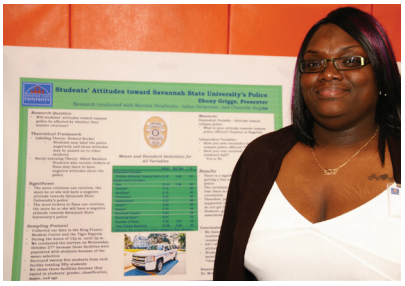
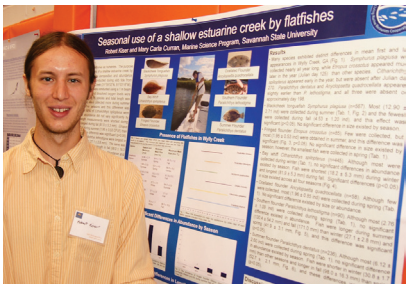
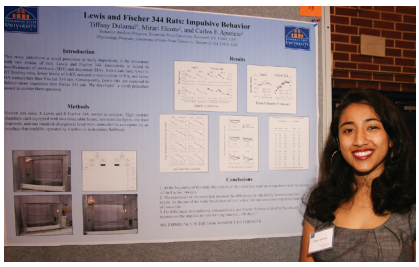
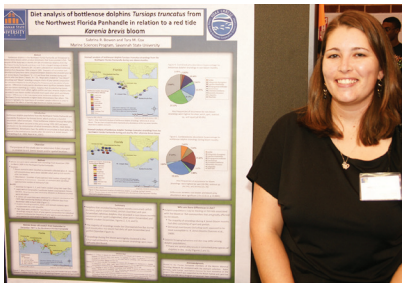
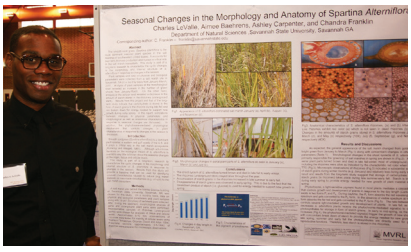










SAVANNAH STATE UNIVERSITY
2ND ANNUAL RESEARCH CONFERENCE

DIVERSITY THROUGH RESEARCH

April 10, 2012

This page has been intentionally left blank.

Savannah State University

2nd Annual Research Conference (ARC) and RIMI Symposium

Student Union, Event Rooms A, B, and C

Sponsored by the
Office of the President
Office of Sponsored Research Administration (OSRA)
Quality Enhancement Plan (QEP) 'The Write Attitude'
NIH-NIMHD Research Infrastructure in Minority Institutions (RIMI)

Conference program cover design and Program Design by
Recha Reid, NIH/NIMHD Research Infrastructure in Minority Programs

Funding for this publication was made possible (in part) by P20MD003941 from the National Institute on Minority Health and Health Disparities. The views expressed in written conference materials or publications and by speakers and moderators do not necessarily reflect the official policies of the Department of Health and Human Services; nor does mention by trade names, commercial practices, or organizations imply endorsement by the U.S. Government.

Contents

Overview of the Conference and Committee Members

The one-day event seeks to highlight the research of Savannah State University (SSU) undergraduate and graduate students completed by students and their mentors both on and off campus. The objectives of this conference are to help undergraduate and graduate students to enhance their reseach communication skills and to better understand how to prepare for careers in the global marketplace.

The general format for this conference is networking sessions and poster presentations. This is an important platform for students to present their findings to both SSU and Savannah community. In addition, through workshops, roundtable/panel discussions and keynote speaker, the one-day conference will be vital in stimulating the interest of students, faculty, and community members in the area of research.

Annual Research Conference Committee Members

Dr. Chellu S. Chetty, Chair
Ms. Recha Reid, Organizer and RIMI Representative
Dr. Lisa Yount, QEP Director
Ms. Alexa Schider, OSRA Representative
Mr. Kenneth Williams, MAGEC-STEM Plus Representative

Dr. Carlos Aparicio, Social & Behavioral Sciences Department Liaison
Dr. Anshu Arora, Marketing Department Liaison
Prof. Emily Bentley, Political Science and Public Affairs Department Liaison
Dr. Tara Cox, Marine Science Department Liaison
Dr. Tamara Friedrich, Management Department Liaison
Dr. Shinaz Jindani, Social Work Department Liaison
Dr. Karla Sue Marriott, Natural Sciences Department Liaison
Dr. Mohamad Mustafa, Engineering & Mathematics Department Liaison
Dr. Carol Pride, Marine Science Department Liaison
Dr. Jun Wu, General COBA Liaison

It is my pleasure to extend to each of you a warm Tiger welcome to the Second Annual Research Conference (ARC) at Savannah State University. With growing numbers of faculty and students engaged in research at Savannah State, the "university by the sea" is proud to host this special event that shines a well-deserved spotlight on the hard work of our students and their mentors.

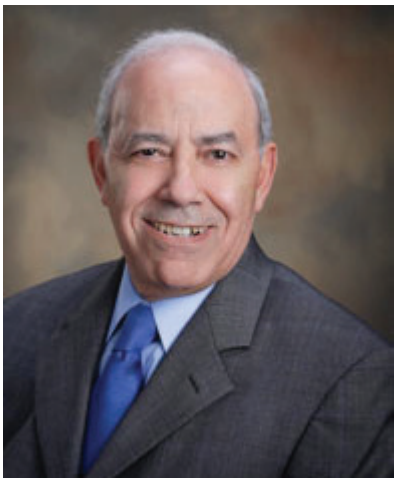
At SSU, we strive to develop productive members of a global society who are fully prepared to achieve professional and personal success. Today's graduate schools and employers are looking for students who have already published and participated in research projects at the undergraduate level. Their scholarship is increasingly vital to the nation's future. That is why ARC is so important: it gives students an invaluable opportunity to showcase the innovative research they have conducted throughout the year and encourages them to continue scientific investigation and examination of the world around them.

The Annual Research Conference committee members have planned an event that will be exciting and memorable for all involved. I thank them for their work and look forward to joining our faculty, supporters and community partners at this year's conference as we explore "Diversity through Research" and celebrate the creativity and intellect of our talented students.

Sincerely,

Cheryl D. Dozier, DSW
President (Interim)
Savannah State University

Welcome



On behalf of the Division of Academic Affairs, I would like to welcome you to the Second Annual Research Conference and RIMI Symposium at Savannah State University. This year's conference "Diversity through Research" reflects not only the full spectrum of our student presenters but the academic areas as well. Student education goes beyond classroom learning, to include the collaboration of other students, researchers, faculty, and community partners. This is made evident in the research presented by the students during this conference.

This student research conference was designed to significantly impact the way we teach and conduct research. It was also created to highlight the strides each student has made over the course of their academic career. I hope you find this conference a rewarding experience and I thank you for being a being a part of the SSU community.

Sincerely,

M. Sarhan

Mostafa Sarhan, Ph.D., CMA
Interim Vice President for Academic Affairs

Welcome to the Savannah State University's 2nd Annual Research Conference and RIMI Symposium. The Office of Sponsored Research Administration has been striving to increase the research endeavors of Savannah State University (SSU) faculty and students. In the past year we have seen the number of students participating in research almost doubled. The aim of this student-focused conference is to highlight the various research projects in areas such as Natural Sciences, Engineering, Mathematics, Social Work, Computer Science Technology, Homeland Security, Marketing and Management, Social and Behavioral Science, and Social Work.

The work of the SSU students and their on/off-campus research mentors demonstrate a commitment, not only to investigative reasoning, but also a talent for "Diversity through Research", the theme of this year's conference. I extend my thanks to the reviewers of the abstracts and the department liaisons for ensuring that this event continues to be a success. A special thanks to the faculty and community partners who have donated their time and support to judge the posters. Finally, I would like to thank the QEP ReWrite Connection and the Office of the President for their support.

Sincerely,

Chellu S. Chetty Ph.D.
Associate Vice President for Research and Sponsored Programs

Research Programs at Savannah State University

NIH NIBIB (National Institute of Biomedical Imaging and Biotechnology): The goal of the "Expanding Diversity" research training program is to increase the number of minority students who earn a degree in science, technology, engineering or mathematics (STEM) and enter STEM graduate programs and research careers. Award money will be used to support 15 Savannah State freshmen STEM majors entering the university fall semester 2012. Each student will receive a $4,500-$5,000 scholarship each year through their senior year at SSU, be given academic & research training under the mentorship of STEM faculty members and travel to scientific conferences to present their research. In addition, each student will complete summer internships at the NIH & Industry laboratories after their sophomore and junior years. Expanding Diversity in Engineering and the Physical Sciences Program" (This SSU Program is 1 of 2 Funded Nationwide)

NIH-NIMHD RIMI (Research Infrastructure in Minority Institutions): The objectives of this NIH-NIMHD Research Infrastructure in Minority Institutions (RIMI) program are to strengthen the research infrastructure of SSU and contribute to the knowledge base in biomedical/behavioral science/health disparities fields by developing junior faculty to become independent investigators under the mentorship of external collaborators, strengthening shared core research labs, and strengthening STEM curriculum by infusing health disparities topics. Each semester, the RIMI program engages 14 students in mentored research training with SSU faculty and community research partners such as the Chatham County Health Department Chief Epidemiologist. A key element of RIMI is expanded research networks with external collaborators/mentors, and the MARC program will build on these research collaborations.

NSF EDGE (Enhancing Diversity in the Geosciences): The goal of this Opportunities for Enhancing Diversity in the Geosciences (EDGE) program is to attract minority students to marine science/geoscience education and career tracks. It supports 10 undergraduate students each semester (20 per year), and 4 full time summer internships for a total of 24/year. The program engages young students who may be struggling to find direction in the shorter, low-commitment academic year positions. The full time summer positions are more competitive and targeted to the best and most dedicated students. There are opportunities to attend cruises with students for teachers. In addition, an undergraduate can be placed with specific teachers in their classrooms.

NSF GK-12 (Graduate STEM Fellows in Kindergarten – Grade 12 Education): The Graduate STEM Fellows in Kindergarten – grade 12 Education (GK-12) program is a collaboration between SSU, Skidaway Institute of Oceanography (SkIO), the Savannah Chatham County Public School System, and the Oatland Island Wildlife Center. The goal is to develop graduate students' research and pedagogical skills and strengthen the connections with local K-12 teachers and students. Master's students in the marine science program work with local science teachers in the classroom, developing and presenting modules. In turn, the science teachers are engaged in summer research with SSU and SkIO researchers. There are also yearly research cruises for interested teachers and high school students. In addition, there are summer research positions for teachers.

NSF MAGEC-STEM Plus: The goal of this program is to develop and implement a comprehensive model to strengthen SSU's undergraduate STEM education and research infrastructure and increase STEM undergraduate enrollment, retention and graduation rates. From 2003-2009, 103 students were supported, 85 were engaged in mentored summer research, and 66 presented at conference. The graduation rate for Historically Black Colleges & Universities – Undergraduate Program (HBCU-UP) scholars has been 80% compared to the average SSU rate of 29%. SSU's renewed HBCU-UP award has added innovative elements, including international research and interdisciplinary research (forensic science, computational biology, and environmental engineering). In Summer 2012, students will conduct international research in China, India and Malaysia.

NSF PRISM (Proactive Recruitment for Introductory Science and Mathematics): The goal of the Proactive Recruitment for Introductory Science and Mathematics (PRISM) Program is to stimulate interest in STEM majors by freshmen/sophomore students through discovery learning that demonstrates the applications of math principles using real-world examples. It is an interdisciplinary program between the mathematics, environmental science, and engineering technology programs, and includes partnership with Georgia Institute of Technology – Savannah Campus for summer discovery learning and field trips to local industrial partners who demonstrate the applications of math principles in their everyday operations. The program supports 30 students each year.

NSF PSLSAMP (Peach Stoke Louis Stokes Alliance for Minority Participation): PSLSAMP is an alliance of 7 Georgia institutions, Savannah State University, Fort Valley State University, Georgia Perimeter College, Southern Polytechnic State University, Kennesaw State University, GA Tech, and the University of Georgia (lead institution). The program goals are: Build the academic and research capacity of these institutions, which have significant enrollments of minority populations underrepresented in STEM professions. Increase the number of minorities contributing to and advancing the frontiers of research and education in STEM fields. Over the past 5-year program, 104 SSU students have been supported, 97 have been engaged in mentored summer research, and 60 have presented at the national conferences. The new PSLSAMP funding (2011-2016) began in September 2011.

8:30 – 9:00 Registration and poster set-up

9:00 – 9:30 Welcome

Greetings:	Dr. Mostafa Sarhan, Interim VPAA
Remarks:	Dr. Cheryl D. Dozier, Interim President
Introduction of Orals:	Dr. Chellu S. Chetty, Associate VP for Research and Sponsored Programs

9:30 – 10:30 NIH-NIMHD Research Infrastructure in Minority Institutions Oral Presentations

Presentation by Dr. Cecil Jones on
Photodynamic Therapy: Treating Cancers with Light

Presentation by Dr. Hua Zhao on
Treating HIV-1 and cancers with new compounds from birch bark

Presentation by Dr. Johnny Johnson on
Impact of Weight Reduction on Estrogen and GLP-1 Levels in African-American Females

Presentation by Dr. Nicole Oretsky on
Health Disparities and Childhood Exposure in the Benjamin Van Clark Neighborhood, Savannah, GA

10:30 – 12:00 Poster Presentations

12:15 – 12:45 Awards for Poster Presentation

Awards:	Dr. Lisa Yount, QEP Director
Remarks:	Dr. Jonathan Lambright, Interim Assistant Vice President of Academic Affairs

12:45 Lunch

Luncheon for speakers and judges
Box lunches for student research presenters

Judges

Dr. Adegboye Adeyemo
Natural Sciences
Savannah State University

Dr. Stephanie Alexander
Social Work
Savannah State University

Dr. Benigno Alvarez
Social Sciences
Universidad de Oviedo

Dr. Carlos Aparicio
Social Sciences
Savannah State University

Dr. Anshu Arora
Management and Marketing
Savannah State University

Dr. Sri Ranjini Arumugam
Natural Sciences
Savannah State University

Dr. Benita Berry
Social Work
Savannah State University

Prof. Shalonda Bradford
Management and Marketing
Savannah State University

Ms. Stephanie Bradl
Management and Marketing
Savannah State University

Dr. Ulysses Brown, III
Management and Marketing
Savannah State University

Dr. Hae-Yeon Choi
Management and Marketing
Savannah State University

Dr. Tara Cox
Marine Science
Savannah State University

Dr. Mary Carla Curran
Marine Science
Savannah State University

Ms. Kate Doyle
Marine Science
Savannah State University

Dr. Sue Ebanks
Marine Science
Savannah State University

Ms. Norda Evans
Social Work
Chatham County DA Office

Dr. Tamara Friedrich
Management and Marketing
Savannah State University

Dr. Irma Gibson
Social Work
Savannah State University

Ms. Lenora Gilbert
Management and Marketing
Savannah State University

Dr. Matthew Gilligan
Marine Science
Savannah State University

Mrs. Latasha Hickson
Management and Marketing
Savannah State University

Dr. Christopher Hintz
Marine Science
Savannah State University

Dr. Dionne Hoskins
Marine Science
Savannah State University

Mr. Gregory Hunter
Marine Science
Savannah State University

Dr. Shinaz Jindani
Social Work
Savannah State University

Dr. Johnny Johnson
Natural Sciences
Savannah State University

Dr. Otis Johnson
Social Work
Savannah State University

Dr. Cecil Jones
Natural Sciences
Savannah State University

Mrs. Cindy Kelley
Management and Marketing
Savannah State University

Ms. Ruth Keith
Social Work
Ralph H. Johnson VA Medical Center

Dr. John Kraft
Management and Marketing
Armstrong Atlantic State University

Dr. Reginald Leseane
Management and Marketing
Savannah State University

Dr. Liz Mann
Marine Science
Skidaway Institute of Oceanography

Dr. Karla Sue Marriott
Natural Sciences
Savannah State University

Dr. Lauren McClain
Social Sciences
Savannah State University

Dr. Suman Niranjan
Management and Marketing
Savannah State University

Dr. Deepika Paul
Management and Marketing
United Community Bank

Dr. Carol Pride
Marine Science
Savannah State University

Dr. Elissa Purnell
Natural Sciences
Savannah State University

Dr. Linda Samuel
Social Work
Savannah State University

Mr. Adam Sapp
Marine Science
Savannah State University

Dr. Rebecca Setliff
Management and Marketing
Savannah State University

Dr. Kai Shen
Natural Sciences
Savannah State University

Dr. Maliece Whatley
Management and Marketing
Savannah State University

Dr. Jerry Wright
Social Work
Savannah State University

Dr. Jun Wu
Management and Marketing
Savannah State University

Dr. Seong No Yoon
Management and Marketing
Savannah State University

Dr. Hua Zhao
Natural Sciences
Savannah State University

COLLEGE OF BUSINESS ADMINISTRATION AWARD RECIPIENTS

Name of Presenter:	Grace Curry (graduate)
Type of Award:	First Graduate Student Award
Conference:	Southeast Decision Sciences Institute (SEDSI)
Type of presentation:	Paper
Title of presentation:	African American Stereotypes in Advertising and Its Effects on Society
Faculty mentors:	Dr. Anshu Arora, Dr. Jun Wu and Dr. Reginald Leseane (Savannah State University)

Name of Presenter:	Jasmine Gordon (undergraduate)
Type of Award:	First prize
Conference:	Southeast Decision Sciences Institute (SEDSI)
Type of presentation:	Paper
Title of presentation:	Say It Without Saying It: How Consumers Interpret `tropes' in Advertising and Its Impact on Campaign Success
Faculty mentors:	Dr. Anshu Arora, Dr. Jun Wu and Dr. Reginald Leseane (Savannah State University)

Name of Presenter:	Carl Sharperson (undergraduate)
Type of Award:	Second prize
Conference:	Southeast Decision Sciences Institute (SEDSI)
Type of presentation:	Paper
Title of presentation:	The S.H.A.R.P. Conceptual Framework for Young African-American Adults -- What is Cool?
Faculty mentors:	Dr. Anshu Arora, Dr. Jun Wu and Dr. Reginald Leseane (Savannah State University)

Name of Presenter:	Angela Snipes (undergraduate)
Type of Award:	Second prize
Conference:	Southeast Decision Sciences Institute (SEDSI)
Type of presentation:	Paper
Title of presentation:	Buzzing the Traditional Media Off Through Ambient Advertising
Faculty mentors:	Dr. Anshu Arora, Dr. Jun Wu and Dr. Reginald Leseane (Savannah State University)

COLLEGE OF SCIENCE AND TECHNOLOGY AWARD RECIPIENTS

Name of Presenter:	Tiffany S. Bostick (undergraduate)
Type of Award:	First Place
Conference:	Peach State Louis Stokes Alliance for Minority Participation (Peach State LSAMP) Conference
Type of presentation:	Poster
Title of presentation:	Seasonal Changes in The Anatomy and Morphology of Spartina Alterniflora
Faculty mentors:	Dr. Chandra Franklin (Savannah State University)

Name of Presenter:	Eric Corbett (PSLSAMP Scholar, undergraduate)
Type of Award:	Second place
Conference:	Peach State Louis Stokes Alliance for Minority Participation (Peach State LSAMP) Conference
Type of presentation:	Poster
Title of presentation:	Interactive User Interface (UI) for the support of a Virtual Coaching System
Faculty mentors:	Dr. Takeo Kanade (Carnegie Mellon University)

Name of Presenter:	Eric Corbett (PSLSAMP Scholar, undergraduate)
Type of Award:	Third place
Conference:	Emerging Researchers National (ERN) Conference
Type of presentation:	Poster
Title of presentation:	Interactive User Interface (UI) for the support of a Virtual Coaching System
Faculty mentors:	Dr. Takeo Kanade (Carnegie Mellon University)

Off-Campus Research Conference Award Recipients (Continued)

Name of Presenter:	Ismael Dondasse (undergraduate)
Type of Award:	Second place
Conference:	Peach State Louis Stokes Alliance for Minority Participation (Peach State LSAMP) Conference
Type of presentation:	Poster
Title of presentation:	Exploring the Isoperimetric Problem: Insight for Optimizing Solar Cells
Faculty mentors:	Dr. Baskar Ganapathysubraminian (Iowa State University)

Name of Presenters:	Jessica Foster and Megan Bridges (PSLSAMP Scholars, undergraduates)
Type of Award:	Third place
Conference:	Peach State Louis Stokes Alliance for Minority Participation (Peach State LSAMP) Conference
Type of presentation:	Poster
Title of presentation:	A Sinusoidal Temperature Model for Major Cities in Georgia
Faculty mentors:	Dr. Samuel Dolo (Savannah State University)

Name of Presenter:	Kierra Hill (MAGEC-STEM Plus Scholar, undergraduate)
Type of Award:	First Place
Conference:	Peach State Louis Stokes Alliance for Minority Participation (Peach State LSAMP) Conference
Type of presentation:	Poster
Title of presentation:	Synthesis of Novel Agents for use in Addiction Treatment
Faculty mentors:	Dr. Karla Sue Marriott (Savannah State University)

Name of Presenter:	Kiara Miller (MAGEC-STEM Plus Scholar, undergraduate)
Type of Award:	First Place
Conference:	Annual Biomedical Research Conference for Minority Students
Type of presentation:	Poster
Title of presentation:	Localizing Shal 1 b/c in the Stomatogastric Ganglion of the Spiny Lobster
Faculty mentors:	Dr. Jing Jing Fu and Dr. Deborah Baro (Georgia State University)

Name of Presenter:	Amarria Phillips (undergraduate)
Type of Award:	Second Place
Conference:	Peach State Louis Stokes Alliance for Minority Participation (Peach State LSAMP) Conference
Type of presentation:	Poster
Title of presentation:	Zooplankton Abundance and Distribution in the Savannah River Estuary and the Adjacent Coastal Shelf
Faculty mentors:	Dr. Matthew Ogburn (Savannah State University)

Name of Presenter:	Marquese Pollard (PSLSAMP Scholar, undergraduate)
Type of Award:	First place
Conference:	Emerging Researchers National (ERN) Conference
Type of presentation:	Poster
Title of presentation:	Electronic Name Tag
Faculty mentors:	Dr. Asad Yousuf and Dr. Mohamad Mustafa (Savannah State University)

Name of Presenter:	Rahja Sharp (PSLSAMP and RIMI Scholar, undergraduate)
Type of Award:	Second Place
Conference:	Peach State Louis Stokes Alliance for Minority Participation (Peach State LSAMP) Conference
Type of presentation:	Oral
Title of presentation:	Attempting to Improve the Accuracy of the Screen Positive Rate (SPR) in Down Syndrome Reports of Pre-Natal Testing
Faculty mentors:	Dr. Sainan Wei (Michigan State University)

This page has been intentionally left blank.

