



# 8<sup>th</sup> Annual Research Conference

April 24<sup>th</sup>, 2018



*Smart, Bold, Proud, Seriously Impressive*



Savannah State University

## **8<sup>th</sup> Annual Research Conference (ARC)**

**April 24<sup>th</sup>, 2018**

Savannah State University

**King Frazier Ball Room**

Savannah, GA 31404

### Sponsored by

- Office of the President
- Office of Sponsored Research Administration (OSRA)
- National Oceanic and Atmospheric Administration (NOAA) - Living Marine Resources Cooperative Science Center (LMRCSC)
- Quality Enhancement Plan (QEP) 'The Write Attitude'

## Overview of the Conference and Committee Members

Savannah State University (SSU) will host its 8<sup>th</sup> Annual Research Conference in the King Frazier Ballroom on Tuesday, April 24<sup>th</sup>, 2018, starting at 8:00 am. This event highlights research conducted by undergraduate and graduate students at SSU and at other major research institutions. Students will showcase their various research projects in areas such as Computer Science Technology, Homeland Security, Engineering, Physics & Marketing, Marketing and Management, Natural Sciences, Marine Sciences, Social and Behavioral Science, and Social Work.

The general format for this conference is poster presentations and serves as an important platform for students to present their findings to both the SSU and Savannah communities. This event is sponsored by SSU's Office of Sponsored Research, the NOAA Living Marine Resources Cooperative Sciences Center, and The Write Attitude program, a campus-wide initiative to enhance student learning by improving attitudes by writing.

Abstracts published in this program reflect the individual views of the authors and not necessarily that of the Office of Sponsored Research Administration or Savannah State University.

Funding for this publication and event was made possible by the generous support from Office of Sponsored Research and Administration (OSRA) and Living Marine Resources Cooperative Science Center (LMRCSC) at Savannah State University

## Annual Research Conference Committee Members

The organizing committee consists of individuals who contribute to various aspects of conference organization.

**Dr. Chellu S. Chetty**

Associate VP, Office of Sponsored  
Research and Administration

**Ms. Nancy Riggs**

Director, Office of Sponsored  
Research and Administration

**Dr. Dionne L. Hoskins**

Associate Professor, Director of  
NOAA Sponsored Programs  
Department of Marine and  
Environmental Sciences

**Dr. Tara Cox**

Associate Professor  
Department of Marine and  
Environmental Sciences

**Dr. Suman Niranjana**

Associate Professor, College of  
Business Administration

**Dr. Abhinandan Chowdhury**

Assistant Professor,  
Dept. of Mathematics

**Dr. Johnny Johnson**

Associate Professor,  
Dept. of Biology

**Dr. Manoj Prasad**

Instructor, Dept. of Chemistry &  
Forensic Science

**Mrs. Devi Chellu**

Program Manager, NIH-SSU-  
MARC U\*STAR & RISE, NSF-  
SSU PLSAMP Programs

**Mr. Patrick Dean**

Director for Outreach and Career  
Development/STEM 360

**Dr. Lisa Yount**

Associate Professor and QEP  
Director

**Dr. Shinaz G. Jindani**

Professor  
Department of Social Work

**Mr. Harshavardhan Kenche**

Research Associate, Dept. of  
Chemistry & Forensic Science

The Organizing Committee would like to extend our THANKS to the many persons who contributed in so many ways to make this conference a continued success

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\*All presenters are undergraduate except where marked by \* to signify graduate program



Greetings!

It is my pleasure to welcome each of you to Savannah State University's 8<sup>th</sup> Annual Research Conference. Since 2011, we have held this conference every spring to honor the research endeavors of Savannah State's undergraduate and graduate students.

The conference, under the leadership of Dr. Chellu Chetty, Associate Vice President of Research and Sponsored Programs, gives students an opportunity to present their work and demonstrates Savannah State University's commitment to research. The projects on display today are examples of the significant achievements of our students.

I congratulate the student presenters, and I offer my gratitude to their faculty mentors and to the Annual Research Conference committee members who organized this event: Dr. Chellu Chetty, Dr. Dionne Hoskins, Dr. Tara Cox, Dr. Shinaz Jindani, Dr. Lisa Yount, Mr. Patrick Dean, Ms. Nancy Riggs, Ms. Chellu Devi and Mr. Harshavardhan Kenche.

I wish you all a successful and productive conference.

Kindest regards,



Cheryl D. Dozier  
President

On behalf of the Savannah State University (SSU) Office of Academic Affairs, I am pleased to welcome you to SSU's 8<sup>th</sup> Annual Research Conference.

Research – the discovery and dissemination of new knowledge – along with research training are fundamental cornerstones of an academic institution. Students who learn to do research -- to use systematic methods to investigate significant problems in innovative ways – and who learn to clearly communicate their findings to diverse audiences -- are uniquely trained in the high-demand skill sets needed by our modern day workforce. These students are also better qualified to enter top graduate programs.

SSU is committed to engaging as many students as possible in the research process. I am proud that at this event we have so many students participating, and I am especially proud that as an HBCU we engage so many minority, underrepresented students in this critical activity.

I applaud the student presenters here today. They represent the best and the brightest of our students, and demonstrate that research is alive and active here at SSU on all levels (from lower division undergraduate to graduate studies) and including the entire spectrum of the fields of study here at SSU – from biology to engineering, from global logistics to social work.

I also wish to extend my sincere gratitude to the faculty who have mentored the students in their research training and who are integrating research training in the curriculum. Without their encouragement and mentorship, this day would not be possible. I salute these committed faculty.

Again, congratulations to our student investigators. We wish you continued success in the future.



Michael J. Laney, Ph.D.  
Provost/Vice-President of Academic Affairs





Dear Research Day Participants,

Welcome to Savannah State University's 8<sup>th</sup> Annual Research Conference. The Office of Sponsored Research Administration (OSRA) has been striving to strengthen the research endeavors of Savannah State University (SSU) faculty and students for many years. SSU continues to seek funding to develop competitive research programs through which we can infuse technology and innovation to keep our students actively engaged in the learning process. I urge our students to participate in the research internships available both at SSU and other institutions. I request the faculty mentors to ensure that student mentoring and research training are part of their efforts to prepare the students to pursue advanced degrees and careers in their fields.

Congratulations to all of the student presenters. Many of you have had the chance to participate in faculty-mentored research and today is your chance to showcase your research and what you have learned during this year. This will enable you to build a strong foundation to set new goals and for your future success.

OSRA has started several initiatives to strengthen our research infrastructure through external funding, which is key to SSU's presence in the larger research arenas nationally and globally. We remain committed to support SSU's mission to "develop productive members of a global society through high quality instruction, scholarship, research, service and community involvement".

My special thanks to all faculty mentors, staff and organizing committee for their commitment and participation in making this event a success.

Sincerely,

A handwritten signature in black ink, appearing to read "Chellu S Chetty". The signature is fluid and cursive, with a long horizontal line extending to the right.

Chellu S Chetty, Ph.D.

Associate Vice President for Research and Sponsored Programs

# 8<sup>th</sup> Annual Research Conference

**April 24<sup>th</sup>, 2018**

*Unless noted, all events will take place in King-Frazier Ball Room, King Frazier*

## **Agenda**

8:30 am – 10:30 am

### **Registration and Poster Presentation**

10:30 am – 10:45 am

### **Welcome Greetings:**

Dr. Chellu S. Chetty, Associate VP for Research and Sponsored Programs

10:45 am – 11:00 am

### **Remarks**

Dr. Michael Laney, Provost and Vice President for Academic Affairs

11:00 am – 11:30 am

### **Student Remarks for Research Experiences**

Iesha Phillips - College of Sciences & Technology (COST)

Itunu Ilesanmi - College of Liberal Arts & Social Sciences (CLASS)

Corliss Best - College of Business Administration (COBA)

NicQuala Shields - School of Teacher Education (SoTE)

11:30 am – 11:45 am

### **Remarks**

Dr. Cheryl D. Dozier, President, Savannah State University

11:45 am – 12:00 pm

### **Poster Presentation Award Certificates**

Dr. Lisa Yount, Associate Professor of Philosophy

### **Remarks**

Ms. Nancy Riggs, Director, Office of Sponsored Research Administration

## College of Science and Technology

### **Biology**

#### **Bio-1**

Kindeara Brown, Bobbi Wilson, Dr. Andrew Methven,

Research Mentor: **Dr. Andrew Methven**

*Fungi Associated with Spartina alterniflora in Coastal Georgia*

Salt marsh ecosystems which feature *Spartina alterniflora*, *Juncus roemerianus* and *Phragmites australis* characterize many temperate, coastal regions around the world. In eastern North America, *S. alterniflora* is one of the dominant plant species in coastal salt marshes which are important in estuarine productivity, sediment stabilization and as nurseries for fish and shell fish. Much of the knowledge of marine fungal diversity, biology and ecology is based on studies of fungi on *S. alterniflora* in coastal salt marshes. Fifty-two fungal species have been recorded on *S. alterniflora* from the east coast of North America (Ascomycetes = 31 species; Hyphomycetes = 11 species; Coelomycetes = 7 species; Basidiomycetes = 3 species). Of these fifty-two records, only four species of fungi on *S. alterniflora* have been confirmed from coastal Georgia. As part of this research project, seven fungal species were identified from *S. alterniflora* in coastal Georgia, including six new records for the state. We hypothesize that there is: 1) seasonal variation (Fall, Winter, Spring, Summer) in species of fungi which occur on *S. alterniflora*; 2) variation in vertical distribution of fungi on *S. alterniflora* (plants inundated during high tide vs. plants not inundated during high tide); and, 3) variation in fungi which inhabit different parts of *S. alterniflora* (living vs. dead, attached vs. dead, floating). Research on fungal colonization of *S. alterniflora* in coastal salt marshes near Savannah, Georgia will expand existing knowledge of this unique ecosystem.

#### **Bio-2**

Diamond Gilliard

Research Mentor: **Dr. Johnny Johnson**

*Determine if GLP-1 Induced Adipogenesis is Mediated via Notch Activation or if GLP-1 Induced Adipogenesis is Mediated via Notch Target Gene up Regulation.*

The purpose of this research is to identify a relationship between Glucagon- Like Peptide-1 and the Notch gene by using 3T3-L1 preadipocyte fibroblast cells. Because obesity remains as a contributing agent of many health disparities seen in the African American community, effort has been put forth to understand those patterns. The postprandial response of GLP-1 is associated with the activation of some areas of the human brain that have been previously associated with satiety, meal termination and the regulation of food intake. Data has shown that the role of Notch signaling during adipogenesis can either promote or suppress adipogenesis or the differentiation and maturation of the cells. Conducting research by differentiating the 3T3-L1 preadipocyte cells, and testing them with GLP1 and HES1, will help prove the hypothesis that activation of the Notch gene by GLP-1 induces adipogenesis. The basic design of this research will be to grow preadipocyte cells into confluency then analyze their reactions with GLP1 and HES1 through a series of complex tests such as western blotting. Overall, this research has moved forward in the direction of understanding the mechanisms of the pathway that causes preadipocyte cells into mature adipocyte cells, but further testing needs to be completed.

#### **Bio-3**

Shalyric Moye

Research Mentor: **Dr. Takayuki Nitta**

*Effects of SERINC3 on Replication of MuLV and XMRV*

While hosts have developed restriction factors that are proteins limiting viral replication in the infected cells, some viruses have acquired accessory proteins to counteract restriction factors. Murine leukemia virus (MuLV) encodes an accessory protein, glyco-gag. Xenotropic murine leukemia virus-related virus (XMRV) showed high homology to MuLV, but does not

show glyco-gag activity. We found that a chimerical XMRV containing glyco-gag showed higher infectivity than the original XMRV in some cells. We hypothesize the glyco-gag counteracts new retroviral restriction factors, SERINC3. Our objective is the (1) comparison of expression of SERINC3 in cells to XMRV replication, and (2) determination of sensitivity of MuLV/XMRV to SERINC3 isolated from a variety of species. To achieve the objectives, the cDNA samples prepared from the cells were subjected to qPCR with GAPDH and SERINC3/5 primers. We found no significant difference of SERINC3 expression among the cells. For the objective (3) experiments to determine susceptibility of viruses against SERINC3 from different species will be performed.

#### Bio-4

Charkira Patrick

Research Mentor: **Dr. Xiaorong Zhang**  
*Generations of a phylogenetic tree using Diabetes insulin receptor sequences*

Diabetes have multiple forms. In some cases, individuals suffer with diabetes because their body does not produce insulin, can not process the insulin, or the insulin receptors are not receiving the signal. In this study we looked at diabetes dealing with insulin receptors. The identity of protein sequences of the human (*Homo sapiens*) insulin receptor was compared with the insulin receptor sequences from other species which were used to construct a phylogenetic tree. The trees were evaluated by comparing them with published phylogenies in literature.

#### Bio-5

Iesha Phillips, Jasmine Phillips, Blessing Enya, Dr. Takayuki Nitta

Research Mentor: **Dr. Takayuki Nitta**  
*Effect of Betulinic Acid and Its Ionic Derivatives on M-MuLV Replication*

Murine leukemia virus (MuLV) is retrovirus causing leukemia and neurological disorders in mice, and its viral life cycle and pathogenesis have been investigated extensively over decades. Betulinic acid is a naturally occurring pentacyclic

triterpenoid that can be found in the bark of several species of plants (particularly the white birch). Betulinic acid and its derivatives have shown several biological activities such as their inhibitory activities against several cancers, viruses, malaria and inflammation. In this study, we examined the antiretroviral activities of betulinic acid and its ionic derivatives against Moloney MuLV (M-MuLV). The mouse fibroblast cells stably infected with M-MuLV, 43D cells, were treated with different doses of betulinic acids and its derivatives, and viral structural protein Gag in the cells and media were detected by western blots. Two of the ionic derivatives inhibited the virus production into media and decreased Gag in the cells. However, all the betulinic acid compounds exhibited a minimum impact on the processing and release of Gag from 43D cells. A cell proliferation assay with AlmarBlue suggested that two ionic derivatives containing the benzalkonium cation inhibited the growth of 43D cells, implying that our ionic derivatives limited the virus production through the inhibition of metabolism in 43D cells. Difference of viral maturation between MuLV and human immunodeficiency virus is discussed.

#### Bio-6

Alexus Williams, Jasmine Phillips, Dr. Takayuki Nitta, Hua Zhao

Research Mentor: **Dr. Takayuki Nitta**  
*Benzalkonium Chloride and Betulinic Acid Inhibited Growth of Human Cancer and Transformed Cells*

Benzalkonium chloride (BKC) is an organic salt classified as a quaternary ammonium compound. Although BKC has been reported to enhance drug penetration and improve topical bioavailability of ophthalmic drugs, effects of BKC on proliferation of cancer cells are not well understood. We here examined anti-cancer effects of BKC and an ionic derivative of betulinic acid, BA-Gly with human tumor cells and transformed cells. HeLa (cervical adenocarcinoma), PC-3 (prostate adenocarcinoma), MIA PaCa-2 (pancreatic carcinoma) and HEK293 and 293T (human

embryonic kidneys cells and 293cells expressing SV40 large T antigen) cells were treated with different doses of BKC for 48 hours. The cell viability was evaluated using Almar blue cell proliferation assay that measures conversion of resazurin to resorufin in viable cells. Cell proliferation of HeLa and 293T cells showed 28-37% decrease at 2.5 mM of BKC and the inhibition curves made gentle slopes with 2.5 mM to 20 mM of BKC. In contrast, proliferation rate of PC-3 cells dropped acutely from 80% (5 mM) to 27% (20 mM). PaCa-2 cells maintain 70 to 80% of cell proliferation at 2.5 mM to 20 mM of BKC, and showed 74% and 82% decrease at each 20 mM and 40 mM of BKC. The cell viability assay demonstrated that combination of benzakonium and BA-Gly showed synergistic effects in 293T cells ( $p < 0.05$  at 20 mM,  $p < 0.05$  at 20 mM, Student's t-test), but not in the other cell lines, implying that this synergistic effects could be against SV-40 Large T antigen.

## Chemistry

### Chem-1

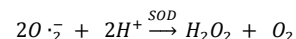
Zari Preyer, Dr. Cecil Jones

Research Mentor: **Dr. Cecil Jones**

*Detection and Activity of Mitochondrial Superoxide Dismutase in Merlangius Merlangus Gill Tissue*

This work investigates the use of an oxidative defense enzyme as a biomarker or early warning of environmentally-induced oxidative stress. The inhibition of epinephrine-HCl autooxidation by superoxide dismutase (SOD) was monitored by UV-Vis spectroscopy for activity measurements. SOD is a key oxidative enzyme of vertebrate's biological defense systems. It plays a major role in reducing oxidative stress that leads to a host of deleterious effects that compromise the integrity of healthy cells. Specifically, at least two isoenzymes of SOD are responsible for the removal of the superoxide ion,  $O_2^-$ . This reactive oxygen species has the potential to cause irreversible oxidative damage through the mechanism of lipid peroxidation, propagating a chain of organic radicals that ultimately results in cell death. The catalyze dismutation of

superoxide by SOD is shown in the following equation:



Potassium cyanide was employed to inhibit the activities of Cu/Zn-SOD in an acrylamide gel as well as in a 50.0 mM  $Na_2CO_3$  buffer solution of pH 10.2 for spectroscopic analysis. Only qualitative data was acquired from electrophoresis, however, both qualitative and quantitative data were obtained from spectroscopic studies. Flame atomic absorption spectroscopy was evaluated as a potential analytical technique for detecting mitochondrial SOD in the tissue

### Chem-2

Zhane' Cox, Dr. Pennington, Khadijatul Kobra,

Research Mentor: **Dr. W. Pennington**  
*Interactions of Triiodide and Organoidiodide through Halogen Bonding using Single Crystal Growth and Powder X-Ray Diffraction*

Halogen bonds occur in the presence of Halides(F, Cl, Br, I) when an electrophilic region and a nucleophilic region. When an Iodine molecules is introduced to Iodine there is a hopping mechanism that takes place. The entering Iodine molecule will enter the appropriate bonding space while simultaneously the leaving Iodine molecule will leave the bonding space. This mechanism is enhanced by the presence of other Halogen bonding that are in close proximity to create a net attraction.

The study used a triiodide and organoidiodides to create single crystals and follow the binding to achieve halogen bonding. In ordered to tract this bonding there was the use of the X-Ray power diffraction instrument was used to identify the structure and binding of the crystals.

In long term application, the crystals and information gathered about the interaction of the iodide can be used in Dye-Sensitized Solar Cells. Dye-Sensitized solar cells are a more effective solar cell option that when there is illumination of the dye electricity can be generate through oxide electrodes.

### Chem-3

Torrey Mott

Research Mentor: **Dr. Adegboye Adeyemo**

*Synthesis of Porphyrin for Photodynamic Therapy*

Porphyrins are photosensitizers that are absorbed into cells to make them susceptible to light. For this reason, Meso-Tetrakis (6-Bromo-2-Hydroxy-3-Methoxyphenyl) Porphyrin has been synthesized by reacting 6-Bromo-2-Hydroxy-3-Methoxy benzaldehyde with pyrrole in refluxing propionic acid. This new porphyrin is a likely candidate for thermodynamic therapy of tumor. Photodynamic therapy (PDT) is less harmful treatment for cancer than radiation and chemotherapy; in this form of therapy, cancerous cells are easily detectable because of the nature of the porphyrin's sensitivity to light. When exposed to light, the photosensitizing agent releases singlet oxygen to destroy the foundation of the cell.

