4-14-2015

2015 Undergraduate Research Competition Program

Coastal Carolina University

COASTAL CAROLINA UNIVERSITY

Undergraduate Research Competition

April 14-15, 2015

The Undergraduate Research Competition is a spring tradition at Coastal Carolina University. This year, students and faculty mentors from 20 different majors and all university colleges have worked to produce 49 oral and 40 poster presentations. These are the results of months, and in some cases, years of effort on undergraduate research projects, and demonstrate the strength of experiential learning at CCU. Congratulations, presenters!

Program Overview

Tuesday, April 14, 2015

2:00-3:00 PM Oral Presentations, Brittain Hall, 1st Floor
3:00-4:30 PM Poster Session I, Lib Jackson Student Union Atrium
5:00-7:00 PM Oral Presentations, Brittain Hall, 1st Floor

Wednesday, April 15, 2015

2:00-5:00 PM Oral Presentations, Brittain Hall, 1st Floor
5:30-7:00 PM Poster Session II, Lib Jackson Student Union Atrium

Concurrent Event

Senior Exhibition (portfolios from graduating Graphic Design and Art Studio majors)

- Portfolio 1: April 8-April 19, 2015, Rebecca Randall Bryan Art Gallery
- Portfolio 2: April 27- May 9, 2015, Rebecca Randall Bryan Art Gallery

Individual Presentations and Abstracts can be found on the following pages

2015 Undergraduate Research Competition
ORAL PRESENTATIONS
Brittain Hall, First Floor

TUESDAY, APRIL 14, 2015

Time	BRITTAIN HALL RM 101	BRITTAIN HALL RM 112	BRITTAIN HALL RM 114
2:00 PM	**Katelyn Vicente** "Student Satisfaction and Greek Life" *Faculty Mentor: Miranda Brennemann*	**Renee Richardson** "Exploratory Usage of Global WRF for Ensemble Tropical Cyclone Simulations" *Faculty Mentors: Varavut Limpasuvan and Shaowu Bao*	**Somersill Tarabek** "Co-op Parasocial Relationships between Video Game Characters and the Player" *Faculty Mentor: Kyle J. Holody*
2:20 PM	**Timothy Hardwick** "Basso Continuo: The Original Lead Sheet" *Faculty Mentor: Eric Crawford*	**Katina Foley** "The Correlation between Light Pollution Along the Grand Strand and the Location of Sea Turtle Nests" *Faculty Mentor: Louis Keiner*	**Julie Emory** "Samurai in Gaming Pop Culture Abstract" *Faculty Mentor: Brandon Palmer*
3:00 PM to 4:30 PM	**Poster Session I** Lib Jackson Student Union - Atrium (see poster schedule)		
5:00 PM	**Dakota Fulp** "To the Death Star: Orbital Maneuvers to Arrive at a Killer Asteroid" *Faculty Mentor: Louis Rubbo*	**Erica Aikens** "Blood Pressure Variability While Playing Golf: Walking vs. Riding" *Faculty Mentor: G. William Lyerly*	**Brooke Clark** **"**(Un)wrapping Felix Gonzalez-Torres: The Relational Power and Contagious Wonderment of Candy and Other Things" *Faculty Mentor: Tripthia Pillai*
5:20 PM	**Chris Mocarski** "May the Force Be With US: Deflecting Killer Asteroids" *Faculty Mentor: Louis Rubbo*	**Danielle Ludlam** "Changes in Heart Rate and Energy Expenditure in College Males While Golfing: Walking vs. Riding" *Faculty Mentor: G. William Lyerly*	**Nina Annunziate** "Our Voices Count: LGTB Educators Experiences and Its Impact on Teacher Education" *Faculty Mentor: John Delport*
5:40 PM	**Christopher Nicholson** "South Carolina Solar Policy" *Faculty Mentor: Virginia Norris*	**Michael Iwaskewycz** "Acute Responses in Heart Rate When Playing Golf: Walking vs. Riding" *Faculty Mentor: G. William Lyerly*	**Meg Oshima** "Effects of Injury on *Dorytheuthis (Loligo) Pralei*i's Response to Predation Threats" *Faculty Mentor: Robyn Crook*
6:00 PM	**Joseph Fleming** "South Carolina Counties: In the Shadows" *Faculty Mentors: Mikel Norris and Virginia Norris*	**Sarah Henry** "Energy Expenditure for Health Benefits: Actigraph Accelero-meter vs. Polar Heart Rate Monitor" *Faculty Mentor: G William Lyerly*	

Time	BRITTAIN HALL RM 101	BRITTAIN HALL RM 112	BRITTAIN HALL RM 114
6:20 PM	**Charles Stackhouse, Dylan Fender, Erin Bair and Austin Nichols** "Investigating Global Corruption: Views from the International Student Festival in Trondheim [ISFIT] 2015, Norway" *Faculty Mentor: Richard Aidoo*	**Billy Rydstrom** "The Impact of Product Placement" *Faculty Mentor: Monica Fine*	**Tyler Owens** "Healthcare: The Effects of the Patient Protection and Affordable Care Act on the Uninsured Population and Free Clinic Services" *Faculty Mentor: Sherer Royce*
6:40 PM	**Rodney Miller, Rebecca Truluck and Tatiana Mgrdechian** "Gender and Political Knowledge in the 2014 South Carolina Gubernatorial Elections" *Faculty Mentor: Adam Chamberlain*	**Jessica Geilbert** "Curls Concerned: A Study of Reactions to Natural or Treated Hair" *Faculty Mentor: Kyle J. Holody*	**Chad Smith** "Does Age Effect Preference on E-Book use Versus Traditional Reading Material?" *Faculty Mentor: Jason Eastman*

WEDNESDAY, APRIL 15, 2015

Time	BRITTAIN HALL RM 101	BRITTAIN HALL RM 112	BRITTAIN HALL RM 114
2:00 PM	**Damien Wright** "How to Protect Gotham City Using Voronoi Diagrams" *Faculty Mentor: Ogul Arslan*	**Mallory Banton** "Biophysical Parameters that Determine RNA-mental Complex Formation" *Faculty Mentor: Rachel Whitaker*	**Alyson Lavin** "Association Patterns in Atlantic Bottlenose Dolphins (*Tursiops truncatus*) off Northern South Carolina" *Faculty Mentor: Rob Young*
2:20 PM	**Mariel Celina Po** "Student Perception about Purchasing a Textbook for a College Course: Does Gender and Class Status Matter?" *Faculty Mentor: Stephen Firsing*	**Sean Smith** "The Gallipoli Campaign" *Faculty Mentors: Matt McDonough and Adam Chamberlain*	**Alyssa Stinnett** "Home Range and Core Use Areas by Atlantic Bottlenose Dolphins" *Faculty Mentor: Rob Young and Eric Wright*
2:40 PM	**Jo Piecynski** "Female Chinese Protagonists in the Context of American Secondary Education" *Faculty Mentor: Cynthia Port*	**Nicholas Thurn** "HPLC Purification of Bateriophage T2 Using a DEAE Methacrylate Monolithic Column" *Faculty Mentors: Brett Simpson and Paul Richardson*	**John Saeger** "Evaluation of Simplified Models for Refractivity Inversion Problems" *Faculty Mentor: Erin Hackett*
3:00 PM	**Carlie Mills** "Conducting Formative Research in Alcohol Social Norms Campaigns" *Faculty Mentor: Mark Flynn*	**Suzanne Crass** Facial Feedback on Self Esteem, Optimism, and Openness to Challenge and Diversity *Faculty Mentor: Terry Pettijohn*	**Corrine Jacobs and Marek Jendrassak** "Effect of Turbulence on Particle Settling Velocities" *Faculty Mentors: Erin Hackett and Roi Gurka*

Time	BRITTAIN HALL RM 101	BRITTAIN HALL RM 112	BRITTAIN HALL RM 114
3:20 PM	**Megan Von Kolnitz** "How Gender, Pet Presence and Pet Ownership Affects Perceived Personality Traits and Interpersonal Attraction of a Stranger" *Faculty Mentor: Terry Pettijohn*	**Jason Lee and Gabe Arce** "Safety on a Bike: That's What We Like" *Faculty Mentors: Sharon Thompson and Eric Wright*	**Lyndsay Young** "Multiple Pathways of Neurodegeneration in *Caenorhabditis Elegans"* *Faculty Mentor: Daniel Williams*
3:40 PM	**LeAna Norman** "The Relationship between Fear of Happiness and Shame and Guilt" *Faculty Mentor: Joan Piroch*	**Briana Laws, DeVairay White; and Christina Auth** "Analyzing Perceptions of Recreational Needs of Horry County" *Faculty Mentor: Sharon Thompson*	**Kelly Shelton, Abigal Blass, Aundrea Dolan, Hailey Ensor, Jessamin Straub, Kristen Kebblehouse and Tatiana Mgrdechian** "Issues of Erosion and Sea Level Rise along Pawley's Island, South Carolina" *Faculty Mentor: Pam Martin*
4:00 PM	**Aaron White** "Trust in Government as a Function of Race and Gender" *Faculty Advisor: Joan Piroch*	**Dori Sanders** "Does Educational Level Determine Health Practices of Employees at a Southeastern Medical Center?" *Faculty Mentor: Sharon Thompson*	**Emily Murray** "*Xenobalanus* Index Modeling in Atlantic Bottlenose Dolphins" *Faculty Mentor: Rob Young*
4:20 PM		**Victoria Lambert** "Weight Gain and Sleeping Patterns among College Students" *Faculty Mentor: Sharon Thompson*	**Layla Baykal** "Zinc is the Molecular "Switch" that Controls the Catalytic Cycle of Bacterial Leucyl-tRNA Synthetase" *Faculty Mentor: Rachel Whitaker*
4:40 PM	**Kylie DeBari** "Hands Up, Don't Shoot an Analysis of National and Local Newspaper Coverage of Recent Protests" *Faculty Mentor: Kyle J. Holody*	**Chelsea Thomas** "Assessing Changes in Campus Nutritional Choices among College Athletes" *Faculty Mentor: Sharon Thompson*	**Molly Johnson** "From West to East: Buddhism as Enlightenment in *Her"* *Faculty Mentor: Jennifer Boyle*
5:30 PM To 7:00 PM	Poster Session II Lib Jackson Student Union - Atrium (see poster schedule)		

