

14TH ANNUAL GC Student Research Conference

Friday, April 15, 2011 | 8:30 a.m.– 4:30 p.m. | GC Health Sciences Building



GC Showcase of Graduate Research

Thursday, April 14, 2011 | 4:45 p.m.– 7:30 p.m. | GC Macon Center

www.gcsu.edu/engagement/studentresearch/researchconference.htm

- PAPER PRESENTATIONS
- POSTER PRESENTATIONS
- PERFORMANCES AND READINGS
- CITIZEN-SCHOLAR SESSIONS



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The annual Georgia College Student Research Conference and Showcase of Graduate Research provide undergraduate and graduate GC students the opportunity to present their scholarly work to the campus community.

"Research" in this context is interpreted as any scholarly or creative activity ranging from scientific experimentation, to service-learning, to literary criticism, to case-study design, to artistic expression, and so on. **As such, students and faculty from all disciplines are invited to attend.**

14th Annual Georgia College Student Research Conference

April 14-15, 2011
GC Health Sciences Building



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8:30 to 9:00 a.m.	Registration & Check-in	GC Health Science Building / 3rd Floor Student Commons
9:00-10:00 a.m.	Paper Session #1	GC Health Science Building / 1st, 2nd & 3rd Floors
10:15-11:15 a.m.	Paper Session #2	GC Health Science Building / 1st, 2nd & 3rd Floors
11:15 a.m.-12:45 p.m.	Reception, Keynote Address & Poster Session	GC Health Science Building / 3rd Floor Student Commons and Movement Lab
12:45-1:45 p.m.	Paper Session #3	GC Health Science Building / 1st, 2nd & 3rd Floors
2:00-3:15 p.m.	Paper Session #4	GC Health Science Building / 1st, 2nd & 3rd Floors
	Faculty Best Practices in Undergraduate Research Panel Session	GC Health Science Building / Room 300
	Students Best Practices in Undergraduate Research Panel Session	GC Health Science Building / Room 304
3:15-5:15 p.m.	Happy Hour Reception	GC Health Science Building / 3rd Floor Student Commons

Oral Presentations

GC HEALTH SCIENCES BUILDING • ROOM 103

9:00 • Criminal Justice

White Collar Crime: A Study of Nursing Home Abuse
Amber Williams

Approximately one to two million elderly adults are abused and neglected by their caregivers every year. This presentation offers a basic definition of abuse and explains the three basic types of abuse suffered by senior citizens: physical abuse, financial abuse, and psychological and emotional abuse. The five theories behind abuse (social learning theory, situational theory, exchange theory, political economic theory, and psychopathology of the caregiver theory) are also explored. Specific examples of nursing home abuse are to be explored. Recommendations to prevent nursing home abuse to be discussed, including higher wages, more training, and criminal background checks for nursing home employees.

9:15 • Criminal Justice

An Evaluation of Georgia College's Sexual Assault Prevention Program "Can I Kiss You?"

Julia Oliver

After a high-profile incident prompted campus-wide discussions about sexual assault, the researcher felt it would be beneficial to examine the sexual assault prevention program administered at Georgia College. This paper involves an in-depth look at Mike Dormitz's Can I Kiss You? program. The program is presented to incoming freshmen and focuses on such topics as consent, bystander intervention and supporting survivors. I will analyze the advantages and disadvantages of the program based on the Center for Disease Controls (CDC) Nine Principles of Effective Prevention Programs. As Can I Kiss You? is used at schools across Georgia, this program deserves attention and evaluation. The paper aims to improve understanding of the Can I Kiss You? and inform administrators as to whether its content meets CDC standards. The results of this evaluation should improve the sexual assault education given to Georgia College students as well as students at schools across Georgia.

9:30 • Criminal Justice
Analyzing Georgia College Students' Victimization Rates
Amanda Hamel

Anyone can be a victim of a crime, and some feel more vulnerable or susceptible to crime than others. In order to find out student fear of crime and victimization rates on campus, a voluntary survey was sent out to Georgia College & State University students. The data obtained from this survey examines the relationships between fear levels during the day and night, the actual victimization rates and the characteristics that make students more susceptible to being a victim of a crime on the Georgia College campus.

10:15 • Politics & Victimization
The Tribulations of the Trials of Orestes and Socrates
Andrew Whitaker

This research paper compares and contrasts the trial of Socrates as presented in Platos Apology and the trial of Orestes depicted in The Eumenides, the classical Greek tragedy written by Aeschylus. The paper highlights the similarities between both judicial proceedings and contrasts the glaring differences. Further, the paper comments on the weaknesses inherent to jury trials and examines the consequent potential for rendering flawed decisions. Additionally, the paper outlines and comments upon the alacrity with which Greek society in particular; and, Western society in general, have accepted and indeed, have guaranteed, jury trials. Lastly, the paper comments on the apparent willingness of ancient and modern society to embrace the inescapable limitations of trial by jury.

10:30 • Politics & Victimization
Political Cartoons: Just for Looks?
Lindsay Ryan McCoy

The purpose of this presentation will be to describe the affect of political cartoons on students understanding of historical and political concepts and events. Based on the facets of understanding the goal of this action research project was to analyze student's perspective, interpretation, and explanation of political cartoons that were introduced throughout the curriculum. This action research project was intended to have students reflect their understanding of the curriculum specific political cartoons introduced to them over a five-week timeframe. The goal of this project was for students to see more than a cartoon or silly drawing but to withdraw information from the cartoon's intended meaning. This presentation will demonstrate the students perspective, interpretation, or explanation of political cartoons used throughout the curriculum.

10:45 • Politics & Victimization
Suicide Prevention Practices in Correctional Facilities
Kaitlin Mullins and Cayla McMichael

The leading cause of death across jails in America is suicide. Current research has found common indicators and ways to identify at risk inmates. There needs to be more practices and policies in the corrections system that are focused on preventing suicide in American prisons based off of these indicators. The purpose of this research is to review current practices and procedures and propose changes policies in order to reduce the rate of suicide in prisons and jails. These changes include video surveillance, radio systems, suicide cluster response and using a mental illness ranking system and counseling programs. These changes and propos-

als are hypothetical and because we are not in a position of power we are unable to implement them. Although we cannot put them into effect we would hope that if they were put into effect the suicide rate would decrease in prisons and jails.

11:00 • Politics & Victimization
Overcoming Gender Myths in the Workplace: Shortening the Gender Gap
Jamie Knox

Women have pushed and fought to become equals with men in the workforce, yet still in 2010 men hold most elite positions. This issue is a result of many gender myths that play an active role in todays society. This paper examines the gender gap between men and women, why it exists, and how it can be shortened. As an intern at Plan Ahead Events-Peachtree, I observed a female, small business owner and I was able to examine the struggles that she faces in running a business and participating in networking groups. I will use information from my internship and research to demonstrate how women mask their gender by taking on masculine traits to become more successful in the workplace.

12:45 • Socialization
Immigrant Experience of Education in the U.S. and Spain
Joanna Glasser

Education structures and policies in Spain and the U.S. force an assimilationist model of education where immigrant students must embody the dominant culture in order to reach academic success. With the vast increase in the population of immigrants in Spain (Aguado & Malik, 2001) the current systems and policies are being reevaluated to incorporate diversity. In this paper I look at the current education system and the affects that the assimilationist model has on both immigrant and native students experience. Given the current discussion in policy change, I specifically examine intercultural education, which is an alternative form of education that has been constructed to foster and encourage diversity.

1:00 • Socialization
The Effects of Food Commercials on Kids and the Increasing Obesity Rate
Samantha Jackson

The analysis of how Saturday morning television food ads can affect how children relate to food and therefore what types of food they may desire and consume after seeing food ads that promote unhealthy food that are full of sugar, salt and fat. How marketing schemes directed at young children encourage unhealthy eating habits and therefore can lead to adverse health effects like obesity in children who are vulnerable and susceptible to negative influences from the media. How our society could encourage a healthier environment for children and in turn determine what our government should do to protect our children like ban unhealthy food commercials that could damage a childs perception on food and consequently their health.

