

4-17-2013

2013 Undergraduate Research Competition Program

Coastal Carolina University

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Coastal Carolina University

The Fifth Annual

Undergraduate Research

Competition

Wednesday, April 17th, 2013 and
Thursday, April 18th, 2013
Coastal Science Center

- ✓ **What:** Each spoken session will include a 10-12 minute presentation by an undergraduate student followed by 5-7 minutes of Q&A. A dedicated poster session will be held on Thursday from 4:30-6:30 pm.
- ✓ **How:** Each session will be judged based on the criteria listed. Judges will be Coastal Carolina University faculty.
- ✓ **Where:** All undergraduate research competition sessions will be scheduled in the Coastal Science Center, CSCC 205 and 207. The poster session will be in the hallway.
- ✓ **When:** See schedule of times below. All sessions are scheduled back-to-back.

For both spoken and poster presentations, the top three ranked presentations will be awarded approximately \$300, \$150 and \$50. Award recognition will be at the Honors Convocation on Friday, May 10, 2013 at 3pm.

Wednesday, April 17th

3:50 pm- 4:10 pm [CSCC 205]

Thomas M. Fernandez

Faculty Mentor: Adam Chamberlain, Political Science

Education, Employment, and Coastal Carolina University: What Are CCU Students' Plans after Graduation?

3:50 pm- 4:10 pm [CSCC 207]

Rebecca Coburn

Faculty Mentor: Keira Williams, Honors Program
Abuse of Spice, Bath Salts and Steroids

4:10 pm- 4:30 pm [CSCC 205]

Janel Reeves

Faculty Mentor: Sharon Thompson, Health Promotions

Exercise Education and Motivation in the Workplace

4:10 pm- 4:30 pm [CSCC 207]

Jordan Rutherford

Faculty Mentor: Chris Hill, Biology

Messing with Angry Birds: Measuring Acclimation Levels of Northern Mockingbirds (*Minus polyglottos*)

4:30 pm- 4:50 pm [CSCC 205]

Jamie N. Glass

Faculty Mentor: Terry Pettijohn, Psychology

Environmental Security Hypothesis: During Threatening Economic Times, Do Facial Features Affect Hiring Preferences?

4:30 pm- 4:50 pm [CSCC 207]

James Truluck

Faculty Mentor: John Hutchens, Biology

Differences in Food Availability for Venus Flytraps in Restored and Resident Populations

4:50 pm – 5:10 pm [CSCC 205]

Seanna Kautz

Faculty Mentor: Rob Young

Effects of Tidal and Current Gradients on the Movement Patterns of Bottlenose Dolphins Inhabiting the Estuaries along the Coastal of South Carolina

5:10 pm – 5:30 pm [CSCC 207]

Alesha Sheftic, MaryClaire Chalfant, Jake

Hendrickson, Jamie Donovan, and Helen

Chamblee

Faculty Mentor: Monica Fine, Marketing

Student Satisfaction of the HTC Recreation Center

5:30 pm- 5:50 pm – Break

5:50 pm- 6:10 pm [CSCC 205]

Alexander E. Mosier

Faculty Mentor: Megan Cevalasco, Biology

Identifying Kleptoplastic Foraminifera along the South Carolina Coast

5:50 pm- 6:10 pm [CSCC 207]

Christine Po

Faculty Mentor: Sharon Thompson, Health Promotion

Dietary Knowledge and Habits of Collegiate Athletes

6:10 pm- 6:30 pm [CSCC 205]

Zack Parker

Faculty Mentor: Scott Parker, Biology
Modeling Terrestrial Characteristics of Diamondback Terrapin Nest Sites using LiDAR and GIS at Waites Island, SC

6:10 pm- 6:30 pm [CSCC 207]

Kathryn Roach

Faculty Mentor: Sharon Thompson, Health Promotion

Examining the Impact of a Lunch Club for Elementary-children to Prevent School Tardiness

6:30 pm- 6:50 pm [CSCC 205]

Jenifer Butler

Faculty Mentor: Tripthia Pillai, English
Badness in a Round

6:30 pm- 6:50 pm [CSCC 207]

Iesha Wade

Faculty Mentor: Sharon Thompson, Health Promotion

A Perception of Taste Quality of Vegetable Enhanced Snacks/Desserts across the Life Span

6:50 pm- 7:10 pm [CSCC 205]

Hannah Widdifield

Faculty Mentor: Tripthia Pillai, English
Who's allowed to Ride the Short Bus? Un-Defining Disability

6:50 pm- 7:10 pm [CSCC 207]

Joseph Cannon and Nicholas Thurn

Faculty Mentor: Paul Richardson, Chemistry
The Effects of Salinity, pH, Temperature and Dissolved Oxygen on the Sensitivity of PCR Identification of the T4 Bacteriophage in Estuarine Waters

7:10 pm- 7:30 pm [CSCC 205]

Jennifer Stone

Faculty Mentor: Rob Young, Marine Science
A Correlation between Population Densities of the Atlantic Bottlenose Dolphin (*Tursiops truncatus*) and Habitat Complexities in Three South Carolina Marsh Systems

7:10 pm- 7:30 pm [CSCC 207]

Joseph Cannon

Faculty Mentor: Maggie Morehouse, History
New Deal Resettlement Communities in South Carolina

7:30 pm- 7:50 pm [CSCC 205]

Benjamin Thepaut

Faculty Mentor: Susan Libes, Marine Science
Plant Survival in the Floodplain Restoration of Crabtree Swamp, Horry County, SC

Thursday, April 18th

3:50 pm- 4:10 pm [CSCC 205]

Jacob Beaver

Faculty Mentor: Michael Pierce, Biology
The Influence of the Ubiquitin-related Modifier Protein URM1 on Prion Formation