2015 Undergraduate Research Competition
POSTER PRESENTATIONS
Lib Jackson Student Union - Atrium

Session I: **Tuesday, April 14, 2015, 3:00pm – 4:30pm**
Session II: **Wednesday, April 15, 2015, 5:30pm – 7:00pm**

POSTER SESSION I
TUESDAY, APRIL 14, 2015, 3:00pm – 4:30pm

DAVID J CATALANO, Marine Science
Seasonal Variations in Gut Contents of Atlantic Silversides from Dunn Sound, SC (#1)
Faculty Mentors: Jane L. Guentzel, Marine Science and Daniel Ferons, School of Coastal and Marine Systems Science

MICHAEL CLINE, Marine Science
An Investigation into the Relationship between Common Marine Nutrients and Phytoplankton Community Composition (#15)
Faculty Mentor: Eric Koepfler, Marine Science

HARLEY COATES and LARISSA MARTIN, Chemistry
Heavy Metal Concentration in *Donax* Clams Found in Myrtle Beach Analyzed Using Atomic Abstraction (#14)
Faculty Mentor: Kevin McWilliams, Chemistry

MELANIE ESCH, Marine Science
Reef Coverage and Species Richness with Respect to Water Depth at Discovery Bay, Jamaica (#16)
Faculty Mentor: Erin Burge, Marine Science

HUNTER FIUZAT, Marine Science
Seasonal Influences on Gut Contents of Mummichogs in South Carolina (#2)
Faculty Mentors: Jane Guentzel, Marine Science and Daniel Ferons, School of Coastal and Marine Systems Science

ERIN FOWLER, Psychology
Personality and Moral Reasoning (#4)
Faculty Mentor: Andrew Terranova, Psychology

ERIC GILLEY and DIANA EVANS, Intelligence and National Security Studies
Using Geospatial Mapping to Track Al-Qaeda (#5)
Faculty Mentor: Susan Bergeron, Politics and Geography

VERONICA LANCE and MARIA CUFLEY, Marine Science
Optimization of Friedel Crafts Alkylation with Indoles to Form the Core of Flinderole C (#8)
Faculty Mentor: Bryan Wakefield, Chemistry

SAMANTHA MCKINLEY, Marine Science
Effects of Hydrocarbon Extraction on Subsidence in the Mississippi Delta (#17)
Faculty Mentor: Zhixiong Shen, Marine Science

CAITLIN MCNAMARA, Marine Science
Determining Stock Structure of Atlantic Bottlenose Dolphins (*Tursiops truncatus*) Using Photo identification (#3)
Faculty Mentor: Rob Young, Marine Science

KINGSLEY NEAL and LAYLA BAKEL, Biochemistry
Synthesis of LeuRS Inhibitors (#9)
Faculty Mentor: Bryan Wakefield, Chemistry

JENNIFER N. PAGE, Psychology
The Effects of Stress and Physical Activity on Academic Performance (#6)
Faculty Mentor: Emalee Quickel, Psychology

AMY POWERS and DEREK PRIDE, Biochemistry
The Search for Lytic Bacteriophages within the Population of Coastal Carolina Students (#10)
Faculty Mentor: Paul Richardson, Chemistry and Physics

AUQUILLA SAMUEL, Chemistry
CCU Campus Water Quality (#11)
Faculty Mentor: Kevin McWilliams, Chemistry

JESSAMIN A. STRAUB, Marine Science
Fluvial Morphology and Bedform Migration in the Ebb Tidal Dominated Duplin River, Georgia (#18)
Faculty Mentor: Jenna Hill, Marine Science

JENNIFER SOYKE-TESTER, Psychology
The Effects of Fixed and Free Play Interactions with a Robotic Dog on Student Emotional States (#7)
Faculty Mentor: Terry Pettijohn, Psychology

NICHOLAS THURN, Biochemistry
Progress towards the Grandisines (#12)
Faculty Mentor: Bryan Wakefield, Chemistry

BRITTANY VALEDON, Chemistry
Development of Molecular Modeling Module (#13)
Faculty Mentor: Kevin McWilliams, Chemistry and Physics

SHANNON WESSTROM, Marine Science
Environmental Education in the Galapagos (#19)
Faculty Mentors: Sharon Gilman, Biology and Catherine Scott, Elementary Education

POSTER SESSION II
WEDNESDAY, APRIL 15, 2015, 5:30pm – 7:00pm

TYLER AULFFO, Marine Science
Abundance, Distribution, and Physical Properties of Ghost Crab Burrows in Horry County, SC (#14)
Faculty Mentor: Eric D. Rosch, Marine Science

DAVID BARKER, Psychology
College Student's Perception of Aging and Retirement (#1)
Faculty Mentor: William Hills, Psychology

EMILY DEBORDE, Applied Mathematics/Marine Science
A Random Walk with the Dead (#9)
Faculty Mentor: Nicholas Pritchard, Statistics

SASHA FARR, Health Promotion
Media and Peer Influences on Body Perception and Eating Disorders (#2)
Faculty Mentor: William Hills, Psychology

ARIEL HERRIOTT, Health Promotion
Women's Access to Contraception in Sierra Leone (#8)
Faculty Mentor: Fredanna M'Cormack McGough, Health Promotion

SARAH KEFFER, Marine Science
Rainfall, Ground, and Lake Water Monitoring in Briarcliffe Acres, SC (#18)
Faculty Mentor: Susan Libes, Marine Science

THOMAS J. KILBRIDE, Health Communications
The Media's Impact on Eating Disorders in Young Males (#10)
Faculty Mentors: Mark Flynn and Christina Anderson, Health Communications

VERONICA LANCE, Marine Science
Differences in the Gut Contents of Mummichogs (*Fundulus heteroclitus*) from a Polluted Site and a Non-polluted Site in South Carolina, U.S.A. (#19)
Faculty Mentors: Jane L. Guentzel, Marine Science and Daniel Ferons, School of Coastal and Marine Systems Science

RACHEL LIMING, Exercise and Sport Science
Effect of 30 Second vs. 60 Second Static Stretching on Vertical Jump Performance (#11)
Faculty Mentor: Chadwick Smith, Kinesiology Recreation and Sport Studies

LANCE MCDANEL and MARIAH HARDEN, Biochemistry
Elucidation of the Physical Parameters that Underlie Nucleic Acid-Metal Interactions (#5)
Faculty Mentor: Rachel Whitaker, Chemistry and Physics

MACKENZIE PETERS, Elementary Education
Productive Learning Time and the Implications it has on Teachers (#12)
Faculty Mentors: Richard Costner and Catherine Scott, Elementary Education

JOHN SEGRETO, Marine Science
Unsteady Effects of the Near Wake behind Freely Flying European Starling, American Robin and Western Sandpiper (#3)
Faculty Mentor: Roi Gurka, School of Coastal and Marine Systems Science

SAMANTHA STADY, Marine Science
Synthesis of the Flinderole C Core using a LaRock Indole Synthesis (#6)
Faculty Mentor: Bryan Wakefield, Chemistry

BRITNEY STEWART, Chemistry
Conformational Isomerization of 2-Butenedioic acid: - A Computational Study (#7)
Faculty Mentor: Johnson Agbo, Chemistry

MEGHAN TROUP and MALARIE O'BRIEN, Marine Science
A Study of Hypoxic Events in Long Bay, South Carolina: 2004-2014 (#16)
Faculty Mentors: Diane Fribance, Marine Science, Erin Hackett and Roi Gurka, School of Coastal and Marine Systems Science

AUSTIN WALDORF, Marine Science
Long Bay Water Quality Trends (#4)
Faculty Mentor: Susan Libes, Marine Science

ASHLEY WHITEHEAD, Psychology
The Relationship between Mindfulness and Self-esteem (#13)
Faculty Mentor: Emalee Quickel, Psychology

ADAM YASCAVAGE, LINDSAY KING, BENJAMIN RICHARD, KRISTIN GUNNING, ERIC HAFFEY, KYLE HOFFMANN, DENNIS ALLEN and JULI HARDING, Marine Science
Blenny Habitat use in a Southeastern Saltmarsh (#15)
Faculty Mentor: Juli Harding, Marine Science

2015 Undergraduate Research Competition
Abstracts

(Alphabetical by Presenter)

Blood Pressure Variability While Playing Golf: Walking Vs. Riding *(Oral Presentation)*
Erica Aikens (Exercise and Sports Science)
Faculty Research Mentor: G. William Lyerly, Kinesiology, Recreation, and Sport Studies

Participation in physical activity to increase health and reducing risk factors is practiced in the 2008 Physical Activity Guidelines. Our purpose was to compare changes in blood pressure while playing golf, walking versus riding. Eight individuals completed measures pre and post round. The results suggest that the pre-systolic and diastolic blood pressures for riding were trending lower than that of carriers (129.2±17.37 vs 123.4±10.19) (p = 0.538). Post diastolic blood pressures for riders were substantially lower than carriers (77.8±7.40 vs 89±8.50 (p = 0.056). Our data indicate that only post diastolic blood pressure showed no difference from pre to post.

Our Voices Count: LGBT Educators Experiences and Its Impact on Teacher Education *(Oral Presentation)*
Nina Annuziata (Special Education)
Faculty Research Mentor: John Delport, Special Education

Currently, a void exists in the literature regarding the voices of LGBT educators and how their experiences could be used to enhance teacher preparation. Our efforts explores through teacher experiences who identify as LGBT to share their stories on their involvements as educators. We are using the information provided by participants to increase the exposure and readiness in teacher education training programs to effectively engage with diversity training for pre-service teachers.