COLLEGE OF BUSINESS ADMINISTRATION

Management and Marketing

Undergraduate Abstracts

P001
Customer Relationship Management: Locally and Internationally

Michael Allegretti (Junior)
Dr. Jun Wu (Savannah State University)

Customer relationship management (CRM) has become an important part of the business world over the years both locally in the United States and globally around the world. CRM has become a necessity for companies' success and now is a foundation to developing repetitive customers. More can be learned about how different CRM is when one compares the techniques used in the U.S. and those in other countries. The research paper illustrates distinctive things about local CRM and global CRM such as different techniques used, different ways companies target potential customers, and why it can be important for business to build good customer relationships. In addition, the research paper will compare the direct relationship between companies with strong CRM techniques pertaining to their success and the direct relationship between companies with weak CRM techniques pertaining to their failure.

P002
Integrated Marketing Communications: Changing Perspectives

Travis Alston (Junior)
Dr. Anshu Arora (Savannah State University)

This research paper will address the history, growth, and future of Integrated Marketing Communications through advertising. Integrated Marketing Communications is the most recent in the long line of innovative marketing concepts widely endorsed by marketing and advertising academics. Some researchers believe that IMC is nothing new to the world; it is just simply a reiteration of what marketing organizations have always done things. This paper focuses on the follow research questions:

- What is Integrated Marketing Communications and Why is it Important?
- How does Marketing Communications work?
- What are the basics of developing an IMC Program?
- How has IMC changed over the years through its changing views and agenda to match the new economic realities of the organizations?

003
Mobile Marketing: SMS

James Battle (Junior)
Dr. Anshu Arora (Savannah State University)

Mobile marketing, also known as wireless marketing promises vast opportunities. Mobile services offer companies powerful marketing potential via direct communication with consumers, anytime and anywhere. This paper discusses Short Message Services (SMS), which belong to the first and most successful forms of mobile data transmission. This paper defines mobile marketing, describes its most popular application text messaging, it address successful retailer mobile marketing strategies and the paper concludes with predictions on the future of mobile marketing and some core areas of further research.

P004
The Effects of Creating Brand Equity vis-à-vis Price Promotions

Eric Billinger (Senior)
Dr. Anshu Arora and Dr. Suman Niranjan (Savannah State University)

Brand equity is the power of a brand that lies in the minds of consumers and their experiences with the brands over time. This study examines price promotions and customers perception of quality when using high-price and low-price strategy. In addition, this paper discusses brand name, brand loyalty, and the short-term and long-term effects of brand equity on customer's perception of name brand and generic brand products.

P005
Do friends Influence Purchases in Social Media Networks?

Latasha Blount (Junior)
Dr. Anshu Arora (Savannah State University)

Marketers and advertisers have realized that referrals from friends, family, colleagues, and classmates are highly effective tools in social networking media. When one of the aforementioned makes a purchase, it is highly probable that their purchase will influence the purchases of other friends, family, colleagues and classmates. Alternatively, the users who don't have much interaction with other users aren't as influenced by their purchases.

P006
Text Marketing: The New Advertising Trend

Regina Brockington (Junior)
Dr. Anshu Arora (Savannah State University)

Companies offer instant coupons and discounts for goods and services to cellular customers willing to text their cell phone numbers to the companies to receive the benefits of the ads they see in restraints, stores, hotels, radio and television. At first it may seem to be a great idea, until the customer discovers the twenty-five cent charges for incoming text messages on their cell phone bills. This research paper explores the popularity of text marketing and addresses the following question. Why is text marketing so popular?

P007
The Impact of Ownership and Informating Sharing on Cold Chain

Charisse Bruin (Senior)
Dr. Suman Niranjan (Savannah State University)

PURPOSE: - Supply chain management for pharmaceutical products that requires cold storage is also referred to as cold chain management. The pharmaceutical products often pass through several echelons (stages) in the supply chain. Majority of the cases manufacturer is responsible for the product quality. In the process of transportation to different stages, there is likelihood that the product quality is compromised, which is an associated risk. We think if one company owns the majority of the supply chain firms, or have a centralized information then the risk is reduced and cold chain efficiency is increased. The purpose of this research is to explore how important is supply chain ownership in cold chain management, and does it impact the product quality at the various stages of the supply chain.
DESIGN METHODS: - Surveys will be conducted to compile data from managers and employees in various industry segments. Factor Analysis and Multiple Regression analysis will be used to analyze the data and the relationship between product attributes, supply chain risk, and supply chain characteristics on cold chain effectiveness/efficiency.
RESULTS/EXPECTED RESULTS: - The results of various hypothesis will be discussed. Through this research we would like to find out if various factors like product attributes, supply chain risk, and characteristics have a positive impact on the cold chain effectiveness/efficiency, in presence of use ownership and information sharing as a mediator.
DISCUSSION/CONCLUSION: - Such kind of analysis will help the companies make informed decisions on their ownership/ partnership strategies, and making a decision on having a centralized information sharing point.
GRANT SUPPORT: - None

P008
Customized Communications: Targeting African-American Through Adaptive Advertising

Kerrie M. Byrd (Senior)
Dr. Anshu Arora and Dr. Jun Wu (Savannah State University)

This research focuses on the African-American (AA) minority group and how they are affected by mass media advertisement. It takes the concept of customized communication and how sometimes it is positively interpreted by this minority group. Customized advertisement can be defined as "retailers, manufacturers and agencies are taking control of their most valued assets -- customer relationships - by connecting 1-on-1 with past, present and future customers through personal custom media and creative integrated marketing solutions". By providing more customized advertisement the organization has the opportunity to build a relationship with their consumers. It is the responsibility of an advertising agency to communicate effectively to African American's; especially if they are the target market. African-American's has been the focal target market, when advertising agency was trying to expand their markets. During the expansion, most companies focus on stereotypes, which portrayed negative to African- American's. This research paper addresses the following questions:

- What are the effects, and techniques of customized advertising on the African-American culture?
- What are some ineffective stereotypes given to African-American's through customized communication?

P009
Creative Advertising Appeals: An Advertiser's Avenue

Eboni Calhoun (Junior)
Dr. Anshu Arora and Dr. Jun Wu (Savannah State University)

How do advertisers and marketers decide the creative advertising strategy that will appeal to their target market, inducing purchase intentions? This research describes various strategies in advertising that focus on hard-sell and soft-sell creative appeals. When an advertising agency considers using hard-sell or soft-sell advertising, it has to determine what type of message it wants to convey to the potential consumer. Hard-sell advertising is used when the agency wants the ad to be direct and wants to induce rational thinking. Soft-sell advertising is an indirect approach that appeals to the feelings and emotions of the potential consumer. This study discusses the following questions:

- What is the difference between hard-sell and soft-sell advertising?
- Is soft-sell advertising more effective than hard-sell

advertising when targeting potential consumers?
- Which advertising appeal (hard-sell or soft-sell) should be used to target consumers in the global, cultural landscape?

P010
Does Advertising and Branding during Violent and Arousing Situations Create Lasting Memories?

Ottis Scott Claxton (Junior)
Dr. Anshu Arora (Savannah State University)

Advertising in violet and arousing situations may be more effective than one might think. The problem is how effective is it and are the memories it creates negative or positive. Many companies are turning to this type of advertising and reporting mixed results. The Jeep Wrangler is a great example of companies expanding into this type of advertising as seen in the new Call Of Duty video game line. In the latest installment of the video game the Jeep Wrangler is the featured vehicle for the main character which is used in heavy combat scenes. Shortly after the game hit the market Jeep started running commercials with footage of the video game and even calling the sport utility vehicle the Call Of Duty edition. The Jeep Wrangler is just one product to step into this line of advertising which seems to be becoming a new platform in the advertising world. The real question is how effective is it and are the memories of the product being portrayed as positive or negative in the consumers mind?

P011
Humanitarian Logistics Framework for Natural Disasters

Christina J. Davis (Senior)
Dr. Suman Niranjan and Dr. Anshu Arora (Savannah State University)

PURPOSE: Humanitarian logistics is the organizing, delivering, and warehousing of supplies during natural disasters or complex emergencies to those in need. The purpose of this research is to develop humanitarian logistics frameworks for two different natural disasters, along with supply chain factors that influence these disasters.
DESIGN METHODS: This research uses a qualitative and quantitative (empirical) approach to develop frameworks. Interviewing officials and conducting surveys of officials in various non-profit and government organizations involved in humanitarian aid.
RESULTS AND EXPECTED RESULTS: Develop a comprehensive framework and various supply chain factors under each of the two natural disasters. It is the intention of this research paper to determine if effective planning and supply chain management has a positive or negative influence in disaster relief efforts. The influence on the disaster relief efforts is tested through a series of hypothesis. It will also consider the impact of factors such as operations and infrastructure and their positive or negative effects in comparison to other natural disasters. A framework will be created and examined for its effectiveness in a natural disaster.
DISCUSSION AND CONCLUSION: This research intends to discuss what establishes a disaster and what factors indicate supply chain management effectiveness in humanitarian relief efforts. The findings should show how planning and supply chain management can improve the effectiveness of humanitarian logistics and prove they are useful in the event that non-profit and government organizations use the frameworks to reduce cost, time, and casualties.
GRANT SUPPORT: None

P012
Transforming: Marketing Across Cultures

Teanesa Fabain (Junior)
Dr. Anshu Arora (Savannah State University)

As we move into the future, the number of companies expanding globally is on the rise. With the expansion into other countries, culture plays a significant role in how a product is marketed to appeal to the taste of the consumers. It is imperative to acquire understanding and adaptation to the local culture. Culture is very resistant to change; therefore there are many factors that arise when marketing across cultures. This research will identify those factors that affect a firms marketing strategy. This research will address the following questions:
- What are the many factors that marketing companies face in an international setting?
- What effects does culture have on a company's marketing strategy?
- Is it necessary to adapt to the local culture to successfully market a particular product in the area?

P014
The Power of Social Media: Weighing Publicity Effectiveness of Blogs versus Online Magazines

Tiajuana Alicia Gilliard (Junior)
Dr. Anshu Arora (Savannah State University)

Abstract: This article addresses how important blogging has become through the years. It also addresses how the consumer has driven the market of blogging to become a popular choice of communication. More than ever people use blogging to respond to business deals as well as personal issues, Businessmen, writers, readers and Marketers. The author mentions the influence of blogging in the industry and that it will generate greater parasocial interaction than online magazines. Blogging has

replaced other social media communication. This research paper investigates the following questions:

- What is the relationship between blogging to online magazines?
- Is blogging more efficient?
- Compared to blogging and online magazines, which one is more effective?

P015
Say It Without Saying It: How Consumers Interpret 'Tropes' in Advertising and Its Impact on Campaign Success

Jamin Gordon (Senior)
Dr. Jun Wu and Dr. Anshu Arora (Savannah State University)

As consumers we are subject to various mediums of advertising including print, radio, and commercials. The going trend in advertising is to have a witty trope or metaphor which appeals to the consumer. Each consumer interprets these tropes differently, creating a difference in opinions toward the advertised product. The success of an advertising campaign weighs heavily on how consumers will receive a particular message. This research introduces the HUBS Framework, a new innovative framework which determines if an advertising campaign is successful. This research addresses the following questions.

- How do consumers interpret the figurative language presented?
- Is the perceived message the intended message of the company?
- How is the campaign impacted by the interpretation of the presented tropes

P016
Influence of Behavioral Factors on Supply Chain Performance: A 3PL Perspective

Yashikiya S. Harley (Senior)
Dr. Suman Niranjan (Savannah State University)

PURPOSE: - Relationships between companies who use third party logistics (3PL) and 3PL companies often dictate the success between the two. A long term relationship between the two (3PL and its customers) is essential for effective and efficient impact on the supply chain. Behavioral factors like trust, commitment, dependence and reliance are affected by the duration of relationships (longitudinal) between third party logistics and companies. The purpose of this research is to determine if behavioral factors have a positive or negative or no impact on the supply chain performance of both the firms.
DESIGN METHODS: - Multiple regression analysis or structure equation modeling will be used to analyze data collected using surveys from several companies at two points of time (data collected at least 6 months to a year apart). Several hypotheses will be framed from the results of the data collected.
RESULTS/EXPECTED RESULTS: - Discuss the hypothesis based on the positive and negative impact of behavioral relationship on the supply chain effectiveness and efficiency. Survey research is the dominant method employed, reflecting the positivist research tradition within logistics.
DISCUSSION/CONCLUSION: - Such findings can be useful for companies to evaluate their financial risks, needs and priorities. This assessment can foster decisions to form mutual commitment partnership capabilities.
GRANT SUPPORT: - None

P017
Creative Advertising Appeals on Global Cultural Spectrum

John Hudson (Senior)
Dr. Anshu Arora and Dr. Jun Wu (Savannah State University)

The research focuses on consumer advertising appeals on a cross-cultural spectrum. It is imperative for advertising agencies to understand that each culture is not only different on a global cultural spectrum but also unique in different sub-cultures. The perceptions of advertising appeals are ever changing and this research study discusses the different appeals used to target consumers across the global cultural spectrum. This study addresses the following questions:

- Which emotional appeals to use when targeting different cultures?
- How appeals differ in different cultures and subcultures across the globe?
- How do males and females react to different hard-sell and soft-sell (warmth, humor and eroticism) advertising appeals?

The research paper proposes the AD Hard-Soft conceptual framework which focuses on attitudes toward the ad, brand and purchase intentions through the usage of hard-sell and soft-sell advertising appeals. The paper uses qualitative research wherein different ads with varying advertising appeals were utilized and their findings are recorded. The differences between hard-sell and soft-sell are highlighted through this research.

P018
Follow Me! Global Marketers' Twitter Use

Cedomir Ilic (Junior)
Dr. Anshu Arora (Savannah State University)

The article highlights that social media is a large part of companies marketing strategies. Among the many twitter has had a tremendous incline in a short period of time. The main purpose

for twitter is to allow customers to view upcoming products and therefore will have an immediate reaction from them which will provide the company with critical data about their product. It will allow companies to see if the feedback from the consumer is positive or negative. This method in the long run saves time and money on marketing.

P019
Developing a Societal Marketing in a Social Market
Deidra Jackson (Junior)
Dr. Anshu Arora (Savannah State University)

The research focuses on an organizations' strategies to develop a societal marketing concept to give back to society by producing better products to include the best, long- term interest of the consumers' to deliver the desired satisfactions more effectively and efficiently than competitors in a way that preserves or enhances the consumers' and overall well-being of the society. This study will address the following questions:

- Why create a societal market in a completive society?
- What benefits are granted by developing a societal market strategy?
- When should a company or organization develop a societal market

The research paper propose the value and purpose of creating a societal marketing concept that promotes a social responsible company and proves an organization commitment to improve the lives of others, and the environment.

P020
Brand Marketing and Perceived Brand Benefits

Justin Latimore (Junior)
Dr. Anshu Arora (Savannah State University)

In the marketing world today a 'Brand name' says a lot and carries weight. Because consumers can vary greatly in their value structure, they may seek a range of different benefits from products and brands. The research study focuses on brand marketing and the corresponding benefits to the consumer. The research delves into consumer psychographics and how the consumer perceives brand benefits differently. We also want to understand what factors of value take place when making brand decisions. The study addresses the following questions.

- How consumers react differently to marketing communications emphasizing selected brand benefits?
- How to measure brand benefits that drive consumer preferences?

P021
Do Consumers Really Love Wine? The Communication Effects of Warmth, and Eroticism on Alcohol Advertising

Lakheer Lovewine (Senior)
Dr. Anshu Arora and Dr. Jun Wu (Savannah State University)

The research focuses on alcoholic advertising on youth which consist of warmth, erotic and sexual appeals. This study addresses the following questions:

- Is there any association between alcohol advertising to youth and alcohol use?
- What is the basic process of an exposure message to consumers for alcoholic ads?
- Does alcohol advertising cause consumers to become alcoholics?
- How can advertisers be socially and morally responsible for creating alcoholic ads targeting youth in a way that it is responsible and ethical advertising and communicates the negative health effects of alcohol?

P022
Advertising in Programs, and Apps: Can it be Done Effectively?

Andrew Mackey (Junior)
Dr. Anshu Arora (Savannah State University)

Adware, or advertising-supported software, is any software package which automatically plays, displays, or downloads advertisements to a computer. These advertisements can be in the form of a pop-up. They may also be in the user interface of the software or on a screen presented to the user during the installation process. This research examines how some companies are implementing this advertising technique effectively, and how some companies dropped the ball. The research addresses the following questions.

- What are the steps taken when creating these types of advertisements?
- Who is the target audience for these kinds of advertisements?
- What devices are these kinds of advertisements pushed on the most?

P023
Social Factors in User Perceptions and Responses to Advertising in Online Social Networking Communities

Michael Marshall (Junior)
Dr. Jun Wu and Dr. Reginald Leseane (Savannah State University)

With the advent of popular Web destinations such as MySpace and Facebook, online social networking communities now occupy the center stage of e-commerce. Yet these online social networking communities must balance the trade-off between advertising revenue and user experience. Drawing on the sociology and advertising literature, this study investigates the impacts of social identity and group norms on community users' group intentions to accept advertising in online social networking communities. By outlining how this type of group intention could influence community members' perceptions and value judgments of such advertising, this study defines possible mechanisms by which community members may respond positively to community advertising.

P024
What You See Is What You Get: Comparing the Effectiveness of Store Layout Advertising Approach in the U.S. and China

Kimberly Morris (Junior)
Dr. Jun Wu (Savannah State University)

This research focuses on the layouts and arrangements of physical stores and how the actual setup of items in the stores relate to marketing. Though it may go unnoticed, the physical arrangement of a store is direct marketing to its consumers and a great way of reaching out, promoting and advertising to customers as well. The arrangement of a store has proven to be effective in the U.S. but how about in other countries such as China? This research paper examines how store layouts are used as advertising tools to generate sales and how it influences the consumers in the U.S. compared to China. This study investigates the following questions:

- How significant is the store layout with regards to the marketing mix variables?
- How does the arrangement of items in a store affect the consumer?
- What advertising models and avenues are used by advertisers and marketers for a successful store layout approach?
- How does the store layout advertising approach differ in the U.S. from the approach used in China?
- Is the store layout advertising approach more effective in China or the U.S.?

P025
Indirect Persuasion in Advertising

Brittany L. Murray (Junior)
Dr. Anshu Arora (Savannah State University)

Indirect persuasion in advertising is a method of selling that consumers do not recognize. Most, if not all companies use this type of advertising in order to gain consumers and customers this way. This research is based on how indirect persuasion affects college students. This research will also address the following questions:

- How affective are the indirect persuasion ads towards college students?
- What does the future holds for this type of advertising?

P026
Art of Persuasion: Bending Information to Your Will

Terrence Nixon (Junior)
Dr. Anshu Arora (Savannah State University)

When advertising in print, ads use indirect or direct methods of getting the message across to customers. This research explores indirect persuasion in advertising and how this affects consumer behavior and their purchase intentions. This paper will also touch on the ideal of subliminal messaging. The author believes that there are four major components that come together to make successful indirect persuasion ads.

- The message must be broken down into a simple form that most viewers can understand.
- The message must be a relevant to the cultural, ethic group, and/or social status of the buyers.
- The customers must be able to relate to the ad for a positive overall experience.
- The message must relate to one of their five senses and/or make them feel that the intangible can be made into tangible form.

The research investigates all advertising methods used in persuading the buyers.

P027
Sexual Advertising and the Negative Effects it has on America's Youth

Theodore Parrish (Junior)
Dr. Anshu Arora and Dr. Jun Wu (Savannah State University)

Advertising has been used to generate sales and revenue for businesses across the globe. Advertising has been so effective

that the study of advertising has begun to try and figure out which concepts are the most effective and why. Research has proven that one of the most successful forms of advertising is through the concept "sex sales." This concept uses sexual images, gestures, and other erotic methods of persuasion to sale products. The idea surrounding the success of this concept is that sex is wanted and if an item will help one gain sex appeal or a form of sexual desire than it is worth purchasing. This concept is brilliant however these advertisements that display sexual content are viewed by crowds of all ages. Youth between the ages of 10-24 are exposed to these images and can easily be influenced to obtain these items so that they can acquire a type of sex appeal. This research will use surveys based on the SHARP model (Support, Humor, Acceptance, Relevance, and Peer Pressure) and focus on the following research questions.

- Do sexual advertisements really have a negative effect on the youth population?
- How do sexual advertisements affect the social behaviors of the youth?
- Is the power of sex strong enough to persuade the youth to make negative decisions?

P028
How Globalization Impact Advertising Appeals Across Cultures?

Mi'Lisa Patton (Senior)
Dr. Anshu Arora and Dr. Jun Wu (Savannah State University)

Advertising agencies must create advertisements that follow the cultural guidelines and value norms of a country in order to be successful. This research discusses the approaches to hard sell and soft sell advertising. The research addresses the following questions.

- How do cultures react to different advertising appeals?
- Which regions have hard sell and soft sell advertisements permeated?
- How has Globalization affected the use of advertising appeals?

P029
Global Branding Across the Cultural Spectrum

Brett J. Pointer (Junior)
Dr. Jun Wu (Savannah State University)

The paper explores the importance of branding and how it translates into profit. It separates international branding and local branding, but also illustrates the relationship between the two. Explanations will be given that show why global branding is hindering local branding and the impact that branding has on globalization.

P030
Advertising Suspicion and Our Children's Nutrition: The Ethics of Advertising to African American Children

Rachel Raines (Senior)
Dr. Anshu Arora and Dr. Jun Wu (Savannah State University)

Food and beverages are the most highly advertised products on television. Confectionary goods, breakfast cereals and fast-food restaurants account for over half of these advertisements. Marketers have been spending significantly more money to reach a younger demographic audience. Considering all the media vehicles, television is the most advantageous when marketing to youth. African American children are exposed to significantly more television than other ethnicities making African Americans more vulnerable to the effects of strategic marketing. The various components that comprise advertising practices to African American consumers are addressed from a parental perspective. This study discusses consumer socialization of African American children and parental influence in response to food advertisements. Parental styles, socioeconomic factors and geographical factors only contribute to the matter. This paper examines marketing to children from the ethical viewpoint of society, companies and parents and samples from various case studies that illustrate the ethical effectiveness of food advertisements and business responsibility to abide to regulations.