3:50 pm- 4:10 pm [CSCC 207]

Kayla Liland, Ina Troutman, Jessica Otten, and Kaity Essel

Faculty Mentor: Sharon Thompson, Health Promotion
Exploration of a Prosocial Development Program Designed by Undergraduates for Elementary-age Children

4:10 pm- 4:30 pm [CSCC 205]

Amber Cienniewski

Faculty Mentor: Jonathan Smith, Political Science
The Failures of Intelligence Reform

4:10 pm- 4:30 pm [CSCC 207]

Derek Berthiaume

Faculty Mentor: F. Eliza Glaze, History
Breaking the Fourth Wall: Theatre History in American Culture

4:30 pm- 6:30 pm [CSCC]

Poster Sessions

See individual listing on Poster Session page

6:30 pm – 6:50 pm [CSCC 205]

Hilliary Ballentine

Faculty Mentor: John Hutchens, Biology

The Importance of Isolated Wetlands as a Habitat for Rare and Endangered Species in Comparison to riparian Wetlands

6:50 pm – 7:10 pm [CSCC 205]

Ernest P. Vallentine

Faculty Mentor: Douglas Van Hoewyk, Biology

Effects of Selenium on the Freshwater Alga *Chlamydomonas reinhardtii* with and Without the Proteasome Inhibitors MG132

6:50 pm – 7:10 pm [CSCC 207]

Lauren Albrittain

Faculty Mentor: Rob Young, Marine Science

Influence of Tidal Cycles on Movements of Atlantic Bottlenose Dolphins (*Tursiops truncatus*) in South Carolina Coastal Environments

7:10 pm – 7:30 pm [CSCC 205]

Marissa Polascak

Faculty Mentor: Triphthia Pillai, English

A Woman is a Dish for the Gods': Shakespeare's Use of Myth to Criticize Patriarchy

7:10 pm – 7:30 pm [CSCC 207]

Maeve Snyder

Faculty Mentor: Scott Nelson, Communication, Languages and Cultures

Giosue' Carducci: The Unromantic Romantic

7:30 pm – 7:50 pm [CSCC 207]

Marcello Garofalo and Brandon Rudolph

Faculty Mentor: Arne Flaten, Sue Bergeron and Jeff Case, Graphic Arts

New Wine Skins for Old Wine: Gesture Based Learning Environments and Cultural Heritage

Thursday Poster Session

4:30pm – 6:30pm

Coastal Science Center

- Barnes, Romie**
The Investigation of Physical Activity and Upper Respiratory Infections among College Student
Faculty Mentor: Sherer Royce, Health Promotion
- Carrol, Caitlin**
Assessment of Balance Ability in Female Collegiate Cheerleaders
Faculty Mentor: Gregory Martel, Exercise and Sports Science
- Carson, Abigail**
Integrating Science and Policy
Faculty Mentor: Thomas Mullikin, College of Science
- Georgiana, Toni**
Adoptability of Shelter Dogs as a Function of Dog Color and Anthropomorphic Accessory
Faculty Mentor: Linda Palm, Psychology
- Gregorcyk, Kelly**
Benthic Habitat Mapping in Port Jefferson Harbor in Long Island Sound, NY
Faculty Mentor: Jenna Hill, Marine Science
- Kallmeyer, Nina & Hoffman, Bryann**
Confidence Levels Performing Leave No Trace Principles Following Outdoor Education vs. Traditional Education Methods
Faculty Mentor: Sarah Banks Recreation and Sports Management
- Kiel, Brittany & Polivka, Kristen**
Elucidation of a Novel Alternative RNA Splicing Mechanism in Mammalian Cells
Faculty Mentor: Rachel Whitaker, Chemistry
- Knotts, Victoria & Klarich, Ashley**
Acid Catalyzed Intramolecular Friedel-Crafts Reactions with Idole and Allyctic Alcohols
Faculty Mentor: Bryan Wakefield, Chemistry
- Krug, Stephanie**
Quantifying Bivale Veligers in Plankton Collections: Comparing the Effectiveness of Different Mesh Sizes
Faculty Mentor: Julina Harding, Marine Science
- Lavado, Ana Maria**
The Magic of the Book
Faculty Mentor: Ray Moye, English
- Liland, Kayla & Douglas, McKynsey**
D-amino Acid Inhibitory Properties on Bacterial Growth
Faculty Mentor: Paul Richardson, Chemistry
- Lowe, Anna**
Equilibrium in Ionic Liquids
Faculty Mentor: Kathleen Kuhler, Chemistry

13. **McClain, Ryan**
Influences on Contraceptive Use
among Females in Western Africa
*Faculty Mentor: Fredanna
M'Cormack, Health Promotion*
14. **Mosier, Alexander**
Identifying Kleptoplastic
Foraminifera along the South
Carolina Coast
*Faculty Mentor: Megan Cevasco,
Biology*
15. **Snyder, Maeve**
A Survey of Biodiversity and
Abiotic Condition in Carolina Bays
with Links to Land Use and
Conservation
*Faculty Mentor: Kevin Godwin,
Biology*
16. **Stroud, Karla**
Site Fidelity, Home Range, and
Population Demographic of Two
Grass Shrimp Species in North Inlet,
SC
*Faculty Mentor: Juliana Harding,
Marine Science*
17. **Thepaut, Benjamin**
Community-based Groundwater and
Lake Level Management in
Briarcliffe Acres, SC
*Faculty Mentor: Susan Libes,
Marine Science*
18. **Troutman, Ina & Wesel, Jordan**
Searching for Prophylactic
Bacteriophages that Infect and Lyse
Staphylococcus aureus or
Escherchia coli
*Faculty Mentor: Paul Richardson,
Chemistry*
19. **Tuley, Leanne**
Phthalocyanine and Oxygen
Activation Research-Cyclic
Voltammetry and Computational
Chemistry
*Faculty Mentor: John Goodwin,
Chemistry*