Abundance, Distribution, and Physical Properties of Ghost Crab burrows in Horry County, SC *(Poster Presentation)*
Tyler Aulffo (Marine Science)
Faculty Research Mentor: Eric D. Rosch, Marine Science

Ghost crabs (*Ocypode quadrata*), as top predators in beach food chains, are effective indicators of overall beach health. The aims of this study are to determine ghost crab abundances at beaches with varying degrees of human disturbance in Horry County, SC and to relate disturbance to burrow characteristics. Three sites were selected based on their impact level: Waties Island (low), Myrtle Beach State Park (medium) and downtown Myrtle Beach (high). Burrow depth, location on the beach, distance from mean high tide, and signs of recent activity were compared by location to determine the influence of human stressors.

Biophysical Parameters that Determine RNA-mental Complex Formation *(Oral Presentation)*
Mallory Banton (Biology)
Faculty Research Mentor: Rachel Whitaker, Chemistry and Physics

Ribonucleic acids are known to primarily interact with Mg2+ when assuming higher-ordered configurations. By utilizing circular dichroism and mobility gel-shift assays we have observed that tRNA structure can be altered when in the presence of different cations. Additionally, we have observed through the determination of kon and koff rates that tRNA can associate/dissociate from different cations to varying degrees. From the data that has been gathered thus far, we conclude that the tRNA molecule can chelate numerous cations in solution and that it could possibly be used to remove heavy metals from aqueous solution when tethered to a solid support system.

College Student's Perception of Aging and Retirement *(Poster Presentation)*
David Barker (Psychology)
Faculty Research Mentor: William Hills, Psychology

Research exists suggesting that perceptions of aging and retirement are influenced by culture, media portrayals and personal experiences of younger adults and adolescents. This study examines measurement of perceptions of over 100 college students using a demographic survey and the Expectations Regarding Aging (ERA-38) Survey. Data presented will address the hypothesis that college students will have negative perceptions of the aging process and compare data of the present study to existing data on perceptions gathered from older adults.

Zinc is the Molecular "Switch" that Controls the Catalytic Cycle of Bacterial Leucyl-tRNA Synthetase *(Oral Presentation)*
Layla Baykal (Biochemistry/Biology)
Faculty Research Mentor: Rachel Whitaker, Chemistry and Physics

The Escherichia coli leucyl-tRNA synthetase enzyme is part of the aminoacyl-tRNA synthetase family. LeuRS is an essential enzyme that relies on specialized domains to facilitate the aminoacylation reaction. Herein, we have biochemically characterized a specialized zinc-binding domain (ZN-1). We demonstrate that the ZN-1 domain plays a central role in the catalytic cycle of E. coli LeuRS. The ZN-1 domain, when associated with Zn2+, assumes a rigid architecture that is stabilized by thiol groups from the residues C159, C176 and C179. We believe that future research on the ZN-1 domain may reveal a possible Zn2+ dependent translocation mechanism for charged tRNALeu.

Seasonal variations in gut contents of Atlantic silversides from Dunn Sound, SC *(Poster Presentation)*
David J. Catalano (Marine Science)
Faculty Research Mentors: Jane L. Guentzel, Marine Science and Daniel Ferons, Coastal and Marine Systems

Atlantic silversides (*Menidia menidia*) are tertiary consumers that live in coastal waters along the Atlantic coast of the United States and Canada. Silverside diets vary depending upon individual size and season. Primary dietary items include crustaceans, detritus, and mollusks. Silversides were collected from Dunn Sound, South Carolina and gut contents were analyzed quarterly over the course of one year. The objective of this project is to determine how diet and gut-body weight ratio vary with season. It is hypothesized that silversides will eat a more varied diet and have lower gut-body weight ratios during the winter.

(Un)wrapping Felix Gonzalez-Torres: The Relational Power and Contagious Wonderment of Candy and Other Things *(Oral Presentation)*
Brooke Clark (English)
Faculty Research Mentors: Tripthi Pillai, English, and Elizabeth Howie, Visual Arts

This paper offers an object-oriented ontology of Felix Gonzalez-Torres's art installation *Untitled (Portrait of Ross in L.A.)*, which is a mound of individually-wrapped, multihued candy that can be rearranged, possessed, and consumed by the audience and is endlessly renewable in supply. Drawing on Deleuze and Guattari's theories of contagion and line of flight and Jane Bennett's concept of vibrant thing-power, I argue that the candy's diffusional engagement with the audience unwraps its limitless potentiality for material, cultural, and spiritual connections, while illustrating the relational power of object-being that operates within webbed communal networks.

An Investigation into the Relationship between Common Marine Nutrients and Phytoplankton Community Composition *(Poster Presentation)*
Michael Cline (Marine Science)
Faculty Research Mentor: Eric Koepfler, Marine Science

Being primary producers and the foundation of a healthy ecosystem, variations in the population and community structure of marine phytoplankton can have significant effects on coastal species. The general health and composition of marine phytoplankton is influenced by the availability of nutrients such as phosphates and nitrates, and consequently changes in marine nutrients can drastically alter coastal ecosystems. Using absorption spectroscopy and the assistance of the phytoplankton monitoring program, I have investigated the complex relationship between phytoplankton communities and ammonia, nitrite, nitrate, and dissolved organic phosphate; in an effort to lay the groundwork for the regulation of stormwater management practices.

Heavy Metal Concentration in *Donax* Clams Found in Myrtle Beach Analyzed Using Atomic Abstraction *(Poster Presentation)*
Harley Coates (Chemistry) and Larissa Martin
Faculty Research Mentor: Kevin McWilliams, Chemistry

The coquina clam, *Donax variabilis*, is a ubiquitous invertebrate along the eastern seaboard that, due to its placement in the food chain and intertidal habitat, makes it an ideal indicator for the health of the surrounding ecosystem. The clams, along with water and sand samples, were collected from three separate locations in Myrtle Beach, SC and analyzed for heavy metals using an atomic absorption (AA) instrument. This is a temporal study to see how the concentration changes with time. It is hypothesized that the concentrations will increase during the summer months due to increased foot and vehicle traffic from tourists.

Facial Feedback on Self Esteem, Optimism, and Openness to Challenge and Diversity *(Oral Presentation)*
Suzanne L. Crass **(**Psychology)
Faculty Research Mentor: Dr. Pettijohn, Psychology

The facial feedback theory proposes that facial expressions serve to enhance emotions. Using an experimental design, the current study examined the relationships between facial feedback and self-esteem, optimism, and openness to diversity and challenge. This study should also provide a link between sex and the effectiveness of facial feedback. It was hypothesized that women would be more dramatically effected by facial feedback than men would be. After using a popsicle stick to facilitate a smile or a frown, depending on the condition, the participants filled out a packet of surveys about their opinions of self and others.

Hands Up, Don't Shoot: An Analysis of National and Local Newspaper Coverage of Recent Protests *(Oral Presentation)*
Kylie DeBari (Communication)
Faculty Research Mentor: Kyle J. Holody, Communication, Languages and Cultures

In this study, we examine the relationship between gender and political knowledge in the 2014 South Carolina gubernatorial election. We hypothesize that female respondents are more likely than male respondents to correctly name the female candidate, Nikki Haley. We also hypothesize that female respondents will have a heightened level of political engagement. Therefore, they are more likely to vote, and will be more likely to vote for Nikki Haley. This research is relevant because it contradicts the conventional wisdom that women are less politically knowledgeable and thus less engaged in politics than men.

A Random Walk with the Dead *(Poster Presentation)*
Emily DeBorde (Applied Mathematics/Marine Science)
Faculty Research Mentor: Nicholas Pritchard, Statistics

The Walking Dead is a television show broadcasted on the AMC Network that depicts the "eminent" zombie apocalypse. Data was collected from each episode to examine potential trends of the show over time. The variables observed were the number of zombies killed, the episode rating, and the number of viewers for each episode over the first four seasons. Time series plots were constructed for each of these variables and then evaluated to find if they exhibited stationary or non-stationary characteristics. Based on these characteristics, forecasting models were selected to make predictions for the fifth season of the show.

Samurai in Gaming Pop Culture Abstract *(Oral Presentation)*
Julie Emory (History)
Faculty Research Mentor: Brandon Palmer, History

The most common exposure American audiences have with the Japanese Warring States period (or Sengoku jidai, from 1467-1603) is typically through video games. These games, which include Pokèmon Conquest and Total War Shogun, depict the warrior class, their appearances, and important warriors in a manner that deviates from historical reality. Games, though inclusive of basic characteristics of samurai in this period, have given American players a nearly godlike view of these warriors that has ultimately lead to misconceptions regarding historical fact.

Reef Coverage and Species Richness with Respect to Water Depth at Discovery Bay, Jamaica *(Poster Presentation)*
Melanie Esch (Marine Science)
Faculty Research Mentor: Erin Burge, Marine Science

Recently, the community structure of the fore reef at Discovery Bay, Jamaica has been macroalgal dominated. With less destructive events occurring in Jamaica, the reef may be transitioning from its algal state. Living coral coverage has increased since 2006 and now dominates the reef at certain depths. The species richness increases during the transition from shallow to mid-waters and then is consistent with depth. The coral coverage at the fore reef is increasing, and may undergo a shift in dominance within the next decade.

Media and Peer Influences on Body Perception and Eating Disorders *(Poster Presentation)*
Sasha Farr **(**Health Promotion)
Faculty Research Mentor: William Hills, Psychology

It is clear that eating disorders have become prevalent on college campuses in recent years, and there is now research establishing links for eating disorders to various media sources and peer influences. This study will employ a demographic survey, a survey of media usage, and an instrument measuring eating disorders to examine the prevalence of eating disorders and potential links to media and peer-influences at Coastal Carolina University, a medium-sized university in South Carolina. As appropriate, results discussed will include comparisons to existing data for rates of eating disorders for campuses across the United States.