1:15 • Socialization
Study Abroad Creating Global Citizens
Stephanie Waddell

Higher education increasingly challenges students to become global citizens. In this paper, I consider how to define global citizenship and given

that, how it is measured and what kinds of educational experiences lead to its development in college students. I do this partly by comparing the results of my experience in a year-long study abroad exchange program for my own global engagement and cognitive development with the literature on study abroad experiences. I consider how the type and structure of a program influence the development of critical thinking in participants. This includes asking questions about cultural immersion and cross-cultural competence.

1:30 • Socialization

Cross-Cultural Comparisons on Personal beliefs and Family Values Between Hungarian and American College Students

Lisa Noelle Baer, Kacie Caudle, and Megan Cosco

Individuals personal beliefs often reflect their family and cultural values. However, personal beliefs and ideology may vary with each generation. Given limited research, this study aims to contrast family values and personal belief between Hungarian and American college students. Particular interests included the age that an individual was allowed to date, their bedtime before and after becoming a teenager, and how active their parents were in their day-to-day life. The study expected to find high similarity between participants own beliefs and their parental beliefs. Participants included 67 international students (Male = 13), with average ages of 23.6 for male and 21.61 for female, and 51(16 males) American students, collective from a Hungarian and an US University respectively. Results revealed significant correlations between participants beliefs and their parental practices. More results will be discussed the conference.

GC HEALTH SCIENCES BUILDING • ROOM 105

9:00 • Art History

Between the Margins: Cha-U-Kao in Henri de Toulouse-Lautrec's Elles Series, 1896

Lauren V. Masters

In its embodiment of advertisement aesthetics and spectacle-based politics, poster art in fin de siècle Paris portrays many unsteady dualisms. Henri de Toulouse-Lautrec's illustrations negate and uphold the binary framework of his time and society, particularly in his 1896 lithograph, *Elles: The Seated Clowness*, which depicts Cha-U-Kao, an underground female entertainer, as a passage into duality. By undermining oppositions in capitalist alienation and divisions in public and private space, Cha-U-Kao declares a flux existence, between society's margins. In this print, Toulouse-Lautrec explores liminality and provides a layered dissection of nineteenth-century Parisian uncertainties.

9:15 • Art History

Paul Gauguin's *The Ants and the Grasshoppers: A Souvenir from Martinique* an Example of His Search for Authentic Art

Curtis M. Williams

How does Paul Gauguin capture the essence of subject matter? *The Ants and the Grasshoppers: A souvenir from Martinique* is a culmination of everything Gauguin felt was needed in an artwork. Through primitivism, symbolism and eroticism, Gauguin set out in search of the inner character within the subject matter. Gauguin captures the emotions he felt through print on his visit to Martinique and offers a different break from his fellow European artists of the time.

9:30 • Art History

There's More Than Meets the Eye

Marie Bormolini

This paper will focus on the underlying themes in Maximilien Luce's *Port of London, Night*. The painting depicts a scene during the Industrial Revolution in London, which was a bustling, chaotic time for major port cities like London, which Luce chose not to recreate, but instead showed a quiet, inactive composition. Within this inactive composition, is a symbol of a sole lantern in the darkness of the night. Luce was involved in the *Trial of Thirty*, a group imprisoned because of their anarchy views, which I argue is tied in with lantern. Luce's *Port of London, Night* is more than a pointillist painting, but relates to the politics, economy, and his own personal life in the late nineteenth century.

9:45 • Art History

Acceptance

Rachel Graham

Henri de Toulouse-Lautrec depicted women prostitutes in a different manner than other Post-Impressionist artists of his time. A part of his *Elles* series, *Woman at the Tub* (1891) depicts a prostitute in a private moment, proving her to be a human being rather than an object of desire. Why did he depict such a disgraced occupation with such respect? Toulouse-Lautrec specifically focused on prostitutes as his subject matter due to his extreme longing to be accepted by society. I will argue that by trying to satisfy that desire, he gave the same respect to women in prostitution that he so desperately craved in his own life.

10:15 • Art History

Jules Chret and Feminine Desire in Posters

Britta S. Gervais

In this paper, I will examine issues of femininity and the power of advertisement in Jules Chret's lithograph entitled *Saxoline*, 1892. Posters became a major form of advertisement and art in late nineteenth-century Paris. Posters entice the viewer by depicting consumerism and women as sexual commodities. Chret, the father of the poster, set the standard of advertisements still used today in his bold colors and images of idealized women.

10:30 • Art History

An Explanation of Decamps' *Farmyard*

Lauren Kuik

Alexandre Gabriel Decamps presents a complex scene in his oil painting, *Farmyards*, 1849. Amidst his plain, every-day scene, he paints a busy layout with detail viewers will not catch immediately, while bringing forth an act of a simple chore and the working class such as peasants and farmers. I will argue the complexity of this composition's layout with some examples and techniques of other farmyard and courtyard images from other artists before Decamps' time period.

10:45 • Art History

Troubles of the Nineteenth-Century French Laundress

Danielle Stephens

This paper will examine the struggles of nineteenth-century French women laundresses through the case study of Pierre Bonnard's lithograph, *The Little Laundry Girl*, 1896. The laundry industry employed mostly women, and given its record of harsh treatment of its workers and unpleasant working environments, these women worked with little to no payment for compensation. Through the somber mood of Bonnard's print depicting a woman carrying a heavy basket of fabric, her identity as a working woman is shown as she struggles through the monotonous routine of daily life.

11:00 • Art History

Woman Looking Into a Handheld Mirror: A Reflection of Cultural Tradition

Timothy J. Little

This paper is an analysis of the artwork *Woman Holding a Handheld Mirror* by artist Toulouse-Lautrec. The paper will explore the composition of the artwork as well as analyze some aspects of European Culture.

12:45 • Art History

The Religious Symbolism Behind Hugues Merle's *Maternal Love*

Paige Jackson

This paper will explore the painting style and technique of artist, Hugues Merle, in his painting, *Maternal Love*. Merle painted in an academic style during a time when his fellow artists were exploring the idea of modernism.

ty and experimenting with the Impressionist style of painting. It is my intention to provide an analysis which will examine Merles academic style, and uncover the meaning behind his various techniques and elements such as floral detail, implied line, and figure positioning to discern the religious significance of his painting.

1:00 • Art History
Reproduction and the Avant-Garde in Nineteenth-Century France
Joseph Cornelison

Emile Hebert's 1877 terracotta bust of Honore de Balzac contains ideas of modernity, authorship, and capitalization's relationship with literature and art in nineteenth-century France. In this paper I will argue that with the bust, Hebert (despite his strong ties to the French Academy and the neoclassical school) celebrates Balzac's devotion to realism and break from tradition. Because of the reproducible nature of the bust, I will also engage in an examination of the commodification of literature - a prominent theme in Balzac's work.

1:15 • Art History
Moulin Rouge: A Shift from Whore House to Entertainment Hall
Cynthia M. Stone

The Moulin Rouge marked a transition from a traditional brothel to an entertainment hall. Toulouse-Lautrec's print "Moulin Rouge: La Goulue" is an expression of a sexual revolution during a time of progression in nineteenth century Paris. This essay intends to focus on the evolution of the can-can from a gender neutral dance to that of a dance of women, the empowerment of women through the use of their sexuality, as well as the symbiotic relationship that develops as men objectify women and women exploit men's desires for money.

1:30 • Art History
Jacques Louis Gautier: Nineteenth-Century French Art and the Occult
Hilary L. Thompson

Religious imagery exploded in Europe during the Enlightenment of the 18th century. Imagery concerning the occult, such as depictions of demons and witches, emerged in nineteenth-century French art after the Enlightenment as a response to society's growing interest in the supernatural. Jacques Louis Gautiers pair of bronze sculptures of the twisted and emaciated figures, Mephistopheles and The Witch from Macbeth, both completed in 1831, exemplify the artist's fascination with the occult, brought about by French society's same fascination of the supernatural at the time. In this paper I will examine the shift in French art from the Neoclassical forms favored during the Age of the Enlightenment to the occult figures that emerged in the nineteenth century and will argue that said shift acted as a response to society's obsession with religion and life after death.