Coastal Carolina University
Fifth Annual Undergraduate Research Competition
April 17 & 18, 2013

Student Presenter Abstracts

Albrittain, Lauren.-Senior, Marine Science, Honors. **Influence of Tidal Cycles on Movements of Atlantic Bottlenose Dolphins (*Tursiops truncatus*) in South Carolina Coastal Environments.**

Movements of Atlantic bottlenose dolphins were observed relative to daily tidal currents in three South Carolina coastal ecosystems. The null hypotheses tested were that travel direction with or against the tidal currents would not differ between sites, between tidal stages, or between dolphin groups with and without calves. Travel direction was found to be non-random against the tide for all sites, as well as Cape Romain, three tidal stages, and groups without calves.

Ballantine, Hillary.-Senior, Marine Science and Biology. **The Importance of Isolated Wetlands as a Habitat for Rare and Endangered Species in Comparison to Riparian Wetland.**

Many studies have been conducted on the species found within wetlands to demonstrate their importance as habitats. Isolated wetlands are not federally protected, and are vital habitats for many rare and endangered species. These species are found in both riparian and isolated wetlands, with more in riparian. Isolated wetlands represent a small percentage of the total terrestrial habitats in the U.S., so the amount of rare and endangered species found there is evidence for conservation.

Barnes, Romie.-. Senior, Biology. **The Investigation of Physical Activity and Upper Respiratory Infections among College Students. Poster.**

The research primarily studied the correlation between physical activity, healthy body mass and upper respiratory infection among college students. Data was collected by an internet survey distributed via email to all CCU students. Inferential statistics were used to determine differences between groups and relationships among variables. Additionally, relationships between physical activity and perceived stress; and the number of upper respiratory infections and perceived stress levels were also analyzed.

Beaver, Jacob.-.Senior, Biology, Honors. **The Influence of the Ubiquitin-related Modifier Protein URM1 on Prion Formation.**

Prions are infectious proteins generated by altering a cellular protein into a structurally different form that is toxic to the cell. Infectious proteins have also been identified in other eukaryotic organisms including *Saccharomyces cerevisiae* (Bakers yeast). This study tested the effect of deleting the URM1 gene on the formation of [URE3] prions in yeast. Our results indicate that in the absence of the URM1 gene, the formation of the [URE3] prion is modestly increased.

Berthiaume, Derek.-. Sophomore, History. **Breaking the Fourth Wall: Theatre History in American Culture.** My paper challenges the idea of escapism. The idea implies that theatre is an escape from reality. In my research I find that every play that I researched has obvious cultural tie in with the time of the setting. From racism and black face in the American Minstrel Shows to AIDS and the Homosexual Identity in *Angels in America*, theatre directly what is happening in culture; therefore, it cannot be an escape from reality.

Butler, Jenifer.-.Junior, English. **Badness in a Round.**

The presentation will address the definition and qualities of badness as found in *The Maid's Tragedy* by Francis Beaumont and John Fletcher, and it will demonstrate through examples from the play how the reciprocal nature of badness leads to a variety of complications and has the potential, though limited, for justice.

Cannon, Joseph.-.Sophomore, History. **New Deal Resettlement Communities in South Carolina.**

One New Deal approach to dealing with poverty among small farmers in the South was the Subsistence Homesteads Program. Three subsistence communities were developed in South Carolina. This paper examines the development, contemporary failure and the longer term impact of these experiments on the participants and their communities.

Cannon, Joseph - Junior, Biochemistry. **The Effects of Salinity, pH, Temperature and Dissolved Oxygen on the Sensitivity of PCR Identification of the T4 Bacteriophage in Estuarine Waters.**

Bacteriophages are used as indicators of pathogenic bacteria in drinking, and waste waters. They also show potential in limiting aquatic bacterial populations through their lytic properties. The effect of different water characteristics (salinity, pH, dissolved oxygen, and temperature) on the sensitivity of the PCR identification of virus particles were analyzed to determine at what levels bacteriophage can be detected in environmental samples. Data obtained allow for the development of bacteriophage detection threshold for environmental samples.

Carroll, Caitlin.-.Senior, Exercise and Sport Science, Honors. **Assessment of Balance Ability in Female Collegiate Cheerleaders. Poster.**

Assess balance ability and fall risk in female, collegiate CH. METHODS: 11 CH completed a questionnaire regarding recent falls, then were grouped by position. Subjects then completed four separate balance evaluation tests. RESULTS: 63.6% of CH experienced a fall, and 45% reported lower extremity injuries. Significant correlations were found. CONCLUSIONS: Due to high risk for falls, data suggests that conditioning programs should also focus on balance ability along with muscle strength.

Carson, Abigail.-. Senior, Marine Science, Honors. **Integrating Science and Policy, Senior, Marine Science. Poster.** Science stands at the threshold of an unprecedented opportunity to study the far-reaching implications of climate change. However, politicization of science is undermining the credibility of political and scientific institutions. An analysis of the failures that arise from the “disconnect” between science and policy illuminated the importance of the relationship between these sectors to prevent these problems in the future. If attention is focused on the benefits of integrating science into policy the obstacles preventing the groups from working together could be overcome.