Seasonal Influences on Gut Contents of Mummichogs in South Carolina *(Poster Presentation)*
Hunter Fiuzat (Marine Science)
Faculty Research Mentor: Jane Guentzel, Marine Science

Mummichogs (*Fundulus heteroclites*) are found in tidal creeks and salt marshes along the Atlantic coast of the United States and Canada. Their typical diet includes crustaceans, mollusks, and insects (James-Pirri, 2001). During the winter mummichogs burrow in the mud, or swim to deeper regions of the tidal creeks to avoid colder temperatures. They swim into marshes and shallow regions of the Atlantic to feed and spawn during all other seasons. Seasonal variation may influence the prey species ingested by mummichogs. For this project mummichogs were collected over the course of one year to determine seasonal changes in prey.

South Carolina Counties: In the Shadows *(Oral Presentation)*
Joseph Fleming (Political Science)
Faculty Research Mentor: Mikel Norris and Virginia Norris, Political Science

This report will provide a detailed review about employment in South Carolina counties. This report will initially answer the question concerning whether a sizeable African American population in a county, is correlated with high unemployment rates. Next, the research will determine the differences in employment on a county by county analysis by discussing possible factors that lead to disparities. This research is significant to the well-being of South Carolina citizens and to ensure the equal opportunity for each county. Information was gathered from census data and from state agencies such as the South Carolina Department of Employment and Workforce.

The Correlation Between Light Pollution Along the Grand Strand and the Location of Sea Turtle Nests *(Oral Presentation)*
Katina Foley (Marine Science)
Faculty Research Mentor: Louis Keiner, Marine Science

The objective of this study was to map the light pollution along the Grand Strand during May 2014 to see its effect on where sea turtles lay their eggs. We used images provided from NOAA's satellite Suomi National Polar Orbiting Partnership (NPP), contained in the Day/Night Band (DNB) from the VIIRS sensor aboard NPP. These images allowed us to investigate the spatial and temporal variations in light pollution along the Grand Strand. The archived images were imputed into a Remote Sensing Analysis program called ENVII, allowing us to draw a transect along the Grand Strand, and supply a clear picture of the light pollution.

Personality and Moral Reasoning *(Poster Presentation)*
Eric Fowler (Psychology)
Faculty Research Mentor: Andrew Terranova, Psychology

Biases in moral reasoning are related to antisocial and rule breaking behaviors. Aspects of psychopathy have been linked to similar behaviors. The purpose of this study is to further investigate associations between moral reasoning, psychopathy (i.e., callous affect), and academic dishonesty. We hypothesized that callous affect would be associated with biased moral reasoning, and biased moral reasoning would be associated with academic dishonesty. Preliminary findings indicated that, participants who self-reported more callous affect were more likely to endorse moral violations as ethical responses. Additionally, those who endorsed moral violations as ethical responses were more likely to engage in various forms of academic dishonesty.

To the Death Star: Orbital Maneuvers to Arrive at a Killer Asteroid *(Oral Presentation)*
Dakota Fulp (Applied Physics)
Faculty Research Mentor: Louis Rubbo, Applied Physics

Near Earth Objects (NEOs) are relic Solar System bodies whose orbits bring them close to Earth. Consequentially, NEOs may represent a reasonable threat to life on Earth. In this talk we will review how NEOs are categorized from a range of non-hazardous to large, extinction causing bodies that are on a collision course with Earth. The talk will conclude with a discussion on orbital trajectories that will take a diversion mission from Earth to a killer NEO.

Curls Concerned: A Study of Reactions to Natural or Treated Hair *(Oral Presentation)*
Jessica Geilbert (Communication)
Faculty Research Mentor: Kyle Holody, Communication, Languages and Cultures

Modern US culture suggests long, straight hair is the acceptable standard for female beauty, encouraging African-American women to alter their hair texture through chemical treatment to gain wider acceptance, including by potential employers. This trend has shifted recently, however, evidenced in part by the new line of Dove 'Love Your Curls" hair beauty products. The present study examined if this new outlet for hair products, and their accompanying advertising campaign, is reflective of new

acceptance for natural hair in the population. Differences in opinions and experiences based on survey respondents' race, gender, and other demographic characteristics were also examined.

Using Geospatial Mapping to Track Al-Qaeda *(Poster Presentation)*
Eric Gilley (Political Science) and Diana Evans
Faculty Research Mentor: Susan Bergeron, Political Science

Al-Qaeda is a dynamic terrorist organization that has affiliates all over the globe. Using geospatial technologies like ArcGIS is a great way show these links and better understand Al-Qaeda. We intend to use different mapping techniques to show a variety of Al-Qaeda related topics such as known attacks, known affiliates, and many other topics in an easy to understand and intuitive way.

Basso Continuo: The Original Lead Sheet *(Oral Presentation)*
Timothy Hardwick (Music)
Faculty Research Mentor: Eric Crawford and Donald Sloan, Music History

This research project is a theoretical examination of the close improvisational relationship between baroque music and twentieth-century jazz. Due to the Great Awakenings, African Americans embraced European-influenced hymns and fused them with their own music to create spirituals, blues, and jazz. I will compare and contrast the respective notational forms of both genres to reveal common underlying chords, ostinatos, and progressions. Following my oral presentation of these connections, Miles Davis' composition, "All Blues" from 1959's *Kind of Blue*, will be performed in its lead sheet form, and then fully-realized in the figured bass style of an eighteenth-century basso continuo.

Energy Expenditure for Health Benefits: Actigraph Accelerometer vs. Polar Heart Rate Monitor *(Oral Presentation)*
Sarah Henry (Exercise and Sport Science)
Faculty Research Mentor: G. William Lyerly, Kinesiology Recreation and Sport Studies

Playing golf requires physical activity (PA) and may elicit health benefits. Purpose: To determine if walking (W) expends more energy (EE) than riding (R) and which method is more accurate, Actigraph (A) or Polar (P). 11 males played 9 holes (6 C and 5 R). The EE differed between A: C 444.09±59.87 vs. R 265.61±124.55 ($p=0.011$) and R: A 265.61±124.55 vs P 380.4±145.85 ($p=0.045$). Our data indicates a difference in P versus A EE when R. Our data suggests that A: C would have to golf 9 holes 3x/week, R 5x/wk; P: C 2x/week, R 3x/wk for health benefits.

Women's Access to Contraception in Sierra Leone *(Poster Presentation)*
Ariel Herriott (Health Promotion)
Faculty Research Mentor: Fredanna M'Cormack McGough, Health Promotion

The Free Health Care Initiative (FHCI) is provided to pregnant and lactating women of Sierra Leone and children under the age of 5 years. The FHCI was implemented in April 2010. During the summer of 2014, a representative sample of women were interviewed during focus group discussions and were asked about their access to and use of contraception in relation to becoming pregnant. The purpose of this research being conducted was to find out what role the FHCI played in the availability of contraceptives and how often were they used. Most women indicated that contraception was available if needed.

Acute Responses in Heart Rate when Playing Golf: Walking vs Riding *(Oral Presentation)*
Michael Iwaskewyez (Exercise Sport Science)
Faculty Research Mentor: G. William Lyerly, Kinesiology Recreation and Sport Studies

Background: Recreational golfing allows the individual to have the choice of riding, or walking the course. **Purpose**: To determine the differences in heart rate between groups C and R. **Methods**: Two groups of males (20.88 years) played nine-hole rounds. The groups were C or R. All data were analyzed using paired t-tests and presented as mean ± standard deviation, with the significance level at $p<0.05$. **Results**: Paired t-tests indicated that there was no significant difference between walking and riding the course. **Discussion**: Our data indicate no significant differences in HR between the golf groups and suggest a low-intensity activity.

Effect of turbulence on particle settling velocities *(Oral Presentation)*
Corrine Jacobs (Marine Science) and Marek Jendrassak
Faculty Research Mentors: Erin Hackett, Coastal and Marine System Science and Roi Gurka, Marine Science

Studying settling velocities (ws) of a range of particles is an important factor in understanding sediment transport. Previous research for ws in turbulent environments is inconclusive and contradicting, generating interest for our research. Our study shows an increase of ws, for most particles with small Stokes number (St), and small to no change in ws for particles with large

St. A possible explanation of these results is that particles with smaller St have smaller relaxation times allowing them to align and accelerate with the flow energy vortices. This would then link energy dissipation levels of fluid with kinematics of particles.

From West to East: Buddhism as Enlightenment in *Her* *(Oral Presentation)*
Molly Johnson (English)
Faculty Research Mentor: Jennifer Boyle, English

My presentation will trace how the narrative of Plato's "The Allegory of the Cave" exists within the film *Her* and the comparisons that arise, the most significant illustrated by the prisoner stumbling into the light, which is mirrored by Samantha's ascension into the "ether." Plato's Allegory reflects the Western idea of enlightenment through pure rationality, while eventually Samantha's evolution transitions into the Buddhist version of enlightenment, or nirvana. Examining Samantha's transformation as a response to Plato's Allegory allows us to see how Buddhism serves as a corrective in the film, shifting from the Western philosophical outlook to an Eastern outlook.

Rainfall, Ground, and Lake Water Monitoring in Briacliffe Acres, SC *(Poster Presentation)*
Sarah Keffer (Marine Science)
Faculty Research Mentor: Susan Libes, Marine Science

The residential community of Briarcliffe Acres in Myrtle Beach, SC and Coastal Carolina University initiated a groundwater and lake level monitoring program in May 2012 to help community members manage their water resources. The relationship between rainfall, groundwater, and lake water levels was documented to answer questions concerning the management of irrigation from the community's network of wells and stormwater retention lakes.

The Media's Impact on Eating Disorders in Young Males *(Poster Presentation)*
Thomas Kilbride (Health Communications)
Faculty Research Mentor: Mark Flynn and Christina Anderson, Health Communications

Studies have shown a correlation between eating disorders and media portrayals of the ideal body type, but many studies have not focused on males in particular. Through the review of previously conducted studies assessing the impact media has on eating disorders, a list of factors for eating disorders was created, including: exposure or use of certain media, age considerations, gender considerations, and perceptions of the ideal body. A chart illustrates the connections between the factors. Medical professionals and parents can use this chart as a guide to help prevent adolescents from developing an eating disorder based off of media exposure.