P031
Impact of RFID on Supply Chain Performance in Retail Industry

Reginald Reeder (Senior)
Dr. Suman Niranjan (Savannah State University)

PURPOSE: Radio Frequency Identification (RFID) is the best thing since barcoding to keep track of a product or multiple goods. Because barcoding can be replicated dexterously, this welcomes space for thief and manipulative actions that can be taken when a product is in movement in its lead time, and storage. RFID's make this problem easier because in using this technology the system makes calculated statistic that actually track a product and tells where that product can be found and if more of a product needs to be reordered. The purpose of this paper is to investigate the actual benefits of radio frequency identification (RFID) on supply chain performance through the empirical evidence in retail industry.
DESIGN METHODS: - The existing quantitative empirical evidence of RFID on supply chain performance is classified by process (operational or managerial) and for each process by effect (automational, informational, and transformational). The extent of operational and managerial process impact on the

supply chain effectiveness is tested. Multiple regression analysis or Structure Equation Modeling along with Factor Analysis will be used to analyze data collected using surveys.
RESULTS/EXPECTED RESULTS: - Discuss the hypothesis based on the positive and negative impact of operational or managerial process on the supply chain effectiveness and efficiency.
DISCUSSION/CONCLUSION: - For managers, the empirical evidence presented can help them identify implementation areas where RFID can have the greatest impact.
GRANT SUPPORT:-None

P032
Endorser Selection and its Impact on Product Perception

Kristen Rivera-Scull (Junior)
Dr. Anshu Arora and Dr. Jun Wu (Savannah State University)

This research will evaluate the connection between Marketing's use of a spokesperson and the subsequent opinion of the connected product or service. Focus will be placed on the structured selection of a product representative and the desire to focus on specific consumer desired attributes. The status of a spokesperson as famous and their reputation's impact on the effectiveness of marketing tactics will also be discussed. Established research will also reference connections between the ability of a spokesperson to impact a product's marketing effectiveness and the gender of said spokesperson. This paper will address the following research questions:

- How do advertisers select and utilize a spokesperson to facilitate a positive desired impact upon the brand?
- How can the implantation of a spokesperson impact a product through both presentation of the spokesperson and the public image of said spokesperson?

P033
Impact of Ownership on Supply Chain Risk in Various Industries

Ewina Russaw (Senior)
Dr. Suman Niranjan (Savannah State University)

PURPOSE: - Explore the challenges and risks of supply chain ownership for the pharmaceutical, manufacturing, food and automobile industries.
DESIGN METHODS: - Multiple regression analysis or structure equation modeling to analyze data collected using surveys from several companies in the pharmaceutical, manufacturing, food and automobile industries. Several hypotheses will be framed from the results of the data collected.
RESULTS/EXPECTED RESULTS: - Discuss the hypothesis based on the relationship between various supply chain risk factors and supply chain effectiveness (cost and service level), with the ownership (more than or equal to 51% stake) and partnership (less than or equal to 51% stake) being a moderation variable. Through this research we would like to find if number of firms in the supply chain owned by a single company (ownership increase), and partnership moderate the relationship supply chain effectiveness and risk.
DISCUSSION/CONCLUSION: - Such findings can be useful for companies thinking of mergers or acquisitions, or simply partnerships to improve their profit and customer service level.
GRANT SUPPORT: - None

P034
Word on the Net: Do Companies Benefit from Word-of-Mouth Marketing Through Networked Communications?

Jasmine C. Scott (Junior)
Dr. Anshu Arora, Dr. Jun Wu and Dr. Reginald Leseane (Savannah State University)

The research discusses the possible advantages and benefits that a company gets through an unpaid source of advertising called Word of Mouth Marketing (WOMM). WOMM has a life of itself that feeds off social networks. This study explores the world of WOMM and addresses the marketer's big concern - Does WOMM benefit companies or simply bashes their name? The research paper provides informative information on the advantages a company can gain by marketing on networked sites through word of mouth. Implications on un-controllable consumer blogging are also discussed.

P035
ANTHROPOMORPHISM: Studying the Effects of Personification in Advertising

Joshua Shaffer (Junior)
Dr. Anshu Arora (Savannah State University)

Anthropomorphism is an interpretation of what is not human or personal in terms of human or personal characteristics. Many companies have introduced and carried on successful advertising campaigns based on metaphorical figures or characters to create anthropomorphism in consumers. The research focuses on the effects (both positive and negative) of personification in advertising. This study addresses the following questions:

- What are the positive and negative effects of personification in advertising?
- Does personification encourage or create anthropomorphism in consumers?
- How does personification in branding trigger consumer emotions and attitudes towards certain brands?

- What effects do personification and anthropomorphism have on the creation of brand loyalty in customers and consumers?

P036
THE S.H.A.R.P. Conceptual Framework for Young African-American Adults…What is Cool?

Carl Sharperson (Senior)
Dr. Anshu Arora, Dr. Reginald Leseane and Dr. Jun Wu (Savannah State University)

Neural Networks and Consumer tracking studies have gained wide popularity and acceptance in studying young adults' marketing and consumption behavior. In this research paper, the author introduces and proposes a revolutionary method to direct advertising campaigns sources of influences on young adults' psychology and moving dynamic interests. The ideas suggested will advance the thinking of the advertising industry to profit from alternative messages to young adults through mass advertising and welfare of society as a whole. The author discusses what goals and directions are for the next generation of research and advertising; how to use mass advertising to address social issues; and how to profit clients through the use of neural networking by way of implementing the SHARP model. This research proposes a conceptual framework - SHARP (Support, Humor, Acceptance, Relevance, and Peer Pressure) and focuses on the following research questions.

- How can advertising agencies change what is perceived as cool?
- What power does advertisement have on the ideas young adults seek?
- What does it mean to promote what is not visible rather than what is visible?
- These are the questions and ideas this paper seeks to address. The SHARP conceptual model strives to challenge and improve the way advertising is created.

P037
Do You Want to Listen to Adam or Eve: Voice Appeals in Television Advertising

Nesha Simpson (Junior)
Dr. Jun Wu and Dr. Reginald Leseane (Savannah State University)

This research analyzes how customers respond to sound in advertising. Assessment is based on whether customers respond more to a male's or female's voice. The research evaluates and compares which gender dominates in hard-sell and soft-sell advertising appeals, looking into the product categories of sports, entertainment, food, fashion, and electronics. Furthermore, the research evaluates the response to male and female voice appeals by young adults and investigates how the voice appeals lead to ad and brand attitudes and purchase intentions. The findings provide evidence that both gender and predispositions to sexual stimuli should be considered when assessing emotional reactions to voice appeals in advertising.

P038
Do Prior Customer Relationships Provide Value? The Effect of Trust

Kandace C. Smith (Junior)
Dr. Jun Wu (Savannah State University)

Although previous research has indicated that strong customer relationships provide considerable value to service firms, researchers have also noted that the value of customer relationships can vary among customers with diverse cultures. Hui, Ho, and Wan (2011) examine the mitigating effect of a prior relationship between service providers and customers on the negative consequences of service failures. This paper shows how the authors conceptualize prior relationship as the length of past patronage of a service provider. This paper proposes that both the strength and the scope of the mitigating effects of prior relationship on consumer responses to service failures are stronger among consumers than among those with independent self-construal (independent consumers). This paper argues that this is not because of the prior relationship; but rather because of the trust established in the prior relationship, which poses stronger effects among interdependent than among independent consumers.

P039
Buzzing the Traditional Media off through Ambient Advertising

Angela Lucas Snipes (Senior)
Dr. Anshu Arora and Dr. Jun Wu (Savannah State University)

Ambient advertising is a unique, intimate and non-traditional form of communication between the product and the consumer and uses all physical and environmental elements leading to stronger customer engagement. This innovative form of communication goes straight to the top of the consumer's mind and stays there for an extended period of time. The research study explores the innovations in ambient advertising including flash mob dancing, use of structures, posters, props, the backs of bus tickets, supermarket floors, shopping carts, bank receipts, animals, and other strange and unusual venues. The study further examines how ambient advertising can effectively support both traditional and digital media. This unconventional form of advertising makes effective use of surroundings and physical environments to grab attention of the intended audience leading

to positive brand and ad attitudes and purchase intentions. This research paper investigates the following questions:

- What are the social and economic effects on the potential consumer engagement from innovative ambient advertising techniques like flash mob dance and effective utilization of physical spaces for conveying advertising messages?
- Is ambient advertising the future of advertising?
- How is digital and traditional advertising benefit from ambient advertising, thereby revolutionizing the advertising industry?

P040
Do College Athletes Deserve to get paid for Their Advertisement in College Sports?

Daniel Turner (Junior)
Dr. Jun Wu (Savannah State University)

Literatures argue against paying college athletes. Tuition, room, board and books were compensation enough. And even if, increasingly, it wasn't enough and virtually every student who accepted a scholarship was in the red before Christmas of his freshman year, the notion of pay-for-play was at best a logistical nightmare. This paper will take case study approach to address the following research questions: Where exactly would the money come from? How could you pay college football players but not baseball players or members of the women's field hockey team? And how in the world would you pay men in a way that wouldn't violate Title IX?

P041
How Social Media Converts Consumers to Followers: Electronic Word-Of-Mouth (eWOM) in Media?

Reginald G. Walker Jr. (Junior)
Dr. Anshu Arora, Dr. Jun Wu and Dr. Reginald Leseane (Savannah State University)

This study exemplifies how companies advertising (SNA-social networking advertising) their goods and services on social networking sites (SNS) can affect consumers purchasing habits and transform them from consumers of a company into followers of the company and its goods and services. Additionally, this study will examine the effectiveness of electronic word-of-mouth and customer-to-consumer word-of-mouth and how it can transition the experimental consumers into loyal followers because of the interpersonal relationship that family and friends (customers and consumers) have between one another. This is a bond that companies would love to establish by turning consumers into followers; and why they are thankful and grateful to have word-of-mouth floating around in media?

P042
Brand Diffusion: Brand Naming Strategies and Consumer Perceptions

Derek Williams (Senior)
Dr. Anshu Arora and Dr. Jun Wu (Savannah State University)

Brand diffusion occurs when a parent company creates a second product line, under a modified or different name, to appeal to a larger market. Popular luxury companies often create similar products for different social classes under a different brand name. This paper defines the four types of brand naming strategies with respect to a parent brand. The research addresses the following questions:

- Which choice is made for different parent brands and why?
- Which choice is the best for maximizing profits?
- What causes a diffused brand to fail and what are the negative impacts of brand diffusion?
- Does country of origin affect purchasing decisions?

The research further discusses if the consumers' perception of a brand changes with respect to the diffused brand and its country of origin. Research explores possible reasons for this change.

P043
The Effectiveness of Social Media Advertising

Se'Quandria Williams (Junior)
Dr. Anshu Arora (Savannah State University)

The research focuses on the effectiveness of social media advertising. Social media networks are becoming more and more popular in our society. There are thousands of them available and each one is unique in its own way. Whether it's for business or pleasure, a social media network can be found to meet the needs of the consumer. Because of the continuous growth of these sites, marketers can use them to their advantage to advertise their brand. In order for this method to be effective, marketers have to understand the media preferences and habits of target customers. It is important to incorporate paid, owned, and earned media because all brands will not thrive off of Social media networks alone and depending on your target audience social media advertising may have a negative effect on sales or no effect at all. This study addresses the following questions:

- How do marketers determine the value of social media advertising relative to their brand goals?
- What is the difference between paid, owned and earned media?
- What types of impressions are enabled by social media and how effective are they in changing attitudes and behaviors?
- How do marketers incorporate a mix of paid, owned, and earned media geared toward their brand?
- • What are the advantages and disadvantages of using social media advertising?

- The research answers the above questions and helps understand the effectiveness of social media advertising.

P044
Global Cultural Advertising

Brandon Young (Junior)
Dr. Anshu Arora (Savannah State University)

Advertising is a very effective way of getting information out both new and old. This research focuses on the different ways of advertising in the world and how different cultures perceive advertisements in different manner. Billboards, television, internet ads, and even the radio are all forms of advertisements. However different cultures respond to advertisements and the varying advertising media in different ways. This research discusses the history of advertisements and how it has grown over the years and how it will continue to upgrade in the future.

Management and Marketing

Graduate Abstracts

P045
EXOTIC, EROGENOUS, EROTICA: Measuring 'Advertising Erotica' for Luxury Brands

Jamese Beazer (Graduate Student)
Dr. Anshu Arora (Savannah State University)

Businesses spend trillions of dollars attempting to encourage consumers to purchase their goods or services globally. Businesses realize that consumers make their purchases based on the power of advertising and branding. Hard-sell advertisements are in-your-face direct advertisements that suggest using a particular product or service over the competition while soft-sell advertisements are more subtle and incorporate subliminal messages. The research study focuses on why some advertisers prefer to send subtle messages, how these advertising messages unconsciously encourage and entice the consumer to purchase these products or services and why these methods are so successful. The study focuses on the power of soft-sell advertising and conceptualizes 'Advertising Erotica' framework while delving into the sexual, sensual and erotic feelings evoked by the ad leading to positive attitudes towards the ad and brand, and positive purchase intentions.

P046
African-American Stereotypes in Advertising and its Effects on Society

Grace E. Curry (Graduate Student)
Dr. Anshu Arora (Savannah State University)

Abstract: Advertising aims to adapt to the ever-changing consumer perceptions of all races, sexes, ethnicities and attitudes of consumers worldwide. Yet to date there are still advertisements that portray persons of color in either a stereotypical manner or as background to European Americans. For instance, there are two different commercials for the same product that depicts an African American and European American family having dinner. In the commercial with the African American family, only the mother is having dinner with her kids. However, in the commercial with the European American family, the mother and father are having dinner with their kids. This research study explores and investigates the role of advertising in targeting African American consumers through stereotypes and further examines the following questions. What affects do today's commercial advertisements have on race relations?

- Do the stereotypes project the true feelings of African American population?
- Are these types of stereotypical advertisements harmful to the self-esteem of people of color, and how do these perceptions affect different ethnicities including gender?
- Should advertisers be held responsible for the continued perpetuation of the stereotypes?

P013
Brands 'Diffuse' to 'Infuse' Strength: The Effects of Brand Diffusion on Brand Equity

Ahmed Gandema (Graduate student)
Dr. Anshu Arora (Savannah State University)

The purpose of this study is to explore the effects of brand diffusion on brand equity. Lately, the increased competition, and the new market conditions have forced luxury goods' companies to change their strategy of targeting a small group of people to the mass democratization of luxury goods by extending their products to add new customers to their traditional base. To diffuse their luxury brand, parent companies create second product lines, brand extensions, new brands, sub-brands and nested brands to appeal a larger market. The research focuses of the following questions:

- Does brand diffusion offer the same product quality as the parent brand?
- What are the risks and threats associated with brand diffusion?
- What are the reasons behind the brand naming strategies?
- Why luxury brands must adapt themselves as premium

brands to become mass brands?
- What is the impact of brand diffusion on the elite group purchase intention (luxury goods buyers)?

P047
The Value of Social Networks in the World of Advertising

April Harris (Graduate Student)
Dr. Anshu Arora and Dr. Reginald Leseane
(Savannah State University)

Since the inception of the Internet, firms have developed strategies to incorporate the Web in their business models. Most recently, the explosion of social networking sites has changed the business world. This study looks into the phenomenon of social networks and its impact on advertising. Firms are gravitating towards social networking sites to reach target markets, create brand awareness, promote positive attitudes towards the brand name and develop brand trust. This study will investigate how social networking sites can be used as a marketing tool for firms. Therefore addressing the following research questions:

1. How does social communication impact brand trust and attitude?
2. Will participation in social networks increase brand awareness?
3. Can social networks assist marketers in identifying and communicating with target markets?

P048
Are Widgets the Next Big Thing? The Changing Face of Social Media Advertising

Dominique Jackson (Graduate Student)
Dr. Anshu Arora and Dr. Reginald Leseane
(Savannah State University)

Abstract: Social media content such as blogs, social networks like Facebook and Twitter, and discussion forums are becoming more ubiquitous every day. Advertisers are certainly aware of this fact, and are utilizing these social media sites to reach millions of consumers. One of the most popular forms of advertising using social media is widgets. This research aims to investigate how widget advertising can be effective with regards to targeting consumers, how certain demographics impact widgets, and how widget advertising can positively and/or negatively impact a business or organization. The research focuses on the following questions:

1. How can social media widget advertising (SMWA) be more effective for targeting consumers as compared to traditional forms of advertising?
2. Are companies designing specific technology widgets in order to target specific demographics?
3. Is widget advertising always positive or can it also have negative consequences?

COLLEGE OF LIBERAL ARTS AND SOCIAL SCIENCES

Political Science and Public Affairs
(Homeland Security and Emergency Management)

Undergraduate Abstracts

P049
Risks Associated With LNG Trucking Through Savannah

Jamila De Jones (Junior)
Prof. Emily Bentley (Savannah State University)

ISSUE: El Paso, LLC, since August 2010, has been petitioning the Federal Energy Regulatory Commission to reopen the truck-loading facility at its Elba Island LNG (Liquid Natural Gas) import facility on the Savannah River. If the petition is approved, Southeast LNG would begin its trucking operation in late 2012 with 8-10 trucks a day and ramp up to 58 trucks a day over the following decade. LNG is methane gas cooled to minus 260 degrees, but it will not burn in its liquid state. If LNG is spilled out of a truck it's lighter than air; however, the resulting vapor cloud could ignite. The proposed route takes 13,000-gallon double-walled tanker trucks through Savannah, GA, passing two major hospitals and numerous schools, businesses and residential neighborhoods. The purpose of this project is to evaluate the proposed truck route for vulnerable locations. I will map in ArcGIS the trucking route the tanker trucks will be taking and the residential neighborhoods, hospitals, daycares, schools, businesses, and also water outlets that could be affected during a hazardous material spill.
UNDERLYING KEY ISSUE FACTORS: GIS is a powerful tool used to display proximity of vulnerable infrastructure and populations to the potential hazard.
RECOMMENDATIONS: The display of analyzed demographic data will highlight the vulnerability of the areas to a potentially hazardous material spill as a result of the high concentration of hospitals, daycares, schools, businesses, as well as residents. The results of this study can also help city emergency management officials prepare for a disaster by highlighting areas of concern along the proposed trucking routes that would cause a problem in response should a hazardous material spill occur and is expected to provide information that will be of use locally.

P050
Savannah State University's Facilities and Flood Zones

Chasity M. Mathis (Senior)
Dr. Tara Cox (Savannah State University)

PURPOSE: Coastal Georgia is very susceptible to hurricanes and storm surge. The purpose of this research project is to evaluate the storm surge Savannah State University is susceptible to.
DESIGN METHODS: Data from The Chatham County Emergency Management organization as well as the Chatham County Department of Engineering were used to analyze areas that would be inundated by storm surge in hurricanes. The Savannah State University Campus map was overlaid on the information in ArcGIS to show the buildings and if they fall within the indundation areas during hurricanes of categories 1-5.
RESULTS/EXPECTED RESULTS: It is expected that majority of the facilities at Savannah State University fall near or in storm surge areas during a category 5 hurricane. In the event of a hurricane it is expected that there will be storm surge experienced by Savannah State University Campus.
DISCUSSION/CONCLUSION: There will be storm surge at or near the facilities of Savannah State University. The reported findings contribute to the knowledge in the field of Homeland Security and Emergency Management by allowing the field practitioners to realize the potential of the hazard so that there may be mitigation and also to determine if the current mitigation procedures are up to standard and able to deal with the impact of a storm surge.

P051
Evaluating Demographics Using Rural Urban Commuting Area Codes

Britni Seider (Sophomore)
Dr. Tara Cox (Savannah State University), Kasim Ortiz (University of South Carolina)

PURPOSE: The purpose of this research is to examine whether there are larger concentrations of racial minorities in rural areas in South Carolina. The specific aim is to use geographic information systems (GIS) to map patient demographics, at the county level, using RUCA codes from the 2009 Area Resource File (ARF). To achieve this, we will use both race and income as a proxy for concentrations, which will allow us to evaluate whether race or income is the best predictor of rurality.
H0: There will be no difference of concentrations solely based on race in rural areas in South Carolina.
H1: There will be difference in concentrations among racial groups, based upon income levels, in rural areas in South Carolina.
DESIGN METHODS: ArcMap 9.3 will be used to develop chloropleth maps to indicate concentrations along a specified natural gradient. The ARF has several variables that will be selected, such as: racial demographic, age, sex, employment, health insurance status, Medicare enrollment, and health professional shortage areas. We will also use SAS 9.1 to calculate descriptive statistics at the county level.

EXPECTED RESULTS: We anticipate finding concentrations of rural demographics that are based more so on income rather than race.
DISCUSSION: This research is extremely important as often researchers in urban contexts denote residential segregation being the most detrimental to the health of racial minorities. However, in rural contexts it might not be residential segregation that explains segregation the best. Economic segregation may be a more important social determinant of health.

P052
Tropical Storms & Hurricanes Stir Up Georgia's Coastal Waters As Predicted?

Malik Toran (Junior)
Dr. Tara Cox (Savannah State University)

PURPOSE: The purpose of this project was to investigate past results from National Oceanic & Atmospheric Administration (NOAA) forecast made for Georgia in 2008. My goal is to find out the perpetual stability and accuracy of weather forecasting during this time compared to the actual storms' trajectories.
DESIGN METHODS: My methods started with analyzing predicted data from NOAA verses the actual storm's that hit Georgia and comparing the paths of each storm in Arc GIS.
RESULTS/EXPECTED RESULTS: I expect that NOAA will have somewhat of an accurate forecast close enough to the actual storms' trajectories based on their technology to detect storms.
DISCUSSION/CONCLUSION: In conclusion I will have taken forecasted storms from NOAA in 2008 that hit Georgia and compare their accuracy to what really happened when the storms struck.

Social and Behavioral Science

P053
Evaluation of the Forsyth Farmers' Market

Ronnie DeLeon (Senior), Joe'l Shumate (Senior) and LaQuintin Stewart (Senior)
Dr. Lauren McClain (Savannah State University)

The Forsyth Farmers' Market is a place in Savannah where residents and visitors can purchase local, healthy food from local farmers and entrepenures. The farmers' market reaches out to low income residents of Savannah to encourage them to shop at the market. We surveyed the customers at the market to help the organizers determine who shops at the market, how much they spend, on what, and how they pay, how far they travel to shop there, what they know about local and organic food, and suggestions they have to improve the market, among other items. We found that over 1000 people visit the market per Saturday. We collected 191 surveys and found that most people love the market and support its efforts, however they want there to be more selection and be open year round. It also appears that there are fewer low income people who shop at the farmers' market and few that take advantage of the "Double Your EBT" program. Our findings support the efforts of the farmers' market and provide a few suggestions for them going forward.

P054
Interaction between Frequency And Magnitude of Food In The Study Of Choice

Michael Gilbert (Sophomore)
Dr. Carlos F. Aparicio (Savannah State University)

Choices among individuals vary from situation to situation. When making a choice, an individual looks to make the best decision that maximizes the resources. These decisions are known as optimal decisions leading to the formulation of molar theories of choice. To explore how individuals (rats) choose between two alternatives delivering food on a pice work basis, we conducted a study using eight Long Evans rats. The procedure allowed the rats to choose between two levers. Pressing on the levers provided food according to different probabilities that changed during the session simulating a dynamic environment. Thus, the experiment arranged 7 pairs of probabilities that occurred in random order in daily sessions lasting 60-minutes. Behavior allocation to the levers (i.e., pressing the levers) was recorded with approximation of 100 of a second. The results showed that preference adapted rapidly to rapid changes in the contingencies (probabilities) of reinforcement The implications of these results to theories of choice will be discussed.