Chalfant, MaryClaire.-. Marketing. **Student Satisfaction of the HTC Recreation Center.**

The purpose of our study is to understand current undergraduate students' satisfaction with Coastal Carolina University's HTC Recreation Center. The research examines factors of the facility, to determine what influences their satisfaction with the HTC Recreation Center. We studied the students' characteristics, such as their motivation, involvement in campus, their work ethics, lifestyles, and preferred times of gym attendance. The research also investigated campus and facilities' characteristics such as, parking, classes, staff, and cleanliness.

Chamblee, Helen.-.Marketing. **Student Satisfaction of the HTC Recreation Center.**

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Cienniewski, Amber.-. Senior, Political Science, Honors. **The Failures of Intelligence Reform.**

This research shows how the government has attempted to reform the intelligence community on numerous accounts, yet has failed to see that it might actually be a part of the problem. Scholars have criticized intelligence reform in various ways, including the policymaker-intelligence official relationship, yet none have come to the conclusion that this problem is the most significant of all. Once this problem can be addressed, other reforms will have greater impact on the functionality of the institution.

Coburn, Rebecca.-. Senior, Chemistry, Honors. **Abuse of Spice, Bath Salts, and Steroids.**

The abuse of three major drugs were examined and debated if they should continue to be banned in the United States. These three drugs are spice, bath salts, and steroids. Of the three, two should continue to be banned, spice and bath salts, due to scientists little knowledge on these drugs. Steroids should continue to be banned in sports world wide, but on an individual aspect steroids should not be banned.

Donovan, Jamie.-.Marketing. **.Student Satisfaction of the HTC Recreation Center.**

The purpose of our study is to understand current undergraduate students' satisfaction with Coastal Carolina University's HTC Recreation Center. The research examines factors of the facility, to determine what influences their satisfaction with the HTC Recreation Center. We studied the students' characteristics, such as their motivation, involvement in campus, their work ethics, lifestyles, and preferred times of gym attendance. The research also investigated campus and facilities' characteristics such as, parking, classes, staff, and cleanliness.

Douglas, Mckynsey.-. Freshman, BioChemistry. **D-amino Acid Inhibitory Properties on Bacterial Growth.** Antibiotic effectiveness is on the decline due to increasing resistance; new methods for fighting bacterial infections are a necessary to continue to stay ahead of the bacterial resistance. The d conformation of amino acids is very rare and the mirror image of the l-amino acid, the normal conformation found in almost all proteins. With this knowledge, the d-amino acids lysine, arginine, glutamic acid, methionine, isoleucine, and leucine will be utilized in an effort to observe the possible inhibitory effects on the bacterial growth of *staphylococcus aureus* and *Escherichia coli*.

Essel Kaitlyn.-.Senior, Health Promotion. **Exploration of a Prosocial Development Program Designed by Undergraduates for Elementary-age Children.**

Thirty-three percent of teachers believe bullying interrupts teaching time and significantly affects child development and learning. This study explores the effectiveness of a prosocial development program implemented by undergraduates for elementary-aged students. This program provides a model others may use as a tool to administer a health education program encompassing active and educational methods.

Fernandez, M. Thomas.-.Senior, Political Science, Honors. **Education, Employment, and Coastal Carolina University: What Are CCU Students' Plans After Graduation?**

The Bureau of Labor Statistics has shown that while unemployment amongst young college graduates is high, joblessness decreases as students pursue post-baccalaureate degrees. And with national unemployment near 8 percent, it is important for college students to consider what obstacles they may face when entering the workforce. Challenges may include sociohistorical (parent educational attainment) and socioeconomic factors as well as obstacles surrounding various forms of human capital. Using some of these challenges youth face when entering college and/or the workforce, this study predicts the decisions Coastal Carolina University (CCU) students will make post-graduation based upon four elements: parental education, academic achievement, paid work, and faculty-student interaction. I survey a random sample of CCU students assessing future occupational and/or educational plans post-baccalaureate graduation. Overall, the results show that the four selected elements accurately predict CCU student choice after graduation: whether they will enter a graduate program or enter the workforce. Considering, then, that unemployment risks decrease as education beyond a bachelor's degree increases, CCU faculty have a unique opportunity to shape the economy by encouraging students to pursue schooling post-baccalaureate graduation.

Garofalo, Marcello.-. Senior, Graphic Design. **New Wine Skins for Old Wine: Gesture Based Learning Environments and Cultural Heritage.**

Our presentation focuses on an accurate, archaeometric 3D digital reconstruction of the 4th century BCE Cyrene Treasury at Delphi, Greece (Cyrene was near modern Benghazi, Libya) for use in a gesture-based learning environment. Through a custom-coded Xbox Kinect system, users navigate through reconstructed monuments utilizing voice commands and body movements. The virtual environment also functions as a template for archiving and interacting with embedded meta-data, including video, photography, bibliography, and archaeological reports.

Georgiana, Toni.-.Senior, Psychology. **Adoptability of Shelter dogs as a Function of Dog Color and Anthropomorphic Accessory. Poster.**

Adoptability of dogs was examined as a function of dog color and anthropomorphic accessory. Undergraduate students at a southeastern university viewed a photograph of a white or black dog with or without a red bandana accessory and then completed a pet adoptability inventory. An ANOVA conducted on adoptability scores revealed a significant main effect for dog color, no main effect for accessory, and no significant color/accessory interaction. The implications of these findings will be discussed.

Glass, N. Jamie.-.Senior, Psychology-Sociology. **Environmental Security Hypothesis: During Threatening Economic Times, Do Facial Features Affect Hiring Preferences.**

Research on the Environmental Security Hypothesis supports the notion that as the economy undergoes periods of abundance and scarcity preferences for certain facial features emerge. The current study aimed to examine the ESH and hiring preferences in the workplace of ten male CEOs, chosen from the top 100 CEOs of 2011. The CEOs had either a high or low facial width to height ratio. Participants were asked to rate who they would most and least hire.