Weight Gain and Sleeping Patterns Among College Students *(Oral Presentation)*
Victoria Lambert (Health Promotion)
Faculty Research Mentor: Sharon Thompson, Health Promotion

While obesity has increased in our country in recent decades, few Americans are getting sufficient sleep. Research has shown that weight gain is common in the first semesters of college. Additionally, college environments often inhibit quality and quantity of sleep. For these reasons, this study examined undergraduate students and the relationship between sleeping habits, dietary choices and self-reported weight gain. A paper and pencil survey was administered to gather data. Findings were analyzed using means, frequencies, chi-square and t-tests. Results will be discussed.

Optimization of Friedel Crafts Alkylation with Indoles to Form the Core of Flinderole C. *(Poster Presentation)*
Veronica Lance (Marine Science) and Maria Cufley
Faculty Research Mentor: Bryan Wakefield, Chemistry

Flinderole C is a naturally occurring alkaloid that has been shown to inhibit the growth of the parasite that causes malaria. Developing an efficient synthesis could help in the discovery of new treatments. Friedel Crafts alkylations use BrØnsted acids and Lewis acids as catalysts to perform an electrophilic addition of alkyl groups to aromatic rings. In some cases, it can be used as a cyclization to build a new ring onto the aromatic compound. Variations in solvents, temperatures and catalysts produce differences in product formation. To optimize this reaction, tosylic acid or inidium trichloride was employed under different conditions.

Differences in the Gut Contents of Mummichogs (*Fundulus hereroclitus*) from a Polluted Site and a Non-polluted Site in South Carolina, U.S.A. *(Poster Presentation)*
Veronica Lance (Marine Science)
Faculty Research Mentor: Jane Guentzel, Marine Science, and Daniel Ferons, Coastal Marine and Wetland Studies

Murrell's Inlet is known to have high levels of fecal coliforms and has the possibility of becoming eutrophic due to an influx of nutrients and pollution from runoff (Kelsey et al., 2004; QEA, 2005). Due to this, there is a possibility for simplification of the

food web (Brose et al., 2006). Gut contents of mummichogs (*Fundulus heteroclitus*) from Murrell's Inlet were compared to gut contents of mummichogs from Waites Island, a pristine site. The mummichogs from Murrell's Inlet appeared to ingest more terrestrial insects. This suggests a potential shift in the food web due to contaminants in the environment.

Association Patterns in Atlantic Bottlenose Dolphins (*Tursiops truncatus*) off Northern South Carolina *(Oral Presentation)*
Alyson Lavin (Marine Science)
Faculty Research Mentor: Rob Young, Marine Science

Coastal bottlenose dolphins along the northern South Carolina coast are currently classified as being from either the South Carolina/Georgia Coastal Stock or the Southern Migratory Coastal Stock (Waring et al. 2013). This portion of the coast is data-deficient and a priority region for studies on stock structure of bottlenose dolphins. We chose dolphins seen three or more times for the association pattern analysis. Hierarchical cluster analysis divided the dolphins into 3 distinct clusters. We believe these findings may supplement future research to distinguish if the clusters represent different stocks or groups of dolphins off South Carolina.

Analyzing Perceptions of Recreational Needs in Horry County *(Oral Presentation)*
Briana N. Laws (Biology); DeVairay L. White; and Christina M. Auth
Faculty Research Mentor: Sharon Thompson, Health Promotion

Regular recreational activity has numerous mental, physical and social health benefits. To plan for future recreational needs within Horry County, this research was conducted in partnership with Horry County government. Methods included an online comprehensive needs assessment survey for county residents. To determine participants' readiness for motivation to increase exercise, the Physical Activity Stages of Change Questionnaire was also incorporated. Results will be discussed.

Safety on a Bike: That's What We Like *(Oral Presentation)*
Jason Lee (Health Promotion) and Gabe Arce
Faculty Research Mentors: Sharon Thompson, Health Promotion and Eric Wright, Marine Science

Due to high accident and death rates, there has been a growing need in Horry County for future planning and implementation of safe bicycle routes. An online survey gathered qualitative information from Horry County residents (n= 1,057 respondents) on current and desired bicycle routes as well as destinations where residents would like to bicycle. Over 2,200 responses were gathered and were mapped using Geographic Information Systems (GIS). Results will be discussed.

Effect of 30 Second vs. 60 Second Static Stretching on Vertical Jump Performance *(Poster Presentation)*
Rachel E. Liming (Exercise and Sport Science)
Faculty Research Mentor: J. Chadwick Smith, Kinesiology Recreation and Sport Studies

Static stretching over 60 seconds acutely reduces force production. This study's purpose was to examine the acute effects of 30 and 60 seconds of static stretching on vertical jump performance. Twenty-four participants completed control, 30 second, and 60 second sessions in a randomized order. After a warm up, participants completed no stretching, 30 seconds, or two sets of 30 seconds of stretching followed by three jumps on a force plate. Results showed no significant difference in vertical jump height, peak force, take-off velocity, or peak power across sessions. The use of limited-duration static stretching may not impair vertical jump performance.

Changes in Heart Rate and Energy Expenditure in College Males While Golfing: Walking vs. Riding *(Oral Presentation)*
Danielle Ludlam (Exercise and Sport Science)
Faculty Research Mentor: G. William Lyerly, Kinesiology Recreation and Sport Studies

With increasing obesity rates, we must study possible risk factors. Golfing, riding (R) and walking (W), allows individuals to increase physical activity, the easiest risk to change. The purpose was to determine if W or R elicits benefits by observing energy expenditure (EE) and heart rate (HR). Eight males completed 9 holes W and R. All measurements were taken 5 minutes pre and post rounds. EE increased in W (444.09kcals±59.87) versus R (265.61kcals±120.55)(p=.011). Our data indicates EE elicits a greater intensity in W vs. R versus HR. Our data suggests that health benefits may be gained from W and R.

Elucidation of the Physical Parameters that Underlie Nucleic Acid-Metal Interactions *(Poster Presentation)*
Lance McDanel (Biochemistry) and Mariah Harden
Faculty Research Mentor: Rachel Whitaker, Chemistry and Physics

Heavy metal contamination of drinking water is common and is being more of a problem as the world-wide pollution continues to rise and more countries become industrialized. Metal ions are highly soluble in water and are therefore difficult to remove. To address these water-quality concerns, our research focus aims to develop a novel biomaterial that would be biodegradable

and allow for the efficient removal of metal ions from water. The biomaterial will be composed of RNA (ribonucleic acid) tethered to biodegradable support structure.

Effects of hydrocarbon extraction on subsidence in the Mississippi Delta *(Poster Presentation)*
Samantha McKinley (Marine Science)
Faculty Research Mentor: Zhixiong Shen, Marine Science

It is commonly accepted that oil and gas extraction has accelerated surface subsidence in the Mississippi Delta. However, it is uncertain whether this anthropogenic effect has significantly affected subsidence rates derived from stratigraphic records. Cumulative oil and gas withdrawal data were compiled to be compared with latest geological subsidence rates in the Mississippi Delta to answer this question. Oil and gas production data was obtained from the Louisiana Department of Natural Resources website. Geological subsidence rates were derived from stratigraphic studies. The geological subsidence rates decrease toward Louisiana shoreline and their correlation to oil and gas production will be presented.

Determining Stock Structure of Atlantic Bottlenose Dolphins (*Tursiops truncatus*) Using Photo-identification *(Poster Presentation)*
Caitlin McNamara (Marine Science)
Faculty Research Mentor: Rob Young, Marine Science

Along the northern coast of South Carolina, several stocks of Atlantic bottlenose dolphins (*Tursiops truncatus*) overlap spatially and temporally. Boat-based transect surveys were conducted to investigate the stock structure of these dolphins for management purposes. Photo identification of dorsal fins was used to identify individuals and match sightings with neighboring fin catalogs in North Carolina and Charleston, South Carolina. Coastal dolphins in northern South Carolina were found to associate primarily with dolphins to the north, including both coastal and estuarine stocks. These results will lead to revisions in the National Marine Fisheries Service stock definitions for dolphins in the Carolinas.

Gender and Political Knowledge in the 2014 South Carolina Gubernatorial Election *(Oral Presentation)*
Rodney Miller (Political Science); Tatiana Mgrdechian; Rebecca Truluck
Faculty Research Mentor: Adam Chamberlain, Political Science

In this study, we examine the relationship between gender and political knowledge in the 2014 South Carolina gubernatorial election. We hypothesize that female respondents are more likely than male respondents to correctly name the female candidate, Nikki Haley. We also hypothesize that female respondents will have a heightened level of political engagement. Therefore, they are more likely to vote, and will be more likely to vote for Nikki Haley. This research is relevant because it contradicts the conventional wisdom that women are less politically knowledgeable and thus less engaged in politics than men.

Conducting Formative Research in Alcohol Social Norms Campaigns *(Oral Presentation)*
Carlie Mills (Communication)
Faculty Research Mentor: Mark Flynn, Communication, Languages, and Cultures

Well-structured formative research is an integral part to any effective health campaign that uses social marketing tactics. It is especially important to a campaign following the social norms approach. However, well-documented research in this area is currently underexplored. The present study discusses the shortcomings of formative research in health campaigns and its importance in alcohol social norms interventions. In addition, this study highlights the methods used to collect formative research for the alcohol social norms campaign at Coastal Carolina University and posits several practical implications for future alcohol social norms campaigns.

May the Force Be With Us: Exploring the Required Force to Deflect Killer Asteroids *(Oral Presentation)*
Christopher Mocarski (Applied Physics)
Faculty Research Mentor: Louis Rubbo, Physics

To move an asteroid out of a collision course with Earth will require an immense engineering endeavor with no second chances. Among the possible deflection options include applying a relatively small force over a long period of time or employing a relatively large force over a small interval. Through an analysis of numerical solutions to Newton's second law, this talk explores the effectiveness of these options on simulated extinction sized asteroids that are bound for Earth. The effectiveness of the deflection is based the closest approach the object comes from Earth.