P055
Modeling Impulsivity in Lewis and Fischer 344 Rats: Does Learning Matter?

Patrick M. Goodman (Senior), Ramya Chetty (Valdosta State University), Neville A. Russell (Senior) and Rachel Wilson (Senior)
Dr. Benigno Alonso-Alvarez (University of Oviedo), Mirari Elcoro (Armstrong Atlantic State University), and Dr. Carlos F. Aparicio (Savannah State University)

Differences in impulsive choice between Lewis and Fischer 344 rats have been taken for granted. Experience, however, may reverse differences between these strains.
PURPOSE: Evaluate this possibility with eight Lewis and eight Fischer 344 rats responding for food in a novel procedure.
DESIGN METHODS: Rats chose between a small-sooner (SS) and a large-later (LL) food delivery (one versus four pellets). In two retractable levers, six pairs of delays (0-0, 0-5, 0-10, 0-20,

0-40, 0-80 s) were arranged to occur within sessions, each providing ten food deliveries and followed by a one-min time out. Sessions ended after 70 food deliveries or after one hour elapsed. Pressing a lever in the back wall inserted the retractable levers, and food delivery retracted them. Pairs of delays were presented in ascending order.
RESULTS: Preference for the LL lever decreased with increasing delay to LL food delivery. For both strains indifference occurred at 10-s delay to LL. After extended training, differences in impulsive choice between Lewis and Fischer 344 were not evident. Early in training total response output in delays of 40 and 80 s decreased in Fischer 344 but not in Lewis rats.
CONCLUSION: These results have implications to previous studies that early in training showed difference in impulsivity between Lewis and Fischer 344 rats.
GRANT SUPPORT: Collaborative Teaching and Research Grant SSU/AASU, small funding for 2012.

P056
Step Up Savannah Poverty Simulation Evaluation

Marquis Morgan (Senior), Danielle Jordan (Senior) and Maurice Brooks (Senior)
Dr. Lauren McClain (Savannah State University)

Poverty reigns across our nation. Here in Savannah, GA, 22% of the population is living below the poverty level and the majority of those who live in poverty are African American. Step Up Savannah allowed us to join them to help collect data and see if people participating in their poverty simulations leave with a better understanding of what it is really like to live in the state of poverty. This study will indicate how the people responded to poverty before and after the poverty simulation. The results of the study showed that after going through such a realistic experience, people become more sympathetic toward those in poverty and report that they are more willing to help those in poverty by donating their money, time, resources, and food. People really realize just how important helping those in poverty really is.

P057
Delayed Reinforcers: Transition from Ascending to Descending Order Impairs Learning

Lucinda S. Ramseur (Senior), Ramya Chetty (Valdosta State University), Cierra S. Chisholm (Junior), and Alicia S. Stephenson (Senior)
Dr. Benigno Alonso-Alvarez (University of Oviedo), Mirari Elcoro (Armstrong Atlantic State University) and Dr. Carlos F. Aparicio (SSU)

Extended experience in an impulsive-choice procedure where delay to large-later (LL) food delivery increases several times within sessions, should affect preference for the LL alternative in a procedure where delay to LL food delivery decreases as the session progresses. PURPOSE: Explore this possibility with transitions from descending to ascending delay in Lewis and Fischer 344 rats.
DESIGN METHODS: Rats responded to novel procedure where six pairs of delays were arranged to occur within sessions in descending order (0-80, 0-40, 0-20, 0-10, 0-5, 0-0 s). Each pair provided ten choices according to a concurrent-chain schedule. Pressing a back lever inserted two front levers signaling the initial link, each lever was associated with a random-interval schedule. In the terminal link, pressing either the SS or LL lever produced one or four pellets, respectively. After each food delivery, pressing once the back lever was required to restart the cycle. Sessions ended after 70 food deliveries or after one hour elapsed.
RESULTS: Preference in the Lewis rats adapted rapidly to within-session changes in delay to LL food delivery. Learning to respond was retarded in the Fischer 344 rats, showing just a few responses at delays 0, 5, and 10 s to LL food delivery. Later in training, the Fischer rats showed more impulsivity than the Lewis rats.
CONCLUSION: Differences in learning between these strains suggest that the role of the environment in determining impulsivity is more important than possible genetic determinants of impulsivity.
GRANT SUPPORT: Collaborative Teaching and Research Grant SSU/AASU, small funding for 2012.

P058
Impulsive Behavior In Lewis and Fischer 344 Rats

Travis Young (Sophomore)
Dr. Carlos F. Aparicio (Savannah State University)

Gambling, drug abuse, Parkinson's disease, schizophrenia, and attention deficit hyperactive disorders have been associated with deficiencies of serotonin and dopamine in certain areas of the brain. Impulsive choices are impatient, immediate responses to obtain rewards of small value over rewards of large value. Low dopamine levels may increase impulsive choices made by someone choosing a small-sooner (SS) over a large-later (LL) reward. In this experiment, eight Lewis and eight Fischer 344 rats were studied looking for impulsive choices. It was hypothesized that Lewis rats will be more impulsive than Fischer 344 rats when choosing SS over a LL reward. Eight operant chambers were used in sessions lasting for 60-minute. Each chamber was equipped with three levers (1 back-, 1 left-, and 1 right-lever). The left and right lever started with a zero second delay to food (1 or 4 pellets, respectively). Delay to food increased in the levers as follows: 5, 10, 20, 40, 80 seconds. As the delay to food increased, it is hypothesized that the Lewis rats will show more impulsive choices than the Fischer 344 rats (i.e., choosing the SS over the LL) reward due their lower dopamine and serotonin levels. Results showed that at the beginning of the study the

Lewis rats were more impulsive than the Fischer 344 rats. With experience in the task, however, the Fischer 344 rats became more impulsive than the Lewis rats. These results will contribute to improve our understanding of the behavioral differences between the two strains of rats.

Social Work

Graduate Abstracts

P059
Disability Coaching Through Time Management

Reia Chapman (Graduate Student)
Dr. Shinaz G. Jindani (Savannah State University)

The single subject design study took place over a period of ten weeks, that involved a student currently attending a four year college. The client, suffering from comorbidity as a result of multiple Axis I disorders including Obsessive Compulsive Disorder, Bipolar II Disorder, and Depression. An initial interview and assessment indicated the need for stress, anxiety, and time management. A 25-item instrument combining questions from the Index of Clinical Stress and questions to measure stress and anxiety as developed by the student researcher, was administered to the client on a weekly basis prior to the start of each disability counseling session. Additionally he/she was provided a blank survey to self-administer during the following week to complete and turn in at the following session. Implications for clinical practice, the efficacy of disability coaching, as well as treatment outcomes are indicated.

P060
Euthanasia and Physician Assisted Suicide in the United States: Should it be Legalized?

Maria Cothren (Graduate Student)
Dr. Bernita Berry (Savannah State University)

Euthanasia and physician assisted suicide have been a controversial topic debated for the last two decades in the United States. Currently, Oregon is the only state to have enacted laws legalizing physician assisted suicide. All other states treat euthanasia and physician assisted suicide as a criminal offense including the state of Georgia This research discusses end of life care options for patients' suffering from a terminal illness, with less than six months to live. The arguments for and against the legalization of euthanasia for terminally ill patients are reviewed. This research focuses on the state of Georgia and the Georgia Code 16-5-5, which bans the act of willfully terminating ones life either voluntary or through actively assisting in the act. This research includes recommendations for the field of social work and the responsibility social workers have on decisions in end of life care.

P061
Financial Abuse of Older Adults

Lacey Crews (Graduate Student)
Dr. Bernita Berry (Savannah State University)

Financial exploitation is becoming more and more prevalent in older adults ages 65+ (Hooyman & Kiyak 2010). Elder financial abuse is the misuse of an older person's funds and in the state of Georgia the Elder Abuse law is an attempt to control the financial exploitation of older adults (Bergeron 2003). This research focuses on preventative measures enacted to protect older adults from financial exploitation. It will specifically examine policies and practices that financial institutions have in place to protect older adults.

P062
Title XXI of the Social Security Act

Jeremy C. Davis (Graduate Student)
Dr. Irma J. Gibson (Savannah State University)

There are a growing number of families who are above the eligible income requirements to receive Medicaid, but who still do not have the means to obtain personal health insurance. Title XXI of the Social Security Act created the Children's Health Insurance Program (CHIP) to address this population. Each State is able to design and run its CHIP program. In Georgia, PeachCare for Kids was set up as a result of the CHIP program. "PeachCare for Kids is a low-cost health insurance program for children of uninsured, low-income families who do not qualify for Medicaid." The goal of the program was to make healthcare obtainable for everyone, however a gap still exists between those who qualify for the program and those who do not qualify and still do not earn enough to obtain personal health care. Opponents of the bill also claim that the bill does not require states to meet a standard to ensure the kids who need the insurance the most receive it first. Amendments and recommendations for this act are discussed in this project.

P063
Elderly Sex-Offenders and Long-term Care Facilities

Latrise M. Davis (Graduate Student)
Dr. Bernita Berry (Savannah State University)

Today's nursing home environment is a place that many call home and feel safe. Although this sense of community within

the nursing home environment is beneficial for older adults, it also means that the nursing home is not impervious from the troubles that exist in the outside world. One of the rising concerns that present tremendous challenges for the nursing home community is the admittance of elderly sex-offenders including persons with a history of pedophilia (Hart, 2008). Most of society has a high regard for the elderly in general, however, most may not suspect that a nursing home resident has sexually molested another resident or a child. Child molesters are getting older and suffer from some form of disability causing them to need long-term care. This research will explore the implications of placing elderly sex-offenders in a long term care facility.

P064
Aging with a Mental Health Disorder in Florida

Ruthffy V. de la Cruz (Graduate Student)
Dr. Bernita Berry (Savannah State University)

The elderly population is estimated to grow by 100 percent by 2030; this is compared to a 30 percent growth in the remaining population (Hooyman & Kiyak, 2011, p. 15). In Florida, the elderly population is predicted to exceed 25 percent of the state's total population by 2025 (CDC, 2003). The state will experience increasing health care burdens as this large demographic continues to age. These burdens will not only include chronic illness such as diabetes and hypertension but also mental illness such as bipolar disorder. The appropriate diagnosis and treatment can restructure the negative impact of mental illness on the health of elderly. In order for programs to be effective they need to address both mental illness and chronic diseases. Without effective mental health treatment individuals will have poorer health and quality of life and the community will be burdened with higher health costs to treat the individual. The mental health issues that will impact the aging population in Florida have to be addressed.

P065
Truancy as a Symptom: Mother's Substance Abuse

Edwana Harris (Graduate Student)
Dr. Shinaz G. Jindani (Savannah State University)

Using Cognitive Behavior Theory and Strengths Based Perspective an intervention was designed to help a mother whose reckless behavior led to an accident in which her four year old child was hurt. Two goals were identified; Parenting and Substance Abuse. An instrument was designed to measure the same, along with random drug tests. In all 12 data points were gathered. Celeration graph showed that the scores moved in the desired direction for both the goals, however the difference between pre and post phase were not significant. At the end of 12 week the mother entered the detox program and signed the custody of her two children to the grand parent. There was some evidence of practice effectiveness. This data helped me reflect upon my social work practice.

P066
The Personal Responsibility Work Opportunity and Reconciliation Act, 1996

Meghan M. Jackson Roberson (Graduate Student)
Dr. Irma J. Gibson (Savannah State University)

The Personal Responsibility Work Opportunity and Reconciliation Act (PRWORA) was passed in 1996 and created a major revolution in the administration of social welfare. This policy created Temporary Assistance to Needy Families (TANF) and put in place guidelines for individuals who receive welfare assistance. These guidelines enabled states to mandate policies for welfare assistance that limit duration, levy behavioral mandates, and place impositions on parental behavior for those people receiving aid under this program. Child Protective Services' (CPS) purpose is to protect children and provide services in the best interest of children; therefore, PRWORA has tremendous influence on CPS and their clients. With the restrictions placed upon families receiving welfare assistance under this policy, there may be limitations and negative consequences to these policy guidelines, and inadvertently cause an increased burden on CPS workers. For example, these restrictions may lead to unintended consequences or gaps, such as lack of parental supervision due to work mandates. Therefore, social implications, research driven best practices, and future policy recommendations for this act are considered and evaluated in this project.

P067
The Prevalence of Prescription Drug Abuse in the Elderly Population

Trinikia Johnson (Graduate Student)
Dr. Bernita Berry (Savannah State University)

Despite the enactment of the National All Schedules Prescription Electronic Reporting Act of 2005 (NASPER), statistics indicates that prescription drug abuse among the elderly is a growing and substantial problem. The Substance Abuse and Mental Health Services Administration (SAMHSA) reports that nearly 3 out of every 10 adult's ages 57 to 85 use at least 5 prescription drugs and that the rate of hospital admissions for conditions related to prescription medications and illicit drug use has risen by 96 percent among people ages 65 and 84 and for people 85 and older admissions grew by 87 percent. Congress has responded with the Prescription Drug Abuse and Prevention Act of 2011 to increase federal oversight of prescription opioid treatment, abuse, diversion and deaths. This research will collect and analyze

data from substance abuse treatment facilities in Georgia and compare them to the national statistics in order to explore the prevalence of prescription drug abuse in the elderly population. It will also review the impact of NASPER 2005 and investigate the necessity of the Prescription Abuse Prevention Act of 2011.

P068
Living Arrangements for Older Adults: Private Home vs. Institutionalized Care

Ebony Jones (Graduate Student)
Dr. Bernita Berry (Savannah State University)

This research describes the advantages and disadvantages of older adults who are taken care of by family members and live in the home versus older adults who live in some type of residential facility such as a nursing home or an assisted living facility. The quality of care provided by family members and professional caregivers is explored. The Older American Act of 2006 is reviewed to assess changes in the services and protections of elderly individuals who require assistance.

P069
Depression in the Elderly Population

Aleida Mitchell (Graduate Student)
Dr. Bernita Berry (Savannah State University)

Late adulthood (65+) should be a time of fulfillment when older adults can look back on their lives and the way they have lived life. Advanced age among the elderly has been hypothesized to be a risk factor for depression, yet data does not equally support this hypothesis. Depression is one of the late-life mental disorders and the most common older adults face in late adulthood (Hooyman, 2011). Depression is defined as "a state of despondency marked by feelings of powerlessness and hopelessness" (Coon, 2001 p:413). This research will discuss distinct forms of depression: unipolar (depressed), bipolar (manic state) and dysthymic disorder and the significant changes that may take place to cause elders to face depression. The Geriatric Depression Scale, a reliable and valid screening device for measuring depression within the elderly, will be used to assess a community of older adults, in local retirement communities to measure depression among older adults.

P070
The Foster Care Independence Act Of 1999

Arnecia L. Newton (Graduate Student)
Dr. Irma J. Gibson (Savannah State University)

In today's society there are a number of challenges that face youth exiting from the foster care system. In most cases these young people leave without any type of emotional or financial support, education, or housing arrangements. Many of these youth are not adequately prepared for life on their own once the known support systems are removed from their lives. As a result of these issues, programs to address these needs were formed and revised under The Foster Care Independence Act of 1999 also known as the Chafee Foster Care Independence Program. Under the Foster Care Independence Act of 1999 (FCIA) states were provided more funds to assist youth during their transition, given more flexibility in designing their independent living programs and held more accountable for implementing the independent living programs. Although the goals and objectives for this Act appear promising, statistical research suggests otherwise. Based on current research it has become clear that there are some gaps and issues with this piece of legislation ranging from equal program opportunity, program efficiency, to program follow-up. Issues such as these have to be addressed immediately in order to ensure a prosperous future for our children preparing to exit the foster care system as well as those who have already exited. The gaps/issues, social theories, policy revisions, policy recommendations and best practices for this piece of legislation will be discussed in this project.

P071
The Effects of Involuntary Retirement on the Older Worker

Michelle Niesen (Graduate Student)
Dr. Bernita Berry (Savannah State University)

For many individuals in the United States, a career is one of the most important aspects of one's life. What one does for employment is often a defining characteristic of that person. How and when to retire is an important and personal decision that each worker has to make. When this decision is made, the individual has to have prepared for both financial and emotional changes in their lives that come from no longer being employed. These issues are compounded when the decision to retire is not up to the worker. Despite anti-ageism laws, involuntary retirement practices exist in today's economy, particularly for the older worker. With the increasing number of the elderly and the limitations to financial assistance, retirement in one's sixties is not always possible. Forced retirement causes considerable strain on older individuals' financial state, physical health, and emotional stability.

P072
HIV/AIDS Among The Elderly: A Critical Concern

Tracey Denise Oliver-McCombs (Graduate Student)
Dr. Bernita Berry (Savannah State University)

This research explores the issue of HIV/AIDS education and

prevention in the older population (50+). A person infected with HIV gradually loses immune function and becomes vulnerable to numerous health issues that lead to AIDS. This research addresses the prevalence of HIV /AIDS in the older population. Particular attention is directed towards what steps, if any, are being taken to educate the older population about HIV/AIDS contraction and prevention. Local health facilities and other agencies that provide services to the older population will be contacted to help answer this research question. A summary of possible outcomes from the data and the potential effects of the policy on practice in gerontology and aging are provided.

P073
Applying Cognitive Behavioral Therapy to Anger Management and Depression

Jada Nobles (Graduate Student)
Dr. Shinaz G. Jindani (Savannah State University)

A 22-year-old African-American senior enrolled at the four year college was referred to the Office of Counseling and Disability Services after she/he tested positive with substances along with Psychosis NOS. The client was prescribed Risperdal for the mental health diagnosis. During the initial intake the client presented substance abuse and anger management as a primary concern. Using Evidence Based Practice, Cognitive Behavioral Therapy and Substance Abuse Education and Prevention (S.E.P.) group counseling was used as intervention. The goal for the single subject research was to administer the survey once a week for 11 weeks but the client was only able to complete 9 surveys. The intervention, CBT, for the single subject design was not effective. Although, the client remained in the desired zones, his/her scores did decrease in the desired direction for depression and substance abuse. On occasions the client's scores varied but never attained statistical significance. Celeration graph depicts the variance.

P074
The Adoption Assistance And Child Welfare Act Of 1980

Rochelle Rice (Graduate Student)
Dr. Irma J. Gibson (Savannah State University)

The Adoption Assistance and Child Welfare Act of 1980 is a Federal Act designed to provide monetary assistance to families seeking to adopt children and to promote the prevention of the placement of children out-of-home. Additionally there were hopes to ensure access of adoptive families to children already removed from the home of families who failed to follow through with agreed upon plans of working towards regaining custody. But equally importantly, this act was intended to provide permanency to children in foster care within a specified period of time. It has not been effective in meeting its intended purposes. Social implications, best practices and future policy recommendations and amendments will be addressed and discussed within the context of this project.

P075
Senior Affordable Housing: Implications for Policy and Practice

Letitia Robinson (Graduate Student)
Dr. Bernita Berry (Savannah State University)

This research is an analysis of affordable housing for seniors ages 65 and older. Access to affordable housing is important in the integration and sustainablility of community and therefore contributes to the wellbeing of both the individual and society in general. As people become older their houisng needs change. For older people, the diminished income associated with retiring, physical ailments and less employment opportunities create a greater demand for senior affordable housing. This research examines the need for affordable and accessable housing for older adults.

P076
The Burden of a Care Giver of Alzhiemer's Patients

Yvonne Rufus (Graduate Student)
Dr. Bernita Berry (Savannah State University)

According to the Alzheimer's Association (2009), 80% of care to Alzheimer's patients is provided at home by family members such as spouses, adult children, or other relatives. The Alzheimer's Association (2009), reports that caregivers of people with Alzheimer's experience high levels of stress that is directly related to the burden of care required by Alzheimer's patients. With the increasing number of Alzheimer's patients, the stress on caregivers may be lessened by utilizing community resources such as adult day care. This research will examine whether community resources affect the stress of caregivers of Alzheimer's patients. This research will survey participants who are caregivers of Alzheimer's patients to access the stress levels of those who utilize adult day care compared with those who do not utilize adult day care. It is anticipated that a reduction of stress levels will coincide with caregivers who utilize adult day care services.

P077
Fostering Connections To Success And Increasing Adoptions Act 2008

Breanna Shaw (Graduate Student)
Dr. Irma J. Gibson (Savannah State University)

Out of home placements, and foster care have been of particular concern to American society since the early 1900s. Throughout the years, focus has shifted from emphasis on the families and their reunification to expedient permanency. Presently, with the Fostering Connections Act, emphasis is to help hundreds of thousands of children and youth in foster care by promoting permanent families for them through relative guardianship and adoption and improving education and health care. Keeping a child with relatives, in retrospect, appears to be in the best interest of the child; but this act does not account for the financial strain that it inadvertently places upon the caretakers to commit to adopting or becoming legal guardians of the child. This factor, in turn, decides what types of incentives and choices are available for the relative. This project will discuss both the positive and negative implications of this act as well as future recommendations from which the relative, child, and society could possibly benefit.

P078
No Child Left Behind Act 2001

Martin Wells (Graduate Student)
Dr. Irma J. Gibson (Savannah State University)

Making sure our children receive a competitive education in the public schools has been a constant issue that the United States has addressed. Research has found that America ranks 14th in the world in regards to grade school education. Research has also found that children who graduate from high school and receive some form of college are more likely to be successful than the children who graduate and do not go to college. This Act is based on the foundation that setting high standards and establishing measurable goals can improve the individual outcomes in education. It requires public school systems in every state to adjust their standards in the core subjects, so that the school can receive federal school funding. On the other hand, this policy results in the opposite as well. It causes a number of children to be retained. In this project, the author will critique the Act and discuss the social implications and future policy recommendations.

P079
The Multiethnic Placement Act (MEPA) of 1997

Tonya Wright (Graduate Student)
Dr. Irma J. Gibson (Savannah State University)

The welfare of the children within our foster care system has been a major concern for our society. Should minority children by allowed to be adopted across racial lines? Should minority children only be placed with same-race families for adoption and foster care? There are many factors that are taken into consideration involving the placement of children including their permanence, happiness and safety as the main focus. Many would agree that as long as the child's individual requirements are met, race should not be an issue. Others oppose and believe that minority children should be pleased solely within their race and ethnic background. The social implications, best practices and future policy recommendations for the support of this act are discussed in this project.

