuming the prerequisite of a computer. As well as presenting the details of the apparatus design and construction the outcomes of several classic experiments involving the interference of sound waves are reported.

32. On the Optical Characterization of CdSe/ZnS Quantum Dots

Presenters: Austin Griffin

Faculty Advisors: Dr. William Brandon

Nathan Riddell
Ginger Pederson
Frederick Shirmer
Ed Derosier
Trey Archer

Mrs. Shanna Harrelson

Discipline: *Chemistry and Physics*

This project, in which a variety of different sized commercially fabricated core/shell quantum dots (i.e. Cadmium-Selenide / Zinc-Sulfide nanocrystallites) suspended in toluene were investigated utilizing absorption and fluorescence spectroscopy, evolved from new course material introduced in the PHY 2180 Optics course. The UV-visible absorption spectra of the quantum dot solutions were acquired utilizing an Agilent 8453 spectrophotometer and the corresponding fluorescence spectra were measured using a custom fabricated photonic breadboard, ultraviolet laser diode and optical spectrum analyzer. Such characterization methods will be central to an ongoing program focused on the eventual goal of the in-situ synthesis of quantum dots.

33. Size Distribution and Bandgap Energy Calculations of Quantum Dots Based on Fluorescence and Transmission Electron Microscopy

Presenters: Austin Griffin
Nathan Riddell

Faculty Advisor: Dr. William Brandon

Discipline: *Chemistry and Physics*

Dilute solutions of indium-phosphide – zinc sulfide quantum dots (i.e. InP/ZnS core/shell QDs) suspended in toluene have been irradiated with various light sources and their corresponding fluorescence spectra are reported. From the fluorescence measurements acquired under irradiation from an ultraviolet laser the calculation of the average size and size distribution of the quantum dots are calculated from the known effective electron/hole masses and the bandgap energy of these semiconducting nanocrystallites. From the size specifications obtained with a transmission electron microscope, which is supplied by the manufacturer of the quantum dots, and our fluorescence data, the bandgap energy is calculated. Deeper aspects of the physics involving the effective hole/electron masses require more information than supplied by these two methods.

34. Theoretical Considerations of Nanostructure Devices

Presenter: Austin Griffin

Faculty Advisor: Dr. William Brandon

Discipline: *Chemistry and Physics*

A dramatic rise in interest and promise of the apparent ever-increasing utility in the field of nanoscience can be attributed to intensive research and subsequently, a variety of useful applications. This investiga-

tion reviews the most salient features of semi-conductor quantum dot theory. In addition a simple, yet attractive, alternative model, one creating a “pedagogical bridge” to deeper levels of understanding for the physics and chemistry major, is presented. This model provides the main mathematical features of all classes of nanostructures: quantum wells, quantum wires, and quantum dots.

35. Belonging to a Sports Team: Motivations, Adaptation to College and Collective Self-Esteem

Presenters: Jonatano Gutierrez
Christopher Green

Faculty Advisors: Dr. Kelly Charlton
Dr, Shilpa Regan

Discipline: *Psychology*

It has become increasingly important for both students and institutions of higher education to identify predictors of college student success. Belonging to a campus group may help engender some sense of commitment to college which may then translate to better adaptation to college and higher retention rates. Indeed, past research has shown that adaptation to college is predicted by collective self esteem (e.g., Bettencourt, Charlton, Eubanks, Kernahan, and Fuller, 1999). In the current study we wished to explore these issues as they relate to sports team membership. Specifically, we predict that one’s motivation to play sports (Mallett, Kawabata, Newcombe, Otero-Forero, & Jackson, 2007) will be related to adaptation college. We presume that if students have a proactive and self-determined (Deci & Ryan, 1985) motivation to engage in their sports team, they may also be motivated as such to participate in college. Also, given the findings of past research we anticipate that collective self-esteem with regard to sports team membership will also be related to adaptation to college. Sixty-one college students participated in a survey study to examine these issues. Results indicate that although sports team motivation was not related collective self-esteem, atmotivation was negatively related to overall, academic, social and attachment adaptation to college.

36. The (Beautiful) Taboo of Post-Apocalyptic Civilization

Presenter: Deon Soriano Harrell

Faculty Advisor: Dr. Michele Fazio

Discipline: *English and Theater*

This presentation will bring to light the personally vexing recurrence of rarely discussed disabled human bodies in apocalyptic literature. There is a consistent presence of diseased and malformed minor characters found in multiple apocalyptic texts. There seems to almost be a necessity for flawed bodies to juxtapose with the newly established standard of perfection. However, despite the abundant (mis)treatment of these afflicted characters, there has been limited critical discussion surrounding the legitimacy or validity of those who bear “in-valid” bodies. Their worth and identity as people, outside the various illnesses, and the rights they have in a post-apocalyptic society are varied but most often limited under the dominant normative class.

In George Stewart’s *Earth Abides* (1949), the vast majority of humanity has been eradicated by a super virus. Evie, a mentally unstable young woman, is deemed so by the de facto leader of a small band of sur-

vivors. Due to her perceived mental instability and despite her designation as the most startlingly "beautiful" woman of the entire Tribe, Evie is denied status as a person and also denied any reproductive rights to the extent that the elders go so far as labeling Evie as one of the four tribal taboos. Evie's character serves as a catalyst in asserting the power that categorized identification has over individual identification in a post-apocalyptic world. The socially acceptable oppression of "invalid bodies" in this novel, and others, brings into question contemporary society and unquestioned unwillingness to accept flawed bodies (and/or minds) as equal under the standardized norm.

37. Beast Within

Presenter: Laura Head

Faculty Advisor: Dr. John Antoine Labadie

Discipline: *Art*

My art reflects the knowledge we seek of ourselves. Many times my work comments on the "good vs. evil" that dwells inside everyone, or the inner demons we all must face. The complexity of the human psyche is the concept I tried to convey through *Beast Within*. The work is a self portrait, dealing with the plurality in an individual's make-up with a slight ambiguity adding mystery to the figure. The image began as a digital photograph which was modified using the repeated outline of the figure with respect to gradation, size and transparency. Also incorporated into the composition was my poem about the inner demons parasitic to our beings. I created the image using the text of the poem. The shades of red, gray, white, and black were chosen in order to gain a sense of melancholy and darkness. The overlapping of text(ure), one smaller and one larger, utilizes hues and slight gradations to create some depth in the areas of the "skin". The mystery of the work brings the viewer in and captivates their interest. My work was inspired by my own personal thoughts and this is what I challenge the viewer to do; think, introspect, and learn of themselves.

38. "To Kill or Not to Kill: Morality in Suzanne Collins's *The Hunger Games*

Presenter: Elaine Hewett

Faculty Advisor: Dr. Susan Cannata

Discipline: *English and Theater*

Suzanne Collins creates a fictional world in *The Hunger Games* with many obstacles causing the young adult characters to think about their moral and ethical beliefs. The main character, Katniss, is a young woman who is experiencing a change in her life because she is at an age where she is forced to grow up due to the fact that her family has faced strains with the absence of her father which causes her to be the provider. The idea of what exactly morality is in the world by Collins is deciding when something is right or wrong when she puts her characters in the predicament of choosing their own lives or the lives of their opponents. My question that I plan to explore is "When is it considered ok to kill?" *The Hunger Games* puts Katniss and her fellow tributes through mental and physical strains that change the way they think. In this novel, morality appears to be a societal norm that can change over time which is seen in the young characters as they transition from the norms of their districts to the game of life or death in the

arena. Katniss and Peeta believe they know what is right, but by experiencing ruthless killing they start to see that the game is survival of the fittest. My research will help me to gain an understanding of what it means to grow up and how morality works and how it is a different mindset. My research centers on the multiple meanings of morality and the literary concept of bildungsroman.

39. Capture Biases: Examining the sampling biases of capture technique efficiencies among aquatic turtle species

Presenter: Ladriana Hudson

Faculty Advisor: Dr. John H. Roe

Discipline: *Biology*

All over the globe, turtle populations are being threatened by a conservation crisis due to habitat loss and degradation, road mortality, and the medicinal, pet, and food trade. As a result, turtle conservation research should be increased to sustain turtle species' populations. Scientists must survey populations and communities to determine which species and how many are available in a particular site so that effective conservation measures can be developed. It is important to be able to sufficiently obtain data for population size, mortality rates, birth rates, sex ratios, growth rates, and survivorship. Two trap styles that are commonly used for the live-capture of turtles are hoop traps and basking traps. Our objective is to assess sampling biases in capture probability for both types of traps in a Gum Cypress Swamp in North Carolina. Over an 8-month period, four basking traps and equivalent numbers of hoop-nets with different baits (sardines, liver) will be placed within the shallow emergent vegetation and checked at 48-hour intervals. We expect that demographic groups and species with aerial basking behaviors, such as the Yellow-bellied Sliders, will take advantage of the basking trap, while turtles that do not bask often, such as the Common Snapping turtles, may be sampled more effectively with baited hoop nets. This knowledge will advance conservation and management methods by helping researchers to understand the capture biases among techniques so that conducting surveys for rare species, assessing populations' status, and quantifying demography is done accurately.