Gregorcyk, Kelly.-. Senior, Marine Science, Honors. **Benthic Habitat Mapping in Port Jefferson Harbor in Long Island Sound, NY. Poster.**

Multibeam bathymetry and backscatter data were collected in Port Jefferson Harbor and surrounding areas in Long Island Sound, aboard the NOAA Ship *Thomas Jefferson* using a Reson Seabat 7125. The multibeam backscatter data were processed using Fledermaus Geocoder to create a benthic habitat map for Port Jefferson Harbor and the area outside the mouth of the port. The backscatter data was groundtruthed with sediment grab samples.

Hendrickson, Jake.-.Marketing. **Student Satisfaction of the HTC Recreation Center.**

The purpose of our study is to understand current undergraduate students' satisfaction with Coastal Carolina University's HTC Recreation Center. The research examines factors of the facility, to determine what influences their satisfaction with the HTC Recreation Center. We studied the students' characteristics, such as their motivation, involvement in campus, their work ethics, lifestyles, and preferred times of gym attendance. The research also investigated campus and facilities' characteristics such as, parking, classes, staff, and cleanliness.

Hoffman, Bryann.-. Recreation and Sports management. **Confidence Levels Performing Leave No Trace Principles Following Outdoor Education vs. Traditional Education Methods. Poster.**

The purpose of this study was to determine if students have more confidence when learning Leave No Trace principles through outdoor education vs. traditional education methods. This effectiveness was evaluated by using a pre and post-test study to observe which learning environment provided more confidence for the students. Results indicate that students have more confidence in performing LNT skills when they are taught hands on with outdoor education compared to in the classroom traditional learning.

Kallmeyer, Nina.-. Senior, Recreation and Sports Management. **Confidence Levels Performing Leave No Trace Principles Following Outdoor Education vs. Traditional Education Methods. Poster.**

The purpose of this study was to determine if students have more confidence when learning Leave No Trace principles through outdoor education vs. traditional education methods. This effectiveness was evaluated by using a pre and post-test study to observe which learning environment provided more confidence for the students. Results indicate that students have more confidence in performing LNT skills when they are taught hands on with outdoor education compared to in the classroom traditional learning.

Kautz, Seanna.-.Senior, Marine Science, Honors. **Effects of Tidal and Current Gradients on the Movement Patterns of Bottlenose Dolphins Inhabiting the Estuaries along the Coast of South Carolina.**

Bottlenose dolphins are one of the most prevalent cetaceans present in the waters along the eastern coast of the United States. The objective of this study is to investigate the effects of current velocity and gradient on the movement patterns of bottlenose dolphins inhabiting the estuarine environment in North Inlet, SC. Current gradient is expected to have an effect on the movement patterns and location preference of estuarine dolphins.

Kiel, Brittany. - Senior, BioChemistry. **Elucidation of a Novel Alternative RNA Splicing Mechanism in Mammalian Cells. Poster.**

We have demonstrated that Human cytoplasmic leucyl-tRNA synthetase (HcLeuRS) has specific protein-protein interactions with the nuclear enzymes SC35 and SRcyp. Based on our biochemical findings, we hypothesize that HcLeuRS, SC35 and SRcyp form a ternary complex that may influence RNA processing and maturation within the nucleus of mammalian cells.

Klarich, Ashley.-.Junior, Biochemistry. **Acid Catalyzed Intermolecular Friedel-Crafts Reactions with Indole and Allylic Alcohols. Poster.**

A new diphenylphosphoric acid catalyzed Friedel-Crafts reaction between indole and tethered allylic alcohols has been developed. To determine the scope of this new reaction, a variety of indole substitution patterns and tether lengths have been investigated. Each of the newly synthesized compounds were purified then characterized by utilizing Nuclear Magnetic Resonance (NMR). This methodology will enable the synthesis of flinderole C, an antimalarial natural product, and structural analogs for biological evaluation.

Knotts, Victoria.-. Junior, BioChemistry. **Acid Catalyzed Intermolecular Friedel-Crafts Reactions with Indole and Allylic Alcohols. Poster**

A new diphenylphosphoric acid catalyzed Friedel-Crafts reaction between indole and tethered allylic alcohols has been developed. To determine the scope of this new reaction, a variety of indole substitution patterns and tether lengths have been investigated. Each of the newly synthesized compounds were purified then characterized by

utilizing Nuclear Magnetic Resonance (NMR). This methodology will enable the synthesis of flinderole C, an antimalarial natural product, and structural analogs for biological evaluation.

Krug, Stephanie.-. Senior, Marine Science. **Quantifying Bivalve Veliger's in Plankton Collections: Comparing the Effectiveness of Different Mesh Sizes. Poster.**

Retention of bivalve veligers in 153 micron plankton nets has not been evaluated. Simultaneous collections using 80 and 153 micron mesh nets were made in North Inlet, SC during summer 2012 to evaluate consistency between veliger abundances in the two nets. Counts were adjusted by the volume of water filtered yielding bivalve veliger density estimates for both mesh sizes. The results will allow more accurate veliger density estimates in 153 micron samples collected historically.

Lavado, Ana Maria.-.Senior, English, Honors. **The Magic of the Book. Poster.**

Throughout the centuries, books have fascinated and enchanted people with their ability to transport readers to another world. In the Middle Ages, people found magic all around them and had a strong belief in its power and presence, especially in books. Literature produced at this time – such as the Arthurian legends – reflect this strong belief people held in the magical qualities of books as well as provide an interesting comparison to modern views of magic.