### Chem-4

Yasmine Stewart

Research Mentor: **Dr. Adegboye Adeyemo**

*Synthesis and Characteration of Porphyrins as Potential Anti-tumor Agent*

The synthesis and purification of new porphyrins are a promising treatment of cancer in Photodynamic Therapy (PDT). In this research, a new porphyrin, Meso-Tetrakis (2-bromo-3-hydroxy-4-methoxyphenyl) Porphyrin has been synthesized, purified, isolated, and characterized by UV-Vis spectroscopic techniques. Metal derivatives of this new porphyrin were prepared by reacting excess metal ions with the porphyrin in methanol at room temperature. The spectrophotometer showcased that the Soret Peak shifted to higher wavelengths (red shift) in all metal derivatives except in the Cu 2+ and Pb 2+ derivatives. The major Q-Band shifted to higher wavelengths (red shift) in all metal derivatives.

### Chem-5

Rasaan Ford

Research Mentor: **Dr. Pascal Binda**

*Ring opening homopolymerization of alpha-MBL*

The object of this research is to obtain a biodegradable polyester polymerized from alpha-methylene-gamma-butyrolactone, which is a monomer commonly found in tulips. By synthesizing a biodegradable polymer from the  $\alpha$ -MBL monomer it can theoretically be used to replace conventional plastics such as plastic silverware, wrapping, etc.; and utilized in other areas such as the medical field and construction. The unsaturated polymers synthesized were characterized using the following instruments to determine the properties and characteristics of the polymers obtained from the experiment: NMR (Nuclear Magnetic Resonance), GPC (Gas Permeation Chromatography), and (DMA) Dynamic Mechanical analysis. The attainment of unsaturated poly-methylene gamma butyrolactone from low temperature reactions is successful and based on the data, it can be observed that the yield is related to the length at which the reaction is ran.

### Chem-6

Dahlia Thomas, Dr. Pascal Binda

Research Mentor: **Dr. Pascal Binda**

*Synthesis of Functionalized Biodegradable Poly(alpha-methylene-gamma-butyrolactone) for Drug Delivery Applications*

The ring opening polymerization of lactones is an attractive method to synthesize aliphatic polyesters because it enables living polymerizations to be conducted. Therefore, it provides a route to tightly control the polymers' physical properties and polydispersity indices. Ring opening polymerization controls the polymer's end group according to the type of initiator used; therefore, it is possible to install functionality to the chain ends as ester groups. It is important develop strategies toward and syntheses of functionalized aliphatic polyesters and in particular to develop routes to functionalize them with biologically relevant and compatible molecules. Functionalized Poly(alpha-methylene-gamma-butyrolactone) was synthesized by the bromination of unsaturated poly(alpha-methylene-gamma-butyrolactone). 5g of ROP-MBL was dissolved in 20ml of Chloroform in a hot bath

of 60°C. Concentrated Br<sub>2</sub> was added dropwise to the solution in 2 increments of .1ml. The solution color changed from red to colorless indicating a successful reaction. The white solid left after full evaporation of chloroform was dried and characterized using <sup>1</sup>H NMR. The resulting spectrum was then compared to the spectrum of ROP-MBL.

#### **Chem-7**

Princess Merenini, Pascal Binda

Research Mentor: **Dr. Pascal Binda**

*Synthesis of Cross-linked Biodegradable Poly( $\alpha$ -methylene- $\gamma$ -butyrolactone) as Potential Shape Memory Polymers for Drug Delivery Applications*

Shape memory polymers (SMP) are a group of polymer that have the ability to change their shapes from one form to another once external stimuli is applied. The commonly investigated external stimuli that cause the change in shape in SMP are heat, chemicals, water, irradiation, and pH. The properties of polymers can be improved by the combination of the different types of homopolymers together, via cross-linking. This project involves the cross-linking of poly ( $\alpha$  methylene gamma butyrolactone) PMBL using radical initiators and investigating the shape memory properties of the expected copolymer.

#### **Chem-8**

Jasimine Stone, Harshavardhan Kenche, Zaria Gunn, Kai Shen

Research Mentor: **Dr. Kai Shen and Mr. Harshavardhan Kenche**

*Effect of Extracellular Matrix Stiffness on Vinculin Gene Expression*

Vinculin and its muscle specific variant metavinculin are focal adhesion proteins and play a vital cellular role for cell to sense and respond to environmental stimuli. Despite their structural similarities, metavinculin has an extra 68 amino acid insert immediately ahead of its tail domain when compared with vinculin. Point mutants of metavinculin and/or vinculin cause various diseases. The pathological mechanisms of these diseases remain unknown. In my research, I investigated how genetic expression levels of

vinculin gene, which encodes both vinculin and metavinculin, are affected by various stiffness of extracellular matrices. Our results demonstrated biphasic vinculin gene expression in muscle cells when stiffness of extracellular matrix increases.

## **Engineering**

### **Engg-1**

Gabriel Jean-Louis, Zahrah Sabir, Dr. Spyros Andreou,

Research Mentor: **Dr. Spyros Andreou**

*Credit Card Validation using Java*

Credit cards allow us to borrow money from a lender to make purchases, such as food, clothing, or plane tickets. It's hard to believe that random numbers on a small, plastic card contain confidential information needed to complete numerous transactions. These random numbers require an algorithm to compute them, but with this program you can validate your own credit card number. The purpose of this program is to validate credit card numbers of major card providers, i.e. Visa, MasterCard, American Express, and Discover. Embedded inside of the Java code is a methodical mathematical formula, titled Luhn's algorithm. Luhn's Algorithm, also known as modulus 10, is a simple checksum formula used to validate several identifications numbers, such as credit card numbers, IMEI numbers, and Greek Social Security Numbers. The program allows the user to submit a fifteen to sixteen-digit number, responding with the validation or invalidation of the proposed sequence.

### **Engg-2**

Sansriti Ranjan

Research Mentor: **Dr. Roxanna Javid**

*Artificial Intelligence Transforming Safety in Transportation*

Transportation is an age-old backbone of every industry. Ever since trade and commerce have emerged, transportation has been undergoing changes to cater to the ever-growing needs of industries. In the new millennium, the transportation sector faces various challenges in terms of high labor costs, shortage of drivers,

traffic congestion, adherence to safety norms and risk management. Artificial Intelligence (AI) and Machine Learning have emerged as the new cognitive technologies within the field of computer and information technology. These technologies have already infiltrated majority of the industries and can cut down costs, overcome the issue of driver shortage, traffic congestion and more importantly better regulate the safety in freight transportation. This paper analyzes the trends in Transportation Industry, finds the major bottlenecks and challenges and then assesses how Artificial Intelligence and Machine Learning can provide solutions to address these challenges. The main objective of this paper is to show how AI and Machine Learning can help the transport industry in tackling problems faced in compliance and safety. The research is solely based on software algorithms and AI technology “Neural Networks to implement the Safety Measurement System (SMS) Methodology of the Federal Motor Carrier Safety Administration (FMCSA). Once implemented, the FMCSA and transport players will be able to tackle the problems of compliance and safety. They will be better equipped to reduce future accidents. The future lies in incorporating these cognitive technologies to attain efficiency. These technologies have the power to transform the transportation industry in the long run.

### **Engg-3**

Marcus Givens

Research Mentor: **Dr. Roxanna Javid**

*Strategies Towards Improving Urban Mobility and Transport*

Higher education institutions have been incorporating sustainable development policies and activities into teaching, research, infrastructure, and campus operations. Investing in an effective and sustainable campus transportation system, including efficient roadway directions, will be key in helping to promote a sustainable campus, decrease traffic congestion and emissions, and improve safety for students. In this context, this research aims to show the present level of different transportation

modes including driving, riding bus, walking, and bicycling, on Savannah State University (SSU) campus in coastal Georgia. Then, simulating the traffic patterns and operations for two proposed scenarios on roadway directions. There have been some recent changes made on SSU campus in regards to the Tompkins Loop: a one-way street has been transformed into a two-way allowing traffic to flow both ways. Has this changed benefited or made things worst on the street itself? How is the traffic being distributed? A survey approved by SSU Institutional Review Board-- was conducted for approximately five days between November 11th and November 15th on the SSU campus. The survey consists of an organized set of 8 to 11 questions -composed of demographic, transportation, and school information- asked for the recipients to answer. The recipients in this case would be students, faculty, and staff members. The survey results have been employed to estimate the Origin/Destination traffic demand on campus. Next, we model the SSU campus using the PTV Visum Software. We run the simulation for the two scenarios- two-way loop and another for the one-way loop. The results show that although a one-way loop system helps to protect the roadway system itself, we propose to allow the campus to remain as a two-way system. It decreases timely travel and allows for easy access to the desired parts of the campus. The results can help campus officials in effective planning and approaches to provide integrated and reliable solutions and transportation alternatives on campus.

### **Engg-4**

Ellison Burns III, James Livingston

Research Mentor: **Dr. Mir Hayder**

*Drop Test Simulation in SolidWorks*

The purpose of this research was to determine the stress at any point of an object when it falls and hits the ground. The object that we will be using in our simulation is the cellular phone.

The first step in our procedure was to construct the cellular device parts then put them together in the assembly mode using the Solid Works

software. Our next approach was to set up a drop test, from this we would have to specify the material properties which we chose 70 series alloy. We also specified the different angles and height in which the phone would drop and hit the ground. The tests took hours to complete but when it finished we collected the data and published the results in Microsoft Word.

#### **Engg-5**

Marcus Rogers, Aaliyah Bryant

Research Mentor: **Alberto De La Cruz**

*How To Improve Education Using Virtual Reality*

Virtual reality is a computer-generated simulation of a three-dimensional environment in which a user can directly interact in the virtual world by using special VR headsets. The purpose of this project is to create a virtual classroom which will assist students to learn in a non-conventional manner. The virtual classroom will resemble a faculty office and a computer laboratory with furniture, computers, whiteboards and other accessories that are usual in this type of environment providing the necessary tools for students to learn perhaps more efficiently. For visual learners, VR classrooms is a perfect solution since student will directly interact in the virtual world and learn a specific topic. VR classroom will give the willingness to want to learn in a virtual world instead of a traditional classroom that would make some students uninterested. The software we will use in this research is Unity from Microsoft and the hardware we will use is the Oculus Rift headset and touch controllers which will enable student to interact, navigate in the virtual world. The project group will learn as much as possible the functionalities of the hardware and software to create the virtual classroom during the undergraduate summer research.

#### **Engg-6**

Khayree Clark, Roxana Javid

Research Mentor: **Dr. Roxana Javid**

*The impacts of electric vehicle penetration and electricity generation mix on emissions in the U.S.*

Transportation is a very important aspect of our everyday lives. One of the most controversial topics concerning road transportation is how to mitigate the emissions and negative environmental impacts of vehicles. The objective of the research is to understand and quantify the environmental impacts of electric vehicle's penetration in the U.S. The data and approach used for this study is to develop state-level models based on the data from different light duty vehicles including number of convectional cars, Plug-in Hybrid Electric Vehicles (PHEVs), Battery Electric Vehicles (BEVs), gas and electricity prices, electricity generation mix, number of available public electric charging stations, and average vehicle miles travelled in each state in 2015. We develop the models using the Alternative Fuel Life-Cycle Environmental and Economic Transportation (AFLEET) Tool.

#### **Engg-7**

Mikis Mays, Bryan Knakiewicz

Research Mentor: **Dr. Bryan Knakiewicz**

*Friction properties of Solar Roadways  $\hat{a}_{,,}\phi$  glass panels*

Solar Roadways  $\hat{a}_{,,}\phi$  can be the future of renewable energy in the United States. Solar Roadways  $\hat{a}_{,,}\phi$  are glass panels than can be driven upon by vehicles, while producing solar energy from photovoltaic cell sheets below the glass. Since vehicles are to drive on the glass panels, it is crucial that the surface of the glass has sufficient friction in the contact between the vehicle tire and glass, to ensure safety of the users. Like any infrastructure project in development stage, research must be performed to safeguard the safety of the public. In this research project, two samples of glass panels with macro-textured surfaces were tested in the laboratory to determine the friction properties of the surface of the glass. To perform the friction test of the surface, a British Pendulum tester was used, in conformance to ASTM E303-93. This device simulates a vehicle travelling at forty miles per hour in rainy conditions. After analyzing the results of the friction tests, it was concluded that the results of the British Pendulum

Number (BPN) and corresponding Skid Number (SN) of the panels were insufficient when measured against U.S. Department of Transportation (DOT) average requirements of minimum pavement friction. These findings satisfied the project's null hypothesis that the friction properties of the glass samples do not meet the U.S. DOT minimum requirements; therefore, unable to be used in practice and must be modified to achieve desired results.

#### **Engg-8**

James Livingston, Ellison Burns

Research Mentor: **Dr. Mir Hayder**

##### *Drop Test Simulation Using Solidworks*

In this study, a drop test analysis of a cell phone was conducted by SolidWorks simulation software. The main purpose is to determine the stress due to impact and produce animation of the cell phone when it falls and hits the ground. First, Five parts, front camera, outer shell, glass screen, home button, and back camera of an i-Phone, were created in SolidWorks according to specific dimensions as part documents and then assembled to develop the model for the study. The materials selected for the phone shell and home button was 7079 AL-alloy, and for the other three parts was glass. The simulation parameters were: drop height - 6 feet, gravitational acceleration -  $9.81 \text{ m/s}^2$ , friction coefficient - 0, and solution time after impact - 25 micro sec. simulations were conducted for three impact angles,  $90^\circ$ ,  $0^\circ$ ,  $45^\circ$ . Results show that for impact angle  $90^\circ$ , the maximum stress is developed on the lower end of the phone. The stress is uniformly distributed over the phone for an impact angle of  $0^\circ$ . Results were not conclusive for the inclined angle of impact, so more studies are needed to be conducted to investigate the effect of impact. Future studies are also recommended for different drop heights and floor with friction.

#### **Engg-9**

Jaya Washington, Gabriel Nsengiyumva, Hani Alanazi, Yong Rak Kim

Research Mentor: **Dr. Kim**

##### *Sustainable Infrastructure Mixtures with Alternative Cementitious Binder Enhancing Interphase Transition Zone (ITZ) Properties*

In cementitious materials interface transition zone (ITZ) acts as a bridge between aggregate and a binding matrix and it is usually prone to failure. Thus, in order to improve the performance of the cementitious materials, more fundamental understanding of deformation and failure mechanism within the ITZ is critical. Even with recent advances, ITZ characterization remains elusive due to complexity introduced by additives such as recycled aggregates and others. Given that most failure in ITZ occur in form of cracks/ fracture, as part of an ongoing project, this REU research project will focus on : Identification and modeling of fracture related properties of ITZ using full-field displacement data measured by Digital Image Correlation (DIC).

#### **Engg-10**

Zahrah Sabir, Gabriel Jean-Louis

Research Mentor: **Dr. Spyros Andreou**

##### *Verification of Credit/Debit Card Using Java Programming*

Credit cards allow us to borrow money from a lender to make purchases, such as food, clothing, or plane tickets. It's hard to believe that random numbers on a small, plastic card contain confidential information needed to complete numerous transactions. These random numbers require an algorithm to compute them, but with this program you can validate your own credit card number. The purpose of this program is to validate credit card numbers of major card providers, i.e. Visa, MasterCard, American Express, and Discover. Embedded inside of the Java code is a methodical mathematical formula, titled Luhn's algorithm. Luhn's Algorithm, also known as modulus 10, is a simple checksum formula used to validate several identifications numbers, such as credit card numbers, IMEI numbers, and Greek Social Security Numbers. The program allows the user to submit a fifteen to sixteen-digit number, responding with the

validation or invalidation of the proposed sequence.

## **Geographical Information Systems**

### **GIS-1**

Emma Hester, Dr. Tara Cox

Research Mentor: **Dr. Tara Cox**

*Savannah Wildlife Rescue Center 2017 Orphaned Raccoons*

Baby raccoons (*Procyon lotor*) are found orphaned year round in Savannah, GA. At Savannah Wildlife Rescue we rescue, rehabilitate, and release these raccoons, which are brought in by the public to be given a second chance at life. The purpose of this project is to use the location that each raccoon was rescued to see if there is a spatial pattern in rescued raccoons in Chatham County, GA. The locations used consist only of raccoons ages 8 weeks and younger. Locations were geocoded and mapped in ArcMap 10.4. I anticipate that the map will show certain areas, such as construction zones and urban regions, with a concentration of raccoon rescues. These are locations that can cause issues for this species. This information could give us more knowledge on the issues this species struggle with to survive and possibly help us find solutions.

### **GIS-2**

Melany Powell

Research Mentor: **Dr. Tara Cox**

*Reducing Fatalities of Drunk Driving by Enforcing Stricter Laws*

In 2015, 27% of motor vehicle accidents were alcohol related, according to the National Highway traffic Safety Administration. Compared to thirty years ago, less than half as many people every year are dying in drunk driving collisions. The purpose of this research is to show the correlation, if any, between a state's laws on drunk driving and the number of fatalities caused by drunk driving. Data will be mapped in ARC GIS 10.4. States such as North and South Dakota have more lenient laws, as well as high prevalence of drinking and driving. Correlations between state laws and its death rate can show if

laws set in place are helping to prevent these fatalities.

### **GIS-3**

DeAndre Vickers

Research Mentor: **Dr. Tara Cox**

*Growth of Chatham County and School districts to Assist in Future of Chatham County High Schools*

In this project we will study population information and schools throughout Chatham County, to determine what the outlook for Chatham County schools and where the next school should be in the future. Using ArcMap 10.4 the population and school zones for every level of schools will be mapped. Variables such as size of school districts, school sizes and school population are applied in the reasoning for a certain school zone. This research should help give an outlook for what is next for Chatham county schools. As all the variables used to make these school zones are examined, including population of given area we will determine where the next best placement for a new school is.

### **GIS-4**

Gina Humphreys

Research Mentor: **Dr. Amanda Kaltenberg**

*Determining Gulf Stream variability using a comparison of in situ mid-water temperature and satellite-derived sea surface temperature*

In-situ mid-water temperatures from the slope waters off the coast of Cape Hatteras, North Carolina (35 20°N, 74 51 °W) were recorded using a bio-physical mooring deployed from March, 2016 to May, 2017. The mooring was equipped with multiple CTDs, along with 2 acoustic Doppler current profiles (ADCPs), and acoustic echosounders. CTDs were attached at depths of ~560 m and ~650 m to record temporal variability with the influence of the Gulf Stream and potential influences on the nearby ecological community. The purpose of this study was to comparison of these in-situ temperature recordings and satellite-derived sea surface temperature obtained from the (NOAA) Ocean Watch Geostationary Operational Environmental Satellite (GOES)/ Polar Operational

Environmental Satellite (POES) sea surface 2-day satellite data by mapping SST in ArcGIS to determine variability of temporal physical dynamics and influence of the Gulf Stream.