40. Anterior Cruciate Ligament, Lateral Collateral Ligament and Biceps Femoris Rupture of a Collegiate Football Player: A Case Study

Presenter: Pamela Hughes

Faculty Advisors: Ms. Beverly Justice
Mr. Michael Blackburn

Discipline: *Health, Physical Education and Recreation*

This presentation of a 21-year-old football player describes a defensive back who sustained an anterior cruciate ligament (ACL) rupture, lateral collateral ligament (LCL) rupture, biceps femoris rupture, tear at the anterior horn of the meniscus and damage to the lateral capsule of his right knee during a game on September 24, 2011. With minimal support from the athletic training staff, the athlete was able to walk off of the field himself with pain presenting primarily in the posterolateral aspect of his distal upper

leg. The initial differential diagnoses were an isolated LCL sprain, isolated biceps femoris strain, a lateral meniscus tear, and possible capsular damage. Immediately the athlete's playing status was rendered as inactive. A magnetic resonance image (MRI) was ordered for the on the September 26, 2011 to determine specific soft tissue damage. The results of the MRI surprisingly revealed the complex damage done. Due to this amount of damage done to the athlete's knee during a single play of a football game, this case is very much unique. Surgery was performed a week later, which involved an arthroscopic repair of the lateral meniscus and an ACL reconstruction (ACLR). The ACLR was performed using an autograft of the semitendinosus and semimembranosus tendons. To reattach the biceps femoris and LCL, the lateral aspect of the leg was opened. The orthopedic surgeon reported seeing this amount of damage as the result of automobile accidents, but this injury was by far the worst football injury he had seen in his years of experience. The athlete is currently undergoing an intense rehabilitation process and has only been cleared for upper body weight training and rehabilitation exercises. The athlete is focusing on hamstring and quadriceps strengthening at this point in his rehabilitation. The expected return to play season for the athlete is the Spring of 2013.

41. Is He or Isn't He? A Study of Characters and Their Sexual Labels in Dashiell Hammett's The Maltese Falcon

Presenter: Mary Hunter

Faculty Advisor: Dr. Susan Cannata

Discipline: *English and Theater*

In literature, many authors may either follow the stereotypical portrayals of male and female or break the mold and depict their characters as diversely as possible, not following societal gender roles at the time. Certain tenets of sexuality, such as homosexuality or sexism, are more often than not placed in texts in a way that isn't immediately identifiable. Depending on the period in which it was published, such features are sometimes incorporated to reveal an explanation of the character's actions; the interpretation of a character may be influenced by the historical context.

Dashiell Hammett's detective novel *The Maltese Falcon* reveals an array of gender types, from Brigid O'Shaughnessy's dishonest portrayal of a damsel in distress to Wilmer Cook's self-conscious reluctance to identify as homosexual. I'm going to explore how the characters consciously adopt gender stereotypes and how that affects a reader's interpretation. In my research I will first analyze the gender roles during the first half of the 20th century to get a better grasp of society's beliefs towards how men and women are anticipated to be represented when Hammett's *Maltese Falcon* was published and compare it to how it is interpreted today. Through the gender and new historicism critical approaches, readers may be able to better understand the meaning and intentions behind the characters interactions and motives.

42. Smashing Atoms

Presenter: Lingam James

Faculty Advisor: Dr. John Antoine Labadie

Discipline: *Art*

There is something therapeutic about creating Art that gives me a feeling of euphoria that only intensifies when I am able to step back and view my finished work with a sense of accomplishment. I create visual expressions of my thoughts and ideas as a way of communicating to the world what I see with my imagination. I aspire to improve and grow with each experience in my career not only as a digital artist but as a multifaceted artist able to adapt various techniques to a variety of types of media.

Prior to beginning a work I go for a bike ride or run to clear my head so that I can fully develop my idea. Once I have a clear idea of where I want to go with my work I determine what colors I think will best represent the emotion I want to portray. When dealing with color I search for colors that complement as well as colors that contrast to add a feeling of depth. During the creating process I work between programs while applying information learned at school, tips and tricks I've learned from research and experience outside of class.

Prior to being introduced to Op art I often drew large mono-chromatic patterns with pens and paper. As I continued to create these patterns they grew in size, detail and color began to make appearances within many of them. By applying the same concept from my pen and ink drawings to digital works I am challenging myself to apply prior knowledge in new way. Op Art is the next logical step in the progression of my artistic style. Op Art or optical art has an intended physical and mental effect on the viewer and because of this I chose to create such a piece.

43. Ionic Liquids for Carbon Dioxide Recycling: Life Support Applications for Deep Space Exploration

Presenter: Michelle Kerestes

Faculty Advisor: Dr. Paul Flowers

Discipline: *Chemistry and Physics*

Environmental control and life support systems are required elements of any habitats or vehicles used for manned exploration space. Among the critical functions of these systems is the removal of the metabolic waste gas, carbon dioxide, in order to maintain its concentration at a safe level within the habitat. Efficient technologies for carbon dioxide removal will therefore make exploration of deep space easier and more probable for the long term. Removal of carbon dioxide from the atmospheres within manned vehicles and habitats is typically achieved by sorption methods, either chemical (chemisorption) or physical (physisorption). On-going studies in our laboratory indicate that certain ionic liquids may be suitable solvents for the absorption and electrolysis of carbon dioxide. Details of the electrolysis process are presently unknown, but the possibility exists that light carbon-based fuels may be produced, and that could be of added benefit to extended space missions. This poster describes recent experimental investigations of the fundamental spectroscopic and electrochemical properties of one particular ionic liquid that are aimed at assessing its suitability for the dissolution and electrolysis of carbon dioxide. Support of this research by the UNCP Chemistry & Physics Department and NASA is gratefully acknowledged.

44. Family Survival after the Apocalypse

Presenter: Katherine F. Laws

Faculty Advisor: Dr. Michele Fazio

Discipline: *English and Theater*

With the discovery of the Mayan Calendar and the growing obsession with the end of the world during the year 2012, apocalyptic literature has gained popularity. This fascination with the end of the world can be observed in such movies as "I Am Legend"(2007) and "2012"(2009) along with many others. There are a variety of unknown situations that could end the human species such as zombies, disease, or natural disaster; however, little attention is given to helping with realistic concerns such as the survival or the rehabilitation of the family after such a cataclysmic event occurs. Apocalyptic literature, contrary to popular imagination, change the focus from fantasy to reality. Just as the world undergoes extensive metamorphosis, the family and definition of the "nuclear" family does as well. The dissolution and reinvention of family is shown in many apocalyptic literature stories; however, this subject is best depicted in George R. Stewart's *Earth Abides*(1940) and Don DeLillo's *Take the "A" Train*(1962). In Stewart's novel, several different families emerge and maintain their existence, yet DeLillo's story demonstrates the exact opposite, focusing instead on the deterioration of family life and values. The focal point of this project is to examine the different ways the apocalypse affects the survival of the American family and whether its preservation positively or negatively impacts the unknown future.

45. Tricky Women in Hammett's *The Maltese Falcon*

Presenter: Casey Locklear

Faculty Advisor: Dr. Susan Cannata

Discipline: *English and Theater*

The female has always been stereotypically considered to be one of the greatest mysteries according to man. Stereotypes of women like constant complaining, being sneaky and deceitful, but still weak and gullible have been labels pegged to women for ages. This idea is played out in Dashiell Hammett's *The Maltese Falcon*. In this detective novel, the protagonist, Sam Spade has three major female characters involved in his life: Iva Archer, the needy, dependent woman; Effie Perine, the more modern, trying to enter a man's world woman; and Brigid O'Shaughnessy, the woman that uses her sexuality to get what she wants. Spade treats each woman as if he adores her but never fully trusts or depends on any of them. Spade's viewpoint on women can seem quite demeaning, and because the narration is objective, it is hard to know Spade's exact thoughts of each woman. He is very endearing toward all the women, making them all feel special, but seems to act this way because of what he thinks women are: liable to crack at any minute, irrational, always letting emotions get in the way. Why did Hammett choose to write them this way? Is this how he saw women? Was it just the societal influences of his time that made him think this way? In my research I would like to explore the dynamics of Sam Spade's relationships with each female character, and how this lasting generalization of women played a big part in how the story of *The Maltese Falcon* unfolds.

46. Recuperating Native Womanhood through Story Power

Presenters: Myranda Locklear
Jennifer Dorman
Brittany Dorman

Faculty Advisor: Dr. Jane Haladay

Discipline: *American Indian Studies*

The life stories of powerful American Indian women – which have been historically excluded from mainstream educational curriculum – have been passed on nevertheless both orally and in writing, and these stories provide inspiration to future generations of Native women. Our presentation began as final writing assignments in the American Indian Women course we took with Dr. Haladay in fall 2011. Métis/Cree author Kim Anderson's text, *A Recognition of Being: Reconstructing Native Womanhood*, discusses the trauma experienced by Native women and their community roles as a result of colonization, and outlines a healing process to recuperate empowered Native female identity. Using Anderson's text as a framework, our poster will tell our stories and the stories of the significant Native American women who shaped our paths.

47. Frankenstein: A Medical Revolution

Presenter: Crystal Long

Faculty Advisor: Dr. Susan Cannata

Discipline: *English and Theater*

The Industrial Revolution marked a period of great technological innovation. From 1750 to 1850, manual labor began to be replaced with machines and mechanical tools. The inventions of this era sparked enormous advancements in medical technology. Society encouraged progress through research and experimentation, benefitting from its success. However, uncertainties remained. How far is too far? First published in 1818 and revised in 1831, Mary Shelley's *Frankenstein* tells the tragic story of young man's experience in creating human life through technology. In *Frankenstein*, Mary Shelley cautions against the advancement of medical technology being conducted in the early 19th century and encourages society to support nature in its unspoiled design. My research will focus on early 19th century medical technology, experiments, and practices of that time. Research will also include the encouragement and rejection of modern medicine, as well as criticism of Shelley's novel as a critique of such advancements. When I can better understand the social views of 19th century technology, then I can better understand the impact of Shelley's controversial text.