Liland, Kayla.-. Junior, BioChemistry. **D-amino Acid Inhibitory Properties on Bacterial Growth. Poster.**

Antibiotic effectiveness is on the decline due to increasing resistance; new methods for fighting bacterial infections are a necessary to continue to stay ahead of the bacterial resistance. The d conformation of amino acids is very rare and the mirror image of the l-amino acid, the normal conformation found in almost all proteins. With this knowledge, the d-amino acids lysine, arginine, glutamic acid, methionine, isoleucine, and leucine will be utilized in an effort to observe the possible inhibitory effects on the bacterial growth of *staphylococcus aureus* and *Escherichia coli*.

Liland, Kayla.-. Junior, BioChemistry. **Exploration of a Prosocial Development Program Designed by Undergraduates for Elementary-age Children.**

Thirty-three percent of teachers believe bullying interrupts teaching time and significantly affects child development and learning. This study explores the effectiveness of a prosocial development program implemented by undergraduates for elementary-aged students. This program provides a model others may use as a tool to administer a health education program encompassing active and educational methods.

Lowe, Anna.-. Senior, Marine Science. **Equilibrium in Ionic Liquids. Poster.**

Solvent composition effects on the equilibrium position of the weak acid p-nitrophenol were studied. UV-Viz Spectra were obtained in the temperature range 20°C to 45°C, and absorption at the maximum wavelength for the acid and base forms were determined. Then Beer's Law plots and Van't Hoff plots were used to determine the equilibrium point, the enthalpy, entropy, and free energy for the reaction. Solvents included water, 10% methanol-water, 20% methanol-water, and 10% 1-hexyl-3-methylimidazolium trifluoromethanesulfonate-water.

McClain, Ryan.-.Senior, Health Promotion. **Influences on Contraceptive Use among Females in Western Africa. Poster.**

This study examines influences on contraceptive use among females throughout Western Africa. A phenomenological study was conducted utilizing seven articles that examined studies about attitudes towards contraceptive use by women in five different countries. Results show that religious beliefs, cultural practices, marital status, quality of reproductive health services, geographic location, and unique area characteristics may influence contraception use and the use of specific methods. For all areas, the usage of contraceptive methods increases with education.

Mosier, E. Alexander.-.Junior, Biology. **Identifying Kleptoplastic Foraminifera along the South Carolina Coast. Poster.**

The aim of this research project is to determine whether or not foraminifera engage in kleptoplasty with local diatoms populations. Samples were taken from the tidal lagoon areas at Hobcaw Barony, SC and Waties Island, SC. Polymerase chain reactions (PCR) were used to amplify the ribosomal and plastid DNA sequences of both the foraminiferal host and the kleptoplasts and gel electrophoresis gave clear side-by-side comparisons of DNA base pair bands.

Mosier, E. Alexander.-. Junior, Biology. **Identifying Kleptoplastic Foraminifera along the South Carolina Coast.**

The aim of this research project is to determine whether or not foraminifera engage in kleptoplasty with local diatoms populations. Samples were taken from the tidal lagoon areas at Hobcaw Barony, SC and Waties Island, SC. Polymerase chain reactions (PCR) were used to amplify the ribosomal and plastid DNA sequences of both the foraminiferal host and the kleptoplasts and gel electrophoresis gave clear side-by-side comparisons of DNA base pair bands.

Otten, Jessica.-. Junior, Exercise and Sport Science. **Exploration of a ProSocial Development Program Designed by Undergraduates for Elementary-age Children.**

Thirty-three percent of teachers believe bullying interrupts teaching time and significantly affects child development and learning. This study explores the effectiveness of a prosocial development program implemented by undergraduates for elementary-aged students. This program provides a model others may use as a tool to administer a health education program encompassing active and educational methods.

Parker, Zack.-. Senior, Marine Science. **Modeling Terrestrial Characteristics of Diamondback terrapin Nest Sites using LiDAR and GIS at Waites Island, SC.**

The diamondback terrapin is an aquatic turtle that requires terrestrial environments to deposit their eggs. In order to predict environmental features associated with terrapin nesting sites in estuarine habitats, a 3D analyst model was developed to examine the significance of slope, aspect, and elevation in the nest site selection process by gravid female terrapins. If proven accurate, this may be useful in determining which terrestrial habitats are essential to protect.

Po, Christine.-. Senior, Health Promotion, Swain Scholars. **Dietary Knowledge and Habits of Collegiate Athletes.**

Practicing proficient dietary habits and having a general knowledge of proper nutrition plays a large role in athletic performance. This study examines the correlation of nutrition knowledge and habits of a sample of Coastal Carolina University athletes. A survey was administered online and correlation tests were calculated through Microsoft Excel. Results are to be determined.

Polascak, Marissa.-. Senior, English-Communications. **A Woman is a Dish for the Gods': Shakespeare's Use of Myth to Criticize Patriarchy.**

Shakespeare is known for incorporating mythologies into his plays. But while audiences recognized these myths, they may not have recognized that Shakespeare may have been criticizing England's government. After analyzing the plays *Titus Andronicus*, *Troilus and Cressida*, and *Antony and Cleopatra*, it is clear that anti-patriarchal themes such as emasculation, cuckoldry, and powerful female figures are common threads throughout. Shakespeare took familiar mythologies and transcended their boundaries, using the tales as vessels to deliver anti-patriarchal messages

Polivka, Kristen.-. Senior, BioChemistry, Swain Scholars. **Elucidation of A Novel Alternative RNA Splicing Mechanism in Mammalian Cells. Poster.**

We have demonstrated that Human cytoplasmic leucyl-tRNA synthetase (HcLeuRS) has specific protein-protein interactions with the nuclear enzymes SC35 and SRcyp. Based on our biochemical findings, we hypothesize that HcLeuRS, SC35 and SRcyp form a ternary complex that may influence RNA processing and maturation within the nucleus of mammalian cells