Sociology

Undergraduate Abstracts

P080
A Tampered Identity; Self Identity And Social Inequality

Maurice Brooks (Senior)
Dr. Stephanie Alexander (Savannah State University)

Freedom is defined as the power or right to act, speak or think as one wants without hindrance or restraint. ." If one was told they have the freedom to choose between a blue or red pencil, are they truly granted freedom of choice? What if one wants a green pencil? How about a yellow pencil? Are there benefits of choosing the red pencil over the blue pencil? Most importantly, what if one doesn't want to choose a pencil at all? Self identity is defined as one's awareness of and identification with oneself as a separate individual. Self Identity refers to internal forces acting, not external. Social inequalities unequally distribute opportunities and resources to society's members. Limited opportunities and resources conflicts with freedom and tampers with people's self identity. Administering surveys and reviewing credible research as methods for approaching the problem, conclusions have been made based on the data. The data has shown that typically, people are faced with the "red and blue pencil" situation rather than freedom of choice. Considering humanity and the systems that govern it, actions should be taken to eliminate social inequalities as they are destructive to human society.

P081
Dating Attitudes towards People with HIV

Sharonda Hunter (Senior)
Dr. Stephanie Alexander (Savannah State University)

In a study conducted by Faith Foreman in 2003 called "Intimate Risk Behavior among African American College Women", Foreman studied the influences of risky behaviors among African American college women. (Foreman, 2003) Foreman discovered that the participants chose to practice risky behaviors with their partners because they sought to be on a level of intimacy that was expected from their partner and the desire to be in a long term relationship. Foreman studied these behaviors in an effort to understand how to seek prevention options from spreading diseases such as HIV and other sexually transmitted diseases. This paper will be discussing the dating attitudes of college students towards people with disabilities such as HIV. The survey looks at student attitudes on a historically black university in the South... The institution was eligible for the sample based on several factors including population, percentage of students with HIV, race of students, as well as availability of services for the disabled. The study was done as a single study, with anonymous in person surveys. Participants were given a list of several medical conditions and where asked to provide their race, age, whether or not they were or knew members of the disabled community, educational background of their parents, how does the participant define a disability and how the participants feels about dating a person that is disabled. It is expected that students who have a higher level of education or came from backgrounds of parents that had higher levels of education are more likely to date a student that had a disability than other that were not as educated about persons with disabilities. This study is significant because HIV is highest among African Americans.

This page has been intentionally left blank.

COLLEGE OF SCIENCE AND TECHNOLOGY

Natural Sciences

Undergraduate Abstracts

P082
Modification Of Plant Cell Wall: Engineering Fiber For Biofuels

Danielle Chambers (Junior), Shieldy Jean Louis (SU) and Caitlin Phalen (SU)
Dr. Heather Coleman (Syracuse University)

Biofuels, such as ethanol, are fuels produced from renewable, biological feedstocks. The cost-competitive production of biofuels is essential to reducing our dependence on fossil fuels, thereby reducing greenhouse gas emissions. A large source of fermentable sugars for biofuel production is readily available as forestry and agricultural waste. The potential exists to be able to harvest the sugars from the plant cell wall for use in the production of ethanol and other biofuels. One of the major challenges in the production of fuel from plants is that the cell wall is difficult to breakdown. It is possible to address this through the modification of the plant cell wall to either increase the amount of carbohydrates or to make them more readily available. Evidence abounds that nitrogen metabolism is directly involved in cell wall formation and impacts chemical composition. As such, the long term goal of this research is to develop a model of how nitrogen metabolism and utilization impact cell wall formation. The goal of my summer research project was to design and make DNA constructs containing nitrogen metabolism genes for delivery into poplar and to transform poplar with these constructs. A second goal was learning wood chemistry techniques that would be used for future analysis on these transgenic plants. This was carried out on plants from an additional project in the lab which is focused on cell wall modification through the expression of cellulases. The cost-competitive production of biofuels will result in a sustainable, renewable fuel source. Improving feedstock quality is imperative for this goal to be achieved.

P083
Enzymatic Preparation of Biodiesel in Eutectic Ionic Liquids

Tanisha Crittle (Senior)
Dr. Hua Zhao (Savannah State University)

Biodiesel (i.e. fatty acid monoesters) is a renewable alternative to regular diesel fuel from petroleum. Among several methods for preparing biodiese, the lipase-catalyzed enzymatic transesterification of triglycerides (such as vegetable oils and animal fats) is considered a greener approach to the production of biodiesel. But this enzymatic conversion is typically conducted in organic solvents, which are usually volatile, flammable, toxic and enzyme-denaturing. The aim of our study is to prepare new eutectic ionic liquids from biodegradable, non-toxic and renewable choline salts and glycerol, and to apply them as green solvents for the enzymatic preparation of biodiesel. We will prepare new eutectic ionic liquids using the anion-exchange method, and study the enzymatic transesterification of Miglyol oil in eutectic ionic liquids using the HPLC analysis. We will evaluate the compatibility of lipase in these new solvents, and measure the conversion of triglycerides in these ionic solvents.

P084
Protonation/Deprotonation of AMP and cAMP Under Effects of pH Variation and Mg2+ Binding

Angelica Glover (Sophomore)
Dr. Zhiyan Song (Savannah State University)

Various one-dimensional (1D) and two-dimensional (2D) nuclear magnetic resonance (NMR) spectra were recorded for adenosine monophosphate (AMP) and cyclic adenosine monophosphate (cAMP) under varied sample pH and/or Mg2+ binding. If these nucleotides undergo various pH changes Mg2+ binding, then chemical shifts of ^{1}H, ^{13}C, ^{31}P and ^{15}N will occur. The chemical shifts of ^{1}H, ^{13}C, ^{31}P and ^{15}N were analyzed to deduce the protonation/deprotonation of nucleotide phosphate and nucleobase. The transition point of protonation-deprotonation is around pH 6.26 for AMP phosphate and around pH 4.5 for N1 site of AMP. With the binding of Mg2+, the transition point of AMP protonation/deprotonation is lowered to pH 5.25 at phosphate site and pH 3.6 at N1 site, indicating the effect of cation binding on these sites. In conclusion, pH variation had noticeable effects on 31P and N1 site of both AMP and cAMP; the spectra features of cAMP are significantly different from AMP. These NMR characterizations can be important to the understanding of molecular interactions and functions of AMP/cAMP.

P085
Fatty Acid Methyl Esters (FAME) from Marine Algae

Rhecia Goodley (Senior)
Dr. Olarongbe Olubajo (Savannah State University)

Algae are a large and diverse group of organisms, ranging from unicellular to multicellular forms. Algae can be used to produce high value compounds such as carbohydrates, hydrocarbons, and natural oils. Fatty acid ester derived from algae oil can be

used as a source for biodiesel production. Fatty acid methyl esters (FAME) are the main constituents of biodiesel. Biodiesel is a biofuel consisting of monoalkyl esters that are derived from organic oils, plant or animal, through the process of transesterification; and it is biodegradable, nontoxic and has low emission profile as compared to petroleum diesel. Oil from algae may provide a more cost efficient, renewable resource and could ultimately replace standard petroleum diesel. Here we use two methods to produce FAME from marine algae: an extraction-transesterification method and a direct algae transesterification method. The products were analyzed using TLC, IR, and ^{1}H NMR.

P086
Inhibition Of Cancer Cells By Novel Ionic Derivatives Of Betulinic Acid

Angelique Gumbs (Sophomore)
Dr. Suresh Challa (National Institute of Nutrition), Dr. Himangshu S. Bose (Mercer University School of Medicine and Memorial University Medical Center), Dr. Hua Zhao (Savannah State University)

PURPOSE: Betulinic acid is natural compound with high in vitro cytotoxicity toward many cancer cells. However, the poor water solubility of this compound prevents the effect in vivo cancer study. We hypothesize that new ionic derivatives of betulinic acid will improve the high water solubility, without losing the structural integrity and functionality of this compound.
DESIGN METHODS: We prepared the benzalkonium and cholinium derivatives of betulinic acid through a two-step reaction strategy. These derivative were examined by the MTT [3-(4,5 dimethyl-2-thazolyl)-2,5-diphenyl-2H tetrazolium bromide] cell assay in inhibiting different cancer cell lines (melanoma A375, neuroblastoma SH-SY5Y and breast adenocarcinoma MCF7).
RESULTS: The new ionic derivatives have generally exhibited much higher inhibitory effects against these cancer cells than betulinic acid itself. For A375 cell lines, the cholinium derivative showed a low IC50 value of 36 μM (vs 154 μM for betulinic acid); for MCF7 cell lines, the same derivative showed a low IC50 value of 25 μM (vs 112 μM for betulinic acid).
DISCUSSION/CONCLUSION: The high cytotoxicity of these new derivatives is directly linked to their highly improved water solubility. The cell inhibition study based on MTT assay method has confirmed our hypothesis of high inhibitory effect of ionic derivatives of betulinic acid against different cancer cells.
GRANT SUPPORT: The support provided by the National Institutes of Health - RIMI grant (5P20MD003941) is acknowledged.

P087
Dynamic Changes in Probability of Reinforcement in the Study of Choice

Daniel Heslop (Junior) and Ramya Chetty(Valdosta State University)
Dr. Benigno Alonso-Alvarez (University of Oviedo), Dr. William M. Baum (University of California Davis), Dr. Carlos F. Aparicio (Savannah State University)

Short- and long-term effects of food deliveries on preference have been documented in choice situations using concurrent variable interval schedules. Most theories of choice predict exclusive preference for one of the two alternatives arranging food deliveries according to variable ratio schedules of reinforcement.
PURPOSE: Test this prediction in dynamic choice situations where the ratio of food provided by two random ratio schedules changed seven times within sessions in random order.
DESIGN METHODS: Eight rats responded for food in choice situations arranging seven food ratios (8-1, 4-2, 2-1, 1-1, 1-2, 2-4, and 1-8) in two levers. Accordingly, a response unit of two responses was associated with different probabilities to produce food, thus defining random ratio schedules that operated in the levers at different times during the session. Each food ratio programmed ten food deliveries followed by a 60 s-blackout.
RESULTS: Choice adapted rapidly to the rapid changes in food ratio that occurred within sessions. Rats tracked with more responses the lever associated with the highest rate of food production. A small bias for one of the levers was observed across components, but it did not interfered with the rats' sensitivity to reinforcement.
CONCLUSION: The implication of these results to molecular theories of choice will be discussed, and alternative explanations to describe choice in dynamic environments will be presented.

P088
Synthesis of Novel Agents for use in Addiction Treatment

Kierra Hill (Sophomore)
Dr. Karla-Sue C. Marriott (Savannah State University)

Drug addiction is a widespread problem of increasing concern in the United States. Sharing injection drug works such as needles or syringes with someone who is HIV positive is the second-most-common way of contraction HIV among both black men and black women. Because drug use and particularly methamphetamine use, which is on the increase among African-Americans is often associated with higher incidence of unprotected sex, then it can be reasoned that an appropriate strategy for fighting HIV transmission is to treat drug addiction.

Post-mortem studies of drug addicts indicate elevated levels of D3 receptors in the mesolimbic regions of the brain responsible for feelings of reward and pleasure. The concentration of dopamine D2 receptors may be critical targets for effective therapeutic intervention to assist in treating addiction. Benzazepine derivatives have been reported to possess anti-depressant properties and are quite useful in the treatment of chronic neurological disorders including brain damage resulting from epilepsy, stroke, Alzheimer's disease, drug abuse and AIDS-related dementia. Our immediate objective in the project is to determine dopamine D1, D2, D3, D4, D5 and serotonin 5-HT receptor binding affinities of novel benzofuro-benzazepine-6-12-dione derivatives. In general, we expect to assist in the development of D3 receptor selective antagonists or partial anognists for use as antipsychotics in the treatment of addiction-related psychosis.
The overall aim of this project is to contribute to a better understanding the role of D3 receptors in addiction as well as to assist in the development of a therapeutic pharmacophre for central nervous system disorders.

P089
Measurement Of Leptin In African American Women Under Controlled Conditions Of Weight Maintenance And Physical Exercise

Sobriquia Z. Kelley (Senior) and Po-Teea Morris-Hunter (Sophomore)
Dr. Johnny Johnson (Savannah State University)

The discovery of the hormone leptin in 1994 stimulated research into obesity by demonstrating an afferent hormonal signal from adipose tissue to the central nervous system, but the initial hypothesis that a deficiency in leptin leads to obesity in humans has not held up (Korner, 2003). There is a complex interaction of neuroendocrine systems that keeps adipose tissue from diminishing. The regulation of food intake is a complex process that is inclusive of interactions among reward pathways in the central nervous system, societal and environmental influences mediated through higher neural centers, and signals along the gut-brain axis. Recent efforts at unraveling this complexity have focused on glucagon-like peptide 1 (GLP-1), a gut hormone that enhances postprandial insulin secretion. Once secreted, GLP-1 is rapidly degraded to inactive metabolites. Independent of sex, age, adiposity and postprandial changes in other metabolites, the postprandial GLP-1 response is associated with activation of some areas of the human brain that have been previously associated with satiety, meal termination and the regulation of food intake. In addition to examining GLP-1 levels, the aim of the present study is to examine the association between serum leptin concentrations in obese African American women who adhere to a healthy change in lifestyle.

P090
Influence Of Docks On Marsh Dieback On Wilmington Island, GA

Meghan Maylone (Junior)
Dr. Tara Cox (Savannah State University)

PURPOSE: The accumulation of wrack on the marsh surface has been shown to affect the condition of live marsh grasses. Docks over the marsh form barriers which allow for the easy accumulation of wrack mats. Because the route to open water is impeded by the pillars of a dock, the wrack coverage increases and smothers the live vegetation beneath it. Wrack debris build-up alongside docks on Wilmington Island has led to the formation of mudflats and areas of marsh dieback. A 2007 and 2011/12 analysis of bare patches in the Wilmington Island marsh was used to determine changes over time associated with these structures.
DESIGN METHODS: Marsh destruction from 2007 was used as a reference point for change using the "Wilmington Island wrack polygons" map, provided by The Skidaway Institute of Oceanography. 2011/12 aerial photographs of Wilmington Island were collected from Savannah Area GIS (SAGIS), and current areas of bare marsh were mapped using polygon features in ArcGIS.
EXPECTED RESULTS: Large mudflats along older docks are expected to remain unchanged from 2007-2011/12. The influence of more recently constructed docks on the marsh is expected to show results of increased dieback, statistically related to wrack accumulation along the obstructions.
DISCUSSION/CONCLUSION: When a dock is constructed over an area of wrack transport, it collects the floating mats, which blanket the marsh. Once collected along a dock, the wrack continues to build up as the tides carries more debris in with the flow.

P091
Localizing Shal 1 b/c in the Stomatogastric Ganglion of the Spiny Lobster

Kiara Miller (Sophomore)
Dr. JingJing Fu and Dr. Deborah Baro (Georgia State University)

Each pyloric cell type located in the stomatogastric ganglion of the spiny lobster (P. interruptus) possesses a unique, modulatable transient potassium current, or A current (IA) that is instrumental in determining the output of the network. The shal gene codes for œ- subunits of the channels that mediate IA and alternative splicing the gene produces 14 different isoforms that can be modulated by dopamine (DA) but the exact channels are not known. When localizing the shal gene, we locate IA channel receptors to then locate dopamine receptors and analyze the effects that dopamine will have on IA channels. We performed a

series of immunohistochemistry (IHC) experiments to localize the shal 1 b/c channels in the STG. Using confocal imaging, we found that IA channel receptors are located directly in the soma and shal 1 b/c channel distribution is differentially expressed and occurs in the fine neuropil and transport vesicles. A previous study shows that DA receptors are also located in the fine neuropil which suggests that DA can modulate shal isoforms in the same location and possibly co-localize.

P092
Additive Neurological Effects of Amyloid Peptides (Aß 1-40 and 25-35) and Lead (Pb) on SH-SY5Y Neuroblastoma Cells

Roshini Mohan (Sophomore)
Dr. Challa Suresh (Savannah State University)

A common characteristic of the development and neuropathogenesis of Alzheimer's disease (AD) is the abundance of ß-Amyloid (Aß) peptide plaques. The Aß peptide is a peptide processed from the Amyloid precursor protein, that when in abundance may lead to amyloidosis. Another significant hazard to, particularly, the pathology of AD in Human neuroblastoma SH-SY5Y cells are the risks associated with exposure to the lead (Pb) heavy metal. Thus the effects of Aß in combination with the environmental risks of Pb exposure could prove significant to the pathogenesis of AD.
In this study the effects of Aß and lead were simulated in vitro conditions with Human neuroblastoma SH-SY5Y cells. The amyloid peptides Aß 1-40 (20 µM to 120 µM) and Aß 23-35 (2.5 µM to 15 µM) were exposed to the SH-SY5Y neuroblastoma cells for 24 to 48 hours both individually and in combination. The viability of cells were significantly reduced and 50% decrease in cell viability (IC50) were observed to be at 5µM. To find the combination effects, the cells were pretreated with Aß (1-50:60µM, 25-35:7.5µM) and Pb (5µM) and the viability was significantly altered. The combination of Aß and Pb was observed to be effective. Overall, the combination of Aß and Pb exposure to Human neuroblastoma SH-SY5Y cells prove significant to factors of oxidative stress, neuronal apoptosis, and alteration of signaling enzymes.

P093
The Impact on Lifestyle-Induced Weight Reduction on Circulating Levels of GLP-1

Poteea Morris-Hunter (Sophomore)
Dr. Johnny Johnson (Savannah State University)

The regulation of food intake itself is a complex process including interactions among reward pathways in the central nervous system, societal and environmental influences mediated through higher neural centers, and signals along the gut-brain axis (Chaudhri, 2008). Recent efforts at unraveling this complexity have focused on glucagon-like peptide 1 (GLP-1), a gut hormone that enhances postprandial insulin secretion. Once secreted, GLP-1 is rapidly degraded to inactive metabolites (Vilsboll, 2001). Independent of sex, age, adiposity and postprandial changes in other metabolites, the postprandial GLP-1 response is associated with activation of some areas of the human brain that have been previously associated with satiety, meal termination and the regulation of food intake (Pannacciullia, 2007). Obesity, leptin, race, diet and exercise have each independently been shown to influence GLP-1 levels. In severely obese subjects, the postprandial GLP-1 response is attenuated (Verdich, 2001), though it shows some improvement after weight loss. Leptin has been shown to stimulate GLP-1 secretion from rodent and human intestinal L cells, which suggests that the decreased GLP-1 levels in obese humans could be a result of leptin resistance (Anini, 2003). Previous research involving obese African American women has not been conducted under carefully controlled dietary conditions of weight maintenance and physical exercise using measures of GLP-1. Therefore we examined the association between serum GLP-1 concentrations in obese African American women who adhere to a healthy change in lifestyle.

P094
Phytoplankton Populations in Atlantic Coast Salt Marsh

Edward Moultrie (Sophomore)
Dr. Eugene R. Mesco (Savannah State University)

This research was part of a collaborative effort to monitor phytoplankton populations along US coastlines. Various phytoplankton species are known to be present in the local marsh water near Savannah State University. We expected to see consistent representation of the varied species in the samples collected at high tide. Phytoplankton are plant-like microscopic organisms that lives on the surface of fresh and salt water. These organisms are important to the global ecology, as they represent the base of the food web for most coastal ecosystems. Phytoplankton populations can grow into a phenomenon known as a bloom. A main interest of this study is blooms of phytoplankton which include species that produce toxic chemicals, or harmful algal blooms (HABs).
The Phytoplankton Monitoring Network was established by the National Oceanic and Atmospheric Administration (NOAA) as an outreach program to monitor harmful algae blooms and marine phytoplankton.
The procedure used to conduct this research was to obtain and use a drag net with a container attached to the end of it. With the line attached to the net, the net was used to capture surface populations at high tides. Repeated pulls can concentrate the populations present to allow for counts of the various species. After collection of the specimens, drops of the sample were placed on counting slides and viewed under the light microscope.

On average, 250 individual organisms were counted per collection, over 6 weeks of collections.
Thirty distinct species of phytoplankton were identified in the salt marsh near Savannah State University. Temperature variation may influence the populations. None of the species seen in prevalent numbers are known to be toxic, except during algal blooms.

P095
Agent Cancer Therapy, (Sulfonated Porphyrins with a Twist)

David Oguoma-Richards (Sophomore)
Dr. Adegboye Adeyemo (Savannah State University)

We have prepared seven different N-type porphyrins both by the conventional method (1,2) and microwave method (3). To make these porphyrins water soluble, methylation of the external nitrogen atoms has been the norm. Such methylated products especially in iodide forms have either been slightly water-soluble or not significantly water- soluble to carry out any reasonable studies(4). Conversion to nitrate or tosylate form has been done previously to effect reasonable solubility. We attempted to make pyridyl and quinolyl type porphyrins water-soluble by conversion to sodium salts. This sulfonation reaction was complete immediately or within minutes at room temperature. Due to extensive studies and research, conclusion has been made that anionic porphyrins are more effective in killing cancerous cells than cationic porphyrins (5). This alone gives the motivation to produce more anionic porphyrins for use in photodynamic therapy (PDT) of tumor. We have successfully sulfonated the following N-type porphyrins at room temperature with minimum amount of concentrated sulfuric acid followed by neutralization with 4M sodium hydroxide: Tetra(2-pyridyl); Tetra(3-pyridyl); Tetra(4-pyridyl); Tetra(2-quinolyl); Tetra(3-quinolyl); Tetra(4-quinolyl) and Tetra(2-chloro-3-quinolyl) porphyrins. We have started investigating metal ions interaction with some of these sulfonated N-type porphyrins and now wish to report their solution spectral characteristics. Anion dependence was observed for Zn^{2+} interaction with sulfonated Tetra (4-quinolyl) porphyrins ($Cl^- > F^- > OAc^- > NO_3{}^-$). Our results also show metal ions dependence ($Zn^{2+} > Cu^{+1} > Cu^{2+} > Co^{2+}$).

P096
Overlap of Income and Demographics with Flood Zones in Chatham County

Faith Palmer (Senior)
Dr. Tara Cox (Savannah State University)

PROBLEM: In this project I will be comparing the flood zones of Chatham County to the income and demographics of people living in the flood zones.
PURPOSE: The City of Savannah, GA floods and some areas retain water longer than others. The low flood zone areas appear to have more minorities and low income families living in them.
DESIGN METHODS: I contacted professionals within Chatham County and requested the flood data information. I then researched the average incomes rates and demographics in the flood zones and highlighted the areas where the low flood zones and low income areas overlap.
EXPECTED RESULTS: I anticipate in Chatham County the overlap will be significant with greater than 50% of flood zones being inhabited by low income minorities.
DISCUSSION AND CONCLUSION: This will help to better mitigate the flood plan for Chatham County and to not have people living in the low flood zones.