48. Gender and Work Histories of UNCP Staff

Presenter: Rosalie Mashburn

Faculty Advisor: Dr. Brooke Kelly

Discipline: *Sociology and Criminal Justice*

Sociologists define gender in terms of social expectations for masculinity and femininity, not in terms of biological sex or sexual orientation. Gender is a product of social learning and interaction and is present in the practices of social institutions. In order to acquire information about gender and the workplace students in a gender and society course conducted work history interviews with eight university staff members, four females and four males. Although staff members in housekeeping, maintenance, and food services were targeted all of those who responded had at least a bachelor's degree. Interview questions addressed a range of topics, such as basic demographic information, questions about past employment, working conditions at various jobs, job satisfaction, and potential problems at work, such as sexual harassment. Interviews were analyzed with attention to gender, race, age, and social class. Though not addressed in all interviews, gender became relevant in discussions of objectification, sexual harassment, tokenism (being one of a few women or a few men), family leave policies, and work and family issues. Respondents described situations in which gender provided mobility and also created barriers. Interview accounts also indicated that gender expectations vary throughout the life course.

49. Rise to a higher consciousness

Presenter: Mallory McAden

Faculty Advisor: Mr. Brandon Sanderson

Discipline: *Art*

I recall picking up my etching needle to start on a copper etching, thinking to myself "This piece of Art is going to be original in the sense that it involves unpremeditated direction". As artists, we can easily come up with a theme that is applied to art. However, there is something to be said about having a unified theme, but not planning out every aspect of the work. Simply put, this piece is experimental, my thoughts, mood and recent rise in consciousness myself all contribute to the finished version of the etching. The etching is comprised of many connected lines, which form the whole of the picture. Symbolic meaning arises in much of my work, as we are exposed to symbols every waking day throughout our lives. Some of the symbols that are represented in my artwork, I have developed overtime as an Artist. I have included three pyramids that are symbolic of the pyramids of Giza, a rise to higher consciousness, a simple chain which stands for the chain of being, a gateway that is symbolic of the gates of heaven, among other well recognized symbols. The theme that is depicted is merely a floating island connected to a globe, which blossoms into a "Utopia" that I seek as an individual. I truly find this experimental piece interesting for the simple fact that I hadn't planned every detail. This is why it is unpremeditated, the subject matter had existed in my mind before it was brought to life without me realizing it. I came to know many truths about myself that I didn't know existed beforehand. As a society, country, nation and world, all of us in existence on the planet together are connected. This is the main reason that the lines in the piece are connected as well. As a developing artist, I feel like the completion of this particular etching is a boost in the right direction and hope to engage in more unpremeditated art soon.

50. Uncovering Gender Secrets in the Man's World of Dashiell Hammett's *The Maltese Falcon*

Presenter: Patricia McCain **Faculty Advisor:** Dr. Susan Cannata

Discipline: *English and Theater*

Dashiell Hammett's character, Sam Spade, exemplifies the qualities of a masculine detective that audiences had come to expect in the 1930's. The stereotypical "tough man" role of a detective was an ideology that readers had already embraced. By looking deeper into the ideologies that audiences have about masculine vs. feminine qualities, manly vs. womanly roles and the equation of the masculine character as the most powerful character, we can see how Sam Spade meets or exceeds audience expectations as the manly detective. The contrasts of Spade against the other characters, many who encompass very feminine characteristics, exaggerate Spade's masculinity further. The interpretation of a character as "masculine" or "feminine" can affect how an audience comes to trust the character, in general. In order to fully understand Spade as a character, I will research the characters in the hard-boiled detective genre and the gender biases that Dashiell Hammett used or overcame in *The Maltese Falcon*.

51. Infamously Lost In The Eye Of The Night

Presenter: Andre McDuffy **Faculty Advisor:** Ms. Carla Rokes

Discipline: *Art*

Some people just can't handle the world and what comes with it, what it brings to your door step or your backyard, so people handle what they can and hope for the best, then others get taken under with the tides. I picked Jimmy Hendrix, Tupac Shakur, and John Lennon cause those fellows struck me as men that followed the sound of their own drums even though they were constantly in the world on front street with the cameras in their faces in their celebrity, but they seemed to stay true to themselves no matter what either of them got into. The three figures symbolize all of us that don't know who we are in this world, the city scape represents the up's and down's in our lives that make us who we are, the eye reps whatever belief or thing that we believe in even if it's a deceased family member or special person; you know there's always somebody watching over you while you walk or stroll through this game we call life. Finally the pace reaps the optimism that I have in the future for us and the next; we should just make the effort.

52. Sandy Island Immersion Experience

Presenters: Shelbi McMillan
Sheretha Barrios
Betty King
Nancy Turner **Faculty Advisor:** Mr. Frederick Stephens

Discipline: *Social Work*

As a result of our enrollment in a course we were given the opportunity to visit an isolated island where the Gullah people of today still reside. The Gullah-Geechee people are direct descendants of residents of West Africa's rice coast who were brought here as slaves to work the fertile coastal areas. The Gullah-Geechee culture is unique to the coastal areas and Sea Islands of the Carolinas as well as Georgia and Florida. To our discovery less than 100 miles southeast of The University of North Carolina at Pembroke is an island called Sandy Island, located in South Carolina, just south of Myrtle Beach.

This presentation will provide an opportunity to learn about the significance of why Gullah families continue to live on the island accessible only by boat. We will share interesting facts about the 12,000 acre island surrounded by both fresh and salt water. We will expose our viewers to a place in history that reflects a connection between a people of today to people 300 years ago.

53. For the Greater Good: Suzanne Collin's *The Hunger Games* view on freedom

Presenter: Dustin Moore

Faculty Advisor: Dr. Susan Cannata

Discipline: *English and Theater*

The novel *The Hunger Games* takes place in a distant future, in a dystopian society. The nation, called Panem, is ruled from the capital city known as the Capitol, and controls the twelve other districts that make up North America. The government is totalitarian because the Capitol strives to control everyone's lives, although the Capitol's citizens have more freedom than the districts. Almost every aspect of the Districts' lives is subjugated by the Capitol, like forcing them to participate in the Hunger Games. The Hunger Games were created 74 years before the novel is set, as a way for the Capitol to control the nation, a constant reminder to the districts for trying to rebel against the Capitol. The Capitol enforces these games as a way to create peace with the old idea of "for the greater good" which is also the core to Panem's governmental system. In the novel, Katniss shows freedom from the tyranny of the capitol, thus showing the flaws in the dystopian society, as well as the flaws in Panem's idea of "For the Greater Good", Katniss also shows another form of "For the Greater Good" by being a symbol of Freedom for the people of Panem as well as starting the downfall of the dystopian government. My research will consist of looking at critics on dystopian fiction and the way that freedom is gained in the dystopian literature.

54. Abusive Fathers and Absent Mothers: Reading the Personal in Apocalyptic Literature

Presenter: Elizabeth Moore

Faculty Advisor: Dr. Michele Fazio

Discipline: *English and Theater*

One of the most important aspects of apocalyptic literature is the struggle to preserve family relationships in a rapidly changing and collapsing world. The apocalypse sheds light on the conflict within families to uphold traditions and social values, which for the child causes personal apocalypses. In the apocalyptic

short story *The Black Madonna* (1999) by Tony Ardizzone, my focus will be on relationship between the daughter, her abusive father, and her deceased mother. In Donald DeLillo's *Take the "A" Train* (1962), an adult male protagonist struggles to maintain his independence. Both stories, written by Italian-American writers, feature parent child relationships that focus on identity crisis and loss while pointing to a decline of traditional family values. Reading the apocalypse as personal allows for a closer examination of the meaning of home and the significance of domestic space in shaping the future of the next generation. With violent fathers and absent mothers, how does a child survive and thrive in this environment?

55. Statistical Characterization of Carolina Bays in Southeastern North Carolina

Presenters: Darryl A. Mott
Anna Sanford

Faculty Advisor: Dr. Lee Phillips

Discipline: *Geology and Geography*

Carolina Bays are shallow elliptical geomorphic depressions common to the Atlantic Coastal Plain between Florida and New Jersey. A particularly high concentration of Carolina Bays is found in Southeastern North Carolina. Efforts by our research group to characterize their occurrence in this region focus on bay forms in Bladen, Columbus, Cumberland, Hoke, Robeson and Scotland counties. Assessment of the region is based on examination of orthoimagery, LiDAR data, and infrared photography. Bay forms are categorized as either prominent or relic, depending on their surficial expression, and may be subcategorized as truncated if part of the rim has been naturally removed. ESRI ArcGIS software is used to document spatial characteristics, including axial orientation and length-width aspects. These observations are used to determine the area of coverage, density, and distribution of Carolina Bays in the region. More than 6,000 bay forms are included in our regional analysis. Statistical comparison of data for each county and categorization are reported. At present, the data indicate the axial orientations of relic bays have a more northerly component than prominent bays. Prominent bay forms are, on average, more than twice as large as relic bays. We suggest relic bays represent forms significantly older, relatively, than prominent and have, consequently, been subjected to greater amounts of degradation.

56. How About Dessert First? The Relationship Between Taste and Judgments of Others

Presenter: Thanh-Nha Nguyen

Faculty Advisor: Dr. Nicholas Freeman

Discipline: *Psychology*

Is it likely that you will think more of a person if you have a sweet taste in your mouth, or less of a person if you have a bitter taste lingering on your tongue? Previous research suggests that this may be the case. For instance, individuals with a bitter taste in their mouth tend to make harsher moral judgments than individuals with a more pleasant taste in their mouth (Eskine, Kacinik, & Prinz, 2011). The current research examined whether a similar effect is found for other types of judgments. Specifically, we tested to see if taste influences perceptions of physical attractiveness and likability of other people.

In the present study, participants consumed one of three beverages (bitter, sweet, or neutral). While the taste lingered in their mouth, they viewed photos of males and females and rated how physically attractive they found the person and how much they thought they would like the person if they met them. Additionally, participants rated photos of landscapes on similar dimensions. We predicted that relative to individuals who drank a sweet or neutral beverage, participants who consumed a bitter beverage would provide lower ratings of the photographs.