#### GIS-5

DeMarco Jackson

Research Mentor: **Dr. Tara Cox**

*The Invasion of Burmese Pythons in Florida*

The Burmese pythons (*Python bivittatus*) are an invasive species in Florida whose population is increasing at an insane rate. Thousands are spotted every year, and this invasive species is causing havoc in Florida's ecosystem. They eat anything that can fit in their mouth, but mostly prey upon small mammals and they do not have that many predators. My purpose is to create a map using Arcgis 10.4 to figure out where the Burmese pythons thrive and how to prevent them from spreading. I obtained data from Eddmaps because they have the data of pythons sighted in Florida. The pythons are found in the Everglades in Florida where they are thriving. In my map I am trying to show a comparison in times that a python was spotted to compare and see if they are spreading as time passes. In conclusion the Burmese python is an invasive species in Florida that is disrupting the ecosystem.

#### GIS-6

Kayla Bing-Abdullah, Dr. Tara Cox

Research Mentor: **Dr. Tara Cox**

*Verifying a breakdown of inmate population by states in the United States*

The Department of Corrections in the United States plays an important role in rehabilitating those who are convicted of crimes in the United States. The purpose of this project was to show the spatial distribution of people incarcerated in the U.S. with the breakdown by gender and those who are adult and juvenile offenders. Data were collected from Bureau of Justice Statistics and mapped in ArcGIS10.4 with the projection of USA Contiguous Lambert Conformal Conic. The data represent the amount of male and female offenders, and they were separated by adult and juveniles. The intended conclusions are to show how many people are incarcerated in each state in

the U.S. The focus was to reduce the number of people who are incarcerated and to help those who are incarcerated become productive members of society. Georgia is one of many states in the U.S. who not only house inmates, but also offer programs to help offenders learn trades such as working with heavy equipment or gaining a paralegal degree, etc. These programs help to reduce recidivism rates and give the inmates a glimmer of hope for the time of their release so that they may have skills that will help them get and maintain employment.

#### GIS-7

Eduina Campbell

Research Mentor: **Dr. Tara Cox**

*Daycare Availability within the City Limits of Savannah, Georgia*

Daycares play a vital role in most families. Almost anyone, at any location, can classify themselves as an established daycare. However if you remove noncertified owners/operators, the list gets significantly shorter. There are many rules, requirements and safety regulations that the state of Georgia has deemed necessary. So those who run illegally place the children in immediate danger and themselves responsible for criminal negligence. The purpose of this project is to determine Georgia State Certified daycares located within Savannah, Georgia. Data will be mapped using ArcGIS 10.4 with the projection NAD 1983 Georgia State plane East. Non-established or non-licensed daycares will be excluded. Information on daycares will be obtained from Bright from the Start, a Georgia base childcare database.

#### GIS-8

Hannah Farmer, Dr. Tara Cox

Research Mentor: **Dr. Tara Cox**

*Home range of male common bottlenose dolphins (*Tursiops truncatus*) in waters around Savannah, Georgia*

Common bottlenose dolphins (*Tursiops truncatus*) can be considered an indicator species because their health indicates how well a habitat is doing. Knowing their location and where they spend their time can help us understand how their

habitat is doing through the health of the dolphins. The purpose of this study was to identify the home range of male dolphins in the waters around Savannah, Georgia using boat based photo- id data from 2009- 2016. Minimum convex polygons (MCP) and kernel densities (KDE) were created using ArcMap 10.4 and projected in UTM 17N. Dolphins 80045, 80011, and 80003 shared similar core values with the areas being 24.83 km<sup>2</sup>, 24.01 km<sup>2</sup>, and 19.01 km<sup>2</sup>, respectively. Comparisons to home range of female common bottlenose dolphins would provide insight into habitat utilization.

#### **GIS-9**

Olivia Komoroski, Dr. Tara Cox

Research Mentor: **Dr. Tara Cox**

*Spatial Patterns and contaminants in common bottlenose dolphins (Tursiops truncatus) in the waters around Savannah, GA*

The common bottlenose dolphin, *Tursiops truncatus*, thrives in the temperate conditions off of the coast of Georgia and Coastal Empire. They can serve as an indicator species of ecosystem health, especially as their blubber has been found to contain harmful organic pollutants from the sea. Common bottlenose dolphins in Brunswick, GA, have the highest numbers of organic pollutants ever recorded in a marine mammal. Biopsies were obtained from common bottlenose dolphins in Savannah, GA to determine if those dolphins are as contaminated as those in Brunswick. Using ArcMap 10.4, I mapped the distribution of 10 biopsied dolphins from 2009 to 2014. By tracking these contaminated dolphins, their patterns as well as contaminant loads in their habitats could be determined. Focusing on the dolphins' locations and common paths around Savannah, Georgia, will help to achieve a better understanding of the contaminant as well as their cause.

#### **GIS-10**

Amani Lewis, Dr. Tara Cox

Research Mentor: **Dr. Tara Cox**

*Common Bottlenose Dolphin (Tursiops truncatus) Distribution and Group Size Variations with Seasons in Savannah, Ga*

The purpose of this study is to represent how common bottlenose dolphins (*Tursiops truncatus*) are distributed and vary in group size during the summer and winter seasons in Savannah, Georgia. I will use Arc MAP 10.4 to map common bottlenose dolphin sighting data from 2009 to 2015. I will project the data in State Plane Georgia East. In my research, I expect to find that common bottlenose dolphins travel in larger groups in the warmer months. I also expect to find that the dolphins may be coming to Georgia into the near estuaries more than the open ocean because of more nutrients and food in these areas.

#### **GIS-11**

Latriona Nelson, Dr. Tara Cox

Research Mentor: **Dr. Tara Cox**

*Cancer Treatment Centers and their Impact on Cancer Patients*

Cancer is a disease in which the cells in the body do not follow the cell cycle correctly. Breast cancer is one of those types of cancer and it is also one of the leading causes of death in women in the United States. These women go to cancer centers to get treatment for these cancers. The purpose of this research is to show a correlation between breast cancer cases/deaths with the number of cancer treatment centers within each state. By using ArcMap GIS, I will have a map of cases, deaths, and treatment centers showing any type of relation. By using these results, I intend to show that the placement of a cancer treatment center is essential for higher survival rates of cancer.

#### **GIS-12**

Jawara Middleton Jr.

Research Mentor: **Dr. Tara Cox**

*Cancer Deaths in the U.S*

Cancer is caused by an uncontrolled division of abnormal cells in a part of the body. This disease is also the 2nd leading cause of death among people in the United States, and this touches many lives. Breast cancer is the leading cancer followed by lung and prostate cancer. My purpose for doing this project is to map spatial patterns of cancer deaths in people on the total

number of deaths caused by cancer in recent years and by doing so I will make people aware of how much of a threat and how common this disease actually is. I will use Arc Map 10.4 and different colors/shades of states to record the cancer heavy regions of the country versus the cancer limited regions. My expected results should show that the Eastern and Northern states have a much higher death total due to cancer versus the Mid-West and Western states in the U.S. Cancer is responsible to at least 1,685,210 diagnosis and 595,690 deaths a year and should not be taken lightly.

## **Marine Science - Bachelors**

### **MS-B-1**

Dianna Priest

Research Mentor:

*Storm Surge Risk for Chatham County*

Chatham County is along the southeastern coast of Georgia, and Savannah is a major city within the county. Due to Chatham County's low elevation, this county is at high risk for high storm surges and flooding. SLOSH inundation models will be overlaid with Savannah in ArcMap 10.4 to help identify what areas are at high risk so that GEMA is prepared to deal with the severe impact a storm may cause. Even if you are along the coast, this doesn't necessarily mean that you are going to experience devastating effects of a major storm. This is where elevation and other factors play a role that would not cause major flooding in your area. According to the data, areas near the coast, especially Tybee Island, will have to take extra precautions in order to prepare for major storms. Some other areas that are more inland than Tybee would have to take extra precautions. So this will defeat the common perception that the more inland you are the better chance you have of not receiving devastating floods near the area in which you reside.

### **MS-B-2**

Tanachia Williams, Dr. Carol Pride

Research Mentor: **Dr. Carol Pride**

*Determining the Presence and Abundance of Potentially Toxic Diatoms and Dinoflagellates in Country Club Creek (Savannah, GA)*

Phytoplankton are a key component of marine ecosystems; they are the base of the food chain and they provide oxygen through photosynthesis. While vital, some phytoplankton produce toxins which are passed up the food chain to marine mammals and humans, causing severe or even deadly illness. In this study, we are identifying diatoms and dinoflagellates in the surface waters of Country Club Creek, and quantifying the relative abundance and standing stock of potentially toxic genera. For this study, water samples were collected biweekly (n=7 to date) from near the surface of the tidal creek using a Niskin bottle at high tide. Water temperatures during the sampling events decreased from 28.7°C on October 13, 2017, to 12.8°C on January 23, 2018, and then increased to 16°C on March 9, 2018. The average salinity of the water was 17.9 PSU and the average Secchi depth was 163.1 cm. Concentrated samples were preserved with Lugol's solution and phytoplankton were quantified microscopically using a 1 mL Sedgewick-Rafter cell at 100x or greater magnification. The data were analyzed in Excel to determine the most prevalent phytoplankton and the abundance of potentially toxic genera. The overall average standing stock of diatoms and dinoflagellates was 1975 cells/L. Secchi depth measurements showed that water clarity was greater when the temperature was lower, but neither showed strong correspondence with the standing stocks of phytoplankton. Non-toxic genera dominated all samples collected to date. The *Coscinodiscus* morphotype was the most abundant with an average standing stock of 728 cells/L. The average Shannon-Weiner Diversity Index of each sample was 1.85. The only potentially toxic genus present was *Protopteridinium*, however, it was only present at an average standing stock of 35 cells/L.

### **MS-B-3**

Sena Tay, Dr. Christopher Hintz

Research Mentor: **Dr. Tara Cox**

*Dissolved CO<sub>2</sub> in the Pacific Ocean off the coast of the U.S. continental shelf*

Carbon dioxide is a greenhouse gas that is produced in part from the burning of fossil fuels. One of the major ways that carbon dioxide enters the ocean is via surface diffusion since its atmospheric concentration is higher. Once in the ocean it reacts chemically with the sea water leading to ocean acidification. The purpose of this project was to use the data collected from the R/V Sikuliaq onboard collector from February 2-8, 2018 to determine the concentration of dissolved carbon dioxide in the Pacific Ocean off the coast of California and Oregon. The data were mapped using ArcMap 10.4 using UTM 10N projection. A higher concentration of carbon dioxide was seen in the colder waters of Oregon as more gases can dissolve in colder waters and near high population centers like Los Angeles, CA. It is important to know the extent of dissolved carbon dioxide in the ocean as it plays a role the acidification of the ocean.

#### **MS-B-4**

Candice Vinson, Emily Griffin, Robin Pertrree,  
Research Mentor: **Dr. Tara Cox**

*Determining seasonal home ranges and density distribution of common bottlenose dolphins *Tursiops truncatus**

Home range is a quantitative measurement of the spatial area an individual inhabits while sustaining its biological needs. The spatial density an organism occupies within its home range is its utilization distribution (UD). Home range area and spatial density distribution are essential for understanding population structure of a species. The purpose of this study was to determine seasonality of home range area and UD for individual common bottlenose dolphins (*Tursiops truncatus*) using minimum convex polygon (MCP) and kernel density estimation (KDE), respectively. Increasing sample sizes will be used to calculate non-seasonal MCP and KDE areas for each dolphin to determine if an asymptote exists, indicating a minimum number of sightings necessary to accurately define the individual's home range. Sightings were separated into two seasons, summer (May-September) and winter (November-March),

based on average water temperatures. Data from 5 dolphins sighted on a minimum of 8 summer and 8 winter days between 2009 - 2017 were mapped in ArcMap 10.4. Average summer MCP ( $81.60 \pm 53.77$  km<sup>2</sup>) was not significantly different from average winter MCP ( $44.70 \pm 20.04$  km<sup>2</sup>; Wilcoxon signed-rank;  $p = 0.23$ ). Seasonal differences in MCP area were not detected, possibly indicating that more sightings are needed, or that males and females have different patterns. However, the locations of the home ranges that dolphins occupied did change between the seasons for 2 of the 5 dolphins, which will be examined further with KDE. Analyzing individual habitat use with regard to season and sex may reveal differences not detected here.

#### **MS-B-5**

Colton Hamilton, Dr. Tara Cox

Research Mentor: **Dr. Tara Cox**

*Home Ranges of the Female Common Bottlenose Dolphins (*Tursiops truncatus*) in the Savannah Area 2009-2015*

Data collected from the Savannah area pertaining to female common bottlenose dolphins (*Tursiops truncatus*) were mapped. The main purpose of this was to determine the home ranges of female dolphins in the Savannah area. Data were mapped in ArcMap 10.4, and the five most commonly seen female dolphins were plotted. A minimum complex polygon was created for each dolphin and area of habitat use was calculated. Most of the dolphins moved between similar locations within the Savannah area. Most of the female dolphins maintained certain areas, with a few outliers.

#### **MS-B-6**

Key'Asia Walker

Research Mentor: **Dr. Sue Ebanks**

*Oil and Temperature on Hatch and Development Rates of *Artemia salina**

Brine shrimp *Artemia salina* are found in inland bodies of saltwater in regions of the United States. *Artemia* have no stomach and thus must feed nearly continuously and inland environments are often exposed to oils including

petroleum products. The purpose of this project was to determine effects of exposure to different oil types (known and not known to be toxic) on hatch and development rates of *Artemia salina*. *A. salina* in glass culture tubes with artificial seawater (ASW; nominal salinity=35 ppt) and either control (ASW only), 1 ppm crude oil, or 1 ppm olive oil were observed for 4 trials, with each of them lasting 6 - 12 days. Initial incubation was 24 hr at 25°C followed by hatch assessment and then observations for developmental stage at subsequent 48-hr intervals. The hatching observations were scored as hatched live, hatched dead, and unhatched for the number of individuals in 0.5 mL samples from each culture tube. The developmental observations were scored as nauplii, juvenile, and adult; live and dead. They were fed a mixture of 1:1 reconstituted algae and yeast in ASW every other day during each trial. Hatching was observed in water control and in both treatments. For developmental rates, adults did not appear until trial 4, apparently due to temperature and light fluctuations. Evaporation, aeration, temperature, light, and cyst density played important roles in this experiment. *Artemia salina* showed a strong response to temperature over the course of trials, with consistent temperatures likely contributing to development to adult stage.

#### **MS-B-7**

Nathaniel Campbell

Research Mentor: **Dr. Carol Pride**

*Following the Gulf Stream: Nutrients and Phytoplankton Communities from the Gulf of Mexico to the Mid-Atlantic Bight*

Phytoplankton species success is controlled by temperature, salinity, nutrient and light availability, among many other factors. Changing nutrient availability, driven by natural and anthropogenic influences, significantly impacts community standing stocks and diversity. High N:P ratios and phosphate deficiency, for example, have led to exceptional algae blooms. Limited phosphorus tends to support dinoflagellate species, but replete phosphorus tends to support diatom-dominated communities. Utilizing a ship-

of-opportunity cruise aboard the R/V Hugh R. Sharp, water samples were taken at 70 stations along the route from Panama City, FL, down the west coast of Florida, through the Straits of Florida, and back north in the Gulf Stream to Delaware Bay. Samples were collected using a combination of the ship's flow-through system and CTD casts. Nitrate and phosphate concentrations were determined by spectrophotometry. Seawater samples were concentrated using a 20- $\mu$ m plankton net. Phytoplankton were counted and identified to family or genus. Shipboard results suggest that nitrate may be limiting in the Strait of Florida and replete near Panama City. Preliminary results from near-surface samples collected via a CTD rosette show prevalence of nitrogen fixing *Trichodesmium* spp. (50% or more) among phytoplankton of the Gulf of Mexico, Florida Straits and the Gulf Stream off the South Atlantic Bight. Dinoflagellates, notably *Ceratium* spp., were significant contributors (40-50%) to all surface rosette samples with the exception of the South Atlantic Bight Gulf Stream sample. In contrast, diatoms only reached 50% of the community in the coastal sample from the Mid-Atlantic Bight. This research was supported by STEMSEAS, funded by NSF 1540645.

#### **MS-B-8**

Jonathan McLain

Research Mentor: **Dr. Tara Cox**

*Distribution of Gray Seals (*Halichoerus grypus*) and White Sharks (*Carcharodon carcharias*) in the North West Atlantic*

Gray seals (*Halichoerus grypus*) are large semi-aquatic mammals that make their home on the coast of North Atlantic Ocean. They can be found resting on the beaches of the northeastern region of the United States, often overlapping with humans. The seals are legally protected under the Marine Mammal Protection Act of 1972. Recently, scientists warned swimmers that the seals can possibly attack them after scientists discovered that the seals attack and kill harbour porpoises. Aside from potential attacks by the seals, beach attendees must be aware of the white

sharks (*Carcharodon carcharias*) that the seals attract, as they are a food source for them. I used data obtained from the online database OBIS-SEAMAP and mapped it in ArcMap 10.4 to show where sightings of seals have been reported and the sharks that inevitably follow them. The data on the map can be used to show what areas along the coast have the highest concentration of gray seals along the east coast of the United States, and if they are the reason for shark appearances off the coast.

### **MS-B-9**

Keri-Niyia Cooper, Dr. John Drake, Dr. Andrew Park,

Research Mentor: **Dr. John Drake**

#### *Parasite Sharing in Marine and Terrestrial Mammals*

This summer research was conducted on Parasite sharing in Marine and Terrestrial Mammals. The Hypothesis was if there is a relationship between marine and terrestrial mammals then parasite sharing will occur based on either generalism, shared taxonomy or habitat, and by which parasite thrives in either one or both environments. After completing some literature review on parasites that infect marine mammals, a database was created from the Host-Parasite Pairing found in the articles. A larger databased was created by merging the Global Mammal Parasite Database, CLC Life Cycle, and Marine (database from the literature) databases after subsetting certain traits. To Analyze, there were three questions being used: (1) Is parasite generalism greater in marine environments or terrestrial environments? (2) Is parasite sharing greater when hosts are grouped by taxonomy (cetacean/ungulate v carnivore) or habitat (marine v terrestrial)? (3) Are parasites that infect hosts of both environments drawn disproportionately from some parasite taxonomic groups? It was noted that parasite generalism is greater in terrestrial environments. Host have a higher chance of being infected by the same parasite if they are found in the same environment. There is a higher chance of Helminths species being more commonly found

in a single environment. Future research questions would "What parasite were shared in both marine and terrestrial mammals?", "What allows them to use both marine and terrestrial mammals as host?" , and "Are these traits observed in all shared parasite?"

## **Marine Science - Masters**

### **MS-M-1**

Rebecca Thublin, Sue C Ebanks

Research Mentor: **Dr. Sue C. Ebanks**

#### *Analyzing Different Methods for Determining Keystoneness*

The keystone species concept is one that has widespread use in ecology. This concept states that a certain species with a relatively low biomass has a large effect on the ecosystem. The ecosystem can be affected in many way, such as physical disturbance, number of species (biodiversity), number of individuals (biomass), soil/sediment makeup, etc. The common way to determine if a species is keystone is through statistical analyses. Another way is through the utilization of the community importance formula that was developed in 1996. The purpose of this study was to analyze both methodologies of determining a keystone species. Both methodologies were used to analyze 2 datasets: one that was collected through bi-monthly trawling of Wassaw Sound, GA and spanned from December 2015-August 2017 and another that was collected by GADNR and spanned from January 2005-2016. These datasets were analyzed by determining the change in biomass and biodiversity and if they changed with the abundance of a species. Data were analyzed statistically using an independent sample t-test. The results of the statistical analyses did not match the results of the community importance formula. The datasets were manipulated to determine if excluding transient species or ones with obvious seasonal patterns would change the results. It was found that a definite numerical answer for keystone is needed before the community importance formula can become widely used.