2:00 • Art History
Impression of the Oise River: A Primal View of Landscape
Tyler Griffin

Resigning from the Salon jury of 1875, due to overly rigid admission standards to its exhibition, acts as a model example of the zeal possessed by Charles-Francois Daubigny to paint without restriction. Applying paint in luxuriant globs to his canvas en plein air or on a boat expresses his desire to assert his difference to the Barbizon group of landscape painters. To dodge the strictures of impression and make realism a forefront in his work, whether in the Salon or out in the field, proves his sentiment for life and movement that deviates from literary form. An explanation of his affinity for the outdoors is not only important to understand his work, but is crucial to understand how his artistic temperament establishes a direct interpretation of nature.

2:15 • Art History
Prostitution, Bourgeoisie, and Toulouse-Lautrecs Series Elles
Rebecca Skuse

Caf-concerts, social classes and prostitution were all very much prominent during the nineteenth century in France. In 1896, Toulouse-Lautrec was commissioned by an influential publisher, Gustave Pellet to do a series of twelve lithograph prints, entitled Elles. The series depicts sensitive scenes of brothel life. Pellet rejected the series because he wanted the prints to be more sensual, instead of sensitive. I will explore nineteenth century caf-concerts, male dominance and prostitution.

2:30 • Art History
Alphonse Muchas La Samaritaine and the Inextricable Links Between Poster Art and the Modern Woman
Ellen O'Brien

Poster art and the new depiction of the modern woman became important characteristics of modernity in nineteenth - and twentieth - century France. In this paper, I will argue that Alphonse Muchas advertisement for the play La Samaritaine presents an example of the relationship between the use of posters as a new artistic form of advertisement and the rise of the image of the modern woman in nineteenth - and twentieth - century France. Posters, such as those by Mucha, were a popular form of advertisement that often used seductive female protagonists to help appeal to viewers and, thus, sell commodities. In turn, the identity of the modern woman was shaped by the poster artists, which transformed women themselves into commodities. The ornamentation and idealization of depictions of women in poster art played a big role in forming the hard-to-attain materialistic standards that governed the image of the modern woman. Poster art and the ideals of the modern woman that were forming during the nineteenth and twentieth century in France are inextricably linked as both are responsible for playing a heavy role in perpetuating characteristics that would come to characterize both poster design and the ideals of the modern woman.

GC HEALTH SCIENCES BUILDING • ROOM 121

9:00 • Citizen-Scholar

Friends of the Greenway Nonprofit Management Course Project **Alissa Torchia and Colin Moore**

In the fall of 2010, Gregg Kaufman's non-profit management class took on the project of forming a strategic plan for the Oconee River Greenway Foundation Board. The class focused on re-organizing their board and by-laws, focusing on promotion, a membership campaign, and event marketing. The project also included the submission of a grant to the Community Foundation for funds to hire a part-time digital marketing specialist.

9:15 • Citizen-Scholar

Towards Understanding the African American Community's Cynicism of the American Criminal Justice System: Lessons for 21st Century Criminology

Jane L. Curry

This paper is a systematic examination of a very controversial justice issue in American society. In this examination, important questions have been raised, adequate efforts were made to exhaust them, and serious lessons were gleaned from the process—lessons that may be too important and too costly to ignore in 21st century criminology.

9:30 • Citizen-Scholar

Advanced Audio **Victor Pulizzi**

Max/Msp is a visual programming language for music and multimedia development. It has a history of twenty years and has been widely used by composers, performers, software designers, researchers, and artists for creating innovative recordings, performances, and installations. Advanced Audio will be a presentation of Max/Msp research and Module Development based around the Monome. The Monome is a midi controller surface whereby any Audio signal can be manipulated using programmed hardware. The performance will be an electroacoustic spatialization and video composition using Ableton Live 8 and Max/Msp.

9:45 • Citizen-Scholar

Genetic Algorithms and Video Game AI **Ryan Cheek**

My research is devoted to the application of genetic algorithms, more specifically the Ant Colonization Optimization algorithm, towards a massively multi-player online two-dimensional shooter's artificial intelligence. The Ant Colonization Optimization algorithm, or ACO, models the behavior of ants to discover a shortest path between a home and a food source. Based on this algorithm, my artificial intelligence will randomly spread over the game world battling opposing factions and gathering necessary resources in order to create a more dynamic game play for players.

10:15 • Citizen-Scholar

Shared Demographic Characteristics and Their Effects on the Impact of High-Risk Youth **Heather Lluyk**

There are many camp organizations and people out there willing to face

the social problem of high-risk youth, but who is really the most effective when it comes to actually helping these kids on an individual level? This study examines different counselor-camper relationships and their effects on the outcome of improving the odds for high-risk youth. As a long running employee and former intern at The Salvation Army Camp Keystone, I began to hold concerns regarding my own effectiveness because I do not have shared demographic characteristics between most of the high-risk youth that I work with, among these being my race, social class, and upbringing. A review of literature assesses whether or not effectiveness is impacted based on common demographic characteristics or lack thereof between the counselor and camper. While there is a lack of literature on the camp setting there is a large number of reviews that examine drug treatment and school counselors, which is what I will be comparing to camp counselors. This paper offers various explanations on the level of impact of campers based on similarities and differences between counselors and campers, based on field experience and an examination of literature.

10:30 • Citizen-Scholar

Citizen Scholars Make a Food Guide: The Science and Sociology of Your Food

Yi'Sheika Bell, Sierra Busch, Jennifer Cornicchione, Kristen D. Andrea, Margaret O. Des Jardines, Chelsea Dickson, Megan E. Hill, Alexandra Lampp, Candace K. Lattanze, Angela Lisowski, Morgan R. Neal, Samantha Severin, Laura E. Smith, and Jordan Via

This guide is a detailed description of the Baldwin County/ Milledgeville Georgia area in the distribution of food. This guide goes in depth into the demographics of this area and also how well or how poorly healthy foods circulated this community.

10:45 • Citizen-Scholar

Creating a Positive Classroom Culture in Public Achievement **Patricia Fredrickson and Becca Dinoff**

We will be showing a short 4 minute film we made in our Public Achievement class regarding classroom culture in the elementary school area. It will showcase how to get children to feel like active citizens, and effective team-building exercises.

12:45 • Citizen-Scholar

Applying the Community Nursing Process: Eatonton, Georgia **Andrea Kristle, Rachel Smith, Laura Rampley**

Community health nursing students conducted a windshield survey and informant interviews of residents of the Eatonton community to gain a better understanding of partnerships, and to identify information about the community's health. Initially, telephone contact was made with key informants in the community, and students explained they would be in the community conducting an assessment to identify community health needs for action, and strengths and resources. Specific components of the assessment included identifying health, social, and governmental services in the community. Visits were made to the Putnam County Health Department, Elementary and Middle Schools, hospital, fire department, Public Safety Department, City Hall, and churches. After gathering and

compiling data , the data were analyzed. Collaborating with community partners, a priority community health need was identified. Goals were established, and plans were made to provide health promotion and education activities that would help accomplish the goals.

1:00 • Citizen-Scholar

Fire Safety Educational Intervention in a Rural Head Start Program

Valrie Sinchak, Brandon Williams, and Aaron Jones

This intervention is based on data collection from a clinical group visiting Davisboro, GA and observing potential health hazards in the community. One of the largest issues was an aging housing stock, which causes a potential fire hazard. We addressed this issue by visiting the Head Start Program located in Davisboro, GA and educating the children about fire hazards and fire safety.

1:15 • Citizen-Scholar

Hardwick Community Assessment

Richard Jordan, Bradley Cook, and Cami Lawson

The purpose of this presentation is to present community assessment findings of Hardwick Community of Baldwin County. A windshield survey and an in-depth research of the community were conducted during month of January 2011. Interviews with the police department, the fire department, church members, health department and other agencies were also conducted. Findings include economical, environmental and social issues.

Limited of resources will be discussed as well as the impact to community health.

GC HEALTH SCIENCES BUILDING • ROOM 201

9:00 • Education-Student Assessment

Be Your Own Critic

Matthew Chapman

The purpose of this research is to investigate the affects that self-assessment has on the retention of content knowledge in an eleventh grade classroom. The study uses eighteen high school students in a world history classroom. Self-Assessment has become a new trend in motivation techniques and assessment strategies for high school teachers. This study examines the effectiveness of this strategy as it pertains to world history and authentic types of activities that take place in many high school classrooms. The study will use pretest-posttest, journal entries, and field notes to determine the effectiveness of teacher led self-assessment in this particular classroom.