We found that there was a general trend for participants in the bitter condition to provide harsher ratings than participants in the sweet condition. Comparisons between participants in the neutral condition and participants in the remaining conditions were less clear. In short, the results from the current experiment suggest that physical tastes may indeed influence perceptions of others, but more research is needed to reach firmer conclusions.

57. Transparent Dream

Presenter: William Peterson

Faculty Advisor: Mr. Adam Walls

Discipline: *Art*

This piece is very special to me because it represents everything that I am. Since I was a little boy I have always had dreams that have exceeded expectations. However, the road to fulfilling those dreams has been very tough. The bottom of the trail leading up to the dome represents this journey. Yet, my story does not end there, because you also see that the side of the trail that meets with the dome is closed off. This signifies all the barriers that have come up against me to try and detour me from my dream. It is for this reason that I left the other side of the dome open. I have learned that when obstacles rise up, so does ways of escape. If I stay focused on what I desire and keep fighting, I will make it to the other side. To my dreams, which is represented by the box in the center. This piece not only represents my story thus far, but it also shows the determination I have to fulfill the destiny that is set out before me.

58. Katniss: From Powerless Girl in The Seam to Hunger Games Victor

Presenter: Allan Paulley

Faculty Advisor: Dr. Susan Cannata

Discipline: *English and Theater*

In Suzanne Collins's *The Hunger Games*, Katniss starts out in the novel as an ordinary girl from the seam but develops over the course of the novel emotionally, and in her mental and physical strength. Katniss has some power but not a lot after she wins the Hunger Games. At the beginning of *The Hunger Games* Katniss does not have much power. She was a girl who illegally hunted in the woods each day to feed her poor family. Other than when she had volunteered to take Prim's place as a tribute, she had not had any control over what happened in her life. However, Katniss gains some power by the end of the novel. Acts of rebellion towards the authorities shows a sign of some power because you get away with the action and are making a point. Ultimately, Katniss has some power but not enough to overthrow the Capi-

tol. The Capitol still has power over her and her family as well as Panem. Even though she has won the Hunger Games, she had made the Capitol look bad and they are trying to find a way to punish her. I plan to look into sources on society and power. I will explore the ways dystopian societies can/cannot and do/do not go against the authority as well as the hardships of the people in dystopian societies.

59. "The Sin Eaters" and "The Shawl" as test cases for Apocalyptic Holocaust Literature

Presenter: Amelia Philbrook

Faculty Advisor: Dr. Michele Fazio

Discipline: *English and Theater*

While Holocaust stories are often described as apocalyptic, they are not always read as works of apocalyptic literature. My presentation introduces two Holocaust tales, Sherman Alexie's "The Sin Eaters" and Cynthia Ozick's "The Shawl", as test cases for apocalyptic Holocaust stories. Both of these stories are by contemporary ethnic writers who view the destruction of their people through the lens of personal apocalypse while setting their narratives in the broader historical category of the Holocaust. Ozick's short story, written in 1977, is a traditional Holocaust narrative following a Jewish woman and her hidden child in the concentration camps of World War II. Alexie's "The Sin Eaters", written in 2000, is a re-creation of the Holocaust focusing on the persecution of Native Americans by following Jonah, a young boy taken from his reservation. These stories are not just tales of a Holocaust. They are stories of personal apocalypse which are set in a time when the world of the protagonists already seems to have ended; in other words, an apocalypse that follows a post-apocalyptic moment. Ozick and Alexie demonstrate the devastating effects of personal loss and grief by setting their tales in the already horrific landscape of widespread human destruction, showing that personal loss is even more devastating than an actual world-ending apocalyptic event.

60. Social Media Strategies during a Crisis: New Ways to Help Organizations Cope with the Unexpected

Presenter: Xinlei Qiao

Faculty Advisor: Dr. Willaim "Rick" Crandall

Discipline: *Management, Marketing and International Business*

With the information technology developing, social media has a significant and compound influence on crisis management in various approaches. More and more people receive information from social media, such as Google Wave, YouTube, MSN, Facebook, and Twitter. They spread information and interact with friends online quickly. A number of companies and organizations started to interact with external and internal audiences by using social media positively in the recent years.

This paper is about how social media impacts and changes crisis management practitioners. Also I will exemplify and analyze, in detail, how companies cope with unpredictable disasters and crises by using social media strategies. Consumers and other external audiences are able to get both positive and negative information online. With this information in their possession they can spread it widely by social media which could be a two-edged sword. Under this phenomenon companies should have proactive and reac-

tive crisis strategies which are closely dependent on social media. Companies can have many proactive crisis management strategies. For example; establishing the company official website, Facebook and Twitter accounts. Also monitoring the Internet constantly and developing crisis communication training. Effective crisis communication is one of the key components of effective crisis management. Therefore it is critical to take reactive strategies in order to do effective internal and external communication. Companies should designate a spokesperson and should act within minutes instead of hours. All of those strategies can mitigate a crisis if practitioners take proper advantage of it.

61. Perceptions of Online Collaboration by Undergraduate Students

Presenter: Caroline Register

Faculty Advisor: Dr. Irina Falls

Discipline: *Educational Specialties*

Collaborative projects are usually a challenge in all courses, but their difficulty increases in computer supported teams. The purpose of this study is to identify how undergraduate students perceive collaborative work in general and how they act/feel towards online compared with face to face team work. 20 UNCP undergraduate students were asked to respond to a survey investigating their attitudes towards working together in groups on a specific project. The results showed that the students expressed strong emotions when it comes to group work. For example, some students recognized the importance of group work; others became frustrated because of all the work was put on them; some felt overwhelmed and not motivated to do the work; still others did not care how the work got done as long as they could check it off. Some of these response patterns would develop over time and might result in a negative attitude towards teamwork in the workplace. Since most students' complaints were about getting the same grade as those who did not put the same amount of work, it becomes evident that the grade has to reflect team members' participation, not just an evaluation of the final product. Some of the students said that they felt as if the online group work was not as effective as a face to face team work. During face to face interactions, students tend to contribute more than in the online team work because their efforts are visible to their teammates. One of the conclusions of this study was that a clear team work structure, close monitoring, and constant support are needed in order for the students to feel successful during collaborative projects.

62. An Analysis of "Pre-washing" Biodiesel Fuels

Presenter: Josh Ricci

Faculty Advisor: Dr. Tom Dooling

Discipline: *Chemistry and Physics*

In this project, the effectiveness of pre-washing biodiesel fuel with water was studied. Biodiesel is produced via a catalyzed reaction between oil and an alcohol. During the reaction, polar compounds such as glycerol and soap are formed. Glycerol, the most abundant of these compounds, forms an easy to remove phase that contains most of the other contaminants. The remainder of these compounds are most

commonly removed by employing a water wash. Since polar compounds are more soluble in water than in the nonpolar biodiesel, they become dissolved in the water and can be separated by extraction. The process of washing can be time consuming and require large amounts of water. It also can result in the formation of an emulsion. It has been shown that injecting a small amount of water into the reaction mixture near the end of the reaction, or pre-washing, helps to accelerate the process of separation and, alongside proper filtration, may eliminate the need for a water wash all together. In this study, biodiesel was produced from canola oil and methanol using tetramethylammoniumhydroxide (TMAH) as a catalyst. Batches of fuel were produced both with and without a pre-wash step. Fuel and glycerol from each reaction were analyzed via GC-FID, and LCMS, respectively. The results were compared and the effectiveness of the procedure was determined.

63. Structural Characterization of Nanocrystallites Using Scanning Electron Microscopy and Wavelength Dispersive X-Ray Spectroscopy

Presenters: Nathan Riddell
Austin Griffin

Faculty Advisors: Dr. William Brandon
Dr. Lee Phillips

Discipline: *Chemistry and Physics*

Determining the size and composition of quantum dots are vital to an ongoing program focused on the eventual goal of in-situ synthesis of quantum dots- and perhaps the quantum engineering of new devices. Here, we report on the outcome of ongoing attempts at direct size measurements of various quantum dots using a scanning electron microscope (SEM). This is a challenging endeavor since only the largest of the quantum dots correspond to the upper resolution limit of the instrument. In addition we are able to analyze the elemental composition of various quantum dots using the microprobe, via electron and wavelength dispersive x-ray spectroscopy. These high-end instruments, located at Fayetteville State University, are operated and managed in conjunction with SENCR-MIC.

64. On

Presenter: Lindsay Roberts

Faculty Advisor: Mr. Brandon Sanderson

Discipline: *Art*

On represents the close relationships that I have had in my lifetime. These relationships have defined and influenced the person I have become. The position of the light plugs and the socket are important in this piece. The light plugs are directed towards each other, where it seems as if they are interacting with each other. The light socket is positioned at my heart to reinforce the enduring love I have received from these relationships.

This composition is my first etching; I was highly pleased with my results of this project. What I love about printing is the process and labor that goes into making a print. There are so many steps in the development of a print that the process does not seem like a tedious task. I do not only admire the structural

qualities of printmaking but also the experimental processes. Chine Colle has been my favorite experiment thus far. This is a process involving layered papers that are ran through the press onto the print.

65. Empowering Youth through College Mentoring Programs: A Beginner's Guide

Presenters: Keara Robinson
Shelby Newsome
Dalton Hoffer
Chaquilla Woods
Ashley Lowery

Faculty Advisor: Ms. Christie Poteet

Discipline: *Community and Civic Engagement*

Student service leaders in the Office for Community and Civic Engagement have researched, planned and implemented programs that engage college students in service programs that target at-risk youth. Focus has been placed on how to develop student led programs and events that allow mentors to enhance their leadership skills while addressing the issues youth in their own communities face, including education, life skills, health and wellness, leadership, teambuilding, and even parental involvement. The students developed a workshop geared towards other college students to inform them of how to develop and implement their own programs for youth. The workshop focused on six areas, including improving education for at-risk youth, the development of life skills, the importance of parental involvement and ways to increase it, health and wellness, diversity education, and leadership.