## MS-M-2

Shaiane Pinto, C. George, T. Kolkmeier, Robin Perrtree

Research Mentor: **Dr. Tara Cox**

*Analyzing Potential Trends for the Occurrence of the Florida Manatee (*Trichechus manatus latirostris*) along the Coast of Georgia*

In the United States, the distribution of Florida manatees (*Trichechus manatus latirostris*) ranges from Texas to Florida and northward to North Carolina, but they have been observed as far north as Rhode Island. The migration patterns of the Florida manatee include the reliance on warm-water refugia and warm-water discharges at industrial sites. The purpose of this study was to evaluate the seasonality of manatee occurrence at facilities with National Pollutant Discharge Elimination System (NPDES) permits in Georgia from 1975 to 2017. Manatee sighting data were mapped and compared to NPDES-permitted facilities with thermal and non-thermal discharges. In the warmer seasons (Spring/Summer), there was a total of 95 sightings. Of the total, 37 (39%) sightings occurred in Chatham County, while 38 (40%) and 20 (21%) were in Glynn and Camden Counties, respectively. In the colder seasons (Fall/Winter), there were 313 sightings total. From the total, 143 (46%) sightings were in Chatham County, 28 (9%) were in Glynn County, and 142 (45%) occurred in Camden County. Manatees were observed around or at the discharges of NPDES-permitted facilities in all 3 counties. The higher number of sightings during Fall and Winter in comparison to Spring and Summer are probably associated with an increase in effort by the GA DNR. Manatees were observed at facilities with both thermal and non-thermal discharges, which can indicate that other resources other than warm water are possibly driving them to those locations, such as freshwater and food. The use of systematic surveys and telemetry data could help characterize manatee use of Georgia waters and of the available resources along the coast.

## Mathematics

### Math-1

Chadasi Betterson, Nikoia Bennett-Leathers, Vanaja Vijayaraghavan, Monica Roland

Research Mentor: **Dr. Hyounkyun Oh**

*What will happen next? Regression analysis using the Least Square Method*

Least Square Regression is by far the most widely used modeling method. It is what most people mean when they say they have used "regression", "linear or nonlinear regression" or "least squares" to fit a model to their data.

The "method of least squares" was independently developed in the late 1700's and the early 1800's by the mathematicians Karl Friedrich Gauss, Adrien Marie Legendre and (possibly) Robert Adrain.

Not only is linear least squares regression the most widely used modeling method, but it has been adapted to a broad range of situations that are outside its direct scope. It plays a strong underlying role in many other modeling methods, including the other methods including nonlinear regression.

### Math-2

Jania Cummings

Research Mentor: **Dr. Mulatu Lemma**

*My Journey with Triangular Numbers*

In this paper, I investigated some basic properties of triangular numbers. The triangular numbers are formed by partial sum of the series  $1 + 2 + 3 + \dots + n$ . In other words, triangular numbers are those counting numbers that can be written as  $T = 1 + 2 + 3 + \dots + n$ . The sequence  $1, 3, 6, 10, 15, \dots, n(n + 1)/2, \dots$  shows up in many places of mathematics. The Greek called them triangular numbers. The triangular number is a figurate number that can be represented in the form of a triangular grid of points where the first row contains a single element and each subsequent row contains one more element.

### **Math-3**

Leo Degon

Research Mentor: **Dr. Mulatu Lemma**

*Survey of Fermat Numbers*

Fermat numbers are numbers of the form  $F(n) = 2^{2^n} + 1$  for  $n$  existing in the set of whole numbers  $\{0, 1, \dots, n\}$ . Piere de Fermat proposed the numbers as a possible way to generate prime numbers and conjectured that all Fermat numbers were prime. This would be disproved by counterexample. Fermat was theorized to have had the mathematical tools to have discovered this. While his initial proposition was disproved, other interesting properties of Fermat numbers were discovered. There are number of properties of Fermat numbers that have been proved or theorized to exist. This paper is a survey of several of the key discoveries about Fermat numbers.

### **Math-4**

Azea Mustafa

Research Mentor: **Dr. Mihaela Munday**

*Investment Banking*

An applied mathematics workshop was held through the support of the National Science Foundation at Savannah State University to bring together public school teachers from the Savannah - Chatham County area to work on a project that could be modified to use at the high school level. The project involved working within a real world application of mathematics “investment of stocks” and used several key factors of project-based learning. The focus for this workshop and its participants was to work through this applied mathematics problem and discuss relevance and possible adaptations to the high school math curriculum. Through this collaboration, the project was deemed successful as the example could be used at higher levels of mathematics, such as AP Statistics, as well as be modified to use for the lowest area of high school mathematics, such as Algebra 1 and Foundations of Algebra. The main area of concern was the extent to which Microsoft Excel is used and the

ability of the presenting teacher as well as the students to effectively navigate through the program in such a way that it minimizes the use of instructional time for troubleshooting purposes. This workshop allowed us to work through the investment project as though we were students trying to solve the problems. We were able to pick our own stocks, calculate all the necessary data, and analyze and assess possible solutions with respect to investing in our chosen stocks. Microsoft Excel was used as the median to calculate, analyze, and assess all necessary data through the use of its programmed functions. To address the aforementioned concern, we as teachers decided that having a sample Microsoft Excel stocks solution page for students to reference as they attempted each piece would give students an aide for organization and algorithm setups. Furthermore, we decided that we would add more to the instruction manual that was originally given to us for this project to include more basic directions to using functions and developing algorithms in Microsoft Excel to accommodate students who are new to Microsoft Excel and those in lower level mathematics courses.

## **College of Business Administration**

### **Management & Marketting**

#### **MGMT-1**

Rodrick Story

Research Mentor: **Dr. Baruch Lundy**

*UAE advertisement research*

Banks provide investment services as well as corporate banking and wealth management services. The banking sector of the United Arab Emirates is fragmented. The economy of the United Arab Emirates is being filled by foreign banks despite the protection provided to the banking sector. The UAE central bank manages the banking sector. Advertisement of the banking business is, therefore crucial to gear the banking business towards global competition (Sayani, 2015). The United Arab Emirates uses the following techniques to market their business.

## MGMT-2

TreNecha Morgan

Research Mentor: **Dr. Baruch lundy**

### *Increase Sales*

This paper examines four published articles that address research that is conducted on the internet or offline on how to increase sales. The articles explain how to increase sales and different ways other companies increase sales. Berger, J., Sorensen, A. T., & Rasmussen, S. J explains how negative reviews or rumors can often make sales increase. Momany, M., & Alshboul, A. explains how social media brings awareness and increase online sales. Barroso, A., & Llobet, G. demonstrates how important it is to advertise new products. Kriesler, K., & Nitzan, S. demonstrates how introducing non-salable items will increase sales. Each article that were chosen had a different aspect and this research paper authenticate each one. The questions that would be addressed are:

How could businesses increase their sales? How would increase of sales effect a business? What role does negative publicity play in businesses? How does negative publicity effect sales?

Keywords: advertising, sales, awareness, marketing, social media

## MGMT-3

Quincy Parham, Christopher Siebere, Austin Bailey

Research Mentor: **Dr. Inessa Korovyakovskaya & Dr. Suman Niranjana**

### *Otto: Market Selection and Entry Strategies to Expand Exports in the Americas*

**PURPOSE:** To identify potential markets and entry strategies to expand exports of Otto Environmental Systems North America, Inc. in the Americas. The company has 84 years of experience in the waste industry with more than 100 million waste carts currently servicing communities worldwide. Its mission is to provide innovative products created for today's collection needs and customized service developed with technology and experience.

**DESIGN METHODS:** Case Analysis.

**RESULTS/EXPECTED RESULTS:** Otto Environmental Systems North America, Inc. is currently exporting to Canada, Mexico, Bahamas, Dominican Republic, Cayman Islands, Aruba, Virgin Islands, Puerto Rico, Costa Rica, Colombia, Peru, Ecuador, Australia, Philippines, Iceland, and Singapore. A number of country and waste industry-specific analyses were performed on several potential markets in various countries in Latin America. As a result, Haiti was identified as the country with an urgent need for waste containers (trash carts) and recycling bins that Otto manufactures. Otto can enter new markets in Chile and Argentina, or it can practice corporate social responsibility by shipping its products to Haiti. Containers can be viewed as the product that helped clean Haiti's environment after years of being devastated by natural disasters. We are suggesting an innovative modular design to increase shipping capacities and to differentiate from ESE World B.V., the main competitor.

**DISCUSSION/CONCLUSION:** Our analysis on the real-life case of Otto Environmental Systems North America, Inc. contributes to the existing body of knowledge on case studies. The company can act on our recommendations to both increase its profits while differentiating from its competitors, especially from the long-standing rival, ESE World B.V. - Europe's leading manufacturer of temporary storage systems for waste and recyclables. The most promising new markets are in Chile, Argentina, and Haiti.

## MGMT-4

Tae Yoon Park

Research Mentor: **Dr. Inessa Korovyakovskaya**  
*Intrinsic Rewards as Employee Motivational Tools*

**PURPOSE:** Managers understand that they need to constantly motivate employees to help them better engage in their daily operations and to increase their job satisfaction. This is especially true for routine and non-innovative tasks and duties. Employees who perform routine tasks tend to become quickly dissatisfied with their jobs which results in high turnover that lowers productivity and in some instances - the existence

of an organization. This study empirically tests the Four Intrinsic Rewards model developed by Kenneth W. Thomas who claims that intrinsic rewards done through structure changes within the organization actually improve employees overall job satisfaction.

**DESIGN METHODS:** Qualitative research - Verbal interviews with employees (A, B, C D) at the beginning and at the end of the 4 weeks-long research from October 16, 2017 to November 10, 2017 conducted in one of the organizations on the east coast of the United States. The Four Intrinsic Rewards model suggests that an employee would have an appreciation of intrinsic rewards via having four senses from the given tasks: Sense of Choice, Sense of Competence, Sense of Meaningfulness, and Sense of Progress. Each sense of intrinsic rewards is a combination of two of factors: Opportunity Rewards and Accomplishment Reward; Task Activities and Task Purposes.

**RESULTS/EXPECTED RESULTS:** The study results demonstrate that the intrinsic rewards can improve an employee's job satisfaction. We found that three out of four employees had an increase in their job satisfaction after additional intrinsic motivation techniques have been added.

**DISCUSSION/CONCLUSION:** Research findings contribute to the extant literature on intrinsic motivation in the workplace and job satisfaction. The important outcome of this research is the demonstration that it is possible and highly desirable to motivate employees become intrinsically satisfied with their work. Intrinsic rewards can save thousands of dollars to organizations while boosting their productivity and improving employees' morale and job satisfaction.

## **MGMT-5**

Ceteria Polite, Michelle Flood, Steven Antonia,  
Research Mentor: **Dr. Inessa Korovyakovskaya**  
*Factors That Influence Motivation in the Workplace*

**PURPOSE:** Motivation is one of the most influential drivers of performance in the workplace.

Motivation affects the levels of employees' satisfaction with work tasks. Organizational leaders and managers at all levels need to evaluate factors that effectively motivate employees. Specifically, this research examines the following research questions:

**Organizational Culture-** How does the culture of an organization affect employee motivation? Is the culture set by leadership? Within this culture, does the employee relate to the social norms and shared values of the organization?

**Employee Compensation-** Does greater employee compensation lead to increased motivation for an employee? Can an employee be self-motivated in a toxic working environment if he/she receives good compensation?

**Employee Benefits and Rewards-** Do extra benefits and rewards increase employee motivation? In today's society given the high costs of coverage, a great health care

package can be valued more by an employee than a bonus check. Does the company value employee's time with their families and allow them to spend adequate time with their families?

**Challenging and Exciting Work Environment-** Does this environment create motivation or reduces employee's motivation? Do employees feel that their work is valued? Are they bored at work?

**Employee Empowerment-** Do managers entrust their employees with tasks of increased responsibility and risk? Does empowerment motivate employees or make them timid and conservative because of the possibility of making mistakes?

**Communication-** Does a company with an open line of communication create an environment in which their employees feel that their voice is heard? Do employees want management to listen to their recommendations?

**DESIGN METHODS:** Conceptual research.

**RESULTS/EXPECTED RESULTS:** Specific hypothesis related to the motivation in the workplace were designed. The study concluded that each of the factors listed above are necessary to create success within a workplace. If each factor is applied, it will create high satisfaction in

employees. However, if only the bare minimum application is used, employees will not be motivated to work hard.

Research shows that motivation of each employee is as important as any other function of the organization because each employee is expected to contribute to the success of the entire organization. It is estimated that it costs \$75,000 to search for, hire and train a new employee. The rate of employee turnover can be significantly reduced by effectively applying motivational tools in the workplace.

#### **MGMT-6**

Jamia Bailey

Research Mentor: **Dr. Baruch Lundy**

*Business Ethics: Exploring the Causes of Unethical Behavior*

As we progress into the future, an unethical business behavior is one of the most challenging issues for organizations today. Unethical practices have the power to lead organizations to a downfall. Many people are affected by the environment, goals, and leadership of the workplace that may cause the unethical behavior to be practiced. Unethical practices could result in termination of those in job positions. The study will examine how what factors cause workers in the business workplace to practice unethical behavior.

How does a work environment affect the workers to perform unethical practices?

Does the emotion of individuals in the workplace encourage unethical behavior?

Are employees likely to perform unethical behavior when meeting company goals/expectations?

Keywords: ethical behavior, unethical behavior, and business ethics.

#### **MGMT-7**

Bryan Smith

Research Mentor: **Dr. Baruch Lundy**

*Corporate Social Responsibility*

This study aims to present a theoretical framework model for exploring corporate social responsibility (CSR) implemented in supply chains. The practices of CSR are managed at its

suppliers, have recently become a popular business technique in the developed economies the concept behind CSR are starting to reach globalization through the practices, structure of the capitalist world in Multinational Corporations (MNC). However, CSR are often put into question by supply chains and the underhanded practices of MNC suppliers in the world. These irresponsible practices put global firms under a lot of pressure to protect their brands. Some firms go as far even to assume the responsibilities of their supplier practices. This paper challenges the granted assumption that all firms should be accountable for the practices of their suppliers by espousing on the moral and ethical decisions of responsibility. Corporate control or is identifies the use of allocating responsibility in firm supplier's relations which shows the more power the relationship has tends to exert some moral influence over the weaker party in responsibility. What are supply chains?

How does being ethical affect a business?

How does social responsibility relate back to ethics?

Can a business actually be ethical?

Is being ethical profitable?

Keywords: Corporate social responsibility, Multinational Corporations, Ethics, firm-supplier relationship.

#### **Masters in Business Administration**

##### **MBA-1**

Feon Green, Vicktoria Gatling

Research Mentor: **Dr. Suman Niranjana**

*The Effects of Job Burnout in Relations to Work Attitude, Job Satisfaction, and Employee Performance.*

**PURPOSE:** - Job Burnout is a specific form of job stress. A condition of mental, physical, and emotional exhaustion that can be damaging for employees and directly related to health problems. This state in conjunction with uncertainty adds to depersonalization. This research explores Job Burnout on the basis of one dimension of the social exchange theory, specifically how psychological awareness in employees

contributes to the variables of job engagement, work attitude, and employee performance.

**DESIGN METHODS:** - Structural Equation Modeling and SPSS was employed to conduct the analysis of the research.

**RESULTS/EXPECTED RESULTS:** - As the hypothesis related to Job Burnout to its influence of work attitude, job satisfaction, and employee performance were measured on 4-point Likert scale ranging from 0 (never) to 4 (always). We concluded, there is a negative correlation of job burnout in relations to individual employees and their employers.

**DISCUSSION/CONCLUSION:** -The results examines the negative relationship of Job Burnout to the effectiveness of the organization. With the three components of job burnout, loss of personal accomplishment, depersonalization, and emotional exhaustion, the most vital, emotional exhaustion it has an independent effect on the constructs beyond the significance of age and gender.

## **MBA-2**

Sade Shofidiya, Dr. Rebecca Setliff

Research Mentor: **Dr. Rebecca Setliff**

*The Relationship between Mental Workload, Stress, and Anxiety with Transportation Safety Variables*

Employees are facing increasingly higher demands in the workplace as globalization and automation flatten hierarchies. Inattentiveness while driving is not limited to technological distractions. The objective of this research is to examine whether or not a relationship exists between mind wandering and mental workload. This research is an interdisciplinary study of management, psychology, and transportation planning. More specifically, this research is an empirical study (survey based research with a sample size equal to 200) that's targeted at major cities with an excess of 5 million in population. The sample consists of working professionals with a minimum of 2 years of work experience and those who commute daily to work using personal cars and/or transit system for at least a duration of 30 minutes (can be combined transit

and car). A conceptual model with the following latent exogenous variables: mental workload, stress, and anxiety are assumed to have an influence on endogenous latent variables: mind wandering, distracted driving, and cognitive failures. Established scales and survey questions from transportation literature as well as psychology were utilized to conduct the study. Additionally, the duration of commute was utilized as a moderator, as it is believed that the longer the commute the greater the chance of mind wandering and distraction.

The research will impact the field of transportation by informing/guiding the groundwork for the creation of safer roads and transportation environments. The findings of the research will contribute to a more complete understanding of transportation by raising awareness of transportation processes, mental processes, and how the two interact with one another. Managerial insights can be utilized to come up with better policies in order to increase safety and quality of life.

## **MBA-3**

Briana Bennett

Research Mentor: **Dr. Suman Niranjana**

*The Antecedents of Financial Understanding and Independence*

**PURPOSE:** The purpose of this study is to determine if there is a positive correlation between financial literacy and financial motivation, discipline planning and education as well as a positive correlation between financial independence and financial motivation, discipline, planning and education. The study includes a sample of 215-surveys utilizing a Structural Equation Model technique as the research method. There are six constructs which include financial education, financial planning, financial motivation, financial discipline, financial literacy (understanding) and financial independence.

**RESULTS/EXPECTED RESULTS:** Findings show that financial motivation, planning, discipline, and education in an effort to obtain financial literacy is key in financial

understanding which will lead to more assertive and efficient decisions in the monetary context.

**DESIGN METHODS:** The data used and collected for this study was obtained from a large public historically black university called Savannah State University and also family and friends of researchers. Two hundred fifteen (215) questionnaires were applied, two hundred ten (210) participants answered and two hundred (200) participants completed the instrument, therefore a response rate of ninety-three (93) percent was achieved. As seen in Table the participants in the study were of varying age and ethnicity. Path analysis using linear structural relations software, Amos, I. S. (2016). IBM Statistical Package for Social Sciences Amos 24.0. The proposed model used Amos IBM is shown in the Figure . A one-way ANOVA analysis for all variables with the demographic factors as categorical variables is conducted using SPSS software.

**DISCUSSION/CONCLUSION:** The purpose of the study was to determine if positive financial behavior would have an effect on financial understanding and independence. Based on collected data, the Hypothesis is supported. All constructs maintain a positive correlation between dependent and independent variables. It is then observed that Financial Discipline, Financial Education, Financial Motivation, and Financial Planning will eventually lead to Financial Understanding and Independence.