***Xenobalanus* Index Modeling in Atlantic Bottlenose Dolphins** *(Oral Presentation)*
Emily Murray (Marine Science)
Faculty Research Mentor: Rob Young, Marine Science

Stock assessments are a challenging yet important management tool for bottlenose dolphin populations. Sighting histories, in combination with genetic analyses, are the best tools for defining stocks, but require sustained and intense efforts. This study aims to create and test a model to help place bottlenose dolphins, *Tursiops truncatus*, in the correct stock based geographic sighting data and the extent of dorsal fin coverage of the barnacle, *Xenobalanus globicipitis*. Specifically, we will attempt to distinguish between members of the Southern North Carolina Estuarine System (SNCES) stock and the Southern Migratory Coastal (SMC) stock, using data from photo-ID transect surveys designed to estimate stock abundance for the SNCES stock.

Synthesis of LeuRS Inhibitors *(Poster Presentation)*
Kingsley Neal (Biochemistry) and Layla Baykal
Faculty Research Mentor: Bryan Wakefield, Chemistry

tRNA synthetases are an ancient class of enzymes that are responsible for the aminoacylation of amino acids to their respective tRNAs. LeuRS is a special sub-type that is highly conserved, and is an essential component in the production of proteins. These qualities make it an ideal target for drug design and discovery. Our group is designing leucine derivatives to be inhibitors of LeuRS by replacing the carboxylic acid with a ketone or amide. These novel amino acid analogs will then be screened against a panel of LeuRS for inhibitory effects.

South Carolina Solar Policy *(Oral Presentation)*
Christopher Nicholson (Political Science)
Faculty Research Mentor: Virginia Norris, Politics and Geography

The contents of this report include an analysis of current solar policy in South Carolina as well as possible recommendations for future legislation. It goes on to give the overviews of current policies in place as well as a specific section that refers to financial incentives for solar participants. The report also contains a section pertaining to current relative standing which compares South Carolina solar policies that have been put in place in other states. This section also includes why South Carolina is a suitable candidate for solar usage. In order to provided proper insight, the report will turn into. To further discuss the future of solar policy, the report offers a section of innovative opportunities that includes various companies that have made excellent strides in the solar field. the final part of the paper is a policy proposal that South Carolina could implement in order to improve their solar participation.

The Relationship Between Fear of Happiness and Shame and Guilt *(Oral Presentation)*
LeAna Norman (Psychology)
Faculty Research Mentor: Joan Piroch, Psychology

Although many people are motivated to pursue happiness, fear of happiness has also been investigated by many researchers. This study was designed to investigate fear of happiness as it relates to feelings of shame and guilt. The investigator hypothesized a positive relationship between these variables. Subjects were 112 students attending Coastal Carolina University. All subjects completed a demographic survey and surveys to measure the above constructs. Results of a Pearson correlation revealed no significant relationship between the two dependent variables. Results were discussed in terms of some methodological problems, and issues associated with measuring the constructs with a college sample.

Effects of Injury on *Dorytheuthis (Loligo) pralei*'s Response to Predation Threats *(Oral Presentation)*
Meg Oshima (Marine Science/Biology)
Faculty Research Mentor: Robyn Crook, Biology

Squid incur sub-lethal injuries often in the wild, leaving the wounded more vulnerable to predation. To compensate for the injury, a squid may need to adjust its behavioral responses to predation, including schooling or shoaling. This study looks at the influence of peripheral injuries on *Dorytheuthis pealeii's* behavioral response to varied levels of predation threats. An injured squid was significantly less likely to school when exposed to a threat than a healthy squid. Also, the level of danger influenced the injured squid's position within the school. These results provide insight into how squid perceive and cope with injuries.

Gaps in U.S. Healthcare: The Effects of the Patient Protection and Affordable Care Act on the Uninsured Population and Free Clinic Services *(Oral Presentation)*
Tyler Owens (Health Promotion)
Faculty Research Mentor: Sherer Royce, Health Kinesiology Sport Science

The US healthcare system is constantly evolving as evidenced by the Patient Protection and Affordable Care Act (PPACA). The primary goal of PPACA is to decrease the uninsured population. It is unknown how the law will actually impact this population

or the current clinical services offered to the uninsured. Strategic planning of free clinic services is necessary to identify their role in this healthcare evolution. Through partnership with a local free clinic's strategic planning committee, data was gathered via focus groups, interviews, patient surveys to determine recurring themes impacting future directions of this community healthcare resource and strategic planning process itself.

The Effects of Stress and Physical Activity on Academic Performance *(Poster Presentation)*
Jennifer N. Page (Psychology)
Faculty Research Mentor: Emalee Quickel, Psychology

College is a very stressful time in any young adult's life; it is the time to decide what to do with their lives. This correlational study focuses on how general life stressors and college specific stressors affect a person's academic performance based on their level of physical activity. The results from my study can potentially help students who have past experiences and are experiencing stress while in college to help them succeed during and after their college career.

Productive Learning Time and the Implications it has on Teachers *(Poster Presentation)*
Mackenzie Peters (Elementary Education)
Faculty Research Mentors: Richard Costner and Catherine Scott, Elementary Education

Productive Learning Time represents the amount of time students are engaged in meaningful learning activities; this time represents only a small fraction of the total amount of time that students spend in school. Through extensive observation in a local third grade classroom over a seven-week period, I investigated how many hours are devoted to uninterrupted and meaningful learning. The data was analyzed for its implications on student learning and for suggestions on how teachers might create environments whereby students are engaged in meaningful learning for as much of the day as possible.

Female Chinese Protagonists in the Context of American Secondary Education *(Oral Presentation)*
Jo Pieczynski (English)
Faculty Research Mentor: Cynthia Port, English

By studying bildungsroman from other cultures, such as China, young readers may obtain a richer understanding of the experiences of female adolescents. Exploring the tension between the traditional Chinese ideal of duty examined in the novel *Border Town* (1934) by Shen Congwen and the more recent portrayal of adolescence as a time to achieve independence in Xiaolu Guo's *Twenty Fragments of a Ravenous Youth* (2009) illuminates evolving representations of female adolescents in China and offers young American readers the opportunity to consider both similarities and differences between Anglo-American and Chinese constructions of female development.

Student Perception about Purchasing a Textbook for a College Course: Does Gender and Class Status Matter? *(Oral Presentation)*
Mariel Po (Health Promotion)
Faculty Research Mentor: Stephen Firsing III, Health Promotion

Students at Coastal Carolina University (N = 593) completed a survey with three scales to (a) evaluate a personal and community health textbook, (b) evaluate an adaptive online learning supplement, and (c) gather perceptions about purchasing course textbooks. Statistical analyses were conducted to examine the relationships among variables. Significant relationships were identified between student gender and perceptions about purchasing used textbooks ($p = .030$), selling used textbooks ($p = .036$), purchasing electronic textbooks ($p = .047$), and purchasing textbooks for less than $100 ($p = .013$). Class status and purchasing textbooks online was also significant ($p = .024$).

The Search for Lytic Bacteriophages within the Population of Coastal Carolina Students *(Poster Presentation)*
Amy Powers (Biochemistry) and Derek Pride
Faculty Research Mentor: Paul Richardson, Chemistry and Physics

There is a growing medical concern regarding bacterial resistance to antibiotics. Therefore, the quest to find an alternative treatment for bacterial infections through the use of bacteriophages was undertaken. A bacteriophage (phage) is a virus that solely infects bacteria, and they are commonly found behind the ear and inside the nostrils. Coastal Carolina University students volunteered to be swabbed in these locations in attempts to sequester phages for additional study. The samples were filtered and plating techniques were performed to identify the potential presence of phages; capable of lysing *Escherichia coli* (*E. coli*) or *Staphylococcus aureus* (*S. aureus*). Once found, the phages were confirmed and classified using polymerase chain reaction (PCR) and gel electrophoresis.

Exploratory Usage of Global WRF for Ensemble Tropical Cyclone Simulations *(Oral Presentation)*
Renee J. Richardson (Marine Science)
Faculty Research Mentors: Varavut Limpasuvan and Shaowu Bao, Coastal and Marine Systems Science

According to NOAA predictions, the 2013 Atlantic hurricane season was expected to be highly active; however, the observed activity was below average. To understand why the seasonal forecast differs significantly from observation, this study investigates the effects of sea-surface temperature (SST) on hurricane frequency. Using the National Center for Atmospheric Research Global Weather and Research Forecasting model, two ensemble runs of the 2013 season are made: one with fixed SST and one with varying SST. The varying SST run reveals consistency with seasonal observations, while the fixed SST shows no certainty. This outcome suggests the importance of SST variation in improving seasonal hurricane forecasts.

The Impact of Product Placement *(Oral Presentation)*
Billy Rydstrom (Management and Marketing) and Nikki Rydstrom
Faculty Research Mentor: Monica Fine, Marketing

Streaming entertainment capabilities have revolutionized the television experience. New technologies allow viewers to watch and pause titles without commercials. This trend has decreased the average commercials viewed by consumers. In this research project, we investigate factors that influence the effectiveness of product placement by surveying students about their Netflix experience.

Evaluation of Simplified Models for Refractivity Inversion Problems *(Oral Presentation)*
John T. Seager (Mathematics)
Faculty Research Mentor: Erin Hackett, Coastal and Marine Systems Science

To assess a radar system's instantaneous performance, detailed knowledge of meteorological conditions is required because it impacts the index of refraction (refractivity). Recently, inversion techniques are being used to estimate the refractivity structure using simplified refractivity models and high-fidelity radar wave propagation simulations. In this study, three parametric refractivity models are optimized using atmospheric data and are also evaluated against these data. Simulated propagation patterns created using these optimized refractivity models are compared with propagation patterns based-on measured atmospheric data. The results indicate which model performs best enabling us to determine the optimal simplified refractivity model for inversion problems.