66. Aquatic & terrestrial activity in an anuran community

Presenter: Jasmine Rowlett

Faculty Advisor: Dr. John H. Roe

Discipline: *Biology*

Amphibian populations are in decline, but land managers often lack the detailed biological information needed to implement monitoring and conservation efforts. We monitored the terrestrial and aquatic breeding activity in a community of summer breeding anurans at Weymouth Woods, a sandhills nature preserve, using an Automated Recording System to record breeding choruses. We also monitored the use of the surrounding terrestrial habitat by walking transects and recording each Fowler's and southern toad encountered. With the information collected from the ARS, we were able to establish that the peak timing for anuran calls was between 2100-0500 hrs. This time generally falls within the recommended times for survey as set by the North American Amphibian Monitoring Plan (NAAMP), but timing and intensity of peak calling varied among species. We concluded that the current NAAMP calling surveys might not capture peak calling times for all species equally, especially for species that call later in the night, but could yield adequate information about species presence. Most of our toad encounters were recorded within 100 meters from the terrestrial buffer zone. If a 100 meter buffer zone was set up established around the wetland, a land manager could potentially protect about 95% of the area used by toad populations at this site.

67. Who Commits What Crimes on Television Shows

Presenter: Kyra Ruivo

Faculty Advisor: Dr. Judith Curtis

Discipline: *Mass Communications*

When people watch crime shows where some type of crime has taken place they watch to see who was the victim, whose going to catch the person that committed the crime and who the person is that committed the crime. When the killer is caught we wonder why they committed that crime, was it something that was triggered in their mind or did they just feel like committing the crime. For crimes like rape and murder what kind of people commit those crimes and if one person that looks a certain way could other people like that commit the same crime as well?

XX. The Warrior's Legacy: Millennial Japan's Image of the Samurai in *Rurouni Kenshin: Ishin e Shishi no requiem* (1997)

Presenter: Jeremy Salzer

Faculty Advisor: Dr. Annika Culver

Discipline: *History*

Ever since his introduction in the Kamakura period (1185—1333), the image of the noble samurai has persisted in Japan's cultural memory. The modern day version of the samurai stands in great contrast to his historical counterpart who was valued for loyalty in servitude and bravery on the battlefield. Although samurai no longer exist, the spirit of these honorable warriors has thrived throughout Japanese history. The modern-age conception of the historical samurai relates to today's world and acts as a role model for pop culture viewers. In Japan—where anime and manga act as social commentary in the form of entertainment—the image of the samurai in pop culture addresses contemporary issues. For Japan, the years around the millennial decade were a turbulent time in the country's history. Among other things, terrorism, political corruption, and conflict affecting international relations came into the public eye in the 1990s. In the hit anime and manga series *Rurouni Kenshin*, the character of Kenshin Himura, a samurai who seeks to atone for his bloody pasts by preventing bloodshed in the present and make a better future, faces issues of corruption and violence; issues which also resonate with contemporary viewers. By analyzing the film *Rurouni Kenshin: Ishin e Shishi no Requiem* (1997), this project discusses how Japanese popular culture products—recognized by fans both within and outside of Japan—present the country's societal anxieties to the audience.

68. Sedimentological and Pedogenic Characterization of Rim Sands associated with the Jones Lake Carolina Bay, Bladen County, North Carolina

Presenters: Anna Sanford
Darryl Mott

Faculty Advisors: Dr. Lee Phillips
Dr. Eric Wright (CCU)

Discipline: *Geology and Geography*

Jones Lake is a prominent Carolina Bay in northern Bladen County, NC. It is one of only a few Carolina Bays that continues to support a bay lake near its center. Rim sands along the eastern margin have been

sculpted by eolian processes thought to be coeval with formation of the bay. Three pits were excavated along the eastern rim of the Jones Lake Carolina Bay within the Bladen Lakes State Forest. Samples were collected at regular intervals from each pit for grain size determination using standard sieve analysis protocol as a first approximation. Sample splits were also analyzed using a Beckman Coulter Counter System. In addition, samples were collected for age determination by OSL methodology. Preliminary results show that rim sands of the bay are dominated by poorly to moderately well sorted, fine to medium grained, subangular to subrounded, quartz-rich sand. Pedogenic horizonation is most evident in the pit nearest the bay center, with burrows and root traces common within the zone of accumulation. Minor horizonation is also noted in an adjacent pit. Non-pedogenic sedimentary structures are conspicuously absent except in the upper 5 cm of the pit farthest from the bay center, where cross-bedding is evident by inter-laminations of quartz sand with organic matter. These observations compliment a growing set of data from south-central North Carolina in effort to better understand the timing of and factors influencing bay formation.

69. Fractures: That's Life

Presenter: Kayla Seedig

Faculty Advisor: Mr. Brandon Sanderson

Discipline: *Art*

This image was taken minutes after my car window was shattered by a tiny rock. It was something very unfortunate, but at least is brought about this photograph. The way that the sun was setting, along with the angles presented, creates multiple highlights, shadows, warm, and cool colors. This piece demonstrates a juxtaposition of many dissimilar things. The tint of the photograph gives it a very warm, calm feeling, even though the subject appears to be shattering and rigid with each turn of a new shattered piece.

When the eyes enter the picture plane, it is a little unclear as to where the eye will go, depending on the viewer. What appears to be the focal points is the clearly in focus part of the shattered window to the lower right and the large rectangle of light at the top of the piece. These two compete for being the first part that the viewer's eyes go to. The bright rectangle could be the viewer's choice due to its brightness and largeness, which creates a clear distinction from the background. However, the in focused part of the glass could be just as much the focal point since the human eye automatically looks for the part that is most recognizable. As the eyes move from either focal point, they are lead to whichever one that was not their eye's first choice. Each crack and break creates a zig zag path for the eye until it finally reaches another part of the piece that the viewer find interesting.

The concept has a lot to do with the title. "Fractures: That's Life" sums up not only the events that happened that day and the photograph itself, but also the idea that unfortunate things happen, but something wonderful can come from those unfortunate things.

70. Reproduction of the Harley Psalter

Presenter: Kimberly Shaw

Faculty Advisor: Dr. Richard Gay

Discipline: *Art*

For this project I reproduced a part of the Harley Psalter. I made it the exact size of the original and tried to make it as similar as possible. I wanted it to be similar so I could get a sense of how hard it was to reproduce a book by hand.

71. Park Management Techniques' Effect on Terrepene Carolina

Presenter: Jordan A. Smink

Faculty Advisor: Dr. John H. Roe

Discipline: *Biology*

As the only terrestrial turtle species found in North Carolina there is a keen interest in maintaining and growing the population of our state reptile. Box turtle, Terrepene carolina are slow growing and yield few young, which when combined with high egg and juvenile mortality and their delayed sexual development make turtle populations especially susceptible to population decline as a direct or indirect effect of human activities. The main goal of this study is to determine the effects of park management techniques to control undergrowth on mortality and injury to box turtles. From March to November we will be radio-putting the obvious cross to represent Christ, I use symbolism that is more personal to me and describe my reason and relationship with God, an example of that can be found in the dividing lines, the dotted circles, and in the X's.

72. The Loss of Madonna: The Death and Rebirth of Religion in the Post-Apocalypse

Presenter: Tank Steiner

Faculty Advisor: Dr. Michele Fazio

Discipline: *English and Theater*

Today's society is, by all accounts, teetering on the precipice of an apocalypse. As history has shown, people are seeing signs of the end and are looking to old religion for an escape from new doomsday predictions. An example of this, and one of the largest groups of modern apocalyptic believers, are Marianists, the followers of the Madonna. According to Daniel Wojick, author of "Apocalyptic Apparitions of the Virgin Mary in New York City," Marianists see the Madonna as offering an alternative to, or an escape from, the fiery apocalypse to which non-believers are subject. In Cormac McCarthy's *The Road*, readers are introduced to a new kind of Madonna--one that can no longer offer an alternative to the apocalypse; it has already happened. The characters exist in a cauterized wasteland, with death as their only tangible alternative to suffering. By looking at both pre- and post-apocalyptic Madonna figures and by comparing their offers of escape, a clearer vision of the place of mothers--and of female power--in apocalyptic worlds is put forth. My project will explore the shift from the pre-apocalyptic Madonna of today, who draws people in with the promise of the possibility of salvation in a world that seems to be headed towards doom, to a post-apocalyptic world, which questions the purpose she serves for believers after the "end" has oc-

curred. For many, the Madonna offers a final symbol of hope. Her presence, and eventual loss, even in the post-apocalypse, continues to spur not only the rebirth but also the reorganization and reconstruction of various rituals of religious belief.

73. Sower Series

Presenter: Vincent Stephens

Faculty Advisor: Mr. Brandon Sanderson

Discipline: *Art*

A sower is a person that scatters seeds over the ground that the seed may take root and later develop into something that lives and thrives. The Sower series is based on the parable of the Sower, found in the book of Mark. This also coincides with relationships that people have with their heritage. Each fruit has a personal symbolism that speaks to me which also incorporates a relationship with the story. Instead of blackwater bottomland hardwoods, pine oak-hickory forest, pine mixed-deciduous forest, pond shoreline vegetation, and open/disturbed communities. Our distribution data can direct management activities aimed at managing the invasive trees.