#### **MBA-4**

Latasha Hickson

Research Mentor: **Dr. Suman Niranjana**

*Business Students & Technology Integration: Factors that Influence Student's Satisfaction and Self-Efficacy in Higher Education*

This paper investigated the influences on student satisfaction, student self-efficacy among undergraduate and graduate business students as related to the integration of technology into their academic studies at a historically black university in the southeastern part of the United States. Additionally, this research examined the different factors and barriers that influence business

student's satisfaction and self-efficacy, faculty member's perception with advising and teaching with technology and the challenges within andragogic settings. The study spans an interval of one semester. The sample of two-hundred (200) participants were statistically measured over six constructs. The constructs were Instructional Effectiveness and Technology, Online Learning and Technology, Technology and Advisement Effectiveness, Academic Support and Technology, Self-Efficacy and Technology, and Student Satisfaction and Technology. Structural equation modeling was used to evaluate the hypotheses. Four of the six tested scales resulted in strongly reliable and valid measurements, while the remaining two were not reliable. Study results indicated strong correlations between the endogenous constructs of Self-Efficacy and Technology with exogenous constructs of Instructional Effectiveness and Technology and Academic Support and Technology. The endogenous construct of Student Satisfaction and Technology was strongly correlated to the exogenous constructs of Instructional Effectiveness and Technology and Technology and Advisement Effectiveness. Self-Efficacy and Technology and the exogenous construct of Online Learning and Technology were not correlated in the study. Student Satisfaction and Technology and the exogenous construct Academic Support and Technology were also proved to have no correlation in this study.

#### **MBA-5**

Wynitta Lee

Research Mentor: **Dr. Suman Niranjana**

*When Worlds Collide: The Influence of a Corporation's Political Advertisement on Voters*

Based on previous research conducted, I have ascertained that corporations expose hundreds of advertisements daily that influence our attitudes and buying habits toward brands. The space between consumers and a company's advertisement message is filled with noise from their surroundings. Rationally, the shopper's subconscious must take every necessary step to

decode the genuine importance of the commercial. The decoded advertisement can garnish a negative or positive attitude which stimulates a motivation. When the consumer sees or hears an advertisement, a picture automatically appears that can be linked to a negative or positive feeling. Since this is the case, what happens when politics are thrown in the mix? Advertisements are continuously advancing by utilizing elements such as ethnicity, social equity, race, sexuality, and religion to peak the attention of consumers. The past election has motivated companies to use their platform to voice their opinion on societal issues. This research paper will address how advertising has morphed over the past election to positively or negatively influence and motivate consumer's buying habits but also impact their moral conscious. In this investigation, we will continue examining how customer's motivation, beliefs, and morals are affected by the evolutions in subliminal advertising and how these elements change when social issues are being addressed.

#### **MBA-6**

Angelique Serrano, Steven Antonia  
 Research Mentor: Dr. Suman Niranjana  
*Measuring Employee Satisfaction through Empowerment, Task Complexity, and Knowledge Sharing*

**PURPOSE:** - Job satisfaction is an important aspect of working individuals' lives, as well as the organizations they work for. Higher job satisfaction can lead to serious benefits for both parties which include low turnover, improved efficiency, well qualified staff, and internal promotions. This paper explores how factors such as employee empowerment, task complexity, and knowledge sharing will affect job satisfaction of individuals.

**DESIGN METHODS:** - The methods employed for our data analysis include an exploratory factor analysis, a confirmatory factor analysis, and structural equation modeling.

**RESULTS/EXPECTED RESULTS:** - Our main hypothesis was that employee empowerment, task complexity, and knowledge sharing would positively affect job satisfaction. This would mean that those three factors could be properly addressed in order to improve an individual's job satisfaction if needed. We hope that through our collected data and analysis, we will prove our hypothesis to be true.

**DISCUSSION/CONCLUSION:** - Our findings will further contribute to research that has been published on employee empowerment, task complexity, knowledge sharing, and job satisfaction. This will also help provide insight on whether these factors are inter related, meaning that when one factor suffers, the others will be affected negatively as well. Our research will also contribute to business owners who are seeking information on how to improve or maintain job satisfaction for their employees. This research should be continued in the future with a larger sample and in industries outside of service or education, for a better understanding of how these factors interact with one another.

#### **MBA-7**

Amber Evans  
 Research Mentor: **Dr. Suman Niranjana**  
*The Factors that Affect Job Satisfaction: A Thorough Study*

This study is to investigate the intrinsic and extrinsic factors that may have a positive effect on job satisfaction while also discovering why turnover and absenteeism has a negative effect. Job satisfaction is very essential in the workplace that determines the success and performance of employees. This has chances of either helping and hurting organizations' in the long term. An analysis of Herzberg's Two Factor Theory, intrinsic and extrinsic factor, was completed in order assist in figuring out what motivates organizational commitment and loyalty with employees while also uncovering factors that causes turnover and absenteeism. Questionnaires

were distributed amongst employees of various types of organizations that are either satisfied or dissatisfied in their current profession. Based on the results, it could be the conclusive factors that help improve that needs of employees. In the end, it will all come foster new techniques for managers to look into in order to provide better and productive work environments.

#### **MBA-8**

Lakheer Lovewine

Research Mentor: **Dr. Suman Niranjana**

*Leadership Styles Influence on Business and Employee Performance*

**PURPOSE:** - As business sectors and industries continue to grow in response to technological advances, the need for an understanding of employees and their response to leadership remains constant. Researchers have spent countless hours identifying leadership styles, how to utilize them and what's best suited for specific scenarios. This paper reviews four specific leadership styles, identify the personality traits most closely associated with them and determine if they affect business and performance individually.

**DESIGN METHODS:** Data was conducted by using Exploratory Factor Analysis, Correlation Analysis, and One-way ANOVA analysis.

**RESULTS/EXPECTED RESULTS:** - Specific hypothesis related to different leadership styles. of domestic violence were designed and tested through empirical analysis by collecting information via surveys at Savannah State University. We found that substance abuse influenced domestic violence. The results also showed that male dominance predicted domestic violence. We found that there is a difference between males and females with respect to the rate of violence. **DISCUSSION/CONCLUSION:** - Of the eight hypothesis that were performed only four constructs were accepted. However, an ample amount of literature supports all eight hypotheses as it pertains to leadership styles. This study shows how vital it is to have and maintain an employee/manager relationship, possessing factors such as mutual trust, knowledge,

cooperation, and commitment to increasing satisfaction.

#### **Transportation Engineering – Certificate Program**

##### **TCP-1**

Sarah Dillard

Research Mentor: **Dr. Roxana Javid**

*Quantifying the Environmental Impacts of Plug-in Electric Vehicles in the U.S.*

Plug-in Electric Vehicles (PEVs), including Battery Electric Vehicles (BEVs) and Plug-in Hybrid Electric Vehicles (PHEVs), are believed to be one of the means to improve the sustainability of the road transportation by mitigating emissions. PEVs burn less/no gasoline, but producing the electricity used to charge them does generate emissions depending on the source of the generation. The objective of the research is to quantify the environmental impacts of PEVs in the U.S., considering the level of PEVs penetration and electricity generation mix in each state in 2015 and 2030. We developed state-level models using the Alternative Fuel Life-Cycle Environmental and Economic Transportation (AFLEET) Tool for 2015 and 2030 to investigate which states produce less emissions considering their PEV adoption and renewable energy goals. We used data from different sources including number of convectional cars, PHEVs and BEVs, gas and electricity prices, electricity generation mix, number of available public electric charging stations, and average vehicle miles travelled in each state in 2015 and 2030. The results of the analysis show that some states shows a progress towards their GHG emission from 2015 to 2030 including Alaska, California, and New York, while some others do not appear to improve their GHG including Nebraska and North Dakota. Moreover, Alaska, California, Oregon, and Georgia are estimated to have improvements towards their PM2.5 air pollutant emissions from 2015 to 2030 but not Nevada and North Carolina. With sufficient data availability, this model could be developed and used by state policy makers and transportation planners to optimize their

infrastructural investments by identifying states where the response of PEV adoption would be maximized.

## **TCP-2**

Corliss Best, Suman Niranjana, Ph.D., Katrina Savitskie, Ph.D., Maranda McBride, Ph.D.

Research Mentor: **Dr. Suman Niranjana**

*Antecedents of Distracted Driving: Role of Cognitive Failures*

**PURPOSE:** Mobile phone utilization was resolved to be the second most basic type of diverted conduct high school drivers were occupied with before a vehicle mishap. Therefore, we intent to identify behavioral factors that may impact teenagers' and young drivers' perceptions of following laws (ages between 13 and 25 years old). Moreover, we aim to show that an indirect relationship exists between the big-five personality (BFP) traits and distracted driving (DD), mediated through cognitive failures (CF).

**DESIGN METHODS:** The Qualtrics Panel was administered, which collected 521 responses regarding personality (BFP Factor Assessment), CF experiences (CF Questionnaire), and DD activities (DD Questionnaire). Filter questions like age, length of driving, and zip code were used to screen potential responders. Structural equation modeling was used to analyze the data.

**RESULTS/EXPECTED RESULTS:** CF has a significant mediating relationship between personality and DD. Consciousness, neuroticism, and openness were not statistically significant and were negatively correlated with DD; the opposite is true with CF. Extraversion, agreeableness, and consciousness was negatively correlated with neuroticism. Females was statistically significant with neuroticism according to the one-way ANOVA analysis.

**DISCUSSION/CONCLUSION:** Teens who are high in extraversion would be more likely to engage in texting and driving behaviors, especially those who are influenced by their peers. The compassionate and cooperative nature of people who scored high in agreeableness may explain why teens engage in less distracted

driving - regards given to road regulations and safety concerns. Therefore, informational and behavior-deterrent campaigns against TWD should be targeted towards individuals rather than demographics.

**GRANT SUPPORT:** National Science Foundation - Targeted Infusion Program

## **TCP-3**

Antwone Smoak

Research Mentor: **Dr. Deden Rukmana**

*Parking Violations Among Students at Savannah State University*

The purpose of this research is to explore data from the 2016-2017 fiscal year, specific to Savannah State University (SSU), to examine how it will influence the future of student parking regulations at the university. Parking violations among students at SSU is a topic that effects the main population of the institution; the students. The main question of this research is - What are the most pressing parking rules violated, and why are they so frequently violated?

This study looks at the most common parking violation among students at SSU. The research looks at the type of student which violates parking policies the most. It also looks at the month which generates the most violations among students at SSU.

The most common parking violation among students at SSU is for No Parking Permit. The data provided by SSU's Parking and Transportation Department reports that within the 2016-2017 fiscal year, there were over two thousand citations issued to students for not having a Parking Permit.

There are two main types of students as it relates to parking on college campuses. First, there is the resident student. Resident students occupy university housing. Secondly, there are Commuter students. Commuter students do not live on campus but attend classes regularly. The type of student who violated the university's parking policies the most was the Student Senior Commuter. As far as the month which generated the most citations during the 2016-2017 fiscal year, March exceeded any other month. Students

tend to violate campus parking policies due to a lack of knowledge pertaining to their designated parking areas. The researcher recommends biannual seminars to educate students on parking policies. This research is supported by the Interdisciplinary Transportation Grant at SSU.

## **College of Liberal Arts & Social Sciences**

### **Behavior Analysis**

#### **BA-1**

Valesia Davis, William Saidel

Research Mentor: **Dr. William Saidel**

*Information Spread on Grounded Starling Flocks on Arising*

Starlings are small to medium-sized passerine birds in the family Sturnidae. The name "Sturnidae" comes from the Latin word for starling, sturnus. In 1890 and 1891, European Starlings were released in New York City and only sixteen mating pairs survived. They have no predators, so as of today, the starling population in North America is estimated to be around 200 million.

Past and current research on animal collective behavior has been to understand and observe how a species communicates among one another. This behavior can be seen in fish, insects, mammals and birds. European Starlings are an exquisite example of how animals have an impressive trait while in groups. It shows self-organization and lack of centralized control. The study and the use of starlings portrays the significance of animal collective behavior.

This research consisted of analyzing videos of starling flocks arising from the ground and modeling the behavior. After identifying where the initiation of the take-off begins, we complete a series of steps that assist in determining if the distance between a certain amount of birds within the flock correlates to whether the birds rise or stay on the ground.

#### **BA-2**

Alexis Mack

Research Mentor: **Dr. Shinaz Jindani**

#### *Permanent supportive housing*

Permanent supportive housing accommodates residents to start on the path towards recovery which included services and lower to no rent at all. The program is available to individuals and families as well as men and women. Some truly believe that the generosity of welfare has created dependency. Beneficiaries who receive services tend to adopt the passive attitudes and are unwilling to participate in forming of their own destiny. This research explored the attitude of the residents towards permanent housing. Using self-constructed 10 item (Cronbach Alpha 0.460)) instrument along with the demographics, was administered to the 48 residents. Forty-two completed questionnaires were obtained, resulting in 91% response rate. Majority were female (65%), with average age of 51 years, with 30% (n=13) with no income at all. Fisher's Exact Test noted that the data was approaching significance ( $p < 0.06$ ) and Male (79%) were more likely to adopt passive attitude and were less likely to participate in shaping their destiny.

#### **BA-3**

Destinee Todd, Dr. Sherry L. Serdikoff

Research Mentor: **Dr. Sherry Serdikoff**

*Academic Effort Discounting as a Measure of Indolence in College Students*

Effort discounting refers to our tendency to devalue outcomes that require more response effort to obtain. Just as delay discounting can be viewed as a measure of impulsivity, effort discounting can be viewed as a measure of indolence. This study measured indolence in a college setting using an academic effort discounting task with college students. Specifically, we examined the discounting of a hypothetical final course grade that required differing amounts of average weekly outside-of-class study time to achieve. We estimated the degree to which the effortful outcomes were discounted with two non-linear decay models: an exponential model and a hyperbolic model and discuss the potential usefulness of academic discounting tasks for exploring variables that might be related to academic success.

#### **BA-4**

Sequoyah Thurmond, Samnick Pondy, Dr. Kimberly Frame, Dr. Sherry Serdikoff

Research Mentor: **Dr. Kimberly Frame**

*Does immediate feedback improve retention of material compared to traditional and familiar testing formats?*

Previous research has provided strong support for the conclusion that, within an educational environment designed to promote retrieval practice, answer-until-correct (AUC) assessment produces better learning than a typical testing arrangement that has become common in college classes. This study was designed to replicate and extend previous studies evaluating the effects on college students' learning using AUC class assessments that provide immediate corrective test-item feedback. Students completed multiple-choice unit quizzes that were scored using electronic software (Brightspace D2L) with delayed feedback (feedback was available at the end of the quiz) or Immediate Feedback Assessment Technique forms designed for AUC assessment. Exams included questions from 6 unit quizzes (3 delayed feedback and 3 AUC quizzes). Performance on quiz questions were compared to the matching exam questions to determine the effect of the feedback conditions in place when the original unit quiz was administered. There does not appear to be much difference between overall performances on items that were initially tested with IF-AT vs. D2L, but students were more likely to answer items correctly on the exam if they had answered them correctly on the initial quiz. In the current study immediate feedback may have been more effective than delayed feedback in improving exam scores from quiz scores, however there was no statistical difference between the IF-AT and D2L conditions.

#### **BA-5**

Rachel Cuffy

Research Mentor: **Dr. Dennard**

*Domestic Violence Increase Homelessness*

Homelessness is a severe problem in which many people have become blinded to the ever-rising crisis. By not having adequate support or resources, many victims and children have to choose between staying in the abusive relationship until a bed is open in a domestic violence shelter or leave the partnership and be homeless on the streets. With resolutions such as the Violence Against Women Act and the McKinney-Vento Homeless Act, victims and children of the victim do not have to stay in those abusive partnerships and can receive services granted they meet the requirements. Some ways to eliminate the homeless crisis is to create more safe shelters as well as implement stricter consequences for domestic violence police calls such as more arrest for both the victim and perpetrator. In doing so, the number of domestic violence calls and homeless people would decrease. This paper aims to identify ways in which the people, community, and organizations must work together not to allow domestic violence or homelessness to continue. To best assist children, adolescents, as well as families that are homeless, one must first know that homelessness is not like an incurable disease. Homelessness is a temporary circumstance that is fixable with assistance.

#### **BA-6**

Chatham Davis

Research Mentor: **Dr. Shinaz Jindani**

*Interpersonal Psychotherapy effects on Depression and Anxiety of Soldiers suffering from Post-Traumatic Stress Disorder*

Trauma-Resolution Intensive Outpatient Program (TRIOP) purpose is to help service members recover from Post-Traumatic Stress Disorder or other related symptoms related to experiencing a traumatic event. The program is treatment focused and designed to provide an intermediate level of care to promote psychological health, healing, and resiliency for service members. It is a multi-day/multi-week structured program of both individual and group therapy services. A 37-year-old soldier participated in eight individual therapy session,

who had experienced multiple deployments that resulted in a Post-Traumatic Stress Disorder diagnosis. Using Cognitive Behavior Therapy Interpersonal Psychotherapy was implemented to reduce Depression and Anxiety. Using a 10-item scale used to measure the progress of therapy. The data tested for Autocorrelation. No trend was detected (Phase I  $p=0.57$ , Phase II  $p=0.22$ ). T test noted no significant differences in means between two phases ( $p=0.68$ ). Delta noted 12% increase in undesired direction. This could be due to the short duration of the treatment. Therefore the treatment should continue. Moving forward, through client engagement, alternative therapy presents the best option for the client. Through this project, I learnt that working with soldiers that suffer from Post-Traumatic Stress Disorder solidifies my reason for serving the military, not only as a soldier but also as an advocate. I will never underestimate or marginalize the stressors that cause PTSD; changed came as a Social Worker, but also getting to know our nation's heroes in their most vulnerable state and to accomplish this feat research is inevitable.

#### **BA-7**

Zhane Rucker

Research Mentor: **Dr. Shinaz Jindani**

##### *Parental Involvement Impact on Self-Esteem in LGBTQ Teens*

This research explores parental involvement impact on self-esteem in LGBTQ teens. The research subject is a 15-year-old African American female who has low self-esteem caused by the turbulent relationship with her parents due to her sexual identity. Parental rejection can lead to low self-esteem as well as a host of other problems. A study published in the Journal of Child and Adolescent Psychiatric Nursing found that 'specific parental and caregiver behaviors, such as advocating for their children when they are mistreated because of their LGBT identity or supporting their gender expression-protect against depression, substance abuse, suicidal thoughts and suicide attempts in early adulthood. In addition, LGBT youth with highly accepting families have significantly higher levels of self-

esteem and social support in young adulthood (Rena, 2010)' An instrument that included 10 self-esteem items and 11 family relations items was given to the client. This instrument was distributed to the student twice a week for four weeks during each session. The data was tested for autocorrelation, no trend was detected (Phase I  $p=0.70$ , Phase II  $p=0.13$ ). Proportion Frequency noted significant differences between phases. Effect Size D-index noted 34% decrease in desired direction. This project made me more aware of the challenges that LGBTQ teens face. In the future I will be more aware of my bias about someone else's personal life whether it be sexual identity or not.