Reeves, Janel.-. Senior, Exercise and Sport Science. **Exercise, Education and Motivation in the Workplace.**

Physical activity habits are important because they can decrease the risk of cardiovascular disease, type II diabetes, colon cancer, breast cancer, and obesity. The purpose of this study was to determine if a five-week program could significantly change physical activity habits of 22-50 year old adults (n=15) and make positive changes concerning BMI. Pre/post measurements included self-recorded height/weight and self-administered completion of the International Physical Activity Questionnaire (short-IPAQ). Results will be discussed during presentation

Roach, Kathryn.-. Senior, Health Promotion, Swain Scholars. **Examining the Impact of a Lunch Club for Elementary-children to Prevent School Tardiness.**

Physical activity habits are important because they can decrease the risk of cardiovascular disease, type II diabetes, colon cancer, breast cancer, and obesity. The purpose of this study was to determine if a five-week program could

significantly change physical activity habits of 22-50 year old adults (n=15) and make positive changes concerning BMI. Pre/post measurements included self-recorded height/weight and self-administered completion of the International Physical Activity Questionnaire (short-IPAQ). Results will be discussed during presentation.

Rudolph, Brandon.-. Graphic Design. **New Wine Skins for Old Wine: Gesture Based Learning Environments and Cultural Heritage.**

Our presentation focuses on an accurate, archaeometric 3D digital reconstruction of the 4th century BCE Cyrene Treasury at Delphi, Greece (Cyrene was near modern Benghazi, Libya) for use in a gesture-based learning environment. Through a custom-coded Xbox Kinect system, users navigate through reconstructed monuments utilizing voice commands and body movements. The virtual environment also functions as a template for archiving and interacting with embedded meta-data, including video, photography, bibliography, and archaeological reports.

Rutherford, Jordan.-. Senior, Biology, Honors. **Messing with Angry Birds: Measuring Acclimation Levels of Northern Mockingbirds (*Mimus polyglottos*).**

The northern mockingbird (*Mimus polyglottos*) is a common bird species found in North America. It is now commonly seen in urban and suburban areas where as a century ago, it was rarely seen outside of rural and forested areas. For the study, I observed northern mockingbirds at nine different sites to determine acclimation levels. After the study, I determined that there is a negative relationship between the number of people in the surrounding area and the distance when the birds flew away.

Sheftic, Alesha.-. Senior, Marketing. **Student Satisfaction of the HTC Recreation Center.**

The purpose of our study is to understand current undergraduate students' satisfaction with Coastal Carolina University's HTC Recreation Center. The research examines factors of the facility, to determine what influences their satisfaction with the HTC Recreation Center. We studied the students' characteristics, such as their motivation, involvement in campus, their work ethics, lifestyles, and preferred times of gym attendance. The research also investigated campus and facilities' characteristics such as, parking, classes, staff, and cleanliness.

Snyder, Maeve.-. Junior, Biology. **A Survey of Biodiversity and Abiotic Condition in Carolina Bays with Links to Land Use and Conservation. Poster.**

Carolina Bays are elliptical wetland depressions of unknown origin, geographically unique to the southeastern US. Their importance to rare and endemic species and history of human impact and degradation creates a need to quantify biotic diversity and abiotic condition of these habitats. My study will use survey methods, specific to the taxon surveyed, in three bays. If realized, my research will investigate the presence of a relationship between land use and biodiversity in Carolina bays.

Snyder, Maeve.-. Junior, Biology. **Giosue' Carducci: The Unromantic Romantic.**

Giosuè Carducci was the first poet laureate of Italy and a leading figure of Italian literature in the 19th century. Although Carducci personally aligned himself with the Neoclassicist movement, my research demonstrates that many of his poems contained themes and characteristics of the Romantic Movement. Through his efforts to recall the nobility of classical literature, Carducci's poetry actually contributed to the development of a uniquely Italian Romanticism.

Stone, Jennifer.-. Senior, Marine Science, Honors. **A Correlation between Population Densities of the Atlantic Bottlenose Dolphin (*Tursiops truncatus*) and Habitat Complexities in Three South Carolina Marsh Systems.**

This study aimed to correlate population densities of the bottlenose dolphin (*Tursiops truncatus*) with habitat complexity. Densities from three salt marsh systems in South Carolina (Cape Romain, ACE Basin, and Bluffton) were compared, and found that densities per linear transect distance were not significantly different between sites ($p=0.077$) but were significantly different per surface area between sites ($p=2.3 \times 10^{-4}$). With similar densities per distance, one could estimate population by extrapolating density over a large system.

Stroud, Karla.-. Senior, Marine Science, Honors. **Site Fidelity, Home Range, and Population Demographics of Two Grass Shrimp Species in North Inlet, SC. Poster.**

Grass shrimp are trophically important in salt marsh tidal creek systems. Site fidelity and home range of grass shrimps in North Inlet were examined using a tag-recapture method. Ninety-nine percent of shrimps recaptured were collected at the same creek of release, and they had an average home range of less than 2 meters. The energy expended by shrimps needing to maintain positions in tidal creeks may be worth the benefits.

Thepaut, Benjamin.-. Senior, Marine Science. **Plant Survival in the Floodplain Restoration of Crabtree Swamp, Horry County, SC.**

Crabtree swamp is located in the Kingston Lake Watershed in northeastern SC. The swamp flows around the City of Conway and discharges into the Waccamaw River. Since the 1960's, an eight-mile canal was dredged through the swamp to prevent and control flooding. In April 2009, a half-mile stretch along one streambank was restored and revegetated with native trees, shrubs and wetland plants. Their health status has been assessed periodically to ensure a successful restoration.