P097
Analysis Of Drug-Protein Binding Phenomena Using Nuclear Magnetic Resonance

Ekundayo Platt (Senior)
Dr. Zhiyan Song (Savannah State University)

As the most abundant protein in human blood, human serum albumin (HSA) plays a major role in drug delivery and exhibiting its pharmacologic effects. HSAis an important protein in drug research because of its high affinity for binding with numerous ligands. The fact that a drug can only exhibit its pharmacologic effects when free from protein such as human serum albumin is the basis for this research study. The focus of this project was to use NMR to analyze whether an increase in the concentration of the anti-depressant Imipramine resulted in more of the drug being free from human serum albumin. This research addressed a topic that is important to public health. The development of drugs with moderate or weak binding to HSA would be beneficial. We hypothesized that as the concentration of Imipramine is increased the molar fraction of imipramine bound to HSA will decrease. And this was verified by 1H NMR pulsed-field-gradient (PFG) diffusion measurements. The experimental procedure consisted of preparing solutions that contained a constant concentration of HSA (0.5mM), and varying concentrations of Imipramine. The concentrations of Imipramine that were coupled with 0.5mM human serum albumin were 12.0mM, 21.78mM, 32.19mM, 44.19mM, and 56.19mM. The samples were inserted into the NMR spectrometer and data was obtained from their 1-dimensional and diffusion spectra. The diffusion spectra were used to determine the diffusion constant of the different samples. A larger diffusion constant is attributed to a smaller molecule and in our case it also meant Imipramine was less bonded to HSA. Our results showed that an increase in the concentration of Imipramine leads to a larger observed diffusion constant which suggests that a larger portion of Imipramine remains free from human serum albumin at higher

concentrations. In conclusion, this research was able to show that an increase in a drug's concentration decreases its relative binding fraction to human serum albumin. The binding is also pH -dependent. The binding information obtained from such study can be important for improving the efficiency of drugs and development of new drugs.

P098
Fluorescence Anisotropy Of Human Serum Albumin Interaction With Sulfonated Silicon Phthalocy

Moriah Potts (Sophomore)
Dr. Cecil Jones (Savannah State University)

Phthalyocyanines are dyes that may be used as photosensitizers for photodynamic therapy (PDT). Fluorescence anisotropy was employed to monitor the binding between the drug carrier protein, human serum albumin (HSA) and a photosensitizing agent, sulfonated silicon phthalocyanine (SiPcSn). UV-Vis spectroscopy was used to determine that the excitation maximum is at 679 nm. Excitation is desirable in this region of the spectrum because of the ability of long wavelengths to penetrate skin tissue to significant depths. Such penetration by visible light broadens the applicability of Photodynamic therapy (PDT) to treat deep seated cancers. The photosensitizer exhibited near resonance fluorescence emission with a maximum observed at about 686 nm. Anisotropy measurements of SiPcSn were recorded as a function of HSA concentration. The sigmoidal transitions associated with binding were fitted to a nonlinear equation to calculate the binding affinity between HSA and SiPcSn. The result shows the potential of SiPcSn to serve as a photosensitizer for PDT.

P099
Random Delayed Consequences and Preference in the Study of Impulsivity

Quentre Shannon (Senior), Lucinda S. Ramseur (Senior), Neville A. Russell (Senior), Patrick M. Goodman (Junior) and Ramya Chetty (Valdosta State University)
Dr. Benigno Alonso-Alvarez (University of Oviedo), Mirari Elcoro (Armstrong Atlantic State University), Dr. Carlos F. Aparicio (Savannah State University)

Research in impulsivity has provided limited demonstrations of effective techniques to teach ways to tolerate delays or train rats to wait for delayed reinforcers.
PURPOSE: Develop effective procedures to measure the process of devaluating food reinforcers presented with random delays.
DESIGN METHODS: Sessions started with the initial-link having available a lever. Responses on that lever advanced the program to the middle-link, turning off the house-light, inserting two retractable left and right levers, and turning on the lights above them. Random interval (RI) schedules operating concurrently in these levers arranged the following choice: (1) press on one lever to earn one food pellet (the small-sooner, SS-lever), or (2) press on the other lever to earn four food pellets (the large-later, LL-lever). The following pairs of delays were presented in random order within sessions (0-80, 0-40, 0-20, 0-10, 0-5, 0-0 s). Each pair provided ten choices and was followed by a blackout.
RESULTS: Lewis rats adapted rapidly to delays presented in random order, generated delay discounting functions that were consistent with those obtained in previous studies. The Fischer rats showed less impulsivity than the Lewis rats. But this result may be due to a lack of discrimination that the Fischer 344 rats showed across delay conditions.
CONCLUSION: Differences in learning between Lewis and Fischer 344 rats seem to be more important than differences in brain mechanisms to determine impulsivity. GRANT SUPPORT: Collaborative Teaching and Research Grant SSU/AASU, small funding for 2012.

P100
Attempting To Improve The Accuracy Of The Screen Positive Rate (SPR) In Down Syndrome Reports Of Pre-Natal Testing

Rahja' Sharp (Senior) and Nisachon Chaiwang (MSU)
Dr. Sainan Wei (Michigan State University)

Prenatal screenings are tests offered during pregnancy examining if a mother is at an increased risk to have a baby with certain defects requiring the baby to need extra medical care. If a mother knows her baby will be born with a defect, she can make critical decisions and arrangements before birth. The purpose of this research is to improve test accuracy for detecting Down syndrome to help more mothers make decisions for their babies. The specific tests we examined are the Quadruple Test, the Serum Integrated Test and the Full Integrated Test. We increased the cut off values for these tests with the expectation of improving our Screen Positive Rates (SPRs) and accuracy rates. SPRs are calculated by dividing the number of patients with Down syndrome by the number of patients in that sample test. This project breaks down the demographic data of two samples (2007-2010 and 2010 to present) received from the MSU Clinical Genetics Laboratory by the variables: age range, weight, ethnicity, IVF pregnancies, and diabetic status from two data sets. We compare the SPRs for each variable to see if any specific breakdown of a variable has a significant correlation to the detection of Down syndrome. Then, a comparison of the SPRs from the previous and current data sets was conducted, to display the improvement for the new cut-off value. The Quadruple and Serum Integrated tests improved from the previous to the current cut-off values. Other than age, no other

variable chosen has shown a correlation with Down syndrome. By improving the cut-off values, two of the three tests produced an enhanced SPR and accuracy rate.

P101
Conserved Genetic Homologies for the Ubiquitin Proteolytic Pathway in Vertebrate Model Organisms

Renee' Smith (Sophomore)
Dr. Eugene Mesco (Savannah State University)

Previous work has identified over 800 gene sequences that share identical sequence homologies in over 100 genes related to the Ubiquitin Proteolytic Pathway (UPP). These genes were identified from the mouse and human genome libraries and the genome bank at the National Library of Medicine and searched with the BLAST program. The current work will extract the 25-base sequences present in these conserved homologous regions and search for conserved sequences in other model organisms available on the GeneBank database available at the National Center for Biotechnology Information (NCBI). The other species examined were the zebrafish Danio rerio and the rat (Rattus norvegicus). 25 of the genes were found to have homologous genes in these other species, in comparison to the human and mouse library. 64% of genes within the rat have identical 25-base homologies when compared to the human and mouse libraries, while 36% of genes examined in the zebra fish have a 1oo% correlation with the sequence homologies. The remainder of the genes examined had been 80 and 99% sequence homologies. These are being examined for inclusion into a DNA microarray construction which will include 25 base sequences taken form these different genes. The microarray will be used to look for gene expression in various vertebrate model organisms of this targeted gene population.

P102
Novel Synthesis, Sulfonation and Metallation Reactions of Meso-Tetrakis (4-hydroxy-3-methoxyphenyl) Porphyrin

Chelsey Snell (Sophomore)
Dr. Adegboye Adeyemo (Savannah State University)

According to previous research conducted by scientist, there is already a form of treatment for cancerous tumors. However, our job is to find other ways in which this cure can be water soluble. From this information the hypothesis, if Porphyrin made from Vanillin is taken, and react with Sulfuric Acid and Sodium Hydroxide, the compound will then become water soluble, was formed. We have prepared meso-tetrakis (4-hydroxy-3-methoxyphenyl) porphyrin by both the conventional method (1) and microwave method (2). This new porphyrin has been prepared by reacting 4-hydroxy-3-methoxybenzaldehyde and pyrole (1:1 mole ratio) in reflexing propionic acid for one hour. The dried crude product was dissolved in acetone and then passed through alumina column. Complete evaporation of the eluent afforded the pure Porphyrin. Acetone solution of this porphyrin shows absorbance maxima at 423, 517, 555, 595, and 651 nm. The water-soluble derivative was prepared by dissolving the parent Porphyrin in concentrated sulfuric acid followed by neutralization with 6M sodium hydroxide. The metal complexes were prepared by the addition of metal salt into the water solution of the porphyrin followed by shaking. The U-V Visible spectrum of each solution shows a marked difference compared to the freebase. The zinc complexes showed similarities in the absorbance maxima (427, 560, 601 nm), indicating lack of anion dependence. The Copper complex shows absorbance maxima at 418 and 539 nm, while the Silver complex shows absorbance maxima at 430, 544, and 580 nm. The fact that these absorbance maxima are different, suggests the sensitivity and capability of this porphyrin to differentiate various metal ions. The purpose of the research was to find better water soluble porphyrin to be used in photodynamic therapy to cure/treat cancerous tumors. In conclusion, we found the porphyrin to become better water soluble when reacted with various metal complexes.

P103
Characterization Of Human Serum Albumin Interaction With Zinc Phthalocyanine Tetrasulfonic Acid By Circular Dichorism Spectroscopy

Lana Thomas (Junior)
Dr. Cecil Jones (Savannah State University)

A circular dichroism method was developed for monitoring the interaction of the protein, human serum albumin (HSA) with the photosensitizer, zinc phthalocyanine tetrasulfonic acid (ZnPcS4). The primary requirement for binding analysis by this technique is that there must be a change in CD signal accompanying ligand binding. Complexation between the two species causes no discernable changes in the CD spectrum of the protein. However, thermal denaturation of HSA at 80.0 °C resulted in a significant change the CD signal of the protein. As an alternate method, the thermal unfolding of HSA was monitored at 225 nm as the temperature of the sample compartment was increased from 25 to 100.0 °C. The CD signal produced exhibited a sigmoidal transition of the protein with its native conformation shown at low temperatures and its unfolded conformation shown at temperatures above 80.0 °C. The data was fitted to dose-response curve to determine the transition midpoint, Tm of the protein. A shift in Tm toward higher temperatures was expected because energy is needed not only to unfold the protein, but also disrupt the protein-ligand complex formed at room temperature. Binding between the protein and ligand was monitored by a shift in Tm as the protein was titrated with

ZnPcS4. The shift in Tm may be used to calculate a dissociation constant for the protein-ligand complex at Tm. The key calorimetric parameters needed for affinity calculations are the enthalpy change, ΔH and the heat capacity change ΔCp for the interaction.

P105
Evaluation Of Treatment Of Efficiency Of Waste Water Treatment In Savannah

Breon Whitten (Junior)
Dr. Kuppuswamy Jayaraman and Dr. Sivapatham Paramasivam (Savannah State University)

Wastewater treatment is one of the important processes taken care by the waste water treatment plants in cities around the Globe. Research study was initiated in President Street wastewater treatment plant, one of the 4 plants in the city of Savannah, to evaluate the effectiveness of wastewater treatment process. Waste water (influent water) and treated waste water (effluent water) samples were collected every other day (3 times per week for a period of 3 weeks (June 20th through July 14) and tested for acidity / alkalinity by measuring pH, amount of total suspended solids, dissolved oxygen content in the waste water treatment at President Street, Savannah, GA. In addition, other important characteristics of wastewater such as biological oxygen demand (BOD), chemical oxygen demand (COD), electrical conductivity (EC), fecal coli form were measured once in 5 days with the assistance of dedicated laboratory facility located at the President Street Wastewater treatment plant. In addition, additional practice samples were collected in the nearby "Kayton Canal" within the premises of President Street Wastewater treatment plant and tested for some of the parameters normally tested in Laboratory of President Street Wastewater plant. Results of this 3-wk study indicated that all the test results of all the important parameters in treated wastewater (effluent) effectively met safe discharge limit of treated wastewater within environmental water bodies and also to be used as irrigation water for Golf Course in Savannah, GA.

Computer Science Technology

P106
Interactive User Interface (UI) For The Support Of A Virtual

Eric Corbett (Senior), Portia Taylor (CMU), Jessica Hodgins (CMU)
Dr. Takeo Kanade (Carnegie Mellon University)

In this research we discuss the development of an interactive user interface (UI) to provide a quick and cost effective method of labeling exercise video data for classification. Researchers are developing an intelligent home coaching system that will be able to recognize errors in the exercise performances of patients with knee osteoarthritis (OA). In order for the system to be able to detect these errors, it needs to know examples of the types of errors that may occur. The user interface proposed here will allow for easier labeling and viewing of exercise data. This tool will be used by physical therapists to give subjective assessments of the quality of the exercises performed by patients. This data will then be used to train a system to recognize any errors in the exercise performance.

P107
Health Disparities Database in Chatham County

Fredrick J. Smith (Senior)
Dr. Deden Rukmana (Savannah State University)

PURPOSE: The purpose of this project was to make the data uncovered by Research Infrastructure in Minority Institutions (RIMI) Interns and the respected faculty mentors easily accessible to the public through the design, construction, and publication of a website committed to their findings. The RIMI interns and faculty researched various diseases such as: stroke, colon cancer, heart disease, lung cancer, and many more. The interns analyzed the mortality, morbidity, and emergency room visits associated with each of these diseases in the Chatham County area. This is vital information that could be used to better understand these diseases and a database to access this information is essential.
DESIGN METHODS: The website will serve as a database that will actively update and convey the data submitted from the ongoing research endeavors of the RIMI students and faculty. With accuracy and the ability to easily understand the data being presented the data being presented to the public being the focal point of this project, the website will utilize graphs, charts, and diagrams with descriptive text to allow the optimum number of visitors to follow the important information displayed on the site without impedance.
RESULTS/EXPECTED RESULTS: Once published, the website is expected to be an effective database for accessing all information gained by RIMI interns and faculty during their respective research projects. The website will successfully distribute vital information to all that access the database.

P104
The Role of Mobile Devices in Cloud Computing

DeAngelo Williams (Sophomore) and Faheem Muhammad (Sophomore)
Prof. Ijaz A. Awan (Savannah State University)

The purpose of this research is to make a comparative study of

all developing mobile devices keeping in mind their compatibility and usage of cloud computing. Cloud computing refers to the logical computational resources (data, software) accessible via a computer network, rather than from a local computer. Cloud computing is a model for enabling convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction. The Cloud computing takes away the installation and upgrades hassles and need for higher computing power from users and gives more control to the service providers on administration of the services. Cloud computing utilizes the network as a means to connect the user to resources that are based in the cloud, as opposed to actually possessing them. A wave of new technologies such as cloud computing is shuffling the industry's leaders, elevating the likes of Apple, Amazon and Google while forcing once-dominant companies such as Microsoft and Dell to reinvent themselves to keep up. Smart phones and tablets have given rise to a new consumer demand for immediate information at our fingertips. With smart phones and tablets on the rise, cloud services have changed to allow access from any device connected to the Internet, allowing mobile workers access on-the-go, as in telecommuting, and extending the reach of business services provided by outsourcing it. App developers are becoming increasingly frustrated with the limited reach and growing cost of launching and maintaining mobile apps. Smartphone apps are typically custom built for particular Smartphone platforms in advanced programming languages, limiting the available pool of developers and driving up costs. Increasingly, the answer to these problems is coming from the cloud in the form of web based driven applications that perform one task known as web widgets being another form of on-screen tools.

Based on our research in this field we will see:

- The development of tablets and its evolution
- With tablets growing in sales, which tablet is the best buy?
- Emerging of different Operating Systems and its impact on growth of technology
- What kind of mobile devices will be the best and worst markets for widgets?
- Native apps vs. widgets -- how important will widgets be over the next five years?
- Touch screen technology as an intuitive way to navigate our devices

Engineering, Mathematics and Physics

P108
Development Health Disparities Database For Chatham County And Georgia

Tyquan Burney (Senior)
Dr. Deden Rukmana (Savannah State University)

The goal of the preset study is to retrieve three measures from the Online Analytical Statistical Information System (OASIS), including morbidity, mortality and Emergency Room Visits. OASIS is a suite of tools used to access the Georgia Department of Public Health standardized health data. The idea is to improve our understanding of health disparity by identifying diseases that qualify as health disparities. Although there are many diseases pertaining to health disparities, this study will only focus on the following 10 diseases: lung cancer, colon cancer, prostate cancer, respiratory disease, obstructive heart disease, major cardiovascular disease, diabetes, HIV, stroke, and high blood pressure. These diseases were chosen based on suggestions made from the Community Advisory Board of RIMI. To accomplish these goals, the present research will use Excel worksheets and Power Points to organize the data and charts of the diseases listed above by groups of different age, race, and gender. Accordingly, this study will consult the databases of Chatham County and Georgia, from 2002-2008, to identify and document the above health disparities. Two general conclusions of the present research are that: (1) men are more likely to have a stroke than women, and (2) strokes happen more in white people than compared to black people. Some other findings are that lung cancer is more present in men than in women, and that white people compared to black people are more likely to be diagnosed with lung cancer. Also by comparing groups of different ages, the present research was able to conclude that High Blood Pressure becomes more present as people get older. Future direction of this research will be to analyze other Health Disparities comparing groups of men and women (blacks and whites) of different ages.

P109
Solving Cubic Equations Using Direct Factoring in Complex Field

Nichelle Carrington (Junior)
Dr. Shinemin Lin (Savannah State University)

Cardan's Method is not easily understood by undergraduate students. In this research project, we developed a method that students can understand without advanced mathematics. The method we developed only need to use the skills of factoring polynomials in complex field and finding cubic roots of a complex number.

The procedures we developed are as follows:

1. Write cubic equation in the form of A3 + B3 + C3 – 3ABC = 0, where A is a function of x, B and C are complex numbers.
2. Solve the quadratic equation Z2 – (B3 + C3)Z + B3 C3 = 0, which gives B and C.
3. Factor equation of (1) into (A + B + C)(A + Bw + Cw2)(A + Bw2+Cw) = 0, where w is a complex root of 1.

P110
A Sinusoidal Temperature Model for Major Cities in Georgia

Jessica Foster (Sophomore) and Megan Bridges (Transfer)
Dr. Samuel Dolo (Savannah State University)

One of the periodic natural phenomena in life is temperature patterns. Given the significant positive and negative impacts of temperature patterns on lives and livestock throughout Georgia, there is a need to formulate a mathematical model that would describe maximum and minimum temperature through a yearly cycle of the major cities in Georgia. A mathematical model based on periodicity called a sinusoidal temperature model has been formulated to describe and estimate the maximum and minimum temperature characteristics for the major cities in Georgia. Since weather temperature is a complex phenomena that is periodic in nature, we base our model on the periodic functions of sine. A sinusoidal function is a function which can be expressed in the form:

$$y = D + Asin(Bx + C)$$

where the parameters *A, B , C* and *D* are constants. The four parameters in the sinusoidal temperature model that are used to predict or estimate temperature patterns are based on a thirty-year monthly means of the maximum and minimum temperature of cities in Georgia obtained from weather.com and almanac.com/weather/history/GA. The basis for the calculation of the parameters for the model is the thirty-year monthly means of maximum and minimum temperature of each of the major cities included in the study. We believe that the thirty-year means will provide us with the necessary sample size to obtain a historical base for comparison of a given year's temperatures, and the model parameters for each city will provide a quantitative way of comparing temperature patterns among the cities. A scatter plot of the data for each of the cities clearly revealed a sinusoidal pattern. The model shows a high level of accuracy in predicting maximum and minimum temperature for major cities in Georgia. Furthermore, the data indicate that the major cities in Georgia have (almost) identical temperature patterns. The standard deviation (which is used as a measure of accuracy of the temperature model) for the maximum temperatures and the minimum temperatures, ranged from 11.59 to 13.05 degrees Fahrenheit, and 13.50 to 14.94 degrees Fahrenheit respectively.

P111
Development Of Funny Flash Math Games: Evaluation Of Trigonometric Functions At The Special Angles

Ashley Morris (Sophomore)
Dr. Hyounkyun Oh (Savannah State University)

The nation-wide FWD (Fail-Withdrawal-D grades) rates were marked inordinately high showing up in the 40-60 percent range. It has been stated on numerous occasions that this deficit is due to students' insufficient high school preparation, lack of reflection of students' needs, change of students' attitude, and other environmental, social, or mental factors. The most serious problem is students' lack of interest in the traditional learning environment. On the other hand, students show great interests in new games and they grasp their concepts rather quickly. With this reasoning this project contributes to the development of new learning tools which attract the students' interest through the creation of a Math Online Flash Games. The use of the advantages present within web based modern computer technology will allow a funny flash game and mathematics concepts to co-exist. In particular, the project primarily focuses on the evaluation of trigonometric functions at special angles which is one of most difficult topics that students are always confused on. It consists of three building blocks: an explanation of a formula through the flash movie that can be used to evaluate the trigonometric functions at the special angles, a matching card game with function-and-value cards, and a speed game to confirm the students' evaluation skills. The gamed keep its unique, fun nature, but stimulate students to become involved in pre-studying or practice. Although these learning materials are not currently examined in some classes, one expects that they help students enhance their math knowledge and so to be successful methodologies.

P112
Using Random Walk To Find A General Equation For Stationary Probabilities

Kwasi Platt (Junior)
Dr. Sujin Kim (Savannah State University)

Most phenomena in our nature don't have formulated functions in a closed form. Instead, there are differential equations with certain common properties, which can explain natural phenomena. Any arbitrary nth order equation can be transformed into a system of n first order equations, , , and solutions of this system of equations can be considered as a set of n dimensional parametric equations. For a given time, these n dimensional parametric equations give n coordinate values, at arbitrary time and it can be viewed as one point, in the space. These values are changing generally as time is changing. The collection of these points corresponding to the given time forms a curve, which is called a trajectory. In this research, is jumping to a randomly chosen point which can be interpreted as a random walk on a trajectory when we divide the given time into finite n sub-intervals, therefore a stationary distribution could be found for the random walk on a trajectory in 3 by 3 and also could be extended to n by n.