#### **BA-8**

Lauryn Webster

Research Mentor: **Dr. Shinaz Jindani**

##### *Quality of Life*

Reading is one of the indicators of cognitive development. When a child has reading difficulties, it can mean slower brain development. Therefore it is extremely important that the child develops reading competencies, which can affect their self-esteem. This single subject design was conducted to find whether a child's confidence level in reading correlates with their school engagement and classroom behavior. Using Solution-Based Therapeutic approaches, mentoring and reading tutoring was implemented. An eight-item scale was used to measure classroom engagement, reading competence and classroom behavior. In total, ten data sets were gathered and assessed. The data was tested for Autocorrelation (phase I:  $p=0.66$ , phase II:  $p=0.22$ ). The Proportion Frequency noted significant differences between phases ( $p=0.00$ ). The index noted 49.9% change in the desired direction. As a social worker, we attempt to measure social work practice process, it still cannot capture total dynamics that can be responded to in such a short period of time. Therefore, social workers must use all forms of data, including notes, observations, feedback from teachers, parents, and any other parties to inform their practice. As I enable others to

appreciate their process of change, I value my own processes of growth and change, which is the place from which my sense of self-efficacy derives.

## **Political Science & Public Affairs**

### **PSPA-1**

LaQuin Andrus

Research Mentor: **Dr. Dedan Rukmana**

*Unemployment and Public Transportation Commuting in South Carolina's Lowcountry Region*

In this study, we examine the effect of access to employment opportunities in Hilton Head Island, South Carolina on labor market outcomes in rural areas, especially focusing on unemployment rates in the Lowcountry region Beaufort, Jasper, Allendale, Colleton and Hampton counties of South Carolina's coastal area during 2007-2017. We overlaid ridership data obtained from Palmetto Breeze, the Beaufort County public transportation system, which serves the five counties, and county unemployment rates in ArcMap 10.4 to determine if the spatial mismatch explains labor market outcomes in rural communities. The spatial mismatch hypothesis (SMH) argues that low-skilled minorities residing in U.S. inner cities experience poor labor market outcomes partly due to the spatial separation from suburban job opportunities. Consistent with SMH, increases in geographical distance between location and jobs lead to increases in unemployment in the Lowcountry. Results also showed that there was a correlation between total Palmetto Breeze ridership and unemployment rates per county.

## **Social Work - Masters**

### **SW-M-1**

Susan Ellwanger

Research Mentor: **Stephanie Spencer**

*Exploring Risk Factors and Retention Among Adolescents*

The National Guard Youth Challenge Academy is a quasi-military educational program for adolescents who have difficulty completing their education in traditional educational settings. The

program has an overall goal of retaining at least 85% of initial candidates to the end of the program. NG-YCA operates utilizing the Learning Theory, which indicates that behavior is learned and therefore can be unlearned. A screening tool for candidates was implemented in to identify those candidates who were less likely to successfully complete the program and therefore improve program retention. This study analyzes the effectiveness of the screening tool and provides suggestions for improvement. Baseline retention rates were taken from the previous four classes prior to the implementation of the screening tool. This data was compared to the rates of the two classes that have utilized the screening tool. Unpaired t-test was applied and no statistical significance was found. Cohen's d indicates a large effect size between the two data sets. The purpose of this study was to determine effectiveness of the newly implemented screening tool on program retention rates.

### **SW-M-2**

Jallona Brady-Dennis

Research Mentor: **Dr. Shinaz Jindani**

*The effect of alcohol consumption on self esteem in college students*

The title of my research project will be The effect of alcohol consumption of self esteem in college students. This research project was designed to address the prevalent issues of how alcohol consumption effects self esteem in college students. The idea was to introduce and reinforce the importance of knowing the risk of alcoholism and underage drinking on college campuses, as well and promoting strong self-esteem in college students. The program will run for 10 weeks during the Spring semester of 2018. Participants have the option to participant in a survey, they can decline at any time without penalty. Participants will be a combination of male and female, who will vary in age. The only survey questionnaire consists of 15 questions and will take approximately 10- 15 minutes. The research will take place on Savannah State University's campus.

### SW-M-3

Justice Lewis

Research Mentor: **Dr. Shinaz Jindani**

*Does federal TRiO programs increase high school student's college readiness abilities and skills?*

Graduating from a secondary institution is a great milestone to accomplish for high school students. However, the data from the National Assessment of Educational Progress has shown that high school graduates perform low academically in college. College Readiness has been identified as the ability to successfully demonstrate academic proficiency when enrolling into a four year post-secondary institution. The two variables that were analyzed are the Tutorial and Mentorship pillars demonstrated from the United States Department of Education: Upward Bound Federal TRiO program. There are three major factors that describes college readiness in this study: (1) Time Management, (2) Self-Discipline, and (3) Academic Progression. This study assumed that if high schoolers take responsibility for their own Affect (3 items, Independent variable) then they are more likely to take charge and demonstrate College Readiness (12 items, Dependent variable). Using the sample of convenience, the five high schools' students responded to the questionnaire, and all 32-completed questionnaire was obtained. The Reliability Test measured Affect (.546) and Demonstrated College Readiness (.539) which indicated the study is stable and measurable. The Chi Square, Fisher's Exact Test ( $p=.000$ ) Association between Affect and Demonstrated College Readiness. The findings suggest that if students are aware and accountable of their feelings then they will more likely be empowered and oversee their educational process.

### SW-M-4

Estelline Beamon

Research Mentor: **Dr. Shinaz Jindani**

*Understanding Foster Parent Awareness of Human Trafficking*

The proposed study is designed to address whether foster parents in the state of Georgia are

knowledgeable about human trafficking and its prevalence. Foster children are very vulnerable to becoming victims of human trafficking. Researchers have identified that many foster children are becoming victims every day. One reason for this vulnerability is that foster children have traumatic family histories that make them feel unloved and cared for. In their quest for love and belongingness, they are easily drawn to people who show them affection, exposure to seemingly better life opportunities, and the instant gratification that money or financial support can bring. They are easily manipulated by traffickers who eventually prey upon their emotions and dupe them into lives filled with servitude, prostitution, crime or even death.

### SW-M-5

Rachel Wright

Research Mentor: **Shinaz Jindani**

*How to Increase a Students' Knowledge About College Readiness While in a College Readiness Program*

College readiness is the set of skills, traits, habits, and knowledge that students need to enter and succeed in college (Arnold, K. D., Lu, E. C., & Armstrong, K. J. 2012). The Educational Talent Search program targets low- income, first generational, college bound middle and high school aged students with preparing for post-secondary schooling. The single-subject for this study was a 17-year-old African-American male that lived with his single mother. In the study, the client was offered college-career counseling, college tours and scholarship application assistance. This was measured through a self-constructed questionnaire on college readiness that had 12 items, using Likert Scale 1-4. At each counseling session the client responded to the questionnaire and in all 12 data sets were gathered. The data was tested for autocorrelation, no trend was detected (Phase I  $p=0.68$ , Phase II  $p=0.80$ ). T-test noted significant differences in the means between two phases ( $p=0.05$ ). Delta noted effect size of 43% in desired direction. Bronfenbrenner's theory of the Ecology of Human Development informed this practice

situation. I learned how to incorporate a theoretical perspective while conducting a research informed practice with a client.

#### **SW-M-6**

Quandalyn Waldon

Research Mentor: **Dr. Shinaz Jindani**

*Impact of Life Skills and Mentorships on Self-Esteem & Anger of an Adolescent*

As a teenager, there are many forms of peer pressures and anxieties that adolescents face to try and fit in with their peers. Sometimes peer pressure could result in a change of behavior that could result in a punishable action. The single subject was a 14-year-old female, who was enrolled in alternative middle school and was offered to mentor to gain Life Skills and improve compliance with school. Using Social Learning Theory, the client was presented, ten sessions. Two eight-item instruments were designed to measure self-esteem and anger that used Likert Scale, where for self-esteem 1= disagree and 4= strongly agree; anger 1=strongly agree, and 4= disagree. The data was divided into two phases. The first phase included mentoring while the second phase involved mentoring plus life skills. In all ten data points were gathered. The data were tested for autocorrelations. T-test for anger noted significant differences between periods ( $p = -0.51$ ). Effect Size Delta index noted 19.5 % decrease in anger. T-test for self-esteem noted substantial differences between phases ( $p=2.78$ ). Effect Size Delta index noted 49.7% increase in self-esteem. Mentorship is a proven program that helps to reduce problematic behaviors in at-risk youth and help them reach their full potential in life. I would recommend continuous mentorship for my client once she starts high school. I would also focus less on anger management and more on conflict resolution to further assist with her problematic behaviors in school and home.

#### **SW-M-7**

Elizabeth Brodhead

Research Mentor: **Dr. Shinaz Jindani, Professor**

*Facebook Usage and Bereavement*

Mourning the loss of a loved one by posting comments on the deceased person's Facebook page has become a common practice, yet the motivations behind this practice are not well documented. This research study explores the connection between Engagement with Facebook, the independent variable, and Memorialization, the dependent variable. Engagement is defined as the level of awareness of Facebook memorial pages and the subjective experience of obligation to engage in Memorialization. Memorialization is defined as usage of a Facebook page of a deceased friend. It is hypothesized that if Engagement is high, then Memorialization will also be high. If Engagement is low, then Memorialization on Facebook will also be low. Using a 4-point Likert Scale, respondents answered 15 questions measuring Engagement and Memorialization along with 10 demographic questions. Using Google Forms, this instrument gathered 93 responses. Majority (84%) were female, Caucasian (87%), and married (71%). More than half (52%) had learned about a friend's death through his or her Facebook page. The Engagement variable attained Cronbach's Alpha of .615. The Linear by Linear Association was  $p<.023$  and  $p<.013$ . Respondents scoring low in Engagement were also found to be low in Memorialization (46%), while respondents scoring high in Engagement were found to be demonstrating more Memorialization behaviors (57.5%). An individual's decision to participate in the Facebook online memorial is positively associated with the individual's preexisting knowledge regarding the existence and functioning of memorial pages. Social workers in hospice settings would benefit from a greater understanding of what motivates Facebook users to participate in the online memorial.

#### **SW-M-8**

Cheryl Kitchings

Research Mentor: **Dr. Shinaz Jindani**

*Self-Esteem as an Indicator of Seeking a Balance in Intimate Relations*

The purpose of this study was to determine the effects of self-assessment, journaling, and

individual counseling on the client's self-esteem. The single subject client was a 31 year old female. Using empowerment theory, strengths perspective, cognitive behavioral therapy, expressive writing, and self-awareness in the therapeutic process, the client's goals of effective communication and individual inner strength were promoted. The client, who was recently divorced after 9 years of marriage had begun a new relationship. The client was given a daily self-assessment survey instrument incorporating 12 questions (of which 11 were used in data analysis) on a Likert scale that measured self-esteem and emotional well-being, where 1= Strongly Disagree and 4= Strongly Agree. The data was collected in two phases separated by an individual counseling session. In all, fourteen data points were collected (of which 12 were usable). The data was tested for autocorrelations. Hypothesis testing showed that no trend was detected ( $p=0.652$ ) and the T Test was not significant. The client stated that she felt stronger inter-personally and in communication of her feelings. However, the data showed a decreasing celeration line with an effect size of 37%. As the client feels completely responsible for the breakup of the intimate relationship with her boyfriend, there is more work to be done in the area of building the client's self-esteem. Through this project, I learned to match the tool with the practice situation and worked to combine theoretical, practical, and statistical data for more informed practice.

#### **SW-M-9**

Latrell White

Research Mentor: **Dr. Eneverlyn Dennard**

*The Work Opportunity Reconciliation Act of 1996*

This research looks at the correlation between The Personal Responsibility and Work Opportunity Reconciliation Act of 1996 and the impact of children an youth healthcare neglect and abuse, that may have been sustain due to government eligibility laws. This act was established to provide a reconciliation of the concurrent resolution on the budget. The Senate and House of Representatives of the United State

of America proposed this act and President Bill Clinton signed it on August 22, 1996. This welfare reform plan has dramatically changed the nation's welfare system over the past two decades, by requiring work in exchange for time-limited assistance to cut the budget for public assistance.

#### **SW-M-10**

Shekinah Akkebala

Research Mentor: **Dr. Shinaz Jindani**

*Effects of Childhood Sexual Trauma*

The issue of sexual abuse is becoming more relevant with each passing day. This study defines sexual assault as any sexual abuse including rape, molestation, fondling or inappropriate touch, under force by threat or coercion. It also defines abusive/unhealthy adult relationships as a relationship in which one or both partners are physically, mentally, or verbally abusive, leaving the other feeling unfulfilled and discontented in the relationship. Using a sample of convenience, responses from random people were solicited through an online survey, via google docs. Participants were asked to complete a 15-item questionnaire (Cronbach Alpha 0.779) that measures the health of romantic relationships in adulthood. Chi-Square Test of Association was run, and it found no significant association between childhood sexual assault victimization and negative perceptions of health of adult relationships. This could be an issue of a small sample size or measuring items. Item by item analysis for contentment in adult relationships is presented.

#### **SW-M-11**

Devon Anderson

Research Mentor: **Dr. Shinaz Jindani**

*Resolving Trauma due to CPS or Foster Care Involvement*

Currently in the state of Georgia there are approximately 13,000 children in foster care. Of these 13,000, there are 946 children that are in foster care homes in the coastal Georgia region. A number of these children are currently in foster care homes both privately and state operated. Many of these children have experienced the

trauma of being separated from family, friends, homes, and loved ones. The experience of being placed in foster care or being a part of a child protection service (CPS) removal is where this experience normally begins and often goes unnoticed or not addressed at all. There are very few studies that have been conducted regarding the experiences that someone goes through when being placed in the foster care system. Often the experiences of children placed in foster care are not addressed directly and are referred out to service providers. Children in foster care will display behaviors that are result of the trauma experienced because of a removal, abuse suffered either prior to, while in care, or the possibility of returning to the place where it all occurred. There are some experiences that are due to adjustment to new settings, bullying by other children within the foster care home, or even allegations of some type of abuse. It is the intent of my research to look at the experiences of a single subject individual who has experienced trauma while in the foster care system and to address the symptoms of Post-Traumatic Stress Disorder that has affected her daily living.

#### **SW-M-12**

Vilma Castillo

Research Mentor: **Dr. Shinaz Jindani**

*Using Alcohol to Deal with Everyday Stress*

The American Addiction Centers (2018) explains how individuals will use alcohol to alleviate the anxiety that comes from day-to-day stress due to its sedative effect. It is hypothesized that participants with higher levels of anxiety are more like to have higher levels of alcohol consumption as compared to those with lower levels of anxiety. The instrument used 27-items from the Clinical Anxiety Scale (Cronbach Alpha, .743) (Thyer, 1984) and the Index of Alcohol Involvement (Cronbach Alpha, .863) (MacNeil, 1991). Using the method sample of convenience, 100 responses were obtained and analyzed using IBM SPSS. The null was rejected. The chi-square, Fisher's Exact Test ( $p = .001$ ). Noted association between anxiety and

alcohol consumption. Social work implications were discussed.

#### **SW-M-13**

Fatima Chisholm

Research Mentor: **Dr. Shinaz Jindani**

*Regulating Anxiety: Veteran Diagnosed with Schizophrenia*

Much like physical illness, mental illness can take several forms. Schizophrenia is a major mental disorder that affects many people. Research suggests that about one in every one hundred people (1%) develops the disorder at some point in his or her life (Veteran Enrichment Center, 2017). A 60 year old Veteran with a diagnosis of schizophrenia was identified for this study. Using the biopsychosocial perspective, Cognitive Behavioral Therapy (CBT) was implemented as the primary form of intervention. This and other therapeutic techniques, such as Supportive Therapy, Mindfulness Meditation, and Stress Management Skills Training were addressed through individual psychotherapy and group sessions. A 10-item survey was administered during each session to assess the client's ability to manage anxiety associated with symptoms of schizophrenia. The assessment tool was based on a Likert Scale, 4 = strongly agree and 1 = strongly disagree, where higher is better. The data was tested for auto correlations; however, no trend was detected. The baseline was  $p = 0.620$  and the intervention was  $p = 0.450$ . Though positive symptoms of schizophrenia decreased after intervention, the results of this study show no statistical significant decrease in anxiety levels. Through this project I learnt to measure my own practice and understand how theoretical, practical, and statistical significance should be used together to inform a social worker about his/her sense of practice effectiveness. This is what makes social work an accountable profession.

#### **SW-M-14**

Rachel Cuffy

Research Mentor: **Dr. Shinaz Jindani**

*Understanding Myths Related to Alien Spouse and Domestic Violence*

Given the current immigration agenda, it is not unusual to encounter a general view that alien spouses marry US citizens just to obtain a visa and immigrate to the USA. Once in the USA, they file false charges of Domestic Violence to receive services and remain in the USA and build their life permanently. Is this a myth or a reality? The research explored this assumption and measured two variables; the Myths and Domestic Violence on a four-point Likert Scale and was administered to the individuals over 18 years of age, in informal settings. In all 102 completed questionnaire were gathered and analyzed. This scale attained Cronbach alpha of 0.71. While testing the relationship between the educational levels and mythical view, the Chi-square did not attain significance ( $p=.09$ ), however the respondents with high school diploma (62%) clustered as 'high mythical view' and the respondents with some college (60%) clustered in 'low mythical view'. Implications for social work as it relates to immigration agenda and immigrant population are discussed.

#### **SW-M-15**

Annie Dunlap

Research Mentor: **Dr. Shinaz Jindani**

*The effects of stress on working adults when it comes to physical activity*

Introduction: Stress and physical activity are said to be related. Most research have been done on how physical activity or exercise has had a positive impact on stress. The research that I am currently doing was carried out to investigate the correlation of exercise with psychological stress among working adults.

Methods: This descriptive analytical study was conducted on 57 working adults in the community through convenience sampling. Data was collected by a valid questionnaire, consisting of two sections: demographic information and questions about everyday daily life and the satisfaction of their social life. Collected data sets were analyzed by SPSS-16 software.

Results: In total 8.5% of working adults were reported to have a good stress level that allowed them to be active. The minimum score was found

for preparation for examination domain. A Positive correlation was observed between adult's psychological stress and physical exercise.

Conclusion: The findings indicated that there is a correlation between working adults not being physically active due to their psychological stress.

#### **SW-M-16**

Marah Everett

Research Mentor: **Dr. Shinaz Jindani**

*Job Contentment & Spirituality*

This research study hypothesized that individuals who are spiritual in their outlook are more likely to report job contentment. Questions were formed using a four-point Likert scale as answer choices. An eighteen-item questionnaire was created which explored spiritual practices and overall job contentment. This study defines spirituality as, being concerned with the human spirit or soul as opposed to material or physical things. It also defines job satisfaction as how content an individual is with his or her job, including pay, work hours, job context, and peer and supervisory relationships. My assumption is individuals who are more spiritual are able to connect with their inner self to display more positive outward behaviors and emotions. In addition, my hypothesis is those who are spiritual are less materialistic and don't allow things such as wealth or salary dictate their happiness at work. I believe spiritual people put more emphasis on values such as kindness and compassion. Subjects include sixty participants, ages eighteen and older who are currently or have previously been employed. Collection of participants was chosen using a snowballing selection. The study conducts a longitudinal survey using an exploratory design method. A Chi-Square test of association was used to understand the relationship between spirituality and job satisfaction, and no association was detected.

#### **SW-M-17**

Orisbel Fernandez

Research Mentor: **Dr. Shinaz Jindani**

### *The Effects of Working Long Hours on Adults*

The purpose of this research is to establish a link between longer work hours and the physical and mental health challenges of workers. The population that this research will cover includes all working adults, chosen by the researcher on a random basis. The research instrument that is most appropriate given the quantitative methodology to be deployed is the questionnaire, which is an instrument of survey that aims to collect information on an individual basis from different respondents of a common background. This study is particularly significant giving the growing number of people reporting cases of mental and physical health issues. As an academic research, it will contribute to the growing body of theory on how the organizational ecosystem affects the human health. In addition to this, this study will also serve as a platform on which researchers seeking to understand related problems can refer to for helpful information.