CCU Campus Water Quality *(Poster Presentation)*
Auquilla Samuel (Chemistry)
Faculty Research Mentor: Kevin McWilliams, Chemistry

Water quality is a measure of the condition of the water relative to its use for human needs. Due to water's universal use, standards demarking upper limits on substances in the water, such as organic matter, salts, and heavy metals, have been standardized and set by the Environmental Protection Agency. This project focuses on discerning the quality of several water sources on campus. These sources are analyzed for the following dissolved substances: oxygen, chloride, nitrate, ammonium, chromium, copper, nickel, iron, and lead. The amounts are quantified using an ion probe or atomic absorption instrument and compared to EPA limits.

Does Educational Level Determine Health Practices of Employees at a Southeastern Medical Center? *(Oral Presentation)*
Dori Sanders (Exercise and Sport Science)
Faculty Research Mentor: Sharon Thompson, Health Promotion

According to recent studies, those with a higher educational level are more likely to engage in healthier lifestyle practices such as better nutritional and exercise habits, as well as decreased tobacco use. A basic, non-invasive health risk assessment targeting tobacco usage, physical activity, and healthy eating was administered to all full-time employees at Southeastern medical center. The relationship between health practices and education level will be analyzed using t-tests, chi-square, and percentages. Results will be discussed.

Unsteady effects of the near wake behind freely flying European Starling, American Robin, and Western Sandpiper *(Poster Presentation)*
John Segreto (Marine Science)
Faculty Research Mentor: Roi Gurka, Coastal & Marine Systems Science

To study the interaction between turbulence and birds' flight, we have flown three types of birds: European Starling, Western Sandpiper and Red Robin. Time series of the vorticity fields have been expressed as composite wake plots, which depict segments of the wing beat cycle for various span-wise locations in the wake. Comparison between the near wake fields behind

the three birds reveals remarkable similarity in their wake structure. We have identified over multiple wing beat cycles the presence of what appears to be the interaction between root and tip vortices described as a double branch feature.

Issues of Erosion and Sea Level Rise along Pawley's Island, South Carolina *(Oral Presentation)*
Kelly Shelton (Philosophy and Political Science); Abigail Blass; Aundrea Dolan; Hailey Ensor; Kristen Kibblehouse; Jessamin Straub; Tatiana Mgrdechian
Faculty Research Mentor: Pam Martin, Politics and Geography

Pawley's Island, SC faces high levels of erosion due to sea level rise and climatic change. Erosion has caused a political and social dilemma between residents and environmental agencies who disagree on a solution. The solution presented by the mayor of Pawley's Island and the residents include building a beach groin on the public beach. According to marine science researchers, hard structures and groins contribute to erosion of nearby beaches and are not adequate solutions. An in-depth investigation of the concerns and issues affecting beach stability and the communities of Pawley's Island is presented to enhance understanding and decision making.

Does Age Effect Preference on E-Book use Versus Traditional Reading Material? *(Oral Presentation)*
Chad Smith (Sociology)
Faculty Research Mentor: Jason Eastman, Sociology

The use of digital materials is growing tremendously within the education system, and it is important to understand how society prefers to learn. I will study whether preferences for E-Books versus traditional books vary by age by surveying students at a midsized, southeastern university. After securing informed verbal consent I will administer at least 100 anonymous questionnaires. The questionnaires administered will contain questions asking about age, social network use and preference on reading material. Technology is consuming the lives of younger individuals, hence, I hypothesize younger students will prefer E-Books.

The Gallipoli Campaign *(Oral Presentation)*
Sean Smith (History and Political Science)
Faculty Research Mentors: Matt McDonough, History, and Adam Chamberlain, Politics and Geography

The main concept of this paper is to provide people with a minute understanding of the Gallipoli Campaign and why it came to fruition. This campaign occurred in March 1915, less than a year following the assassination of Archduke Ferdinand. The objective was simple: capture Constantinople from the Turks and most importantly the Central Powers. With the capital of the Ottoman Empire under Allied occupation, the latter would have a direct trade route to Russia. Such a victory would also deal a huge blow to the war effort of the Central Powers. By successfully attacking the Gallipoli peninsula and defeating the Turkish defenses along the Dardanelles (a narrow strait dividing the Gallipoli peninsula from Asia Minor), Allied Forces would have direct access to attack and subsequently capture Constantinople. Unfortunately, this campaign turned into a complete disaster for the Allies. The stubbornness of Winston Churchill, who was the First Lord of Admiralty, and his inability to recognize excellent Turkish defenses led to his removal from his position and an Allied defeat that was detrimental to the Allied war effort. It was a huge mistake in the otherwise extraordinary career of Winston Churchill.

INVESTIGATING GLOBAL CORRUPTION: VIEWS FROM THE INTERNATIONAL STUDENT FESTIVAL IN TRONDHEIM (ISFIT) 2015, NORWAY *(Oral Presentation)*
Charles Stackhouse (Political Science); Dylan Fender; Erin Bair; Austin Nichols
Faculty Research Mentor: Richard Aidoo, Politics and Geography

Corruption is a menace to every culture and country. Its causes and impacts are widespread, making any attempt to engage in the discussion and agreement on methods to combat it rather complex. Though a global analysis of corruption does exhibit this complexity, it also allows for explanation through many major theories and approaches. At the International Student Festival in Trondheim (ISFiT) 2015, we sampled views that relate to existing theories and approaches, and draw conclusions that underscore the feature of complexity in investigating global corruption.

Synthesis of the Flinderole C Core using a LaRock Indole Synthesis *(Poster Presentation)*
Samantha Stady (Marine Science)
Faculty Research Mentor: Bryan Wakefield, Chemistry

Flinderole C is a natural product from the bark of the *F. ambionensis* plant found in Papua New Guinea. This compound is known inhibit to growth of a parasite, *P. falciparum*, which causes malaria in humans. In this research project, a more efficient method to synthesize the core of flinderole C is being studied. The goal is to avoid problematic steps in earlier syntheses. This was done by synthesizing an imine of iodoaniline followed by grignard addition to produce an amine. This compound will then be converted to the indole found in flinderole C by employing a LaRock indole synthesis.

Conformational Isomerization of 2-Butenedioic acid: - A Computational Study *(Poster Presentation)*
Britney Stewart (Chemistry)
Faculty Research Mentor: Johnson Agbo, Chemistry

The gas phase conformational isomerization of 2-butenedioic acid is studied computationally. The potential energy surface is explored using ab initio methods and the reaction pathway is studied using density functional theory (DFT) at B3LYP level of theory. The kinetic and thermodynamic properties of this reaction are calculated at the B3LYP level using the correlation-consistent polarized valence-only Triple zeta (cc-pVTZ) basis set. The isomerization rate constants are determined using the Rice–Ramsperger–Kassel (RRK) theory and the transition state (TST) theory at 298 K and 1.00 atm.

Home Range and Core Use Areas by Atlantic Bottlenose Dolphins (Tursiops truncatus) in Murrells Inlet, SC. *(Oral Presentation)*
Alyssa Stinnett (Marine Science)
Faculty Research Mentors: Rob Young and Eric Wright, Marine Science

Atlantic Bottlenose dolphins include both resident and transient individuals. Resident dolphins can be seen in a given area year round, whereas transient dolphins are migratory. Mark and recapture data gathered on both transient and resident dolphins can be used to keep track of total sightings for individuals and to determine the geographic distribution and habitat use patterns of both groups. I used Geographic Information System (GIS) software to plot the locations of dolphins sighted three or more times within a year and measured the home range and core use areas of coastal bottlenose dolphins near Murrell's Inlet, SC.

Fluvial Morphology and Bedform Migration in the Ebb Tidal Dominated Duplin River, Georgia *(Poster Presentation)*
Jessamin A. Straub (Marine Science)
Faculty Research Mentor: Jenna Hill, Marine Science

The Duplin River is an ebb-dominated, salt marsh drainage system west of Sapelo Island, Georgia. With no riverine input, flow in the Duplin is dependent on local surface run off, groundwater discharge and tidal flushing. Repeat multibeam bathymetry surveys within this system provide insight into sediment transport, current dynamics, and the migration of bottom features. The new data suggest punctuated events, such as storm surges, may also play an important role in the fluvial transport, although more analysis is needed to determine how sediment storage changes in the Duplin river system over multiple tidal cycles.

Co-op Mode: Parasocial Relationships between Video Game Characters and the Player *(Oral Presentation)*
Sommersill Tarabek (English)
Faculty Research Mentor: Kyle J. Holody, Communication, Languages, and Cultures

Existing research demonstrates audiences can experience emotional connections with mediated personalities or fictional characters that feel as genuine or as strong as in-person, two-way relationships. Little research, however, has examined if players experience genuine emotional connections to the players they control or the storylines they experience within narrative-driven video games. The present study examines via survey and experiment the parasocial relationships players may develop with characters in the popular game *The Last of Us*, as well as their feelings of empathy and homophily towards the characters. Implications for media effects, trait and state aggression, media enjoyment, and identification are discussed.

The Effects of Fixed and Free Play Interactions with a Robotic Dog on Student Emotional States *(Poster Presentation)*
Jennifer Tester (Psychology)
Faculty Research Mentor: Terry Pettijohn, Psychology

Animal-assisted therapy and animal-assisted activities have shown to have a positive impact on one's life. College students (N=82), were assigned to a fixed interaction or a free interaction session with a robotic dog and then completed The Visual Analog Mood Scales (VAMS) to assess mood. The participant's happy and energetic moods were predicted to improve while tense and sad would be reduced. Participants assigned to the free interaction condition group, and those who have owned pets previously, were predicted to report a significant decrease in sad and tense feelings and an increase in happy and energy feelings. Although results were not statistically significant, individuals in the free interaction group were happier and more energetic than those in the fixed condition.