74. Queen's A Night at the Opera

Presenter: Kimberlee Stepp

Faculty Advisor: Dr. Ryan Anderson

Discipline: *History*

My project explores Queen's album *A Night at the Opera* (1975) and locates the work within the contexts of the 1970s music business and society. In my research I ask how Queen maintained artistic control and a measure of authenticity at a time when media conglomerates began influencing rock music. Additionally, I explore how Queen created a new sound by mixing different music styles, traditions, and instrumentation. A primary factor in Queen's success was that its members capitalized on the emergence of the "Me Generation." Audiences instantly recognized Queen's sound as eclectic and original. According to producer Roy Thomas Baker, all four band members contributed to the album and that was what made their style unique: rather than sounding like a collection of solo efforts, the album's multifaceted songwriters blended their work together into a "Queen aesthetic." Despite the fact that critics compared them to Led Zeppelin and Deep Purple, lead singer Freddie Mercury insisted "We're just Queen." Ultimately, *A Night at the Opera*, is historically significant because it represented Queen's statement that its members were who they were, rather than what society and the music industry expected.

75. The Woody Flora of Sampson's Landing, Robeson County, North Carolina

Presenter: Andrew M. Sutton

Faculty Advisor: Dr. Lisa Kelly

Discipline: *Biology*

Floristic inventories inform studies of plant diversity and ecological distributions.

We inventoried the vascular flora of Sampson's Landing (16.5 ha) from late May to late July 2010 and during the growing season of 2011. The site, located on the Lumber River in Robeson County, North Carolina, was acquired by The Lumber River Conservancy to protect the biological resources and water quality of this National Wild and Scenic River. Here we discuss data for woody species from the 2010 inventory. We documented ~182 taxa of vascular plants, of which 29% (52 taxa) were trees. Among the 80 families present, 30 families included species of trees (including "shrubs" > 4.5 m), encompassing 40 genera. Diversity among families of trees was generally low (just one or two species per family), but the family Fagaceae was striking in having 10 species (*Quercus* spp.), or 15% of all tree species observed. The second largest family, Rosaceae, included just 6% of all tree species. Only 6% of the tree taxa were non-natives: *Albizia julibrissin* Durazz., *Ligustrum sinense* Lour., and *Quercus acutissima* Carruthers. The USDA Forest Service manages *A. julibrissin* and *L. sinense* as invasive trees in the southern United States. This small site is relatively diverse for trees, likely a reflection of multiple plant communities: blackwater cypress--gum swamp, tracking a sample population of box turtles in the Weymouth Woods Nature Preserve, where controlled fire is used to manage the understory, and the Lumber River State Park, where mowing is used to manage vegetation near human-use areas. We will be visually inspecting turtles twice a week for evidence of injury or other physical effects of park management. We expect that the mortality and injury due to mowing will be higher than the mortality due to direct or indirect effects of controlled wild fire. The data collected from this study will be useful for the staff at many park facilities. Data from the injury and mortality rates will give management staff conclusive information on the effects of their undergrowth management on non-target species, *Terepene carolina*.

76. Finding love

Presenter: Stefanie Sykes

Faculty Advisor: Mr. Brandon Sanderson

Discipline: *Art*

This images depicts two symbols of love and power coming together to represent unconditional love and natural beauty. The zebra symbolizes freedom and the unification of black and white strips. The black and white strips are bold and strong representing the power to stand against the stereotypes of beauty. The tiger lilies falling around the zebra symbolize compassion and unconditionally love. The lily is the foundations of the zebra bursting with the vibrant orange color expressing joy and happiness. The zebra being only black and white shows how beauty is not always vibrant and loud but simple and elegant. The combination of stripe on the zebra illustrate bold confidence and love the core of beauty.

Both of the symbolic creatures are a part of our large world and growing in a land of sadness and pain. As they come together in this image they represent the importance simplistic beauty. The truth behind this image is that we lose ourselves and hide behind the stereotypical words that are plastered on use every day. This image represents me as the zebra confronting my stereotypes and coming close to my inner beauty which are the tiger lilies.

77. The Fallen Tree That Changed the Future: Environment and the Deconstruction of Character in *Earth Abides*

Presenter: Patricia Taylor

Faculty Advisor: Dr. Michele Fazio

Discipline: *English and Theater*

George R. Stewart's *Earth Abides* is a riveting apocalyptic classic. Though it was written in the late 1940s, the text draws its reader into the drama of the story, and it becomes impossible to remember that it was written more than 60 years ago. The themes and social issues that the novel's characters grapple with transcend time and speak to the very essence of age-old struggles that humankind still grapples with today, including the struggle between intellectualism and spirituality. According to Daniel Wojcik in his book, *The End of the World As We Know It*, the apocalypse "refers to the catastrophic destruction of [the] world or current society..." (12). This loose definition allows for an analysis not only of how events in *Earth Abides* depict the decline of society and social values, but also how the changing physical landscape of the world contributes to the deconstruction and restructuring of the characters. Just as the post-apocalyptic environment plays a significant role in the development of the protagonist, Ish, his transformation from graduate student to tribal leader in turn alters the physical and social landscape in *Earth Abides*, creating interdependence between character and environment.

78. The Effect of Intensive Standard English Grammar Instruction on Reading and Writing Skills

Presenters: Patricia S. Taylor
Kaitlyn West

Faculty Advisor: Ms. Sara Oswald

Discipline: *English and Theater*

More emphasis on writing in upper levels of education is creating a greater need for student proficiency in reading and writing skills, as evidenced by The University of North Carolina at Pembroke's own "Writing Across the Disciplines" program. These types of programs emphasize writing and communication as an important part of any subject and seek to improve students' writing and reading within their disciplines. The purpose for this shift in emphasis is to develop a group of more highly skilled professionals who are more proficient in the types of oral and written communications that are common to their discipline so that they might answer a growing need for literacy and communication in the American work force. We seek to determine if strengthening teaching methods in Standard English grammar would help students to become more proficient in these core areas and achieve more success in university and professional settings. We will be analyzing data that was collected during the Braves Academic Readiness Program (Raising the BAR) in summer 2011. This group of 39 students participated in a grammar lab in which they received intensive grammar instruction to supplement their English 1050 class. We believe that this preliminary data suggests that intensive Standard English grammar instruction may play a pivotal role in enhancing students' performance in reading comprehension and writing as evidenced by their Accuplacer pre-test and post-test, their grammar lab diagnostic exams, and their grades in English 1050, and we seek to research this theory more fully.

79. Seasons Series

Presenter: Reilley Thayer

Faculty Advisor: Mr. Brandon Sanderson

Discipline: *Art*

The elements of my work aim to express relationships, the passage of time, reflection and emotional connections. Whether the connections are intertwined between the subject matter and I, the subject matter within the composition, or intended to create a connection with the viewer and themselves. While generally not blatantly obvious, the symbolism of personal connections generally come from simple objects that are associated with an individual, relationship or event.

As the viewer explores the piece, I intend for further relations and personal interpretations to be made beyond my symbolism. Focusing on emotions and connections, my work becomes visually and psychologically interactive and allows them to call to question their own past experiences, connections to themselves and others.

Printmaking is where I employ the majority of my symbolism, time and expression. I find great interest in the processes and extensive work that is involved in generating a successful print. Raised by and assisting a father whom is a carpenter and working on farms throughout my life, I am intrigued by exploring the use of raw materials and tools. I mainly find strength within the realms of woodcut; the texture, marks generated and methods of cutting and printing are all fascinating.

Season Series

The Season woodcuts represent the personalities and relationships I have with four people that have made a significant impact on my life thus far. I have associated each individual with a season that best connects to his or her personality and character and is also the season that I rarely see them during the year. To reinforce the symbolism of seasons, the figures shift in position from far left to right as the viewer moves through the series, representing time passing throughout the year. The figure in each print is not necessarily a realistic depiction of that person on a daily basis, but depicts and associates them as my perception of their personality and interaction with me on a personal level. Catering to my interest in the media and textures involved, I included a background generated by hammering and scratching to create unique markmaking.

80. Traditional Etchings from Rembrandt's Methods

Presenter: Reilley Thayer

Faculty Advisor: Mr. Brandon Sanderson

Discipline: *Art*

UNCP Art Professor Brandon Sanderson and I have been exploring traditional etchings based on Rembrandt's methods over the course of the 2012 Spring semester. The goal of the research was to attain more knowledge and skills based on the work of Rembrandt and his peers and skills that I will be able to apply to my own prints. I have worked with Professor Sanderson since the Fall 2010 semester and am cur-

rently in my fourth course with him. I have taken his Intro to Drawing, Intro to Printmaking, Intermediate Printmaking and now Advanced Printmaking I courses. Formally an Elementary Education major, with a concentration in Art, I found great interest in printmaking and, as a result, changed my major to Art Education to further explore and attain skills.

Professor Sanderson has generated ten 6 x 9 inch etchings that investigate Rembrandt's methods and I have helped to print them and apply other methods and then print my own copper etchings. When I initially began printmaking, I used Rembrandt's etchings as a guide and have found great interest in his work. Etching, a chemical technique dating back to armories in the Middle Ages, was a medium that attracted Rembrandt enough to explore and generate around 290 prints. He mastered the use of dry point and etching to generate deep blacks. I had somewhat limited exposure to etchings in comparison to other mediums of printmaking, and this research helped me to focus on and be exposed to new methods. I learned Rembrandt's methods by assisting, from trial and error, and attained new methods to achieve successful prints.

81. Seven Hail Mary's to Cure a Zombie Apocalypse: How Consumerism, Violence, and Class Play a Role in the End of the World, and Its Chance at a New Beginning"

Presenter: Stephanie Tillman

Faculty Advisor: Dr. Michele Fazio

Discipline: *English and Theater*

The year is 2012 and we are waiting for the world to end. Throughout history, humankind has imagined many ways as to its demise. However, the truth is that the wait is over because we are now living in an apocalypse. Driven by consumption, people as a whole have become mindless, apathetic, violent, and vocally non-communicative--all of which define the qualities of the zombies found in Robert Kirkman's *The Walking Dead* (2003) and in Jeff Goldberg's *These Zombies Are Not a Metaphor* (2007). But, what we really need is a reset button; an end to violence, consumerism, and classism for a chance to improve the state of humanity in the 21st century. Tony Ardizzone's *The Black Madonna* (1999) can be seen as the solution to the social issues presented in zombie apocalyptic literature in that its heroine, Anna, lacks the features that marks "the walking dead," and it is her unyielding faith in the Madonna that serves as model for replacing materialism with spirituality. Apocalyptic literature, therefore, is a warning about the ruinous effects of capitalism on our culture, offering faith as a key aspect of humanity's rebirth.