Thepaut, Benjamin.-. Senior, Marine Science. **Community-based Groundwater and Lake level Management in Briarcliffe Acres, SC. Poster.**

A groundwater and lake level monitoring program was initiated in May 2012 to enable the community of Briarcliffe Acres to locally manage their water resources. Briarcliffe Acres is a residential community located on the northeastern shoreline of Horry County, SC. The major water resource of concern is a series of networked lakes that are used for stormwater retention and a source of irrigation water. These lakes are believed to be controlled by groundwater aquifer levels.

Thurn, Nicholas.-.BioChemistry. **The Effects Identification of the T4 Bacteriophage in Estuarine Waters of Salinity, pH, Temperature and Dissolved Oxygen on the Sensitivity of PCR.**

Bacteriophages are used as indicators of pathogenic bacteria in drinking, and waste waters. They also show potential in limiting aquatic bacterial populations through their lytic properties. The effect of different water characteristics (salinity, pH, dissolved oxygen, and temperature) on the sensitivity of the PCR identification of virus particles were analyzed to determine at what levels bacteriophage can be detected in environmental samples. Data obtained allow for the development of bacteriophage detection threshold for environmental samples.

Troutman, Ina.-. Junior, Biochemistry. **Searching for Prophylactic Bacteriophages that Infect and lyse *Staphylococcus aureus* or *Escherchia coli*. Poster.**

Bacteriophages (phages) are absolute parasites that solely infect and lyse bacteria. They are one of the most abundant entities on Earth and carry all the information needed to direct their own reproduction once introduced into a host cell. Before the discovery of antibiotics, phages were used as prophylactic and therapeutic agents against bacterial infections. Since the commencement of antibiotics and their widespread use in fighting bacterial infections, there has been an emergence of bacterial organisms that have developed resistance. The purpose of this research is to search for naturally occurring phages that could potentially be used as natural therapeutic agents with the ability to inhibit infectious diseases.

Troutman, Ina.-. Junior, BioChemistry. **Exploration of a Prosocial Development Program Designed by Undergraduates for Elementary-age Children.**

Thirty-three percent of teachers believe bullying interrupts teaching time and significantly affects child development and learning. This study explores the effectiveness of a prosocial development program implemented by undergraduates for elementary-aged students. This program provides a model others may use as a tool to administer a health education program encompassing active and educational methods.

Truluck, James.-. Senior, Biology. **Differences in Food Availability for Venus Flytraps in Restored and Resident Populations.**

Based on Prof. Luken's 2008 research on restoring Venus flytrap populations in the Lewis Ocean Bay Heritage Preserve, to better understand his results soil arthropods were sampled from the restored and resident sites, to determine if there was a significant difference between the populations

Tuley, Leanne.-.Senior, Biology. **Phthalocyanine and Oxygen Activation Research-Cyclic Voltammetry and Computational Chemistry. Poster.**

This research focuses on using two derivatives of phthalocyanine to determine if they will be more efficient with the cyclic voltammetry therefore more productive. The two derivatives were made from the starting product and then layered onto an electrode. The electrode was then tested through cyclic voltammetry and compared to the original compound. The object of this research is to find a compound that will not decompose and be more efficient than the starting phthalocyanine.

Vallentine, P. Ernest.-. Senior, Biology, Honors. **Effects of Selenium on the Freshwater Alga *Chlamydomonas reinhardtii* with and Without the Proteasome Inhibitor MG132.**

Selenium has not been shown to be needed in plants, but the model plant cell *Chlamydomonas reinhardtii* may be an exception and appears to increase growth rates in the presence of selenium. Selenium may be incorporated into proteins as the modified amino acid selenocysteine. Resulting stress may be measured. This study is interested in the affects selenium has on stress levels, and how they are affected when the proteasome is inhibited.

Wade, Iesha.-. Senior, Exercise and Sport Science, Swain Scholars. **A Perception of Taste Quality of Vegetable Enhanced Snacks/Desserts across the Life Spa.**

A gradual loss in taste perception often accompanies aging. This study examined perceptions and actual ratings of taste among an older age population. Prior to consuming vegetable-enhanced snacks/desserts and milk substitutes, participants were informed of the food to be sampled and recorded perception of taste. Next, they tasted foods and recorded actual ratings. Since this taste test research has previously been conducted with younger age populations this presentation will describe results for all age groups.

Wesel, Jordan.-. Senior, BioChemistry. **Searching for Prophylactic Bacteriophages that Infect and lyse *Staphylococcus aureus* or *Escherchia coli*. Poster.**

Bacteriophages (phages) are absolute parasites that solely infect and lyse bacteria. They are one of the most abundant entities on Earth and carry all the information needed to direct their own reproduction once introduced into a host cell. Before the discovery of antibiotics, phages were used as prophylactic and therapeutic agents against bacterial infections. Since the commencement of antibiotics and their widespread use in fighting bacterial infections, there has been an emergence of bacterial organisms that have developed resistance. The purpose of this research is to search for naturally occurring phages that could potentially be used as natural therapeutic agents with the ability to inhibit infectious diseases.

Widdifield, Hannah.-.Senior, English, Honors. **Who's Allowed to Ride the Short Bus?: Un-Defining Disability.**

Combining personal anecdote with scholarly research in the field of disability studies, this thesis aims to deconstruct the common social and academic perceptions of disability. Two disabled figures—Artie Abrams and Oscar Pistorious—are considered throughout the piece, as are the effects of stereotyping disabled figures into simplified roles. The study ends on a note of inclusion, calling for more representation of the disabled community within the academy.