#### **SW-M-18**

Annie Foskey

Research Mentor: **Dr. Shinaz Jindani**

#### *Absenteeism and Job Performance*

Employers would like employees to produce and support the company's profit. On the other hand, employees seek nurturing environment that would foster, creativity, personal growth, socialization, and emotionally supportive environment. This study explored the relationship between Nurturing and Non-Nurturing Employment Context, (10 items, Cronbach's Alpha) and Absenteeism (4 items, Cronbach's Alpha). Using the sample of convenience 32 completed responses were gathered via GoogleDocs. Chi-Square was not valid due to the small sample size. However, Non-Nurturing Environment was associated with low absenteeism (67%).

#### **SW-M-19**

Cyrus Hansberry

Research Mentor: **Dr. Shinaz Jindani**

### *Response to College Stress*

The present study was conducted on college students to see if stress college affects their academic achievement. The following variables were used in this study: classification of students, undergraduate or post graduate; gender differences (male or female); and students who live on and off campus. When stress is perceived negatively or becomes excessive, it can lead to anxiety or depression for students which can ultimately affect their academic achievement. The sample consisted of 62 college students, both male and female, from Savannah State University which was drawn using a probabilistic random technique sampling method. A questionnaire was developed by the researcher to access different factors that lead to stress, anxiety and depression among college students. There was no significant difference found in this study to conclude that stress levels affect the academic achievement of college students.

#### **SW-M-20**

Cyrus Hansberry

Research Mentor: **Dr. Shinaz Jindani**

#### *The Personal Responsibility and Work Opportunity Reconciliation Act of 1996 and the Temporary Assistance for Needy Families*

This paper will examine the correlation between family poverty and child maltreatment, and the policies that can be put in place to inhibit or promote child and family well-being within the context of welfare reform. While the organizational systems designed to provide cash assistance and child welfare services have been separate since the 1970s, changes made by welfare reform in the late 1990s suggested new opportunities for agency collaboration with the child welfare system. After reviewing the policy and obvious challenges that the Temporary Assistance for Needy Families (TANF) has encountered since it originated, and in addition to that of its predecessor, one can reasonably say that the policy is due for a significant reform or outright replacement. Poverty has extreme negative consequences on a society if left without any serious interventions. This paper will also

take a deeper look into the inter-organizational collaboration between welfare and child welfare and the special challenges agencies face in attempting to streamline these services.

#### **SW-M-21**

Jasmine Harrison

Research Mentor: **Dr. Shinaz Jindani**

##### *Impact of Motivational Interviewing and Talk Therapy on Alcohol Use*

Substance abuse and mental health disorders are commonly linked together. The Substance Abuse Intensive Outpatient Program at Gateway Behavioral Health Services assists individuals who have both a substance abuse and mental health diagnoses. The chosen participant in this study was a 32 year-old African American female, diagnosed with schizoaffective disorder bipolar type, generalized anxiety disorder and mild alcohol use disorder and was charged with driving under the influence (DUI). Cognitive dissonance Theory was employed which encompassed motivational interviewing and talk therapy in individual and group settings as a part of treatment to reduce or eliminate alcohol use. Ten items from a four point alcohol use scale were administered weekly to measure the difference in reported alcohol use over seven weeks of service. The data was divided into two phases. The data was tested for autocorrelation, no trend was detected. Proportion Frequency noted significant differences between phase I and phase II and noted effect size of 34% reduction in alcohol use during the seven week period. Through this project, I have learned to design tools and measure my practice to gain a sense of practice effectiveness and understand if the desired outcome was attained or not.

#### **SW-M-22**

Yahirassein Heraldez

Research Mentor: **Dr. Shinaz Jindani**

##### *Single Subject Design*

Being visually impaired and dealing with academics can be difficult without the necessary tools and resources. The disability resource center, provided the single subject client with the services and accommodations to strengthen

academic skills. Using positive psychology that promotes strengths and a positive outlook towards their life, the single subject received counseling and tutoring services for five weeks. Using 16 items scale, his confidence in academics and his stress levels were measured. In all 10 completed data sets were obtained. The data was tested for autocorrelation. T-test noted no difference between phases. Effect size noted only 1.5% change in desired direction. There was no statistical evidence that the intervention was making any difference. However, this could be due to small sample size (n=10) and short duration of the intervention (5 weeks). My experience in completing this self-project, taught me my competency of the ability to collect data to have an informed practice. This has allowed me to have an awareness of self-efficacy to others that have disabilities and how important it is to understand the connection of interventions in Social Work practice.

#### **SW-M-23**

Theresa Horton

Research Mentor: **Dr. Shinaz Jindani**

##### *Regulation Anger of Bipolar Youth with Explosive Disorder*

The single subject was a 17-year-old Caucasian American from a two-parent home, who has a past trauma of sexual abuse, physical abuse, and abandonment. Many teenagers feel angry, and develop problems managing their anger. The single subjects program goal is to manage his anger and improve his respect. Researchers suggest that Cognitive Behavior Therapy is effective in reducing disruptive behaviors in adolescents. The purpose of this design is to measure the effectiveness of integrating Cognitive Behavior Therapy into Anger Management counseling. The subject agreed to attending CBT anger management group sessions and receiving 20 minutes twice a week of individual CBT anger management counseling. The intervention was delivered in two phases. The baseline was obtained for the first three weeks medication and individual therapy (phase A), group therapy was added from week four

through week six (phase B). To measure to impact of the intervention, a 10 item Anger Management Scale was administered bi-weekly for six weeks. In all 10 data points were gathered. The data was tested for autocorrelation. T-Test was applied, no significance was detected. Delta noted a 2% movement in the undesired direction. The process of conducting this study contributed to my self-efficacy as a social worker.

#### **SW-M-24**

Itunu Ilesanmi

Research Mentor: **Dr. Shinaz Jindani**

*The Psycho-social Effects of Anger Management on Suicidal Ideation.*

Changes in the equilibrium of an individual's ability to interrelate with social factors, individual thought and behavior tend to encourage suicidal ideation. The single subject study of a 25-year-old African American female college student diagnosed with Borderline Personality Disorder (BPD), presenting suicidal behaviors, affective instability and periodic presentation of anger and marked impulsivity gave the basis for this study. Addressing these presenting symptoms in order of priority of the client's interaction with the educational environment was vital, hence the psychosocial effects of anger management as the Independent variable and suicidal ideation as the dependent variable. Guided by the Dialectal Behavioral Therapy (DBT), an evidence-based intervention for parasuicidal women with BPD, the Columbia-suicide severity rating scale (6 items,  $\hat{r}=-0.67$ ) and Hamby, Stith, Grych and Banyard (2013) Anger Management Scale (5 items  $\hat{r}=-0.39$ ) was utilized. Provided with 12 measures entailing eight baseline and four interventions, T-test notes not significant for both scales with ( $p=0.299$ ) for the Suicide scale and ( $p=0.478$ ) for anger management. The client continues to receive the provided DBT interventions, and with this current result, the client shows signs of improvement falling beyond the desired zone.

#### **SW-M-25**

Morgan Ivey

Research Mentor: **Dr. Shinaz Jindani**

#### *Communication as an Inevitable Component of Parent Child Relationship*

There is no argument about how communication is the important foundation of any relationship especially that of a mother and a teenager. This single subject research client was a teenager who was interested in improving her relationship with her mother. Walmyr's Scale of Child's Attitude Towards Mother was used. This 25-item scale was modified to fit the practice situation. The client received weekly counseling face to face. This also included role play and narrative therapy that is rooted in Bowen's Family Systems Theory. When we narrate our events in life, we tend to find new meanings in it, as those events are far removed when we narrate them at a different point in time of our lives. At every session the client was administered the instrument to measure the progress between the two sessions. In all, eight completed data sets were gathered and analyzed using SINGWIN. The data was tested for autocorrelations. The celeration graph along with T-Test, The D-Index indicated 26.7 % in desired direction.

Even though this project did not attain statistical significance, it was important that social work practice matched the client's background to arrive at problem solving (dependent variable). Through this project I have earned confidence in integrating statistical, practical and theoretical significances to arrive at my very own sense of practice effectiveness.

#### **SW-M-26**

ShaTara Jackson

Research Mentor: **Dr. Evelyn Dennard**

*Plan of Safe Care and the Current Drug Crisis*

The current opioid crisis has brought interest, funding, and attention to prenatal drug exposure. Deciding on where and how that funding should be spent needs to be further analyzed. Via literature review Georgia's current child welfare policy on parental abuse has been assessed, and analyzed. Currently one of the major pitfalls is that the medical community did not have the right to report NAS (Neonatal Abstinence Syndrome) until 2016. CAPTA (Child Abuse Prevention and

Treatment Act) also did not require a formal tracking mechanism for cases that qualified for prenatal abuse until 2015. These late starts have an impact on how the funds have been dispersed. The programs that benefit the child welfare communities for prevention and intervention (DFCS, Ready for Work, and Plan of Safe Care) have not received any additional funding from the 6 billion dollars recently allocated in the new budget. This brief examines the current policy and provides direction as to where the grants and attention would be best placed. In the absence of hard data on the number of children effected prenatally.

#### **SW-M-27**

Mariam Jones

Research Mentor: **Dr. Shinaz Jindani**

*Re-Socializing After Cancer Diagnosis*

Imagine yourself being an active individual, married with children and working a full-time job. As well as being active in extracurricular activities such as church, managing a garden, and baking What if that was all taken away from us? Sometimes we as humans have sudden changes in life that completely change who we are and how we interact with others. For the presenting patient, she is a 55-year-old, African American woman who was diagnosed with liver cancer in 2016. The patient was active prior to her diagnosis. She was a singer in her church choir, she worked full time, managed a garden with her husband, and exercised on occasion. After she was diagnosed she became inactive. She stopped socializing with others and became a homebody, this caused her to have low self-esteem. The hypothesis postulates that with exercise and journal therapy, the client will regain her social life and raise her self-esteem. With Cognitive Behavioral Theory, the researcher will approach patient with a goal of becoming more active and promoting a healthy social life. Two fifteen item instruments were provided to the client at baseline to measure her self-esteem. 1= Strongly agree, 2= Agree, 3= Disagree, 4= Strongly Disagree. The data was divided into two phases that first phase implemented counseling and

journal therapy the second phase introduced journal therapy and yoga classes. In all twelve data points were gathered. The data was tested for autocorrelations. Hypothesis tested that there was a slight increase in self-esteem  $p=.23$ . This research design involved in intervention where I used theoretical, practical, and statistical insight to gain insight on my research.

#### **SW-M-28**

Shegin Jones

Research Mentor: **Dr. Evelyn Dennard**

*Child Abuse Prevention Treatment Act (CAPTA)*

The Child Abuse Prevention Treatment Act (CAPTA) is in place to protect the innocent children in this world, but as we so recently seen, the ball has been dropped numerous times and many innocent lives has been taken because of gaps in the system. The CAPTA provides funding to the states for programs, investigations, and grants etc. to help children in abusive and/or neglect situations. Funding from CAPTA fluctuates over time and the amount of funding for one state isn't guaranteed for another state. "Over the past several years funding for the incentives has fallen short of the amount needed to award all states what they are eligible for. As a result, HHS rewards states for the previous year to address the shortfall. Last year, despite the \$37.9 million appropriations only \$19 million was available for the latest incentives. This year's appropriations are likely to compound that shortfall" (CWLA; 2012-2016). We see the obvious funding issues, with over worked social workers that end in tragedy cases like the Ohio case. A 4-year old little girl viciously beaten and tortured over time and was crying out for help and no one was there to save her. CAPTA funding is there to save the innocent, like the 4-year old in the Ohio case, especially in easy cases like this one where there were obvious signs of abuse and the young child spoke about the abuse she was receiving from home by her mother. There are many other cases where CAPTA funding failed to save a child because of over worked social workers and other relatable reasons.

### **SW-M-29**

Shegin Jones

Research Mentor: **Dr. Shinaz Jindani**

*Parental Engagement in College Readiness*

Ongoing research shows that family engagement in schools improves student achievement, reduces absenteeism, and restores parents' confidence in their children's education. Students with involved parents or other caregivers earn higher grades and test scores, have better social skills, and show improved behavior (Garcia and Thornton; 2014). It was hypothesized that parental engagement with high school children will propel them into college readiness. This study used 11 items to measure Parental Engagement (Cronbach's Alpha=0.762) and 16 items to measure College Readiness as Self-Reported (Cronbach's Alpha=0.734) by high schoolers. In all 72 completed data were gathered using a sample of convenience. The null was rejected, Fischer's Exact Test noted Association between low parental engagement and low readiness (62%). With these findings implementation of parent engagement in their children's academics could be a reinforcing prompt to increase higher college attendance from high school students.

### **SW-M-30**

Jameka Kirkland

Research Mentor: **Dr. Evelyn Denard**

*Child Abuse Prevention and Treatment Act*

This research looks at bridging the gaps between The Child Abuse Prevention and Treatment Act (CAPTA) and The Children's Bureau who has the main responsibility for enforcing federal child welfare legislative mandates and monitoring child welfare across the nation. Child welfare systems they all work to promote the three national goals for child protection; safety, permanency, and child and family well-being. The Child Abuse Prevention and Treatment Act (CAPTA), originally enacted on January 31, 1974 (P.L. 93-247). This act has been amended several times and was last reauthorized on December 20, 2010, by the CAPTA Reauthorization Act of 2010 (P.L. 111-320). Federal legislation provides

mandates and guidelines for how State and Tribal child welfare systems should work to prevent and respond to child abuse and neglect. Child Protective Services agencies must make efforts to develop a safety plan to keep children with their families.

### **SW-M-31**

Jameka Kirkland

Research Mentor: **Dr. Shinaz Jindani**

*Dynamics in Committed Relationships*

It is not unusual to note infidelity as one of the main causes of divorces in USA. This study explored the relationship between Commitment and Infidelity. Commitment was measured using 6 items (Cronbach's Alpha=0.057) and Infidelity was measured using 11 items (Cronbach's Alpha=0.044). Using the sample of convenience via Google Docs, 103 completed data sets were obtained. Majority were female (79,6%), earning 20,000-40,000 (52%) and were married (37%). Fisher's Exact Test ( $p<.000$ ) noted Association Between the Commitment and Infidelity. Further the respondents who scored higher on Commitment scored on infidelity. This research is not simply about commitment and non commitment. It is about how we as a society understand ethics. About 17% reported 'I would have an affair if my significant would never find out'. This means we would break a law if no one finds out. The importance of ethics cannot be underestimated.

### **SW-M-32**

Bridgett McAfee

Research Mentor: **Dr. Shinaz Jindani**

*Effects of Talk Therapy on Explosive Disorder*

According to Ali et al (2014) challenging behaviors are common among clients with Intellectual Delays and is difficult to diagnose and manage. Challenging behaviors are often expressed through physical aggression (physical assault on other people) and property destruction. This experimental field study evaluates the effectiveness of Talk Therapy on anger and coping skills of a 19-year-old male diagnosed with Intermittent Explosive Disorder. Social Learning Theory, medication and Cognitive

Behavioral Theory was used to implement Talk Therapy and positive coping skills. Cognitive Behavioral Therapy was also used in the study to measure changes in the clients' behavior and the effectiveness of the Talk Therapy. The independent variable is measured using the initial assessment and CBT. A 15-item tool was designed to measure anger, clients' desire to build relationships with others and coping skills that used Likert Scale, where 1= strongly disagree and 4= strongly agree. There were some reverse score items in the tool in which the Likert Scale reverse score items were 1=strongly agree and 4= strongly disagree. The data was divided into two phases. First phase included medication while the second phase included medication plus Talk Therapy. Nine data points were gathered and tested for autocorrelation. Trend was detected. Therefore, transformed data (moving average) was used for final analysis. Hypothesis testing noted a small decrease but did not show significance. Due to this project the researcher learned to match the tool to the practice situation and how to detect if the interventions are effective or when to modify interventions to benefit the client. The researcher merged Theoretical, Practical and Statistical, to gain insight into their own abilities. The researcher gained confidence as a social worker.

### **SW-M-33**

Corinna Miller

Research Mentor: **Dr. Shinaz Jindani**

*Navigating Through Challenges: Survival Post Domestic Violence*

The single subject client was a 36 year old female who was rebuilding her life after escaping a marriage fraught with domestic violence. To contextualize her experiences and their effect on her psyche, Applied Crisis Theory was used in conjunction with Maslow's Hierarchy of Needs. A psychological transition model was used as a framework for the therapeutic interventions. To help her reduce her stress levels during this transition, Cognitive Behavioral Therapies were employed. A ten-item frequency-based instrument was used to measure stress levels and

stress management skills. Options ranged from experiencing events from zero times to more than four times over the course of the week. The data was divided into two phases: The first phase is only medication use while the second phase is medication with intervention. Data was gathered nine times over the course of a month. The data was tested for autocorrelation. While the stress did increase over the course of treatment, this was due to a number of life-altering events that happened after the baseline was recorded. Due to this project, I learned how to evaluate the effectiveness of a particular intervention, and this has increased my self-awareness and efficacy in my practice. I blended the three perspectives of theory, practice, and research to reflect on my own quality of care. This has increased my confidence as a social worker. This study focuses on reducing a domestic violence survivor's stress levels as she resolutely creates a new life for her and her children.

### **SW-M-34**

Jasmine Phillips, Jakhera Howard

Research Mentor: **Dr. Shinaz Jindani**

*Do Senior Recreational Centers Improve the Well-Being of Senior Lives?*

Senior recreational centers are currently established to provide seniors with engagement with peers while allowing them to better their cognitive skills, motor skills, and informing them on living with chronic illness. The recreational centers are open five days a week while they are providing nutritional meal, exercises, and group's activities. This research was conducted to determine if the senior recreational centers are doing that are required and if they are promoting the wellbeing of seniors lives. Referring to the Centers for Disease Control wellbeing is defined as a positive outcome that is meaningful for people and for many sectors of society, because it tells us that people perceive that their lives are going well. There are many factor indicators when testing the wellbeing of life in seniors such as living conditions, what people think of their lives, quality of relationship's, positive emotions and resilience. The survey was giving to 49

seniors who are currently attending senior recreational centers in the Savannah Georgia area. This research explores the relationship between the level of participation in the Center Activities (4 items, Cronbach Alpha = 0.76) and Life Contentment (10 items, Cronbach Alpha = 0.53) experience by the senior citizens. Using the sample of convenience in all 49 completed questionnaires were gathered. Fisher exact test noted Association between center participation and Life Contentment. ( $p < 0.03$ ).

### **SW-M-35**

Keeli Rigdon

Research Mentor: **Dr. Shinaz Jindani**

#### *Social Media Usage and Body Image*

The use of Social Media, as well as Body Image are both prevalent issues among young adults. However, the association between these two variables has limited documentation. Utilizing the Social Comparison Theory as a Theoretical Framework, it was hypothesized that as an individual's use of Social Media increases, that individual's Body Image will decrease. This research explored the relationship between Social Media Usage (10 Items, Cronbach Alpha= 0.82) and Body Image (15 Items, Cronbach Alpha= 0.78). Using a 4-point Likert Scale and the sample of convenience, 94 completed questionnaires were gathered via Google Forms. Majority (72%) were female, Caucasian (64%), and spent 15 hours a week on social media (16 %). Fisher's Exact Test ( $p < 0.002$ ) noted association between Social Media Usage and Body Image. Further, it noted that the lower the Social Media usage, the lower the Body Image (70.2%). This was the opposite of what was hypothesized. It appears that higher Social Media usage can contribute to higher Body Image (62%). With the advancements in technology, Social Media can allow for interactions to occur between individuals in varying locations almost immediately. This could allow individuals to build their support systems and consequently increase their Body Image.