82. 3D historical model: A recreation of progressive timestamps of UNC Pembroke campus through time

Presenters: Jeremy Vargas
William Stanley

Faculty Advisor: Mr. Jesse Rouse

Discipline: *Geology and Geography*

Inspired by the 125th anniversary, we created a 3D historical model of UNC Pembroke's growth over 125 years. With this multilayered project, we recreated a visual image of the original building of UNCP to show expansions and changes over the years. We designed our historical map around three time stamps, 1887,

1953, and 1987. This enabled us to depict the ever changing buildings, new additions added to the school, and how morphed into today's campus. The 1887 timestamp was created to portray the original building and to demonstrate the humble beginnings of the school. The 1953 timestamp was made because the school moved locations and the first significant additions to the campus. The 1987 stamp was created to show a large boom in construction and growth of the campus at the beginning of UNP's centennial year. In creating this project, we had to learn to use Google SketchUp and ArcGIS. This enabled us to recreate old buildings, and landscapes all geo-referencing them in their original locations. The goal of this project is to create an easily accessible map on Google Earth. This will allow everyone in the future to have to the opportunity to explore the past with a virtual tour of the different stages of UNCP history and facilitate a continual growing pride in UNC Pembroke.

83. Who Do You See?: Ethnic Identity, Racism, and Alcohol Use

Presenter: Jovita Vereen

Faculty Advisor: Dr. Shilpa Regan

Discipline: *Psychology*

While substance abuse is prevalent among young adults, research has revealed ethnic differences in frequency of use (Marsiglia & Smith, 2010). These disparities are mediated by ethnic identity, with stronger cultural ties serving as a protective mechanism against substance use (Pugh & Bry, 2007). In addition to ethnic identity, racial discrimination and racism also have an effect on alcohol use. Approximately 80% of minorities have experienced some type of racial discrimination in their lives, contributing to alcohol related issues (Mulia, Ye, Zemore, & Greenfield, 2008; Wei & Alvarex, 2010). Given that racism and ethnic identity are multifaceted constructs, research has been equivocal on the relationship between these constructs and substance use. The purpose of this study was to determine if ethnic identity and discrimination predict alcohol use among a diverse sample of college students. Participants were 109 (male = 45.9% female = 53.2%) college students from a Southeastern Liberal Arts College. Participants completed four questionnaires: Demographic Measure, Multi-group Ethnic Identity Measure (MEIM, Phinney, 1992), Schedule of Racist Events (SRE, Landrine & Klonoff, 1996), and Alcohol Use Disorders Identification Test (AUDIT, World Health Organization, 1989). Results revealed that racism predicted alcohol use. Specifically, racist events occurring in the past year as well as lifetime discrimination resulted in increased alcohol use. In contrast to previous research suggesting a protective factor, ethnic identity was not significantly related to alcohol use. However, the overall sample possessed low ethnic identity. In addition, stress related to discrimination was significantly related to increased alcohol consumption.

84. Restoring Rule Compliance back into College Athletics: A Message to Athletic Directors

Presenter: Kennedy F. White, Jr.

Faculty Advisor: Dr. William "Rick" Crandall

Discipline: *Management, Marketing and International Business*

Rationale: The overall state of college athletics has become increasingly corrupt in nature.

Objectives: This study was conducted to determine whether the NCAA's current system requires complete reconstruction in order to restore integrity back into its enterprise, while providing a positive experience for its student-athletes.

Methods: Documentation regarding the establishment of the collegiate athletic governing bodies. Analyzing key issues facing the NCAA's infractions committee such as; academic importance, commercialism, recruitment violations, improper benefits, agents, and boosters were compiled and investigated by way of literary review.

Results: There have been multiple reports that have become public involving some of the NCAA's major programs. Despite many misconceptions and the overall popular opinion, the NCAA's governing bodies have and will continue to promote fairness and integrity back into collegiate athletics. By punishing violators more severely and enforcing the rules more strictly, it appears that the NCAA is taking the right steps in improving its tarnished image.

Conclusions: There is no one fix-all solution that will save college athletics. There are many adjustments that must be made in order to restore honor back into college sports. Also, it is evident that corruption will always exist in college athletics, as long as individuals seek competitive advantage. The only difference is that now the world of college sports are more readily accessible and more viewable to the public.

85. The Determination of Imidacloprid Residue by HPLC in the Biomass of Tomato Seedlings Grown in Soils Amended with Varied Biochar Concentrations

Presenter: Jaclyn Woods

Faculty Advisor: Dr. Siva Mandjiny

Discipline: *Chemistry and Physics*

The purpose of this study is to determine whether the bioavailability of imidacloprid, a systemic insecticide, is compromised by a soil amendment called Biochar. This research serves to facilitate the cost versus benefit analysis as to whether Biochar is a suitable treatment for conventional farming. The first phase of this experiment involves growing twenty-four *Lycopersicon esculentum* plants in three treatments amended with 0%, 10%, and 20% Biochar concentrations for seven weeks. The second phase of this experiment took place in the laboratory where the first and third leaves from each plant were homogenized and centrifugated for ICP analysis by HPLC. The results of this study indicate that Biochar does not have a significant impact on the uptake of ICP by tomato plants.

86. The Impact of Influenza on the Global Economy

Presenter: Yuanjie Zhao

Faculty Advisor: Dr. Lydia Gan

Discipline: *Economics, Finance, and Decision Science*

In today's society, influenza is a common kind of disease. There are many kinds of influenza, most are not serious but some are more serious than others, and they all have brought great economic losses to our global society. Influenza affects not only humans, but the animals as well. Regardless if the influenza affects humans or animals, most people rarely pay any attention to them because it is often perceived as a minor and common disease, even though some influenza have brought disastrous results to our economy in the last few years. Diseases like SARS (Severe Acute Respiratory Syndromes), Swine Flu, and AIV (Avian influenza virus), have all brought serious economic losses. Having experienced the effects of SARS, I understand how people would panic: schools were shut down, ordinary people found it hard to concentrate on their work, and they were advised to wear masks when going out, not to mention its impact on the price of related consumer products such as masks and drugs. By looking at some secondary research, I hope to show how influenza affects the economy both positively and negatively, and how the healthcare industry and the government of the affected economies adjust to these changes.

Oral Presentations and Performances ~ (order of presentation)

1. Contemporary Chamber Music: "Fanfare for St. Edmundsbury for 3 Trumpets" by Benjamin Britten

Performers: Cheri Ward, Cory Williams
Mr. Marty Spitzer

Faculty Advisor: Dr. Timothy Altman

Discipline: *Music*

“Chamber music” is a form of classical music written for a small group of instruments. The term “chamber” means that the music was often played in room (in a palace or house) during the 18th and 19th centuries. In the more contemporary meaning, chamber music is Western art music performed by a small group of players. Chamber music usually means that there is only one player on each part. This allows the performers (us) to hear each part and learn several important musical concepts; intonation/ tuning, balance, and listening. “Fanfare for St. Edmundsbury for Three Trumpets” was written in 1959. The work sounds contemporary because Benjamin Britten presents three separate solo melodies, each with a different key, meter, and style. Then he combines all of three at the same time. It is as if the trumpets are wandering separately and suddenly unite in a fanfare-like ending.

2. A Comparison of Three Health Care Systems

Presenter: Daniel Bougt

Faculty Advisor: Dr. Lydia Gan

Discipline: *Economics, Finance, and Decision Science*

This paper will examine the fourth basic question of health economics: Who should receive the medical goods and services that are produced? The paper will examine the unique health care systems adopted by three different countries to distribute medical care to its citizens. The study will use the Canadian universal health care system that distributes care based on need, which works through an insurance program administrated by the government known as National Health Institute (NHI). The Canadian system will be compared to the American system where those who can pay for care are given priority. The American system is based on private insurance and some coverage provided by the government through Medicaid and Medicare for vulnerable citizens and elderly. Another country that will be taken into consideration is Sweden who traditionally operates on a universal health care system, but since the liberal parties gained power in 2006, private alternatives similar to those offered in the United States have been introduced to compliment the existing universal system.

To accomplish the objective of this paper, previous literature reviews will be conducted to define how each system operates and finally conclusions on the benefits and drawbacks experienced by consumers under each healthcare system will be drawn.

3. Food Allergy and the Quality of Life Measurement

Presenter: Wei Huang

Faculty Advisor: Dr. Lydia Gan

Discipline: *Economics, Finance, and Decision Sciences*

The topic of this research paper focuses on food allergy and the quality of life measured as a result of food allergy. This topic is interesting because food allergy has become an emerging health problem all over the world. There are many types of food allergy, like peanut allergy, seafood allergy, egg allergy, milk allergy, etc. Food allergy is usually unpredictable and when it happens, it can be continual in a person's life time. Almost everyone has experienced some kind of food allergy. Food allergy is usually non-fatal, however, it can be life-threatening for the elderly and young children. Young children are at risk of food allergy because they are unaware of what they are allergic to. Because dealing with daily food allergy is multifaceted, time consuming and costly, it can diminish the quality of life. This paper will focus on answering four questions. How to measure quality of life for food allergy? What life style should you adopt to improve the quality of life as a result of allergy? What should you do when food allergy accidentally happen? How to avoid potential food allergies?