9:15 • Education-Student Assessment

Effects of Student Self-Assessment

Jamie Nevin

There are many issues in education, one being how to encourage students to take responsibility for their own work and learning. I implemented a weekly student self-assessment plan in a rural, high school setting. Students helped to create their self-assessment based on qualities they deem to be important as a high school student that would lead to their success. They went through this plan receiving feedback on their self-assessment comments throughout a four-week period. Their self-assessments were monitored for common-themes and their quality of self-judgment. After the four-week period, students completed a survey evaluating their thoughts on the self-assessment process as well as their metacognitive thoughts.

9:30 • Education-Student Assessment

**Alleviating Mathematical Performance Anxiety Among
Advanced Placement Calculus Students**

Jessica Broadnax

This study will seek to alleviate mathematical performance anxiety among Advanced Placement Calculus students. By studying performance on both graded and ungraded homework, and also responses to a survey concerning performance anxiety, it will be determined whether students suffering from performance anxiety will perform better in an ungraded assessment situation. The Mathematical Anxiety Questionnaire will be administered to confirm the AP Calculus students are in fact suffering from mathematical performance anxiety. Scores will be compared on homework assignments that are included as students grades and assignments that do not influence students grades to analyze performance when performance anxiety is absent. A free-response survey will be administered that will ask students to self-assess their homework assignments. Results from this study will help students to become aware of how mathematical performance anxiety affects them and will also help the teacher become aware of how students perform without the influence of performance anxiety.

9:45 • Education-Student Assessment

**"I Hate These Tests!": Investigating the Effect of Anxiety-
Reduction Strategies on 7th Graders' Perceptions of Test
Readiness**

Elizabeth Anne Gaylor

The purpose of this study is to describe the effect of test anxiety-reducing strategies on student perception of test readiness. Our current era of education is being defined by standardized testing, and test anxiety among students is on the rise. This action research project involves introducing two anxiety-reducing strategies to a group of 7th grade students prior to standardized testing and examining the impact on students feelings of test readiness.

10:15 • Education - Classroom Environment

Block Scheduling: How Does It Affect Students and Teachers?

Valeria Williams

When students behave, learning can occur. As teachers, it is our mission to ensure that students are engaged in order to prevent disruptions and promote learning. In block scheduling, classes normally last for longer periods of time, usually 90 minutes, which requires more engaging lessons for an extended period of time. What happens when teachers effectively deliver lessons, but there is still an ample amount of time left? If classes last for 90 minutes, how much of that time should be used for lecture, and how much time should be used as work time? What type of scheduling would students and faculty prefer as a whole? My study has provided answers to the previous questions and has been conducted in an environment that has implemented block scheduling. By surveying and interviewing students and teachers, I have been able to conclude students and teachers perceptions of block scheduling.

10:30 • Education - Classroom Environment

**Emerging Technology in the Classroom: Which Technology is
Most Effective?**

Courtney Mayo

Technology Advancement is a growing trend in classrooms across the world. With all the new introduction of this technology it is becoming more difficult to decipher which technology to use in your classroom. I will be conducting a meta analysis where I will compare technologies I have used in my student teaching experiences to research that has been done by other teachers in the field and how it overall affected their classrooms. I will also be comparing and contrasting the different types of technology available to teachers and what a school must go through to obtain this technology. The results of this research will inform my decisions on which technology would be the most effective to use while teaching.

10:45 • Education - Classroom Environment

Using Primary Documents from Georgia College in the Classroom

Joshua Miller

The purpose of this study is to examine how local educators can better utilize Georgia College's Special Collections to enhance their curriculum. When primary documents are used to supplement content in Social Studies classrooms, educators are able to create authentic learning experiences by allowing their students to make real-world connections to what

they are studying. This paper will focus on how local educators can become more aware of the resources that are available for use in Special Collections.

11:00 • Education - Classroom Environment
Effects of Real-World Applications on Physical Science
Students Concept of Topics
Tiffany Shoham

Students have a limited motivation to learn material in school. The questions that generally goes through each and every students mind on a daily basis: Why do I need to learn this or When am I ever going to use this information. If a teacher gives the students a reason, other than I told you so, and shows them the usage of the new knowledge, will the students show an improvement in learned material. My study hopes to prove this idea as true. The ability to apply the knowledge in the classroom to the world around these students will significantly improve their ability to learn the material as well as apply the knowledge.

12:45 • Education - Addressing Students' Learning Needs
Flexible Grouping and the Effects on Engagement
Bradley Winger

I observed the effects of engagement when using flexible grouping techniques. I wanted to have a better understanding of which flexible grouping techniques best suit his classroom style. Students filled out a self-assessment at the end of each week asking them about the pros and cons of each grouping. During the research process, I periodically use a behavior checklist and access their quality of work to gauge their level of engagement during the unit. I hope to use the knowledge gain from his research to provide a stable classroom environment.

1:00 • Education - Addressing Students' Learning Needs
Gender Pairing in Science Classrooms
Jamie Wayland Ammons

Students in science classroom are being silenced by teachers. Students are assigned roles either by teachers or other students within collaborative work settings. In science classrooms like many other classrooms, students work collaboratively within a group to reach a common goal. Therefore, students will both be assigned groups/roles as well as self determining these groups. Students will be monitored by teacher/student teacher and occasional video. Behavior, engagement, and grades will be documented.

1:15 • Education - Addressing Students' Learning Needs
Student Interest and Motivation
Nathaniel Smith

The focus of this investigation is to implement the students' interest into the curriculum and monitor their motivation in the classroom. The utilization of the students' interests will be used to observe their motivation in the content area, U.S. History. Their motivation will be monitored through formative and summative assessments, which include formal and informal assessments, to better gauge their increase or decrease in motivation. The data collection will occur through Likert scales, field notes, and informal interviews.

1:30 • Education - Addressing Students' Learning Needs
Warm-Up to Learning
Heather M. Wilson

The purpose of this research is to share the results of the effects that theatre warm-up games have on student engagement in a classroom setting, specifically, I would like to test having students participate in a short, physical theatre warm-up, followed by a short focus theatre warm-up. The purpose of these warm-ups will be to first create energy in the students, and then to harness and focus that energy so that the students are more engaged and ready to learn in the classroom setting. This research will share the results of that study and whether or not theatre warm-ups lead to better student classroom engagement.

2:00 • Athletic Training & Exercise Science
Peroneal Subluxation in a High School Football Player
Sarah Davis

A high school football running back (62, 150lb) felt a sharp pain in the back of his leg as he pushed off while running sprints at the end of football practice. The patient reported that the pain felt like someone kicked him, and was unable to bear weight on the metatarsal heads but could partially bear weight on the calcaneus. The patient has had no previous injuries to either ankles as well as no complaints of pain or discomfort throughout practice. During the on-field evaluation, movement of the peroneal tendon was noted over the lateral malleolus during passive ankle dorsiflexion. The tendon reduced itself in a neutral ankle position. Crutches were administered for ambulation. A conservative treatment was utilized, including immobilization with a walking boot with crutches and referral to the orthopedic physician. During immobilization, a rehabilitation program was designed to increase strength and maintain endurance. For six weeks, the patients left ankle was immobilized, making rehabilitation of the ankle extremely difficult. Cardiovascular training was adapted due to the non weight-bearing status of the patient while being immobilized.

2:15 • Athletic Training & Exercise Science
The Effects of Caffeine on Cycling Time-Trial Performance
Jessica Sethman and Julia Borland

Previous experiments have shown that caffeine attenuates pain and improves performance during leg cycling, but studies have not included arm exercise. This study sought to determine the effects of caffeine on pain and exercise performance during a 10-minute time-trial during leg and arm cycling. Eleven college-aged men (n=5) and women (n=6) participated. Participants performed 2 leg and 2 arm cycling time-trials. Prior to exercising participants consumed either caffeine or a placebo in a counter-balanced, double-blind manner. During the tests, measurements of HR, RPE, oxygen consumption (VO₂), work, RPMs, and pain were recorded. No differences were found between caffeine and placebo for HR, RPE, VO₂, and pain during arm and leg cycling. Caffeine showed a trend for increased work output compared to placebo in both leg (11638 vs 11140; p=0.055) and arm (5928 vs 5721; p=0.08). Results suggest that caffeine may improve exercise performance in both the arms and legs.