P113
Electronic Name Tag

Marquese Pollard (Sophomore)
Dr. Mohamad Mustafa and Dr. Asad Yousuf (Savannah State University)

The purpose of this research is to introduce the undergraduate student to the basic concept of programming, microcontrollers and there real life applications. The purpose of this project is to develop a prototype electronic name tag (ENT). With the development the ENT we can help the world become more environmental friendly one step at a time. This project focuses on creating an ENT that can be used for conferences, visitors' badges etc. There are thousands of conferences across the country annually, and many (if not all) of them use paper name tags with plastic covers and metal clips. The problem occurs once the event is over. The paper that initially served a purpose now goes to waste in a land fill. Now with this concept we can reduce this waste and help save the environment by saving trees in the process. The ENT starts with a microcontroller the brains of the operation, which is an electronic integrated circuit with built in processor memory and peripherals and is also reprogrammable. The microcontroller is first programmed using the Basic Stamp Editor program. This program will allow the microcontroller to communicate with the liquid crystal display (LCD) to display the necessary information for the name tag. Once the microcontroller and LCD are communicating, the electronic equipment is housed in a case. First measurements are taken on the electronic equipment. Then the case is designed on the Autodesk program Inventor 3D. After the design is complete, the manufacturing process (rapid prototyping) will be next. Files must be formatted in sterolithographhy (STL) to be compatible with the printer software (Catalyst EX) for rapid prototyping. The Dimension SST 1200es (3D printer) was used to create the three dimensional physical model to test the design of the case. The case is made from a durable acrylonitrile butadiene styrene (ABS) plastic. Once the parts have been manufactured, they are then assembled then you have your ENT. It is expected that this concept will save money in the long run since the ENTs' can be reused.

P114
Calculation Of Centroids And Center Of Mass Using MATLAB

Megan Price (Sophomore)
Dr. Spyros Andreou (Savannah State University)

The centroid or a center of gravity of any object is the point within that object from which the force of gravity appears to act. It is important for building bridges, dams and roofs of buildings, which can be semi-elliptical or semi-circular. Let the coordinates of the centroid be $\bar{x}$ and $\bar{y}$ in x, y direction. The calculation of these coordinates is done by mathematical integration given by the formulas $\bar{x} = \frac{\int xdA}{A}$ and where $\bar{y} = \frac{\int ydA}{A}$ A is the area of the object. In this project we will utilize MATLAB with its symbolic toolbox to do this mathematical integration for areas such as quarter and semicircular area, quarter and semielliptical area, parabolic spandrel and semi-parabolic area. In the beginning of this project a simple calculation is demonstrated without using the software.

P115
List Decoding Algorithms For Reeds-Solomon Codes

Kahntinetta Pr'out (Senior), Itelhomme Fene, Marlene Gonzalez and Jessica Johnson (ULL)
Dr. Christina Eubanks-Turner (University of Louisiana at Lafayette)

Error detection and correction codes are frequently used for reliable delivery of digital data over unreliable communication channels. The focus of this paper is on the Reed-Solomon (RS) error correcting codes and certain decoding algorithms associated with these codes. In this paper we will provide an introduction to some aspects of coding theory. Then we will investigate the Madhu Sudan list decoding algorithm for Reed-Solomon codes with relevant examples.

P116
Microcontact Printing And Electrical Actuation Of Thrombin-Aptamer Molecule

Therin Young (Senior) and Xiao Ma (Iowa State University)
Dr. Pranav Shrotriya (Iowa State University)

The purpose of my research was to use microcontact printing to print thrombin-aptamer complexes onto a gold surface and actuate the complexes with specified potentials using a potentiostat. What scientists know is that by introducing a negative or positive charge to a DNA inhibited system, the DNA molecules will either stand up in the event of a negative potential being applied or lie down in the event of a positive potential being applied. My motivation for this experiment is the fact that it can be of great use in the medical fields. Every day, patients are diagnosed with illnesses that occur because of biological problems, and advances are being made to ultimately find a cure for these illnesses. Our experimenting introduces a potential method for controlling the amount of fibrin that is produced in the human blood stream. Fibrin is the substance that causes blood clots if too much of it is present in the blood,

and thrombin protein is the catalyst that helps to produce it. By applying specified potentials to the microcontact printed thrombin-aptamer complexes, we hope to be able to control the binding and breaking of this complex. Because we used height changes for our data analysis, expensive evaluation methods such as fluorescent labeling were not required. The results we obtained from our experimenting are big steps towards building a respected experimental practice.

Marine Science

Undergraduate Abstracts

P117
Wildlife Refuges In Georgia

Wilbert Adams (Junior)
Dr. Tara Cox (Savannah State University)

PURPOSE: The importance of this research is to give information that people need so that they can help conserve the wildlife populations and habitats, to investigate how many wildlife habitats are in the state of Georgia, and to show how much of the state's land in acres are being protected, and to acquire knowledge of what habitats are being represented in these refuges.
DESIGN METHODS: I obtained wildlife refuge data from Georgia Data Clearinghouse and U.S. Fish and Wildlife and mapped it in ArcGIS.
RESULTS/EXPECTED RESULTS: Georgia has a total of eight wildlife refuges. These refuges range in area from 2,500 acres to 360,000 acres. The habitats that are included between these refuges include marsh, open water, cypress swamp, open fresh water or marsh, regularly salt marsh, maritime forest, sandy beach, mixed bottomwood-pines, bottomland hardwoods, tupelo gum swamp forests, creeks, and more.
DISCUSSION/CONCLUSION: This analysis will help inform the public about Georgia Wildlife. Georgia has more wildlife refuges than I thought. After seeing this information, more people that want to get involved in the wildlife field will have a better opportunity to work in their specified area.

P118
A 100 Year Record Of Glacier Retreat In North America

Jordan Allen (Senior)
Dr. David M. Anderson (NOAA's National Climatic Data Center Paleoclimatology Branch)

Glaciers grow and shrink in response to changes in snowfall and air temperature, two atmospheric phenomena strongly impacted by global warming. We hypothesize that glaciers decreased in length over the last 100 years across in western North America where the rate of warming is twice the rate at lower latitudes. Glacier length records were obtained by measuring and comparing the lengths of eight glaciers on maps made in1957 with aerial photographs on Google Earth dating from 2005. Length measurements showed uncertainty of 50-200m. We also analyzed time-series photographs of 46 North American glaciers from the U.S. Geological Survey, and the Glaciers of the American West Project to determine a change in glaciers prior to the monitoring interval that began in the 1950s. Repeat photography photos showed a change in glaciers between 1900-2005, notably revealing retreat prior to the monitoring interval. We conclude from the photo and length data that all glaciers examined are retreating across Alaska as well as the contiguous United States.

P119
Seasonal Changes In The Anatomy And Morphology Of Spartina Alterniflora

Tiffany Bostick (Senior)
Dr. Chandra Franklin (Savannah State University)

Smooth cord grass, *Spartina alterniflora*, is the dominant primary producer in salt marshes around eastern and gulf coasts of the United States. It accounts for approximately 90% of biomass production on southeastern coasts and it plays a critical role in the salt marsh ecosystem. An on-going study in the Marsh Vegetation Research Laboratory at Savannah State University is focused on documenting the periodic changes in plant morphology and rhizome anatomy of *S. alterniflora* in response to seasonal changes in the physical parameters of salt marsh habitat on a monthly basis. The objective of this project was to conduct the ongoing study for a period of three months (May-July, 2011). Data on physical and biological parameters were collected from two salt marsh sites in Savannah, Georgia. Results from this project and that of the long-term study indicate that carbohydrate is stored in the form of starch grains in the rhizome during late fall and is broken down for energy needed to support new growth during early spring and throughout the summer . In this report, correlations between changes in physical parameters and morphological as well as anatomical characteristics in response to seasonal changes are discussed. In addition, the phytochrome-mediated physiological mechanism that controls changes in plant characteristics in response to changes in the season is discussed. This work was funded by the NSF EDGE Program at SSU (GEO-0914680).

P120
Distribution of Strandings Bottlenose Dolpihns

James Briscoe (Senior)

Dr. Tara Cox (Savannah State University)

PROBLEM: The common bottlenose dolphin Tursiops truncatus are the most known in the family Delphinidae. Males are normally bigger and heavier than females. The objective of this is study is to find a difference in the distribution of bottlenose dolphins stranding between males and females from 2004-2008. My hypothesis is that females will be more spread out over the entire coast and the males will be in clusters.
DESIGN METHODS: I will be using ArcGIS to plot the data then analyze the times and dates of each stranding to find any trends in the distribution of strandings.
RESULTS/EXPECTED RESULTS: I expect the females to be more spread out across the South Carolina and Georgia borders and the male strandings to be more clustered on the South Carolina and Georgia borders.
DISCUSSION/CONCLUSION: This will help us better understand the ecology of the common bottlenose dolphins.

P121
Sea Ice index

Myron Daniels (Junior)
Dr. Tara Cox (Savannah State University)

PURPOSE: Sea ice covers about 25 million square kilometers of the Earth. Sea ice melts due to warming climates, leading to sea level rising. My purpose is to show sea ice index trends over the past 30 years.
DESIGN METHOD: I will map sea ice data obtained from the National Snow & Ice Data Center (NSIDC) in ArcGIS.
Results: I expect to show sea ice trends for over the past 30 years and also show how the melting of sea ice could affect Savannah, Georgia since it is a coastal city.
CONCLUSION: The sea ice displays a consistent trend in which it has been melting and as a result could lead to sea level rising and affecting coastal cities such as Savannah, Georgia.

P122
Lower Diatom Diversity In Phosphate-Rich Coastal Waters

Nateja Diaz (Junior), Brandon Coleman (Freshman)
Dr. Carol Pride (Savannah State University)

PURPOSE: Diatoms are a type of algal phytoplankton that can be used as potential bio-indicators of natural ecosystem change and anthropogenic influences. The objective of this study was to characterize diatom distribution and abundance in the waterways along the southeastern Georgia coast.
DESIGN METHODS: On May 25, 2010, water samples were collected aboard the R/V Savannah on a cruise path going south along the Intracoastal Waterway. Samples from the sounds were filtered through a 120 µm mesh plankton net. Diatoms were identified at 200X magnification. Phosphate concentrations were analyzed spectrophotometrically using molybdate blue complex determinations.
RESULTS: Phosphate concentrations decreased and diatom diversity increased southward along the GA coast. In Vernon River, near Savannah, phosphate concentration exceeded 2.6 µM and Skeletonema represented 70.1 % of the community. In contrast, Chaetoceros dominated the sample from Doboy Sound where the phosphate concentration was 1.5 µM. There were 5-16 genera present in each sample. The Shannon-Wiener index was highest (2.1) in Altamaha Sound. Skeletonema was present in all samples and, overall, was the dominant genus. Chaetoceros increased in relative abundance down the coast, representing less than 1 % of the community in the Ogeechee River and more than 35% of the community in Doboy Sound.
DISSCUSSION: The lower phosphate concentrations found southward along the GA coast may be the result of lower human population densities. It is common for phytoplankton communities to be more diverse in low-nutrient regimes than when nutrients are readily available. A similar trend was observed in GA waterways.
GRANT SUPPORT: NSF EDGE Program at SSU, GEO-0914680.

P123
Population change near Florida shoreline due to erosion

Mickolas Dudley (Senior)
Dr. Tara Cox (Savannah State University)

PURPOSE: The purpose is to show that shoreline erosion has caused some population near the Florida shoreline to decrease in certain areas and increase in others parts of Florida over a 40 year span.
DESIGN METHODS: The first procedure is to collect the population data from the US Census of Florida from 1980 to 2010 and pinpoint population growth over a 40 year time frame. An aerial photograph of Florida coastline shows the deterioration of popular beaches from 1980 to 2010. ArcGIS was used to layer the shoreline decreasing and population at certain time frames.
RESULTS/EXPECTED RESULTS: One of the most interesting findings was that the shorelines of a region that was affected the most were the southern coastline of Florida. Population will greatly decrease in the southern Florida coastline as time goes on with the erosion gradually increasing and can possibly change the geography of Florida itself.
DISCUSSION/CONCLUSION: The results show that if nothing is used to combat the effect of shoreline erosion that population will gradually decrease from data shown and it's possible To project the future population with the trends of 1980 to 2010.

P124
Effects Of Dredging On The Savannah River

Aaron Huls (Sophomore)
Dr. Carol Pride (Savannah State University)

PURPOSE: The Savannah River is home to one of the busiest ports on the east coast of the United States. In addition to the shipping traffic the banks of the river are heavily industrialized. Tritium, Cesium, and Strontium among other heavy metals have been detected in the water and sediments of the Savannah River. With the proposed deepening of the Savannah River sediments may be resuspended along with heavy metals trapped by them. If large enough amounts of these metals are suspended into the estuaries it can have damaging effects on the ecosystem.
DESIGN METHODS: Sediment samples were collected using a grab sampler during a research cruise along the Savannah River on the R/V Savannah. The samples were then sieved and analyzed. The latitude and longitude at each station was recorded. Data were mapped using Arc GIS and analyzed for spatial trends.
EXPECTED RESULTS: The expectation is that sections of the river near the port and downtown Savannah will have a majority of fine mud and sand on the bottom. I expect that toward the mouth of the river the bottom will have a majority of fine to coarse sand.
DISCUSSION: The areas of the Savannah River that are expected to have finer sediments are directly in the path of the proposed deepening of the harbor. Before dredging begins, the areas that are mapped out should be further examined to see if they contain heavy metals.

P125
Dissolved Oxygen And Chlorophyll Profiles In The Savannah River Estuary

JeWarren James (Senior)
Dr. Carol Pride (Savannah State University)

PURPOSE: The purpose of this study was to observe seasonal variability in water column dissolved oxygen (DO) and chlorophyll concentrations in the dredged Savannah River estuary.
DESIGN METHODS: Water column profiles were produced bi-monthly using a DO meter mounted to a CTD aboard the R/V Savannah during 2010. Measurements were taken at approximately 5 PSU intervals moving upstream starting near the river mouth.
RESULTS: Surface DO concentrations increased from 6.2 to 7.5 mg/L upriver in August and from 8.9 to 10.4 mg/L upriver in December. In general, DO concentrations decreased with depth in parallel with increases in salinity. The month of highest average oxygen saturation (91%) was February, when average surface chlorophyll concentrations were relatively low (7.15 mg/m3). The mean DO concentrations for the bottom 3 m of the water column in August ranged from 2.8-5.8 mg/L among the sampled stations, revealing concentrations low enough to be of concern. Mean DO concentrations for the bottom water were higher at all stations (8.3-8.9 mg/L) in December.
DISCUSSION: The status of the Savannah River has been a major concern due to its economic and recreational use. There is currently concern that further deepening of this harbor will diminish bottom water oxygen and alter the ecosystem. Bottom water oxygen concentrations dropped to low values seasonally in 2010 suggesting that further monitoring is needed.
GRANT SUPPORT: EDGE Program (NSF grant # 0914680)

P126
Comparative Study of Finfish Community Structure in Coastal Georgia Using Trawl Sampling

Jav'ar Henry (Senior)
Dr. Mary Carla Curran (Savannah State University)

PURPOSE: Trawling is a fishing technique employed for commercial fisheries where a variety of non-targeted species are harvested called "by-catch." Savannah State University (SSU) conducted combined research and education cruises to begin a long-term study of fish diversity and abundance trends along the coast of Georgia from September 10, 2009 to December 9, 2011.
DESIGN METHODS: Sixteen trawls were conducted for 15 minutes using a trawl that had 0.89 m stretch mesh, 0.89 m opening, and 0.38 m head to cod end length yielding 45 different fish species and 5,178 individuals.
Results: Five species of the Scianenidae family composed 79% of the catch. The five fish are Atlantic croaker (*Micropogonias undulatus*), weakfish (*Cynoscion regalis*), star drum (*Stellifer lanceolatus*), spot (*Leiostomus xanthurus*), and southern kingfish (*Menticirrhus americanus*).
DISCUSSION: These results were compared to those of the Georgia Department of Natural Resources (GADNR), Coastal Resources Division (CRD) in a multiple fishery-dependent and independent sampling efforts between April 1, 2005-May 31, 2008. The GADNR results yielded 44 different species and 849,645 individuals out of 1,631 trawls. The same five species of the Scianenidae family composed 78% of the catch. The results from the sampling efforts by SSU are sufficiently similar to that of the GADNR, which support that the Scianenidae family dominate the finfish communities of the Georgia coast.
GRANT SUPPORT: This project was funded by the Enhancing Diversity in Geosciences program (EDGE) under the National Science Foundation (NSF) at SSU.

P127
Distribution and Abundance of Flatfishes in Wylly Creek, Georgia

Robert Kiser (Senior)
Dr. Mary Carla Curran (Savannah State University)

PURPOSE: Several species of flatfishes use estuarine creeks as nurseries in coastal Georgia. Temperature and seasonal changes may play crucial roles in the selection of these habitats. The purpose of this study was to investigate the use of a shallow estuarine creek by flatfishes to determine whether species composition and abundance varied by season.
DESIGN METHODS: Monthly samples were collected during ebbing tide between January 2004 and February 2011 in Wylly Creek (31°59'52"N, 81°03'18"W), a shallow estuarine creek in Savannah, Georgia. Tows were conducted for 2 minutes at idle speed using a 1 m-wide beam trawl with a 3 mm mesh net.
RESULTS: Six species were collected throughout the study: the blackcheek tonguefish *Symphurus plagiusa*, the bay whiff *Citharichthys spilopterus*, the fringed flounder *Etropus crossotus*, the summer flounder *Paralichthys dentatus*, the southern flounder *Paralichthys lethostigma*, and the ocellated flounder *Ancylopsetta quadrocellata*. The most abundant species from 2004-2011 was Symphurus plagiusa (7.15 ± 0.90), which was most abundant during summer (12.75 ± 2.72). *Citharichthys spilopterus* were most abundant during winter when mean size was shortest (14.05 ± 5.58; 16.8 ± 0.4 mm) and least abundant during fall when mean size was longest (0.82 ± 0.46; 81.9 ± 5.3 mm).
DISCUSSION: The major finding of this study was the bay whiff used Wylly Creek as a nursery in early winter while the other species utilized this creek in later juvenile stages. Additional research should be conducted to more clearly ascertain the use of this shallow creek by flatfishes.
GRANT SUPPORT: Funding was provided by NOAA Living Marine Resources Cooperative Science Center (06OAR4810163), NSF Opportunities Enhancing Diversity in Geosciences (0914680), and Georgia Department of Natural Resources Wetlands Cooperative Agreement (CD-96459905-0).

P128
Movement of Cynoscion Nebulosus near Savannah, Georgia

Melissa Knight (Senior)
Dr. Tara Cox (Savannah State University)

PURPOSE: Spotted seatrout, Cynoscion nebulosus, is an inshore gamefish found along the Atlantic and Gulf Coast. The purpose of this study was to determine their movement from their juvenile stage to adulthood. This can allow fisheries to better understand their species-specific numbers and trends in specific areas.
METHODS: Utilizing data collected from Armstrong Atlantic State University of juveniles and data from Savannah State University of caught adult fish, maps were created in ArcGIS to investigate C. nebulosus movement in Moon River and Wassaw Sound.
RESULTS: C. nebulosus spawned from May through September with a peak in late August. Comparison of locations between juveniles and adults suggested that C. nebuslosus congregated heavily in Wassaw Sound during the spawning months and moved farther inshore during the winter months.
DISCUSSION: Spotted seatrout cannot tolerate water temperatures under 4.44 ° Celsius. Their movements farther into river habitats and away from the sounds are for protection against colder waters.

P129
Spatial distributions of the bottlenose dolphin Tursiops truncatus along the Georgia and South Carolina coast

Michael M. Knowles (Senior)
Dr. Tara Cox (Savannah State University)

PURPOSE: The purpose of this study was to determine the spatial distributions of strandings of the dolphins between different size classes along the Georgia and South Carolina coast.
DESIGN METHODS: Data were collected from dead dolphins by members of the National Marine Mammal Stranding Network. We mapped the locations of the strandings in Arc GIS by using the projection of Universal Transverse Mercator (UTM) Zone 17.
EXPECTED RESULTS: We anticipate that the spatial distibution of the three size classes (adult, juvenile, neonate) will not be different; however the temporal conditions may be.
DISCUSSION/CONCLUSION: The findings of this study will help us have an understanding of the spatial and temporal distributions of the dolphins along the Georgia and South Carolina coast.

P130
Distribution of the Common Bottlenose Dolphin (*Tursiops truncatus*) in the Savannah River; Savannah, Georgia

Lance L. Love (Junior)
Dr. Tara Cox (Savannah State University)

Savannah, Georgia, is one of the many natural habitats for bottlenose dolphins (*Tursiops truncatus*). Most of these dolphins inhabit oceanic waters and are found in groups that range from 2 to greater than 100 members. Yet there are a few coastal groups that do venture into the Savannah River. We hypothesized that average group size would decrease with distance up the river. Nine survey transects of the Savannah River were conducted on the R/V Savannah between August 2009 and October 2010. During these surveys 130 dolphin sightings were recorded and

photographed. Variation was too high to determine any real statistical significance with reasonable power; however, there appeared to be a trend of smaller groups farther up the river. In the river mouth there was a wide range of group size (1-22 dolphins per group), compared to groups sighted further in the river (1-6 dolphins per group). The Georgia Port Authority has proposed that the Savannah River be dredged, increasing its average depth from 42 ft to 48 ft. This ecological change may affect the chemical conditions of the river, potentially leading to changes in the biological aspects of the river, such as dolphin distribution. We plan to continue our systematic surveys of the Savannah River to increase our sample size and investigate whether differences in group size are significant. In addition, we plan to incorporate additional data taken on our survey transects (e.g., temperature, salinity, water chemistry, plankton tows) in future analyses to achieve a better understanding of the distribution of bottlenose dolphins in the Savannah River.

P131
Distribution of sailfish Istiophorus albicans throughout coastal Florida

James E. McCullars (Senior)
Andrew Cox (The Billfish Foundation), Dr. Tara Cox (Savannah State University)

PURPOSE: The Atlantic sailfish Istiophorus albicans have little significance in commercial fisheries, but are highly prized by game fishermen. In Florida, sailfish play an important role in the coastal economy. The purpose of this study was to determine the distribution of the Atlantic sailfish along the Florida coast in spatial relationship to bathymetry, currents, and fronts.
DESIGN METHODS: Tag and release data from The Billfish Foundation were plotted using ArcGIS 9.3.
RESULTS: A majority of Atlantic sailfish captures occurred along the continental shelf break. We predict there will be no spatial relationship with the Gulf Stream, but sailfish captures will be related to distance from fronts.
DISCUSSION: The low number of captures that occurred outside the continental shelf could be due to the lack of sport fisheries traveling past the shelf break. These findings could be applied to ecological studies and conservation efforts of the Atlantic Sailfish.

P132
The Slums of The North And South

Anthony Nzegwui (Junior)
Dr. Tara Cox (Savannah State University)

PURPOSE: The Purpose of this experiment is to distinguish and identify the differences in lower class living standards in southern and northern parts of the United States.
DESIGN METHODS: Information from the Census was gathered and used to structure map illustrations that showed the widespread amounts of slums in states in the northern and southern parts of the US.
Results/Expected Results: Constructing this project I set out to find information that would explain or give me an understanding of the impact poverty has on different regions of the US or at least the correlation of employment between the south and north.
Discussion/Conclusion: The information that was gathered and used gives an insight on the circumstances between the southern and northern poverty situation. There could be a possible reason for the employment rate and poverty rate problems between the north and south.