4. Joint Replacement and its Associated Costs

Presenter: Jacob Nicholas

Faculty Advisor: Dr. Lydia Gan

Discipline: *Economics, Finance, and Decision Sciences*

This paper explores the cost of joint replacement among various consumer demographics in the United States. The motivation is to examine how out of pocket expenses will affect people of different means and the lifestyle of these people. Some of the areas to be explored include the difference between the out of pocket costs for the insured and the uninsured, and whether it is typically cost prohibitive for the uninsured. The paper will also discuss how the government funded healthcare system (such as Medicare/Medicaid) helps with these procedures. Overall, the goal of the paper is to explore how a typically expensive but requisite medical procedure such as a joint replacement will affect a family and an individual financially and whether it is possible to attain one without insurance. The working basis will be published works, published statistics, and personal interviews from patients who were insured, underinsured, and uninsured. The breadth of the paper has hard limits focusing around personal effects, on the microeconomic level than widespread effects within the macro economy. It will also offer stopgaps and alternatives, with their possible drawbacks and benefits.

5. Washington Lafayette and the Conway Cabal

Presenter: Noah Clark

Faculty Advisor: Dr. Charles Beem

Discipline: *History*

During the fall of 1777, General Horatio Gates won a decisive victory in the Revolutionary War when he defeated the British and Johnny Burgoyne at Saratoga. Meanwhile, George Washington lost battles at Brandywine and Germantown, which resulted in the British capturing Philadelphia. The results on the battlefield led some congressmen to question the leadership of Washington and if the Continental Army would be better served with Gates at its head. Amidst the uncertainty, a Frenchman by the name of Thomas Conway sought to advance himself in the Continental Army by aligning himself with Gates and trying to discredit Washington in what would become known as the “Conway Cabal.” However, the Marquis de Lafayette who had come over to America in the summer of 1777 helped Washington through the difficult time. When he arrived, Lafayette revered Washington immediately, and after Lafayette was wounded at the battle of Brandywine, Washington began to care for the young man. The two men became close friends in December 1777 when Lafayette defended Washington as the best man to lead the Continental Army, even though powerful men such as John Adams and James Lovell were losing confidence in the General.

My presentation will give insight into what was a difficult time for Washington during his tenure as leader of the Continental Army. My paper will also show the beginning of a friendship that had a great impact on the American struggle for Independence.

6. “Composed Improvisations/Child of Tree” by John Cage

Performers: Will Bradle, Ryan Friddle,
Jamie Patterson, Zach Wood

Faculty Advisor: Dr. Tracy Wiggins

Discipline: *Music*

“Composed Improvisations/Child of Tree” was composed by John Cage. He wanted to explore a single harmony without limiting it with any formal preconceptions. He has the players move among the notes of a single chord, derived from the first 32 harmonic partials of a double bass F, sustaining the tones for 30 to 60 seconds. It’s said the piece is different every time it’s played. The players change it, of course, but the audience does, too: one can change the harmony by moving through the space, which was specified to be large.

7. Developing Expertise: Tutor Training in the University of North Carolina at Pembroke Writing Center

Presenters: Victoria Newkirk,
Tank Steiner, Brittany Glenn,
Cheron McMullen, Lonnie Cox

Faculty Advisor: Dr. Teagan Decker

Discipline: *English*

Our Writing Center is currently developing and implementing a tutor-led tutor training program that focuses on meeting the needs of discipline-specific writers in our university. Like many universities in the South, ours is implementing a Quality Enhancement Plan. The focus of the UNCP plan is writing in the disciplines. In support of this, and because of the collaborative, peer-centered spirit of writing centers, we, as tutors, have committed ourselves to developing a WID-based tutor training program that will help us to meet the evolving needs of the students at our university. We are also focusing on keeping tutors directly

involved in their own training and professional development. We have presented this idea as “Developing Expertise: An Ongoing WID Tutor Training Program” at the Southeastern Writing Center Association conference at Eastern Kentucky University.

The purpose of our PURC presentation will be to describe the development and implementation of our training program, the good ideas and the bad. We will touch briefly on some of the various interdisciplinary aspects, tutor undertakings, preliminary tutor feedback (as trainers and trainees), and finally some of our plans for the future.

8. Katniss as an Orphan: The Effect of Absent Parents in *The Hunger Games*

Presenter: Amelia Philbrook

Faculty Advisor: Dr. Susan Cannata

Discipline: *English*

If the death of a parent changes their children then the loss of both parents is certainly damaging. When a child is orphaned at a young age their entire life is affected by the loss. It is precisely this loss which allows Katniss Everdeen to flourish in Suzanne Collin’s wildly popular young adult novel *The Hunger Games* (2008). As a Tribute to the Hunger Games, Katniss is pledged to participate in a battle against 23 other adolescents, including Peeta who professes his love to her. In this last man standing battle royale it becomes obvious that the losses that Katniss has suffered have affected her growth developmentally. Instead of focusing on the negative aspects of this loss, however, my presentation argues that being orphaned at a young age empowers Katniss with strength the other contestants’ lack thus becoming the defining factor in her participation in the Hunger Games. Because Katniss has no parents to guide her, she must make her own way in the world, which has caused her to achieve a mature task oriented world view. Because she has a sister who depends on her for sustenance Katniss has learned to provide for herself and others. Examining Katniss’ behavior through texts on child development and orphans in literature it’s easy to see her as a symbol of power and control, certainly a girl skilled enough to win The Hunger Games.

9. Dynamics Processing and Equalization in Digital Audio Recording

Presenter: Matthew Siegel

Faculty Advisor: Dr. Larry Arnold

Discipline: *Music*

The purpose of this project is to identify the changes in audio quality when applying Dynamics Processing and Equalization to a vocal recording using an ARX preamp. Dynamics Processing and Equalization are two crucial factors that help make an audio recording sound professional. Dynamics Processing is the process of altering the dynamic range of a signal, which in turn enhances the audio without distorting the sound itself. There are four common types of dynamics processors: compressors, limiters, expanders and gates. Compressors in particular are most often applied. Compression is a process that reduces the dynamic range of an audio signal, which in turn, narrows the difference between high and low audio levels giving a cleaner sound. Equalization is the process of adjusting the balance between frequencies within an electronic audio signal. By emphasizing (boosting) pleasant frequencies and dampening (cutting) un-

wanted frequencies equalization gives the audio a clearer sound. To explore the differences in audio quality we will listen to four different vocal recordings: 1. a raw audio file, 2. with compression, 4. with equalization, and 4. with compression and equalization. The information from this research will directly inform digital audio recording practices—particularly input settings for dynamic processing and equalization.

10. Rethinking ESL tutoring strategies: Lessons from Germany

Presenter: Tank Steiner

Faculty Advisor: Dr. Teagan Decker

Discipline: *English*

Recently I had the fantastic experience of studying abroad for a year in Ludwigsburg, Germany. I was there to study German; however, due to financial need, I ended up working nearly thirty hours a week tutoring, teaching, and leading conversation groups in English. We have a large number of ESL students who frequent the Writing Center at UNCP; therefore, I thought that I was prepared to work with ESL students exclusively in Germany. I was not, at least not at first. I was constantly overwhelmed, felt stretched thin, and was exhausted. After months of feeling like this, I started to rethink my tutoring methods and ended up developing a new approach to ESL tutoring that not only helped my German tutees but would also prove beneficial upon my return to the US.

One of the keys to successfully tutoring an ESL student is helping them to develop some of the instincts that all of us, as native speakers of English, have. If Writing Center tutors can impress upon ESL students certain key elements of English on a base cognitive and verbal level, it will lead to a stronger, more genuine understanding and even the ability to correct their own mistakes. This is not a hard process, but it does require frequent, although short, meetings with tutees and the development of an individualized language plan. In this presentation, I am interested in sharing my ideas about, and observations of, ESL tutoring in order to develop a more active forum for discussion related to integrating effective ESL tutoring practices into Pembroke's University Writing Center.

11. Opium for the Masses

Presenter: Dean Stephens

Faculty Advisor: Dr. Judith Curtis

Discipline: *Mass Communications*

A population's internet usage during times of economic depression or prosperity can serve as an indicator of how said population perceives the importance of the internet's content. This statement is the basic concept behind this study, which seeks to answer the question; do economic cycles have an effect on how people use the internet? This study seeks to answer this question by analyzing popularity of entertainment websites within the context of the economy's health (or lack thereof). If economic prosperity or decline does affect how individuals use the internet, then the economy and entertainment site's popularity should share a negative correlation with one another. The basic method for this project combined data from an independent and dependent variable. In this study the dependent variable was simply the popularity of three entertainment websites. Popularity was measured by monthly page views. The independ-

ent factor had to do with the condition of the economy. In this study, the economy's condition was quantified by GNP. After the combination and analysis of the independent and dependent factors, the study came to an unexpected conclusion. The variables, instead of having a negative relationship, had a positive relationship; likely due to a mere coincidence.

12. Kenneth Branagh's Henry V: Historical Accuracy discussion

Presenter: Jeremy Vargas

Faculty Advisor: Dr. Charles Beem

Discipline: *History*

My paper will discuss the differences and the discrepancies between Shakespeare's Henry V play, Kenneth Branagh's Henry V film, and the historical Henry V. Both Shakespeare's play and Branagh's film illustrates a highly emphasized period during the Hundred Years war, the Agincourt campaign. In the play, Shakespeare focuses on the greatness of the English army an idea that climaxes with the depiction of the Agincourt battle. However, Kenneth Branagh refocuses on the brutality of High Middle Ages warfare and creates a movie that is antiwar in nature. Yet, Branagh's Henry V still represents both the Shakespeare film and the Agincourt battle accurately, while able to create a unique story. Through this essay, I will be comparing in what way this change affects the historical accuracy. The focal point of this paper is to understand the in what manner the accuracy of military campaign and the political conflict is depicted.

Notes



Progress Energy