GC HEALTH SCIENCES BUILDING • ROOM 202

9:00 • Education - Teaching Strategies

Rhyme Time in the Sixth Grade

Katelyn Seymour

The purpose of this study is to monitor student understanding and knowledge of historical content by incorporating poetic devices into the classroom and having students listen to and write poems. In the classroom, I will demonstrate and show examples of acrostics, haikus, free verse, quatrains, cinquains, limericks, and couplets. The students will use the facet of interpretation to write poems about the material that we cover in class, which directly relates to the Georgia Performance Standards, during the learning process. With the research complete, I will be able to describe the effect of poetic devices on student understanding of social studies content.

9:15 • Education - Teaching Strategies

Empathy Strategies for Historical Understanding

Kimberly Chatham

The purpose of this study will be to describe the effect of using empathy teaching strategies on student understanding of historical events. In order to obtain data and information regarding this topic, I will gather student journals, Likert scale, and my own field notes. By providing these empathy strategies for students, they will be able to connect to historical events on a deeper level.

9:30 • Education - Teaching Strategies

Group and Individual Work Environments

Katherine Godwin

During the spring of 2011, I completed my student teaching at a rural high school in middle Georgia. My action research took place during this time and dealt with the impact of group and individual work environments on on-task behavior and grade performance. In order to measure this topic, I assigned the class four different projects over a five week period. Two of these projects were individual projects and the other two group projects. In order to create an environment conducive to individual and group work, seating arrangements in the class were altered to appropriate arrangements according to previous secondary research. I chose to use observations of behavior combined with quantitative data in order to gather to most well rounded and accurate findings.

9:45 • Education - Teaching Strategies

Evolving Views of Ophelia

Kathryn Hurd

In this presentation, I follow literary scholars' and readers' interpretations of Ophelia's madness and subsequent suicide in Shakespeare's Hamlet. Societal norms, values, prejudices, and other influences have created evolving interpretations of Ophelia from the time the play was first performed up until the present. The paper this presentation is based off of has been accepted to be published in Volume 12 of The Corinthian, coming out in Spring 2011.

10:15 • Education - Teaching Strategies

Worlds Apart: Using Analogies and Metaphors to Increase the Retention of Curriculum Content

Kelsey Jones

For this study, I will use analogies and metaphors to increase the retention of content curriculum. Too often in social studies, teachers can't make the material relevant for their students. My goal is to hopefully increase their retention and make social studies relevant. By doing this, I also hope to make the students more informed critically thinking citizens in our society.

10:30 • Education - Teaching Strategies

Emotions and History: Connecting for Understanding

Stephanie Grno

The purpose of this paper is to share the results of an action research project that focused on students making emotional connections to history course content through journaling. The journaling took place throughout a unit of study from post WWI through WWII. Connecting emotionally to content material is important for students because the emotional part of the brain is most developed among adolescents. This paper will present findings on how effective emotional connections through journaling was to understanding history course content.

10:45 • Education - Teaching Strategies

Point System to Earn Class Incentives

Amy Suzanne Williamson

Students always want to talk during class, seem not to be able to stay focused on their work, and often come unprepared to do classwork; however, they always want music during class. So, why not introduce a point system for earning an incentive for the class, Music Fridays. Students would be able to earn points for the class to have music on Fridays by keeping noise to a reasonable level, staying on task during class, and answering tickets in/out door or warm-ups correctly. These points would be kept on a chart where the class could see their progress every week. A certain percentage of points for the week earns them music where students can hand in songs to go on the class's playlist. This will allow the students to have a more democratic way of song selection and a say in what they earn as well as learn.

11:00 • Education - Teaching Strategies

Teacher Movement and Energy Levels and Their Relation to Student Engagement

Patrick A. McAfee

This research focuses primarily on identifying a localized relation between teacher movement in front of the classroom and student engagement. The intentions of this research are to examine the expression of various levels of energy and movement at given times during lectures and activities, and through field observations and quick response questions, evaluating how the movement and energy affects the students attention and engagement. Not only does this study intend to illustrate a relationship between teacher movement and student engagement, but it also intends to acknowledge any negative effects of excess movement.

12:45 • Education - Teaching Strategies
What is the Effect of Metacognition on Student Ability to Solve Mathematical Word Problems?
Lauren Smith

Metacognition is an often overlooked concept in education, although it is of great importance. When effectively used, metacognition can have a powerful impact and influence on a student's learning and understanding. In this action research project, I am looking at the role metacognition plays in a student's education, as well as identify the influence of metacognition on a student's ability to solve word problems in mathematics class. Student questionnaires and a written task where students solve word problems will be used to conduct this research. As a result, I hope to be able to use this information in my own teaching practices as I incorporate teaching metacognitive strategies in my own classroom and see the difference it makes in student education.

1:00 • Education - Teaching Strategies
A Study on Guided Notes in Mathematics Courses
Christopher Washington

In an attempt to determine if guided notes were effective in a mathematics classroom, I conducted a study involving a base period and a trial period. The base period guided notes were not given and during the trial period guided notes were used. In this presentation we will discuss the results of my study as well as pros and cons of a guided note taking strategy. Also we will discuss what other researchers say about note-taking and the effectiveness of different note-taking strategies.

1:15 • Education - Teaching Strategies
A Picture is Worth a Thousand Words: Image Analysis in History Curriculum
Meghan Roper

The purpose of my action research is to describe the effect of using image analysis training in student analysis of historical documents, primarily in photographs. I want to know if image analysis training enhances students' ability to analyze historical images. By analyzing historical images, I hope that students will be able to gain perspective, interpret and explain these images through their own understanding of the image. My action research project is intended to allow my students to reflect on images from history and document how their understanding has changed from the beginning to the end of the unit, based on the same visuals. My goal is to measure their initial ability to make inferences and understandings from a photograph and how their inferences change after image analysis training and information from the unit. My presentation will demonstrate the students' understanding of the image, before and after image analysis training.

1:30 • Education - Teaching Strategies
SMART Boards in the Social Studies Classroom
Jonathan K. Grantham, Jr.

There has been quite a bit of research on interactive whiteboards (IWB) like the SMART Board. Some of this research is not sure that there is a

positive benefit. From experience, observations, and readings, I have noted that it is not uncommon for them to merely be \$5,000 projectors. Interactive whiteboards have more potential than one may think. In particular, it can have enormous benefit for students in the social studies or history classroom. In my presentation I will look at the effects of incorporating student interactions and lessons using interactive whiteboards in the social studies classroom.

2:00 • Education - Teaching Strategies
Musical Engagement
Kasey Walden

The purpose of this research was to explore the possibility of a link between classical music and cognitive engagement in the classroom. This was done by administering surveys to eleventh grade students in a rural high school. One survey was given before a week of playing classical music in the background during class; another was given afterwards. The responses were examined.

2:15 • Education - Teaching Strategies
Music in Art Education
Laurene Greene

Teachers are constantly looking for new ways and strategies to help with student productivity and overall learning. The art classroom is different from a traditional academic classroom; there are certainly more freedoms involved. However, with this extra freedom comes the allowance for complete chaos. Like any other subject art has its own set of standards. I am interested to see if playing music while students are working in the art classroom has an effect on the overall productivity of the students. The context for the study includes a series of interviews and field notes made in one particular class over several weeks. I plan on playing classical music while they are working on a project, then I plan on giving them a similar assignment without the music. Detailed observations will be kept throughout the entire process. I would personally like to see the correlation between music and productivity. There is a great deal of buzz about how music promotes learning, and I would like to put this theory to test in the art classroom.

2:30 • Education - Teaching Strategies
The Effect of Visual Literacy on Students
Didier Sauersinger

I have been actively involved in the implementation of visual guides to improve student understanding in history. I have created visual literacy guides, including thinking maps, videos, and political cartoons to help in the learning of history. I strongly believe that visuals create a deeper understanding of all materials and can be worked in with all teaching methods.