P133
Zooplankton Abundance and Distribution in the Savannah River Estuary and the Adjacent Coastal Shelf

Amarria Phillips (Senior)
Dr. Matthew Ogburn (Savannah State University)

Zooplanktons are important components of estuarine and coastal food webs. The purpose of this study was to examine zooplankton density in the Savannah River estuary and coastal waters of the South Atlantic Bight with respect to salinity, the diel cycle and season. Plankton samples were collected at 13 stations using a 280 µm mesh bongo net and preserved in 70% ethanol. Salinity ranged from 5 in the river to 35 PSU in the ocean. Zooplankton were identified and counted using a dissecting microscope. Of the taxa observed, shrimp and mysids (reported here as a group), chaetognaths, crab megalopae, crab zoea, and the Luciferid shrimp Lucifer faxoni were the five most abundant taxa. The highest densities were abundant at night. Most other taxa were relatively more abundant at night, suggesting that they undergo diel vertical migration. Copepod densities were highest in July (19,600 m3) and lowest in February (900 m3). This work was funded by the NSF EDGE Program at SSU (GEO-0914680).

P134
Spatial Variation in the Predominant Behavior of Common Bottlenose Dolphins (Tursiops truncatus) in the Estuaries of Savannah, GA

Ana Reyes (Senior)
Dr. Tara Cox (Savannah State University), Kate Doyle (Savannah State University), Carolyn Kovacs (Savannah State University), Robin Perrtree (Savannah State University), Sabrina Bowen-Stevens (NOAA Southeast Fisheries Science Center)

PURPOSE: Understanding ecology demands the knowledge of how animals use their habitats on a fine spatial scale. Thus, we conducted boat-based surveys in the waters around Savannah, Georgia to document spatial trends in activities of common bottlenose dolphins (Tursiops truncatus).
DESIGN METHODS: Dolphin behavior was recorded in the field and then mapped using ArcGIS 9.3. Dolphins were observed in 462 sightings on 91 days in the summers of 2009 and 2010.
RESULTS: Travel was the predominant behavior for 63.2% (n=292) of the sightings. "Unknown" activities were predominant for 22.5% (n=104) of the sightings, primarily "non-directional movement," which is movement that cannot be identified as any of the other behaviors. "Probable feeding" and "feeding" behaviors combined were observed as the predominant activity in 7.1% (n=33) of the sightings. Social, with boat, and rest behavioral states were the predominant behaviors in less than 5% of the sightings each. Traveling was found evenly spread throughout Savannah area estuaries. There were behaviors found dispersed all over the study area while other behaviors seemed to have avoided certain areas.
DISCUSSION/CONCLUSION: No correlation was found between the behaviors and the environmental factors studied. More detailed analyses will be conducted to understand the locations and associated environmental variables of these behaviors. Understanding spatial variation in dolphin behavior will help managers identify critical habitat for these animals.
GRANT SUPPORT: Photos of dolphins were taken in accordance with the Marine Mammal Protection Act under NMFS Letter of Confirmation # 14219. The research was funded by Living Marine Resources Cooperative Science Center grant awarded to Dr. Dionne Hoskins and the Enhancing Diversity and Geoscience Education fellowship awarded to Dr. Carol Pride (NSF grant # 0914680.)

P135
pH Can Show The Mixing Of The Wilmington And Savannah Rivers

K. Michael Scaboo (Junior)
Dr. Christopher Hintz (Savannah State University)

PURPOSE: The pH of a river normally decreases as the salinity decreases travelling up river. When the pH of the Wilmington River was analyzed, the pH decreased with salinity until the Colston Bluffs area. In this area, the pH began to rise as salinity still decreased. The hypothesis is that this anomaly caused by the influence of the Savannah River at this location and possibly migrates due to tides.
METHODS: Water samples were taken from the Wilmington River roughly every 150-200 meters starting below the Islands Expressway drawbridge to the Savannah River south channel. Sampling was taken during different tidal stages. The pH was analyzed by spectrophotometric processes. ArcGIS was then used to spatially analyze the pH mixing during different tidal stages.
RESULTS: It is expected that the Wilmington and Savannah rivers mix just north of the drawbridge. The mixing zone may migrate depending on tidal conditions.
DISCUSSION: The results are showing that the mixing zone is indeed in the area suggested in the hypothesis. The Savannah River is a dredged river that is maintained and it has been suggested that deepening needs to occur to satisfy the port's demand. The Wilmington River is part of the Intracoastal Waterway (ICW) that is also maintained. This study can be used as a baseline for any major harbor or ICW alterations in the future.
GRANT SUPPORT: Sampling was funded by the NSF EDGE grant secured by Carol Pride, Ph.D. Lab time was funded by NASA/ NSTI for the UNCF-SP secured by Christopher Hintz, Ph.D.

P136
Connecting methmoglobinemia with groundwater in Wisconsin

Sharamie Ware (Senior)
Dr. Tara Cox (Savannah State University)

PURPOSE: The purpose of this study was to establish whether or not there was a connection between the incidents of methemoglobinemia and the groundwater within the state of Wisconsin.
DESIGN METHODS: Shapefiles of groundwater and locations where incidents occurred were mapped in ArcGIS.
RESULTS/EXPECTED RESULTS: Expected results are that locations of methemoglobinemia incidents and groundwater will have a point-source for high nitrate levels.
DISCUSSION/CONCLUSION: Methemoglobinemia occurs in infants that have been exposed to drinking water which contains a higher than normal nitrate concentration and can be fatal because it inhibits red blood cells to carry oxygen to tissues and organs throughout the body.

P137
Mental Healthcare Access Disparities In South Carolina

Mary Beth Wulz (Sophomore)
Dr. Kasim Ortiz (Institute For Partnerships to Eliminate Health Disparities)

PURPOSE: Many residents in South Carolina face challenges in gaining access to metal healthcare providers. These challenges include geographic, income-based, shortages of mental health practitioners and accessibility to mental health facilities. The purpose of the research is to determine the various social-demographic disparities among the counties in South Carolina

with the worst access to mental healthcare.
DESIGN METHODS: Using research data, I mapped out select counties to demonstrate these disparities within areas classified as Mental Health Professional Shortage Areas.
RESULTS: The results of the research showed at least twenty counties face multiple challenges to gain access to Mental Healthcare Providers. One county, with 42.9% of the residents living below the national poverty level had access to only one mental healthcare facility.
DISCUSSION/CONCLUSION: The major results of the study showed that 900,000 residents in at least twenty-five counties were largely underserved by mental healthcare providers. The results will help researchers within the mental healthcare field to have a better understanding of the challenges facing many residents of South Carolina in gaining access to mental healthcare.

Marine Science

Graduate Abstracts

P138
Movement Patterns Of Red Snapper Lutjanus Campechanus

Noelle Hawthorne (Graduate Student)
Dr. Matthew Ogburn (Savannah State University)

PURPOSE: This study aimed to investigate the known diel behavior of red snapper Lutjanus campechanus and determine whether that behavior has a spatial component. Specifically, day, night, and crepuscular detections for all tagged red snapper in the study will be examined for each receiver site over the 3 year period this study has been conducted. Additionally, the daily movements of one red snapper over a period of 2 months are examined.
DESIGN METHODS: The study took place in Gray's Reef National Marine Sanctuary, 40 nautical miles southeast of Savannah, GA. From 2008-2010, 5 red snapper were implanted with acoustic transmitters. At the inception of the project, 22 acoustic receivers were placed throughout the sanctuary to monitor the fish implanted with transmitters. The information detected by the receivers was downloaded about every 3 months, weather permitting.
RESULTS: Red snapper are detected more during the day than at night. One red snapper traveled within the sanctuary for 2 months, not showing preference to any single receiver habitat.
DISCUSSION: Red snapper are thought to have high site fidelity, but the tracking of this one fish shows that they can sometimes also be roving predators without particular preference for an area.
GRANT SUPPORT: NOAA/LMRCSC Grant #NA05OAR4811017

P139
Indication Of Aggression And Behavioral Differences In Tursiops Truncatus Due To Human Interactions

Rebeccah Hazelkorn (Graduate Student)
Dr. Tara Cox (Savannah State University)

PURPOSE: The transmission of an unnatural behavior through cetacean populations has the capability of altering natural behavior patterns and increasing aggression. Interacting with boats and humans are unnatural behaviors that are negatively shifting the behavior patterns of cetaceans. The objective of this study was to look at begging and non-begging dolphins to examine differences in the behavioral pattern and occurrence of rake marks as an indicator of aggression.
DESIGN METHODS: Images from surveys conducted between April and August 2009 were assessed for rake marks (n=40), and focal follows (n=15) were conducted between May and August 2011. Focal follow data was collected by predominant activity and continuous data sampling.
RESULTS: The number of begging dolphins with rake marks present (19/20) was not significantly greater than non-begging dolphins with rake marks present (16/20; df=1; X^2=2.057; p=0.151). However, the number of begging dolphins with over half of their dorsal fin covered in rake marks (0/20) was significantly less than non-begging dolphins with the same dorsal fin coverage by rake marks (4/20; df=1; X^2=4.444; p=0.035). Even though the amount of time spent foraging naturally by begging animals (14%) was half the time spent by non-begging animals (36%), the difference was not significant (t=-1.53, df=13, p=0.07).
DISCUSSION/CONCLUSION: The apparent decrease in natural foraging time by beggars may imply that they are becoming more dependent on provisioned food. Understanding the degree to which these animals change their behavior can help in determining the proper level of management
GRANT SUPPORT: Photographs and data were collected in accordance with the Marine Mammal Protection Act under NMFS Letter of Confirmation #14219 issued to Dr. T. Cox. This research was supported by the Title VII grant awarded to Dr. Mary C. Curran, EDGE fellowship awarded to Dr. Carol Pride, and NOAA LMRCSC grant awarded to Dr. Dionne Hoskins.

P140
Are Common Bottlenose Dolphin (Tursiops Truncatus) Interactions With Shrimp Trawlers Resulting In Social Segregation In Savannah, Georgia?

Carolyn Kovacs (Graduate Student)
Dr. Tara Cox (Savannah State University)

PURPOSE: In Savannah, Georgia, common bottlenose dolphins (Tursiops truncatus) associate with the shrimp fishery during

trawling. We hypothesized, based on other areas of the world, that there would be clear social segregation based on foraging in association with shrimp trawlers.
DESIGN METHODS: We used boat-based surveys in May-August 2009 and 2010 to determine if there was social segregation of dolphins that associate with trawlers and those that do not. Photo-identification was used to distinguish individuals that associated with shrimp trawlers. Community division by modularity was used to determine social clusters for animals seen ≥ 5 times in 2009.
RESULTS: Out of the 7 social clusters identified, 2 were comprised completely trawler dolphins, 3 contained no trawler dolphins, and 2 clusters were mixed. On the first day of the 2010 shrimp season, 97 dolphins were observed associating with shrimp trawlers, 22 (23%) of which had not been previously sighted during surveys.
DISCUSSION: In the estuaries and coastal waters near Savannah, associating with shrimp trawlers did not result in the extreme social segregation seen in other areas of the world. In fact, shrimp trawler associations may result in social integration between estuarine and coastal or offshore stocks, which would be represented by the 22 new dolphins. It is likely that these stocks are mixing at the mouths of estuaries where shrimp trawlers operate. The lack of clear social segregation may be due to the complex stock structure of the dolphins and spatial distribution of trawling, thus encouraging mixing of multiple stocks.
GRANT SUPPORT: I would like to thank the NSF GK12 program for funding.

P141
Comparison of sightings and strandings for bottlenose dolphins on the coast of Charleston, SC

Kevin McKenzie (Graduate Student)
Dr. Tara Cox (Savannah State University)

PURPOSE: Dolphins are long-lived mammals that are susceptible to the same diseases as people. Thus, they serve as sentinels for human health. The purpose of this study is to investigate the relationship between the sighting and stranding locations of common bottlenose dolphins Tursiops truncates.
DESIGN METHODS: Spatial locations for the stranding sites of 72 bottlenose dolphins Tursiops truncatus dolphins in Charleston, SC area were provided by the South Carolina Marine Mammal Stranding Network. For four of those that had stranded a history of sightings on boat-based surveys was provided. Core utilization areas were calculated for these animals using kernel and minimum convex polygon methods in ArcGIS. These core areas were then compared to the stranding locations.
RESULTS/EXPECTED RESULTS: We anticipate that the dolphins stranded in their core areas. Also, we would expect that the home range for these animals will be near anthropogenic outputs, such as areas of high run-off and waste sites.
CONCLUSION: We can shed light on the traits of bottlenose dolphin movement in Charleston, SC. Also, based on the site of dolphin strandings, we can identify "hotspots" for dolphin strandings, and investigate possible anthropogenic cause.

P142
Spatial Chlorophyll Concentrations In The Savannah River Estuary

Brian Christopher Murry (Graduate Student)
Dr. Carol Pride (Savannah State University)

PURPOSE: Phytoplankton are responsible for 84% of the photosynthesis in the South Atlantic Bight continental shelf area. The purpose of this study was to determine downstream variations in chlorophyll concentrations along the Savannah River estuary during flood/ebb tides.
DESIGN METHODS: A cruise along the Savannah River was conducted aboard the R/V Savannah during which 6-9 stations were sampled during October 2009. Stations were determined when the ship stopped at the following approximate salinities: 32, 30, 24, 20, 15, 10, 5, and 2 practical salinity units. The surface chlorophyll concentrations (milligrams per liter, mg/L) were recorded and mapped using ArcMap. Fluorometer measurements of chlorophyll concentrations were made in situ within the upper 3 meters of the water column. The mean chlorophyll concentrations during each cruise were calculated.
RESULTS/EXPECTED RESULTS: The maximum chlorophyll concentration during the ebb tide (26.87 mg/L) occurred at the mouth of the river; however, the chlorophyll concentrations were more spatially uniform during the flood tide. The average chlorophyll concentration during the flood tide (25.72 ± 1.21 mg/L) was greater than that during ebb tide (17.82 ± 1.05 mg/L).
DISCUSSION/CONCLUSION: The results supported the hypothesis that chlorophyll concentrations are greater during the flood tide than during the ebb tide. The spatial trends in phytoplankton warrant further investigation. The results can contribute to the knowledge regarding spatially and tidally influenced phytoplankton growth in a specific estuary.
GRANT SUPPORT: The research was funded by the National Science Foundation Enhancing Diversity in the Geosciences Education program.

P143
Seasonal Densities Of Daggerblade Grass Shrimp Palaemonetes Pugio

Michele B. Sherman (Graduate Student)
Dr. Mary Carla Curran (Savannah State University)

PURPOSE: The daggerblade grass shrimp Palaemonetes pugio is one of the most prevalent macroinvertebrates along the East Coast of the United States and is an integral part of the

estuarine food web. The purpose of this study was to determine the seasonal variation in densities of P. pugio as well as the differences in densities between marsh edge and non-marsh edge in four tidal creeks on the coast of Georgia.
DESIGN METHODS: Shrimp were collected near Savannah, GA at low tide using a dip net and a 1 m3 drop-trap between 2008 and 2011. Sampling locations with relative densities were mapped and projected in GA Stateplane East using ArcMap 10.
RESULTS/EXPECTED RESULTS: Summer densities were greatest at Burnside (449.5±223.1 shrimp/m2) and lowest at Tybee Island (49.3±1.8 shrimp/m2). In contrast, fall densities were highest at Tybee Island (122 shrimp/m2) and lowest at Burnside (21 shrimp/m2). Shrimp densities were higher at the marsh edge (40.3-91.1 shrimp/m2) than in the middle of the marsh (5.5-58.4 shrimp/m2) during both the summer and fall at Country Club Creek and Moon River.
DISCUSSION/CONCLUSION: The greatest numbers of shrimp were found at Burnside and Tybee Island during the summer and fall, respectively. In previous studies it was determined that the prevalence of Probopyrus pandalicola, a parasitic isopod that infects P. pugio, was 3.1% in Country Club Creek and Moon River. Additional studies are currently being conducted to determine if parasite prevalence is greater at Burnside and Tybee Island due to the high abundance of shrimp at those sites.
GRANT SUPPORT: NOAA (LMRCSC) and the Department of Education (Title VII)

P144
An assessment of microbial extracellular polymeric substances (EPS) in coastal Georgia sediments

Crystal A. Smith (Graduate Student)
Dr. Dionne Hoskins (Savannah State University)

PURPOSE: The purposes of this study were to assess the amount of EPS secreted by microbes in sediment samples collected from Williamson Island, Georgia (USA) and Country Club Creek, GA (USA) and to determine how changing environmental conditions may affect EPS composition and abundance.
DESIGN METHODS: Forty samples were collected from subtidal and intertidal sediments on Williamson Island and Country Club Creek. EPS was extracted from the sediment using ethanol precipitation, cleaned via dialysis and then lyophilized. Dried EPS was then weighed and compared by tidal location using an ANOVA. ArcMap 9.3 was used to plot data.
RESULTS/EXPECTED RESULTS: The mean weight of EPS in sediment samples from Williamson Island was (3.18 ± of 2.28mg g-1). The mean weight of EPS in intertidal sediment samples from Williamson Island was higher (3.57 ± 2.28 mg g-1) than the mean weight of EPS in subtidal sediment samples from Williamson Island (3.03 ± 2.31mg g-1) of EPS.
DISCUSSION/CONCLUSION Although there was no statistically significant difference between EPS intertidally (3.57 ± 2.28 mg g-1) and subtidally (3.03 ± 2.31mg g-1), perhaps the exposure to direct sunlight induced the intertidal microbes secrete more EPS to prevent dessication. Future studies should include a field survey to determine which microbes are secreting EPS and at what rate EPS are produced during varying salinities and temperatures.
GRANT SUPPORT: NOAA LMRCSC

P145
The Distribution of Shark Species in Relation to Macrohabitat Features off the Coast of Georgia, USA

Dontrece Smith (Graduate Student)
Dr. Mary Carla Curran (Savannah State University),
Dr. Carolyn N. Belcher (Georgia Department of Natural Resources)

PURPOSE: Many shark species utilize Georgia estuaries as seasonal habitats or temporary nursery areas. The purpose of this study was to assess the distribution of coastal shark species in relation to macrohabitat features along the coast of Georgia.
DESIGN METHODS: The Cooperative Atlantic States Shark Pupping and Nursery (COASTSPAN) dataset for 2000-2010 was provided by the Georgia Department of Natural Resources (GA DNR) Coastal Resources Division. Locations were categorized into 5 macrohabitat features based on proximity to: (1) away from shore; (2) shoreline (3) mouth of tidal creeks; (4) islands; and (5) structures.
RESULTS: A total of 3,158 sharks, representing 11 shark species were collected from April 2000-September 2010 from 9 Georgia estuaries. The Atlantic sharpnose shark *Rhizoprionodon terraenovae* (n=1,968), bonnethead *Sphyrna tiburo* (n=723), sandbar shark *Carcharhinus plumbeus* (n=217), and blacktip shark *Carcharhinus limbatus* (n=146) were the most abundant species. Half of the all sharks combined were found away from shore: *C. plumbeus* (54%); S. tiburo (52%); *C. limbatus* (46%); and *R. terraenovae* (42%). The second most preferred habitat was the shoreline with 39% of *R. terraenovae*, 31% of *S. tiburo,* 24% of *C. plumbeus*, and 20% of *C. limbatus*. The mouth of tidal creeks/rivers was the third most preferred habitat with 25% of *C. limbatus* and 20% of *C. plumbeus* collected.
DISCUSSION: Most sharks inhabited areas away from shore or shoreline indicating that these are critical macrohabitat features for the sustainability of coastal shark populations.
GRANT SUPPORT: NOAA Living Marine Resources Cooperative Science Center (LMRCSC) Program Award # 06OAR4810163

P146
Comparison Of Natural And Restored Intertidal Oyster Reefs In Georgia

Tiffany Ward (Graduate Student)
Dr. Dionne Hoskins (Savannah State University)

PURPOSE: The purpose of this study was to determine whether the vertical structure of restored intertidal oyster reefs is similar to that of natural intertidal oyster reefs in Georgia.
DESIGN METHODS: Data were mapped using ArcGIS. The projection used was GA State East FIPS, NAD83. Reef vertical structure was measured in 2 ways. Rugosity was measured by placing a 200 cm metal-linked chain along the vertical and horizontal surfaces of the reef and measuring the horizontal distance covered. The shoreline slope was measured at 1 m intervals using a laser level placed at the top of the reef. Percent cover of live and dead oysters, barnacles, bare mud, and marsh grasses was also recorded in 1 m2 quadrats.
RESULTS/EXPECTED RESULTS: Preliminary results indicate that the rugosity of shell bag reefs (1 y after construction) varied from 174 ± 5 cm to 188 ± 1 cm, whereas the rugosity of natural reefs varied from 126 ± 6 cm to 165 ± 5 cm. Percent cover of live oysters on the restored reef varied from 13 ± 10% to 22 ± 19%, and on natural reefs from 47 ±11% to 59 ± 12%.
DISCUSSION/CONCLUSION: One year following construction, reefs restored using shell bags had less vertical structure and a lower percent cover of live oysters as compared to nearby natural reefs, suggesting that more time is needed for these reefs to reach a natural functioning state.

P147
Comparisons Of Boat Densities And Time In The Waterways Surrounding Savannah, GA

Catherine Wu (Graduate Student)
Dr. Tara Cox (Savannah State University)

PURPOSE: The purpose of this study was to map boat densities based on type, time, and activity of boat. These data will be used in a future study to determine the best areas to conduct social surveys. Social surveys of boaters will give a better understanding of human interactions with dolphins in the Savannah area.
DESIGN METHODS: Boat location data were collected through the summers (May-July) of 2009, 2010, and 2011 via on-water boat surveys. Waypoints were taken on a GPS recording the latitude and longitude of boat locations. ARC map/catalog was used to organize and map the data. All maps were projected on Transverse Mercator, NAD 1983, UTM 17N. Rasters were created to visualize densities. Maps of recreational boat densities, active-anchor boat densities and densities among months were created.
RESULTS/EXPECTED RESULTS: Boat densities were highest in the Wilmington River around the mouth of the river and southwest of Wassaw Sound. High active-anchor boat densities were concentrated at the mouth of the Wilmington River and Wassaw Sound. Recreational boats were heavily concentrated throughout the Wilmington River and parts of the Isle of Hope. Densities between May and June were similar with high densities in Turner's Creek. In July, boat densities were highest near the Isle of Hope.
DISCUSSION: The results suggest that the optimal areas to conduct social science surveys would be on the Wilmington River and Wassaw sound. During May and June, surveys would be best conducted near Turner's Creek and in July, near the Isle of Hope.

Poster Index

Abstract Index

Office of Sponsored Research Administration
Savannah State University
3219 College Street, PO Box 40289, Savannah, GA 31404
Tel: 912-358-4292
Fax: 912-358-4795
Email: reidr@savannahstate.edu
Website: http://linux.savannahstate.edu/osra/