Assessing changes in campus nutritional choices among collegiate athletes *(Oral Presentation)*
Chelsea Thomas (Biology)
Faculty Research Mentor: Sharon Thompson, Health Promotion

Establishing healthy nutrition is key in athletic performance; however, resource persons are often limited at the collegiate level. This program was designed to determine the nutritional behavior of collegiate athletes, specifically a Division I team (n=37). A nutrition education program was administered, which consisted of lectures identifying the University's food options aided by the use of visuals. The benefits of proper nutrition toward athletic performance was also highlighted. A pre- and post-assessment was utilized to show changes in nutritional choices on campus from the beginning to the end of the program.

HPLC Purification of Bacteriophage T2 Using a DEAE Methacrylate Monolithic Column *(Oral Presentation)*
Nicholas Thurn (Biochemistry)
Faculty Research Mentors: Brett Simpson and Paul Richardson, Chemistry

Bacteriophages or "phages" are viruses that infect bacteria. For any application of bacteriophages, especially phage therapy of humans, it is necessary that phage suspensions are pure. Whenever high purity is needed, chromatography is the optimal choice. The aim of this study was to concentrate and purify Bacteriophage T2 from culture using High-Performance Liquid Chromatography (HPLC) on a weak anion exchange monolithic column. Any HPLC purification method for bacteriophages requires individual development for each phage tested and, therefore, the optimal salt concentration of the loading and elution buffers, as well as the phage recovery were determined.

Progress Towards the Grandisines *(Poster Presentation)*
Nicholas Thurn (Biochemistry)
Faculty Research Mentor: Bryan Wakefield, Chemistry

Grandisines are novel alkaloids that are found in the leaves of the Australian tree *Elaeocarpus grandis*. These substrates have gained biological interest due to their affinity for the delta-opioid receptor. A Friedel-Crafts alkylation was employed using a pyrrole skeleton to synthesize the precursor to the substrate. This molecule will provide a starting point to the total synthesis of Grandisine C.

A Study of Hypoxic Events in Long Bay, South Carolina: 2004-2014 *(Poster Presentation)*
Meghan Troup (Marine Science) and Malarie O'Brien
Faculty Research Mentors: Diane Fribance, Marine Science, Erin Hackett and Roi Gurka, *School of Coastal and Marine Systems Science*

Common causes of hypoxia, or low oxygen, are coastal eutrophication and upwelling that brings poorly oxygenated bottom waters near shore, adversely affecting marine life. Hypoxia was first detected in Long Bay, SC, in 2004, resulting in a long-term hypoxia-monitoring program; however prior studies have been inconclusive as far as the primary cause of these conditions in this region. Using atmospheric and water quality data collected from sensors in Long Bay, we identify hypoxic events using dissolved oxygen concentration and saturation criteria. In our study, we examine physical data corresponding to these events to improve our understanding of their origin.

Development of Molecular Modeling Module *(Poster Presentation)*
Brittany Valedon (Chemistry)
Faculty Research Mentor: Kevin McWilliams, Chemistry

The purpose of this research is to help develop a molecular modeling module for a hybrid lecture/lab organometallic chemistry course. Hybrid courses have been shown to increase hands-on experience and student learning. The synthetic target of the course will be a [2]-catenane. The molecular modeling module is being developed to aid students in: visualizing large macromolecules and corresponding HOMO and LUMO orbitals, calculating zero-point energies to determine stability, and calculating theoretical IR and NMR spectra.

Student Satisfaction and Greek Life *(Oral Presentation)*
Katelyn Vicente (Psychology)
Faculty Research Mentor: Miranda Brennemann, Psychology

Student satisfaction within universities is important to study, particularly in recent years because students are accumulating more debt than ever seeking a gratifying college experience. One factor that may affect a student's satisfaction with their undergraduate career is participation in Greek life and other clubs. This study compares satisfaction scores of students in Greek life, students committed to other clubs, and students who are not involved on campus at all. It is predicted that students who are members of Greek organizations on campus have higher satisfaction scores than students who are uninvolved.

How Gender, Pet Presence and Pet Ownership affects Perceived Personality Traits and Interpersonal Attraction of a Stranger *(Oral Presentation)*
Megan Von Kolnitz (Psychology)
Faculty Research Mentor: Terry Pettijohn, Psychology

Animal presence and pet ownership has been shown to provide numerous benefits for a person's well-being. College students were shown a photograph of either a male or female model with either a dog, cat, or alone. By controlling for the variables of gender and pet presence this study addresses how people perceive certain strangers based on these two factors. This research also measured and controlled for participants who own pets and have strong attachments to them. This study will help identify how gender, pet presence and pet ownership affects how people perceive others. This research can be helpful in backing studies that identify pets as a positive source of support as well as uses in marketing.

Long Bay Water Quality Trends *(Poster Presentation)*
Austin Waldorf (Marine Science)
Faculty Research Mentor: Susan Libes, Marine Science

Water quality parameters in seawater are becoming increasingly important to monitor due to impacts that could be caused by human activities. Several parameters are being continuously monitored in-situ at three piers located in Long Bay on the coast of South Carolina. By analyzing these parameters, trends have been observed over time. Hypoxic events are especially important, as the parameters being analyzed can help to determine possible causes. By monitoring these parameters continuously, trends can be observed over time and interesting results could lead to further studies in the future.

From Student to Teacher: A Transitionary Phase *(Oral Presentation)*
George H. Warriner III (Middle Level Education)
Faculty Research Mentor: Erin Donovan, Middle Level Education

A common issue that new teachers face is learning to comprehend and effectively use complex technical jargon that may overwhelm the transition from student to teacher. As a result, the transition from student teacher to professional classroom teacher may stress and challenge the student's focus and ultimate effectiveness with the students. Many first year teachers lack a strong support system to guide them through this transition. Through research and real life application, I have compiled a list of specific challenges regarding vocabulary that first year teachers may contend with as they transition from student to teacher. I have also provided strategies to address and provide support through these challenges. It is my intention to address these specific concerns in order to better support teachers in their transitional phase.

Environmental Education in the Galapagos *(Poster Presentation)*
Shannon Wesstrom (Marine Science)
Faculty Research Mentors: Sharon Gilman, Biology and Catherine Scott, Elementary Education

The Galapagos are recognized as a World Heritage Center for their unique ecosystems and marine wildlife. However, what is known by local residents about the environment, and what is taught in the schools in regards to science education? I spent a semester abroad in the Galapagos, interviewing its citizens to learn what they knew about the environment. This presentation will share emerging themes from our qualitative research analysis and implications for education.

Trust in Government as a Function of Race and Gender *(Oral Presentation)*
Aaron White, Aaron (Psychology)
Faculty Research Mentor: Joan Piroch, Psychology

The current study was designed to examine trust in government as related to gender and race. The study included a sample of 113 students at Coastal Carolina University. Participants completed a demographic survey and the Trust in Government Index. There were no gender differences for trust in government. However, results revealed significant differences between blacks and whites. Further research is needed to fully understand what factors influence political trust. Experts suggest that trust in government will continue to fluctuate. College students are entering the workforce and deciding the course for America. Therefore, examining their attitudes towards government is important.

The relationship between mindfulness and self-esteem *(Poster Presentation)*
Ashley Whitehead **(**Psychology)
Faculty Research Mentor: Emalee Quickel, Psychology

Self-esteem is considered a valuable trait to have in high measure within our society. Those who think better of themselves are typically found to be happier and more efficient workers. However, there are some who struggle with their self-worth and general feelings of value. The question now is what can influence self-esteem so that those who lack it may gain a better sense

of their own value. This study seeks to evaluate the relationship between self-esteem and mindfulness, as well as other factors, to establish the relevance that mindfulness interventions may have on those with low self-esteem.

How to Protect Gotham City Using Voronoi Diagrams *(Oral Presentation)*
Damien Wright (Mathematics)
Faculty Research Mentor: Ogul Arslan, Mathematics

Imagine Gotham City in which multiple superheroes moved in, parted ways, and decided to fight crime separately. Using Voronoi Diagrams, we can partition the city in such a way that each superhero will be responsible for defending. If we consider each superhero as having a different "weight", meaning they arrive to crimes at different rates, then we can use weighted Voronoi Diagrams to accomplish this same goal.

Blenny Habitat Use in a Southeastern Saltmarsh Creek *(Poster Presentation)*
Adam Yascavage (Marine Science), Lindsay King, Benjamin Richard, Kristin Gunning, Eric Haffey, Kyle Hoffman, Dennis Allen
Faculty Research Mentor: Juli Harding, Marine Science

Striped *Chasmodes bosquianus*, freckled *Hyposblennius ionthas*, feather *Hypsoblennius hentz*, and crested *Hypleurochilus geminatus* blennies are common demersal fishes in southeastern US estuaries. We investigated potential differences in blenny habitat use of oyster *Crassostrea virginica* reefs in North Inlet, SC from May-Nov 2013 and Feb-Oct 2014 with respect to environmental data. The population (n = 430 fishes) was dominated by striped blennies (54%) followed by freckled (23%), crested (16%), and feather (6%). In general, blenny presence increased with decreasing slope and increasing shell cover. This study suggests that blenny habitat use is influenced by intertidal oyster reef condition, complexity, and slope.

Multiple Pathways of Neurodegeneration in *Caenorhabditis Elegans* *(Oral Presentation)*
Lyndsay Young (Marine Science)
Faculty Research Mentor: Daniel Williams, Biology

Despite the deleterious effects of neurodegeneration, our understanding of the degeneration process is incomplete. Our laboratory uses the nematode *Caenorhabditis elegans* as a genetic model organism to identify cellular mechanisms and molecular pathways of neurodegeneration. Disruption of the gene unc-68 abolishes excitotoxic cell death, indicating a role for Ca2+ signaling in neurodegeneration. We tested the requirement for unc-68 in reactive oxygen species-mediated neurodegeneration using the genetically encoded photosensitizer KillerRed. We observed similar levels of ROS mediated degeneration in wild-type and unc-68 mutant worms, indicating that ROS-mediated cell death is independent of unc-68. These results suggest multiple molecular pathways of neurodegeneration.