GC HEALTH SCIENCES BUILDING • ROOM 207

9:00 • Biological & Environmental Sciences A New Method for Detecting Microbial Contamination of Kaolin Products

Kyle Lashly and Michael Alex Thomas

Kaolin is one of the world's most abundant clays, which chemistry and texture make it difficult to detect and treat, indigenous to the clay microbial contamination in kaolin products. In this study, we attempted to develop a reliable method for detecting microbial contamination in kaolin products. Microbial growth kinetics was used for developing correlations between the optical density values developed during incubation of eluted kaolin microorganism and their concentrations in the eluate. This method allowed discrimination between high and low contaminated kaolin products. Obtained data was corrected for the recovery efficiency of the elution technique towards kaolin microorganisms determined via incubation of kaolin with known amounts of *Escherichia coli* followed with their elution and quantification, and that was found at 2%. The method created will be refined with an array of variously contaminated kaolin products and applied for contamination control, and for a better understanding of kaolin microbial communities.

9:15 • Biological & Environmental Sciences The Occurrence of Antibiotic Resistance Genes in Anthropogenically Undisturbed *Grassostrea virginica* Beds and Environmental Factors Impacting Their Distribution and Abundance

Michael Alex Thomas

Rapidly spreading throughout the environment antibiotic resistant genes have been recognized as emerging and health-threatening contaminants. Tetracycline resistant genes (TRG) and integrons (INT) have been monitored in 2009-2010 in four pristine oyster beds located in the Sapelo Island NERR. The results were compared to those obtained from contaminated beds sampled in previous years. Fewer TRG/INT were observed in pristine than in contaminated beds. TRG/INT profiles varied between oysters and their environment, signifying selective accumulation of TRG/INT by oysters. In contrast to contaminated beds, INT profiles in pristine oyster reefs were not dominated by most unwanted class 3 integrons. The frequency of TRG/INT incidents correlated ($R^2 = 0.9$) to (i) water density and (ii) salinity but not to (i) turbidity and (ii) dissolved solids that together indicate run-offs from the watershed suggesting other TRG/INT sources. Lack of correlation between TRG/INT and coliforms presence suggested bacteria other than coliforms as TRG/INT carriers.

9:30 • Biological & Environmental Sciences 17-beta Estradiols Affect in the Feminization of Crayfish in the Oconee Watershed

John Paul Valenzuela

Endocrine disrupting compounds (EDCs) are becoming more and more prevalent in many of our aquatic environments and could eventually lead to epidemics that will plague our society for an indeterminate amount of time (Schwarzenbach et al., 2006). The aquatic environments attain these exogenous substances, which can interfere with the natural hormones produced by our bodies, from numerous different sources. 17-beta estradiol is a female sex-steroid hormone, which is mainly produced by the ovaries (Nilsson et al., 2001). It is composed enzymatically from acetate, chole-

sterol, progesterone and testosterone and has a physiological regulation on reproduction and many secondary sex hormones. Estrogen has also been proven to have a direct role in maturation, bone growth and brain development (Leusch et al., 2006). Streams, creeks, and rivers can attain a high estrogen concentration from dairy farms and CAFOs that contaminate the surrounding water sources directly (Ahmed, 2000). This study looks at how 17beta-estradiols prevalence in different concentrations affects crayfish. Many studies have already proven that 17beta-estradiol can have a major effect on the feminization of fish (Leusch et al., 2006; Ahmed, 2000; Filby et al., 2007; Kidd et al., 2007; Schwarzenbach et al., 2006). However, no studies have directly looked at whether 17beta-estradiol can have any effect on crayfish. The purpose of this study is to see if there is a direct correlation between the male/female ratios of crayfish in pristine or contaminated anthropogenic sites of 17-beta estradiol.

9:45 • Biological & Environmental Sciences Molecular detection of *Helicobacter pylori* in the Marine Environments of Georgia, Puerto Rico and Trinidad

Chelsea Baskin

Helicobacter pylori is gram negative bacterium that infects the human gastrointestinal system. Chronic infections can result in gastritis, peptic and duodenal ulcers, and stomach cancer. Although treatable, the *H. pylori* infections are one of the most common human infections, especially prevalent in developing countries. There are several hypotheses about the route of transmission however the actual pathway is uncertain. One hypothesis is through the transmission of water containing fecal contamination. This experiment used quantitative polymerase chain reaction (QPCR) to amplify the gene *hpaA*, a gene that is conserved in the *H. pylori* species. Seventy samples from sites in Trinidad, Puerto Rico, and the Georgia coast thus far have been tested for *H. pylori* DNA. Of those samples, four have tested positive for the presence of *H. pylori* DNA.

10:15 • Biological & Environmental Sciences A Combined Automated Stream Design and Groundwater Model that Predicts Changes in the Near Channel Groundwater Levels of Restoration Alternatives

Blair Borries

Natural Channel Design (NCD) is a popular method for restoring or enhancing rivers degraded by humans that attempts to restore streams based on a high quality reference stream. It is effective at reducing erosion and improving fish habitat but is time consuming and does not consider many other factors important to ecosystems such as the interaction with groundwater. We will evaluate an automated NCD process in ArcGIS that quickly generates numerous designs and couples the designs to a calibrated groundwater model. We used the process to generate several designs for restoring an eroding creek at Andalusia Farm near Milledgeville. The designs were coupled with a groundwater model calibrated to hydraulic heads measured with mini-piezometers. The coupled model is effective in predicting near stream changes in groundwater elevation and water balances. In the future we will improve the model to predict changes in the hyporheic zone and how this affects biogeochemistry.

10:30 • Biological & Environmental Sciences
A Comprehensive Study of the Water Quality of the Lower Oconee River at Milledgeville, Georgia
Jeffrey T. Brittain

The Oconee River plays a critical role in the water quality of the Milledgeville-Baldwin County Area. Historically a nutrient-poor river, patterns of nutrient input should be closely monitored to safeguard the regions water supply. Preliminary research found elevated levels of nutrients being emitted from the wastewater treatment plant. This prompted further investigation into aquatic conditions upstream and in Lake Sinclair, which functions as the headwaters for the Lower Oconee and greatly influences the watershed below it. Seven sites along the river and lake were chemically and biologically surveyed for nutrient and chlorophyll a levels to evaluate the water quality. Data revealed little variation in nutrient levels among the lake and river sites, but a peak in iron was recorded in fishing creek. The most significant peaks in nutrients were recorded from the wastewater outfall, where elevated readings in phosphate (6.57mg/L), sulfate (32mg/L), and nitrate (10.4 mg/L) were recorded.

10:45 • Biological & Environmental Sciences
Algae in the Classroom: From Gross to Great!
Marka Smith

Algae, rarely introduced in P-12 classrooms, could be a useful tool in the classroom. Algae provide a relatively inexpensive way to offer hands-on application of the sciences. In this project, we created a curriculum centered on algae for K-12 students using Georgia Performance Standards (GPS) to assure that it was age appropriate and relevant to K-12 science classrooms. Seventh grade students were chosen for the preliminary study. One activity was implemented during a 7th grade in-school field trip. Pre- and posttests were administered to students to determine prior knowledge and effectiveness of the activity. Preliminary results show that the students had minimal to no knowledge of algae and many misconceptions coming into the activity and did gain knowledge and understanding of algae through the program. Participant interest was high in activities of this sort and students offered valuable information about what they think could be done to improve the curriculum.

11:00 • Biological & Environmental Sciences
Diatom Species Development and Growth under Different in Vitro Conditions
Michele Weilbacher, Joseph Dominy

The technique of culturing algae can be a highly specialized skill and a way to examine intra and interspecific competition among diatoms for nutrients and survival under controlled conditions. Samples from different habitats in Georgia were used for culturing, some taken on site from Savannah, Georgia (brackish) and from a diatomer on Lake Sinclair, Georgia (freshwater). In the lab we synthesized two natural environments, marine and freshwater, for diatoms to grow and form colonies. Glass vials and petri dishes were used along with Bold algal medium and soil nutrients to ensure proper nutrients for growth and reproduction. The vials and petri dishes were then placed in an incubator and then checked every two days for growth. Over a 4 week period of time, both vials and petri dishes have shown growth of algae. The petri dishes thus far have shown the best growth in comparison to the glass vials. 40% of the cultured diatoms are growing in artificial media. The freshwater sample for Lake Sinclair was easier to culture, because of the lower species diversity. A monoculture

has not been achieved yet in the lab, but a diatom community has been obtained in both marine and freshwater samples.