### **SW-M-36**

Harley Roush

Research Mentor: **Dr. Shinaz Jindani**

#### *CBT With a Fear of Food in Anorexia Nervosa - Restrictive Type*

Anorexia nervosa is a rare and severe psychological disorder that can result in chronic health problems or death. Behavior modification and therapy focus on experimental strategies that can aid in the overall anxiety levels for someone with a fear of food in those who suffer from anorexia nervosa. The single subject was diagnosed with the DSM-V categorization Anorexia Nervosa - Restricting Type. The revised Clinical Anxiety scaled was used to test the effectiveness of Psycho-Education, Nutritional Counselling and Psychopharmacology. The data was tested for autocorrelation. A paired-samples t-test was conducted to compare anxiety levels in Phase I (Baseline) and Phase II (Intervention). There was not a significant difference in the scores for Baseline ( $M = 33.950$ ,  $SD = 3.624$ ) and Intervention ( $M = 35.850$ ,  $SD = 7.479$ ) conditions;  $t(18) = -0.722$ ,  $p = 0.479$ . A Delta analysis (ES-Index) was completed and noted a 19.8% increase from baseline to intervention phases. A D-Index noted a 12.6% increase. As with guided therapy, personal insight into one's problem is considered a major contributing factor to the success one may have with therapy. The purpose of this study was to determine effectiveness of behavior modification on reducing anxiety for those diagnosed with Anorexia Nervosa - Restrictive Type.

### **SW-M-37**

Jaleesa Sauls

Research Mentor: **Dr. Shinaz Jindani**

#### *The Sexual and Personal Practices of Young Adults*

This project looks at the correlation between empathy and risky sexual behaviors among young adults. The hypothesis of this project is that the higher an individual scores on the empathy scale, the lower they will score on the risky sexual behavior scale. All 47 participants were found through social media, specifically Facebook and Snapchat. Upon accessing the link,

participants were asked to complete a questionnaire that measured their empathy and risky sexual behavior, and also recorded their age, sexual orientation, race, and gender. The questionnaire measured the subjects' frequency in certain acts, like having unprotected sex and how often they make decision without outside interference, using a Likert scale from 1 - 5. 1 represents 'never' and 5 represents 'always'. The questions used for the empathy variable were pulled from the 2009 Toronto Empathy Questionnaire created by Simon Baron-Cohen. Both variables, empathy and risky sexual behavior scored low for reliability (0.511 and 0.582 respectively), which affected the correlation between the two. One reason for this may be the low number of questions for each variable. Using the Chi-Square Test of Independence, it was found that there is no correlation between empathy and risky sexual behavior ( $p = 0.33$ ). The researcher believes that this p-value stems from having a small sample size as well as not having normally distributed data. Data was not valid.

#### **SW-M-38**

Jaleesa Sauls

Research Mentor: **Dr. Evelyn Dennard**

*The Adam Walsh Act and SORNA*

The Adam Walsh Protection and Safety Act is a federal statute that was drafted to 'protect children from sexual exploitation and violent crime, to prevent child abuse and pornography, to promote internet safety' and to honor the namesake of the child. It was signed into law in 2006 by President George W. Bush. Adam Walsh was a six year old child who was abducted from a shopping mall in Florida in 1981. Part of his remains were recovered two weeks later. Since then, Adam's parents John and Rev. A. have dedicated their lives to protecting children. This act has seven titles. The first title, the Sex Offender Registration and Notification Act (SORNA) separates sex offenders into three tiers. All offenders are required to update their whereabouts, but the most egregious offenders (tier III) are required to update every three

months for the rest of their lives. Failing to register is considered a felony. States are required by law to publicly disclose the whereabouts of tier II and III offenders. A national sex offender registry is created from this information. Additionally, SORNA increased the penalties for sex trafficking and child prostitution. SORNA is responsible for the requirements under which states must oblige. However, only 18 states have fully implemented all of the rules and regulations that SORNA has put into place.

#### **SW-M-39**

Emilie Sellers

Research Mentor: **Dr. Jindani Shinaz**

*At the Juncture of Perceived Stress and Commitment to Sobriety*

This single subject design study examined the effectiveness of talk therapy that was used to maintain the client's recovery from addiction and to promote long-term sobriety. As the client was already in the process of recovery, a B design was used. The researcher utilized a 11-item Likert Scale, which measured the client's perceived stress and commitment to sobriety. The scale was completed by the client twice a week; once right before the session at Heads-Up Guidance Services (HUGS) and once after the session at the location of the client's residence. A total of 9 completed data sets were obtained. The data was tested for autocorrelation. No trend was detected. As the data was normally distributed, T-Test was applied. The data was split into two phases. Significant difference between phase I and phase II ( $p=0.00$ ) were detected. Through the course of this study, I now know how to use a holistic approach to understand my own practice and include theoretical frameworks, evidence-based interventions, and evaluation methods. I have found that engagement, assessment, intervention, and evaluation all play a critical role in best practices of a social worker.

#### **SW-M-40**

Michael Shorter

Research Mentor: **Dr. Shinaz Jindani**

### *Animal-Assisted Therapy with Children Who Experienced a Recent Death*

Many of the beliefs surrounding grief are institutionalized as individuals observe the grieving process during their childhood. This learning process is accelerated when the child directly experiences the death of a loved one. During this time period it is extremely important that the affected children have access to grief support from mental health professionals. This is the primary driving force behind Hospice Savannah's Full Circle program. Offering free therapeutic counseling to children, and adults, who are attempting to move forward after the death of a loved one ensures that every child has the opportunity to receive the care that they need, regardless of their economic situation. It is fairly normal, no matter the age of the individual, for details surrounding the death to be difficult to talk about. It is at this point that the introduction of a therapeutic animal into the session may give the client an increased amount of comfort and security when attempting to recall the, at times, trauma associated with the death. In attempt to measure the milestones in grief and bereavement counseling a modified complicated grief assessment was used. Questions added were used to gauge feelings of guilt, isolation, comfort, and acceptance. The finding from the subject used showed a continual improvement at the same rate before the introduction of the therapeutic animal, with a sharper improvement in openness surrounding the details of the death.

#### **SW-M-41**

Jazmin Taylor

Research Mentor: **Dr. Shinaz Jindani**

### *Fluctuations in Self Esteem Due to Abandonment and Bullying*

This study focuses on the impact of an absent father as it relates to self-esteem in female young adults. This research was conducted on an African American fifteen-year-old female who suffers from low self-esteem triggered by feelings of abandonment from her biological father as well as being bullied. The client was given the index of self-esteem, a twenty-five- question tool

to measure her self-esteem over the period of eight weeks. Using a client-centered approach and the strengths perspective, Talk therapy and Journaling was implemented. The data was tested for autocorrelation. The data was tested for autocorrelation. No trend was detected (Baseline  $p = 0.28$ , Intervention  $p = 0.58$ ). Using median of 77, Proportion Frequency ( $p = 0.59$ ) detected no significant differences between Baseline and Intervention scores. The D-Index noted 14% change in undesired direction. Talk therapy and Journaling were both used as interventions to treat self-esteem with this client. However, talk therapy proved to be more effective than the journal writing for the time period that the research was conducted. The client's self-esteem began to increase when talk therapy was introduced. When journaling began, the client's self-esteem dropped and increased and decreased weekly. Although I did not cause harm to the client, it is a learning lesson to future client experiences on the importance of critical thinking when it comes to helping a future client. Personally, I do not want to harm a client or have no positive impact on a client that I am working with.

#### **SW-M-42**

Hevylla Terlau

Research Mentor: **Dr. Shinaz Jindani**

### *From Vacation to Work: Stress Regulation Though Guided Diaphragmatic Deep Breathing and Progressive Muscle Relaxation*

Single-subject research designs are an excellent tool to identify effective evidence-based interventions for a specific individual. The purpose of this research was to verify the clinical stress rate outcomes from Diaphragmatic Deep Breathing Exercise, and Progressive Muscle Relaxation from a subject experiencing clinical stress. The author utilized the Hudson & Abel's Index of Clinical Stress (ICS), which consists of 25 questions with a 7-point Likert scale. ICS was applied to measure the level of personal stress experienced by the single-subject on a daily basis. The research consists of three steps. A total of 5 pre-intervention ICS measurements; then the first

intervention, 12 minutes - Diaphragmatic Deep Breathing Exercise, was administered daily. Thirty minutes after completing the intervention the subject was asked to respond the ICS questionnaire. The first intervention was discontinued after 9 measurements. Subject was subsequently introduced to second intervention, 12 minutes - Progressive Muscle Relaxation Exercise, which was administered 8 times. Preliminary results suggest that intervention B was ineffective and increased stress rate by 50%, while intervention C was effective in reducing participant's overall clinical stress rate by 12.2%. This information informed my own sense of practice effectiveness. Being able to measure my own practice is a pathway to enhance my competencies, life-long.

#### **SW-M-43**

Kaytreona Wright

Research Mentor: **Dr. Shinaz Jindani**

*Changing perceptions on aggressive behavior*

Person Centered Counseling fosters components associated with person-centered counseling that includes: active listening, genuineness, paraphrasing, empathic understanding, creating a safe environment, developing trust, reflecting feelings, encouragement, hope, and bringing out the client's awareness and personal choice ([www.person-centered-counseling.com](http://www.person-centered-counseling.com)). Using Maslow's hierarchy of needs unconditional positive regard was used to help the single subject client who was 12 years of age and had issues with aggressive behavior in the public-school setting with ADHD, poor grades, and wanting to develop interpersonal relationships. Individual and group sessions were used to encourage positive behaviors. This was measured using aggressive behavior scale that included 29 items on a Likert Scale of 1-5. In all, eight data sets were gathered. The data was tested for autocorrelation and D index showed a 22.2% decrease in aggression even though it did not attain statistical significance. Personally, I learned to be patient and more empathetic with the client. I realized that a larger data set will inform my own sense of practice effectiveness

which is closely related to my own sense of self efficacy.

#### **SW-M-44**

Bria Anderson

Research Mentor: **Dr. Shinaz Jindani**

*College Students Stress Level and coping Mechanisms*

Abstract

College students undergo stress more than they realize. Stress can come in many different forms and if it is not handled in a timely manner it can trigger major health and mental health issues. Students take time and learn to balance their course work, build relationship with their instructors, build network of peers, and maintain a steady flow of income to fund their education and daily living and experiment with adult intimate relationships. This could be overwhelming and therefore it is imperative that the students learn coping skills so that they can successfully complete their education and enter with work world with confidence. This research explores healthy and unhealthy coping mechanisms used by the college students. The independent variable are college students and the dependent variable is coping mechanisms whether positive or negative. Stress can impact several college students on daily. In the questionnaire there were several demographics that were selected to compare between stress and coping mechanisms. Gender and sexual orientation do not have a correlation on coping skills among college students. College students are stressed and do display some positive and negative coping skills. In the study there were more positive coping mechanisms then negative. There are positive and negative coping mechanisms that come along with stress. Many individuals do not know how to cope with their stress and it can take over their life and become unbearable. This research will measure the amount of stress that college students are under what coping skills will they use to minimize their stress level. Stress can take over your if you are not able to control it can cause more problems than good. Learning positive coping skills are not

only important but beneficial. Individuals who undergo stress rarely recognize that they are under stress.

#### **SW-M-45**

Syerra Donaldson

Research Mentor: **Dr. Shinaz Jindani**

*Impact of Psychotherapy and Dinner on Depression*

Journal of the American Academy of Child & Adolescent Psychiatry; Natural Course of Adolescent Major Depressive Disorder: I. Continuity Into Young Adulthood has examined the course of adolescent major depressive disorder (MDD) by comparing rates of mood and non mood disorders between age 13 and 18 years in participants with a history of

adolescent MDD versus participants with adolescent adjustment disorder with depressed mood, no affective disorder, and no disorder. .

According to the National Institute of Mental Health, (n.d.), girls are more likely than boys to experience depressive disorders.

According to Mayo Clinic, (2017), Issues such as peer pressure, academic expectations and changing bodies can bring a lot of ups and downs for teens. But for some teens, the lows are more than just temporary feelings - they're a symptom of depression. Single Subject

client was a 16 years old male who expressed feelings of uselessness . Using Cognitive

Behavior Theory, psycho-therapy was implemented to measure its impact on dinner and confidence . The client responded to 9 item

instrument that had five items from Trait Confidence Scale and four items were self-created to measure the energy. Overall 9 data

points were collected. Data was tested for autocorrelation. No trend was detected (Phase I  $p=0.356$ , Phase II  $p=0.363$ ).T-test noted no significant difference between phases

( $p=0.578$ ). However, Delta noted the Effect Size of 21.9% increase in desired direction.

This data was used to understand my very own practice effectiveness. A sense of self efficacy as a competent social worker is discussed.

#### **SW-M-46**

Shedrion Elom

Research Mentor: **Dr. Shinaz Jindani**

*Promoting Healthy Coping Behaviors through Hope-Building and Stress Inoculation*

In general, individuals make decisions to improve their circumstances, recognizing stressors, evaluating whether or not the stress is healthy or unhealthy, alongside other important facets of the concept of stress. According to Dr. Susan Folkman, Lazarus' stress and coping theory, C.R. Snyder provides that hope-building can posit two benefits: (1) allowing the individual to practice optimism and (2) fostering an engaging and trusting relationship between the therapist and the client (Stress, coping, and hope, 2010). Thus, if proven impactful and effective, pessimism will transform into optimism and improve desired life outcomes as well as encourage independent nurturing of hope. This single subject client was 38 years old, mother of 1 child and a single parent. She was faced with legal issues due to limited child custody and use of alcohol to cope with stress. Using Dr. Susan Folkman's hope-building approach, stress inoculation techniques were implemented for 5 weeks. A 12-item scale measured perceived stress and presence of hope. In all, 5 data sets were gathered. Autocorrelation was conducted. Effect size noted 9% increase in hope and 5% decrease in stress. Even though these changes are not significant, yet the author believes that combining statistical, theoretical and practical significance and provide a holistic view of practice effectiveness. Despite those deficits, I learned how important it is to utilize evidence-based measures to guide practice as it allows for the researcher to understand what does and does not work. With that being said, the process of conducting this research study contributed to my self-efficacy.

#### **SW-M-47**

Akeya Hurt

Research Mentor: **Dr. Shinaz Jindani**

*Measuring Grief and Loss of an 8 Year Old Child*  
Children, like adults, experience a range of emotional and behavioral reactions immediately

following parental, sibling death, or any close relative death. Studies of both patient and non-patient samples report that children respond to loss with similar symptoms. Many children are faced with life challenges just like adults. Single subject was a second grader facing grief and loss due to the death of the grandfather. Applying cognitive behavior grief theory. Talk therapy was implemented. The 11-item tool was used to measure his effect on weekly basis. In all 8 data sets were gathered. The data was tested for autocorrelation. Proportion Frequency detected no significant differences between Baseline and Intervention scores. This research explores the relationship between the level of how Cognitive Behavioral Grief Theory emphasis the behavioral changes of a student. With the cognitive behavioral grief theory, the researcher will approach the client with hopes of understanding his grief by using talk therapy. Two eleven item instrument was designed to measure Grief and behavior that used Likert Scale, where for Grief 1= disagree and 5= strongly agree; behavior 1=strongly agree and 5= disagree. Single Subject Design provided me with the necessary understanding to complete a research study from beginning to end. Once this study was completed, I became more aware of where the root of the client's behavior was coming from.

#### **SW-M-48**

Jeya Seymout

Research Mentor: **Dr. Shinaz Jindani**

*Self-esteem Of A College Student Facing Isolation*

Having alone times is a good thing, and some people need more solitude than others may. For example, introverts appreciate spending most times alone and may be exhausted with social interaction, however extroverts would rather have others around as company. Social isolation refers to the lack of social relationships. People are sometimes deemed as unhealthy when they spend excessive amounts of time alone, especially when there is no pleasure from time spent alone. The objective of the present study was to evaluate the effectiveness of CBT counselling on the

awareness of self-esteem, as well as emotional trigger and positive thoughts of a 21- year old female with feeling of low self-esteem and isolation. The measure used for the independent variable is the Rosenberg self-esteem scale (RSES), a Likert Scale, where 1= strongly disagree and 4= strongly agree. The data was divided into baseline and intervention The data was tested for autocorrelations. The study assesses the impact of CBT counselling on low self-esteem and social isolation utilizing a single subject design.

#### **SW-M-49**

Victoria Williams

Research Mentor: **Dr. Shinaz Jindani**

*Self Esteem and Truancy of an Adolescent with a Speech Impediment*

It is not unusual for teenagers to face self-esteem concerns. These concerns can exacerbate if they face disability such as stuttering. The present study was collected via one-on-one short-term counseling, mentor support, and attendance interventions offered to a 16-year-old female attending a public school in the Savannah Chatham County Public School System. Cognitive Behavior and Systems theories were used to inform practice intervention. A 9-item scale fluctuation was used as a self-esteem measure. The data was divided into two phases. The data was tested for autocorrelation. No trend was detected (phase I  $p=0.29$ , phase II,  $p=0.09$ ). Proportion frequency was applied, that noted all scores in desired zone in Phase I and only 50% of scores in desired zone in phase II. This was noted by D-Index, 47% decrease in undesired direction. This could be due to the short duration of the treatment. Moving forward the short-term counseling will be reconsidered. As I learned to measure the client's progress towards her goals, I also learned to consider the data to gain insight into the social work practice process and inform my very own sense of competency.

## **School of Teacher Education**

### **SOTE-1**

NicQuala Shields, Angelique Phifer

Research Mentor: **Dr. Kesha R. Cunningham**

*Evaluating Student Perceptions on the Teaching and Learning of Mathematics at the Post-Secondary Level*

College student's perception in the teaching and learning of mathematics are an important factor in determining a student's math achievement (Code and Merchant, 2016). Data on mathematics achievement from the National Assessment of Educational Progress illustrates that national trends in mathematics achievement have experienced significant changes in recent years. Students perception of mathematics and its value in their life often has a direct relationship to their achievement. Affective aims should not be neglected, as this value is the most important element in raising mathematics teaching and learning qualities (Seah, 2002). This mixed methods study explores college student's perceptions of effective mathematics teaching and learning at the post-secondary level. Participants who are early in their teacher preparation program were recruited from math classes at an Historically Black College and University in the state of Georgia. Participants reinforced the literature that knowing both the how and why of mathematics is important to them. Delivery of content was also prevalent in the discussions and supported recent research that ties course delivery and effective teaching strategies with math achievement and an increased positive relationship with the subject of math itself. The desire for effective mathematics instruction while in high school and ongoing support of math instruction learning while at the university level was identified as impediments to learning mathematics at the university level. Participants perception and descriptions of the teaching and learning of mathematics support the current literature regarding effective mathematics instruction. It also provides more insight to the current state of mathematics instruction at the high school level.

## NOTES

[illegible]



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