12:45 • Biological & Environmental Sciences
A Comparison of the Diversity of Dragonflies at St. Catherine's Island: Nymphs vs. Adults
Blair Borries

Biodiversity is a widely accepted measure of community integrity. Odonata (dragonflies and damselflies) make a suitable order for studying the biodiversity of wetlands because they are ubiquitous, sensitive to human disturbance, and can be identified to species as adults or nymphs. In this study I compared the diversity of adults to the diversity of nymphs from the same habitats on St. Catherines Island, Georgia. I analyzed diversity using rarefaction and the fisher-alpha diversity index. My hypothesis was that the diversity of nymphs would be less than adults because adults represent visiting species from the mainland that do not reproduce on the island. The results did not support my hypothesis. Rarefaction analysis revealed no significant difference between diversity of nymphs and adults. The fisher-alpha index showed a slight increase in the diversity of nymphs versus adults.

1:00 • Biological & Environmental Sciences
Analysis of Enamel Hypoplasia in Virginia Opossums, Baldwin County, Georgia
Ray J. Cornay

Enamel hypoplasia is a permanent record of disturbances that hindered the development of ameloblasts, cells responsible for enamel deposition. These defects are suggested to be the result of physiological stressors that disrupted the typical formation of enamel. In this study, the mandibles of fifty-seven road-killed opossums (*Didelphis virginiana*) collected from Baldwin County, Georgia, were inspected macroscopically for the presence of enamel hypoplasia. Pits and furrows were noted in 54% of the opossums, most commonly on the buccal surface. Amongst the subset displaying the defect, enamel hypoplasia was observed on 45% of m1s, 68% of m2s, 35% of m3s and 3% of m4s. No difference was observed in the frequency of occurrence between males and females. Analysis of the order of tooth formation in the Virginia opossum indicates that m1 and m2 are developing at the time of weaning and m3 is developing during post-weaning dispersal.

1:15 • Biological & Environmental Sciences
A Survey of Small Vertebrates Inhabiting a Central Georgia Piedmont Forest
Sergio A. Patitucci

Here I present the findings of a baseline survey of small vertebrates inhabiting a typical central Georgia (Baldwin County) mixed pine-deciduous Piedmont forest. The woodlands were sampled from June, 2010 to November, 2011 using drift fences equipped with pitfall traps and funnel traps. Moreover, trapping data used to determine taxonomic diversity of the woodlands was augmented with field observations. My findings suggest amphibians were the most abundant small vertebrates (64% of all captures), followed by reptiles (27%) and lastly, small mammals (9%).

GC HEALTH SCIENCES BUILDING • ROOM 209

9:00 • Chemistry & Physics

Synthesis of an Octafluorinated Water-Soluble Cobalt Porphyrin Burkett, Stephanie

The standard redox potential (E°) is an important indicator of the chemical nature of systems. Of particular interest is the reduction potential for the formation of H₂O from O₂ (E° (V) = +0.816). Ruthenium complexes have been known to catalyze water oxidation and are in the forefront of modern research. The bisaquaruthenium complex, [RuII-(tpa)(H₂O)₂](PF₆)₂ (tpa=tris(2-pyridylmethyl)amine) has been shown to give rise to high valent oxo species which are catalytically active. In this study, we utilize density functional theory calculations to compute redox potentials of various Ru complexes during the design of new ruthenium species toward the application of water oxidation. The effect on the redox potential of various electron withdrawing and donating groups substituted on the tpa ligand are presented. Computationally predicted synthetic targets are discussed.

9:15 • Chemistry & Physics

Characterization and computational study of Fe(III) porphyrin Kidus Debesai

The ability of iron porphyrins to undergo facile redox reactions at both the metal and ligand centers makes them attractive as catalysts for a variety of important industrial processes. Water-soluble porphyrins are of particular importance since they facilitate the study of redox reactions in the biomedical field. The Fe(II) derivative of the octabrominated tetra-4-N-methylpyridylporphyrin, H₂OBTMPYP, was previously synthesized in aqueous acetone mixtures under argon. We are specifically interested in preparing iron porphyrin derivatives under ambient conditions. To this end, we have been successful in refining a synthetic sequence required to prepare metalloporphyrins through a metathetic reaction between a brominated monolithium water-soluble porphyrin, LiOBTMPyP, and the desired transition metal ion. To evaluate the molecular geometries of these materials, computational studies of Fe(II) and Fe(III) porphyrin complex were also conducted. The results of our findings will be presented.

9:30 • Chemistry & Physics

Synthesis and Spectroscopic Investigations of Octabromoporphyrin Derivatives Tseng Xiong

The active sites in dioxygenase proteins degrade heteroaromatic substrates into aliphatic compounds by incorporating molecular oxygen. All of these active sites contain a metal. Quercetin 2,3 dioxygenase (QDO) is the only definitively characterized copper-containing protein in this class. Although the exact mechanistic information of QDO degradation is unknown, Dr. Will Lynch of Armstrong Atlantic State University has developed a model complex that mimics both the reactivity and structure of the copper active site. Lynch's model complex incorporates a biomimetic ligand consisting of three nitrogen donors tethered by a phosphorus atom that mimics the structural arrangement of the histidine residues in the protein. Density functional theory (DFT) studies of this model complex have been performed and provide insight into the role of the copper atom in the degradation mechanism.

9:45 • Chemistry & Physics

Characterization of Acetone:TMOS Sol-gels Doped with THPP Matthew Yonz

Our research group has made many attempts to synthesize a sol-gel with TMOS and TEOS that results in an optically transparent monolith with a fast drying time. Most recently, acid and base catalyzed sol-gels have been tested. However, a different type of sol-gel was synthesized this year. This sol-gel is comprised of TMOS, acetone, and water and was found to have a substantially shorter drying period a matter of hours to a few days while maintaining an optically transparent, crack-free monolith. The synthesis and characterization of the materials doped with THPP will be presented.

10:15 • Chemistry & Physics

Computational Investigations of a Copper Dioxygenase Model Complex Christina Hamilton

The active sites in dioxygenase proteins degrade heteroaromatic substrates into aliphatic compounds by incorporating molecular oxygen. All of these active sites contain a metal. Quercetin 2,3 dioxygenase (QDO) is the only definitively characterized copper-containing protein in this class. Although the exact mechanistic information of QDO degradation is unknown, Dr. Will Lynch of Armstrong Atlantic State University has developed a model complex that mimics both the reactivity and structure of the copper active site. Lynch's model complex incorporates a biomimetic ligand consisting of three nitrogen donors tethered by a phosphorus atom that mimics the structural arrangement of the histidine residues in the protein. Density functional theory (DFT) studies of this model complex have been performed and provide insight into the role of the copper atom in the degradation mechanism.

10:30 • Chemistry & Physics

Theoretical Studies on the Mechanism of Copolymerization of Oxetane and Carbon Dioxide via (Salen)Chromium Catalysts Jeffery A. Ivie

The reaction of oxetane and CO₂ with a (salen)Cr(III) catalyst to form poly(trimethylene carbonate) and cyclic trimethylene carbonate (TMC) has been investigated using density functional calculations (B3LYP). The effect of different co-catalysts (N₃, Br, Cl) has been taken into consideration. The pathway for the formation of TMC has been investigated, and different direct enchainment pathways have been investigated as well. The effect of temperature and concentration has also been taken into account.

10:45 • Chemistry & Physics

Formal Synthesis of Members of the Schweinfurthin Series John Paul Valenzuela

The goal of this research is to propose a formal synthesis of several members of the Schweinfurthin series. The Schweinfurthin series, isolated from *Macaranga schweinfurthii*, is significant due to a unique pattern of affectivity that indicates an extraordinary mechanism of antineoplastic activity. Such a pattern of affectivity could lead to additional types of anticancer agents. To both aid in the study of these compounds and elucidate absolute stereochemistry, the total syntheses have been accomplished by Treadwell, Wiemer, and others. Existing synthetic pathways present novel

applications of effective organic reagents. However, such synthetic pathways have led to stereochemical complications late in the syntheses which dramatically decrease yield. This newly proposed pathway intends to apply the Diels Alder reaction in order to reduce stereochemical and regiochemical complications. Several requisite Schweinfurthins may be readily obtained by nominal modification of the completed target.

11:00 • Chemistry & Physics
H2Oconne and Beyond: Testing the Waters
Amber M. Pentecost

Surface water testing kits and gas chromatography/mass spectrometry were used for chemical analysis of water samples collected from bodies of water, including the Oconee River Basin, located near the city of Milledgeville, Georgia. Research students tested the waters nutrient levels as well as measured and monitored the waters pH, turbidity, conductivity, and temperature from testing locations. Latitude and longitude coordinates of the locations were predetermined using a global positioning system to guarantee reproducibility for further studies. Water sampling techniques from Environmental Protection Agency guidelines were followed by the trained research students. These techniques, and the undergraduates results, are highlighted and summarized in this paper.

12:45 • Chemistry & Physics
Procedural Developments in Molecular Docking via Autodock
Brian McKinnon

Cyclooxygenase-2 selective agents have been intensively evaluated for their ability to treat cancer. Unfortunately, the most promising class of COX-2 specific inhibitors evaluated as anticancer agents also exhibited adverse and sometimes fatal side effects. Therefore, it is critical to develop a new class of agents with superior COX-2 specific inhibition and fewer side effects. Flavonoids are naturally-occurring compounds that have anticancer properties. Reports indicate that inhibition of tumor development by flavonoids is mediated through inhibition of the COX-2 enzyme. Using rational drug design methods, docking studies were performed to model novel structurally-modified flavonoids, particularly aurone derivatives, at the COX-2 active site. Presented herein are docking studies of key interactions between derivatives and the enzyme binding pocket. Furthermore, binding free energy and inhibitory concentration (IC₅₀) values were calculated and compared against known inhibitors. Results of these docking studies provided promising results thereby leading to the synthesis of the most promising derivatives.

1:00 • Chemistry & Physics
White Dwarf Modeling
Croix W. Snapp

White dwarf stars are the fated states of stars like our Sun. Our research group has used the Herty computer cluster to compile FORTRAN models of the surface gravity of white dwarf stars based on the variation of six major parameters that surface gravity is dependent on. These parameters include effective temperature, solar mass, and gas content.

1:15 • Chemistry & Physics
Development of an Advanced Physics Laboratory at GC
Stephen L. Higgins, Dimitr Kakavelakis, and Brad Williams

Upon establishing the B.S. in Physics program at Georgia College, it became a necessity to implement and develop an advanced physics laboratory in order to encompass upper level course curriculum in electrodynamic theory, classical mechanics, and modern physics such that theory could be brought into perspective. Students gain experience testing equipment and creating laboratory reports. Moreover, students assist in maintaining laboratory equipment in order to sustain optimal performance when conducting experiments. In future, additional laboratories will be available for students in part with additional funding and the utilization of the machine shop for the fabrication of laboratory equipment.

1:30 • Chemistry & Physics
GCSU Campus Energy Audit
Samuel Ovett, Emily Hill, Katie Angell, and Kristian Page

The research we have conducted helps us calculate the amount of energy used in each building on campus and from the calculations we performed a cost analysis on each building to determine the monetary value associated with each building's energy use per kWh. We also determined the carbon footprint of each building. We did this through physical measurements of energy use in each room in the buildings we audited and by asking objective questions of the users of the room and recording this data in spreadsheets. From these results we have been able to determine whether or not our campus manages energy efficiently. Recommendations on how our campus can become more efficient and cost effective in the areas of lighting, heating and air conditioning have also been made.

GC HEALTH SCIENCES BUILDING • ROOM 300

9:00 • Mass Communication

Social Media's Most Beneficial Role in Nonprofit Organizations Kelley Bowers, Emily Bryson, Kyle Lowez, and Zara-Gray Rowe

The use of social media by teens, students, entrepreneurs and companies has become one of the most beneficial means of creating open communication between users and their followers. The most popular outlets utilized being Facebook, Twitter, Blogger, and LinkedIn. More recently the nonprofit sector has also begun to take advantage of these networking resources. This study electronically surveyed 100 nonprofit organizations in Georgia in order to gain insight on why the organizations originally invested in social media and the actual affects the organization has experienced. The survey questions investigate the organizational status of regional and national recognition, size of the organization, type of social media being utilized, and the benefits experienced from the investment in social media thus far. The study then examined the responses received and correlated the organizational status with type of social media used and the benefits experienced.

9:15 • Mass Communication

Relationships Affected by Facebook Usage Brooke Brookins, Spencer Paige, Desiree Maynard, Avery Christian, and William Ellis

With Facebook becoming an important part of today's communication, how does this online communication affect relationships? In a 2009 study, researchers at the University of New Hampshire found that ninety-six percent of the student body used Facebook. This research paper examines the changes and effects Facebook has on acquaintance, romantic, family and business relationships in an offline setting. This analysis was based on a random online survey of 395 college students regarding their use of Facebook to interact, form and maintain relationships with the members of their social network. This study uses the uses and gratifications theory as a basis to examine the positive or negative impact of Facebook on relationships.

9:30 • Mass Communications

Stereotypical Gleeks Kelsi Nilsson, Jessica Newland, Melissa Brown, Magdaline Irungu, and Ian Bridgeforth

This paper researched possible effects of watching the popular television show Glee on a regular basis. This research inquired into whether or not the participants saw stereotypes in the show, and if this affected their real world perceptions. Based on the Cultivation theory of the mass media, frequent viewers could believe in the stereotypes that are so prominent on the show, even if they did not previously attribute these certain stereotypes to people. After watching the program enough, the viewers could begin to associate the stereotypes on the show with people in real life who may exhibit one or two of the characteristics of those characters. This study examined the effects of Glee on a convenience sample of 395 Georgia College students by using a quantitative survey. The study determined whether or not Glee's stereotypical characters play a role in the audiences perceptions of the world.

9:45 • Mass Communication

Media Effects on Academic Performance Mary Bess Parks, Alexandra Taylor, Cristyn Farrell, and Mitchell Davis

Facebook has been a social media phenomenon since it was launched in 2004. With its terrific growth, Facebook created new and exciting ways to get and stay connected with almost anyone on the Internet. The website can have a positive or negative effects on performance depending on how it is used. This research surveyed college students from Milledgeville, Georgia and showed the correlation between the average amount of time an individual spent on Facebook and the type of grades he or she received. The research also analyzed other forms of media, such as television and the Internet, and the effects on academic performance. Participants were asked questions regarding Facebook and other types of media. The survey responses were analyzed by comparing time spent on Facebook and other types of media and their academic performance.

10:15 • Mass Communications

Are Traditional Methods of News Gathering Becoming Extinct? Katelyn Hebert, Shannon Twomey, Amelia Smith, Matthew Manning, and Chidi Ifionu

The use of smartphones has quickly gained popularity as the convenience of mobile internet and constant on-the-go communication have become a priority for many people. Internet on a mobile device makes it easy to access news anywhere at any time. The purpose of this study is to determine whether non-smartphone users get their news more from television, newspapers, and traditional news media than do smartphone users. In order to determine whether there was a significant difference in news gathering methods between these two groups, a survey was conducted among a randomly selected group of Georgia College & State University students. By determining how the target group uses the smartphone as a news provider, the most effective and up-to-date methods for delivering timely and accurate news to the public can be determined.

10:30 • Mass Communication

Is On-Demand Changing the Game? Benjamin Elliott, Brett Norwood, Caleb Rule, Lisa Lotyczewski

Internet television, coupled with on-demand programming, has changed the race for Nielsen ratings in the broadcast industry. ITVedia reports companies such as Cablevision have suffered massive losses in viewership due to the increased popularity and availability of on-demand television. In addition, ITVedia says some companies, like Netflix, have been able to capitalize on these rapid changes, gaining 20 million subscribers and posted record profits. By using a quantitative survey of 395 Georgia College students, this study will discover students preferred method of watching their favorite shows and find their preferences between viewing it online or via live broadcast. Statistics of online viewership and television ratings of live broadcasts will be compared to student responses to determine student viewing tendencies.

10:45 • Mass Communications

The Perception of 3-D Movies and Their Genres

**Alana Baker, Claire Childs, Chandler English, Courtney Kelly,
and Chelsea Thomas**

The phenomenon of 3-D (dimensional) movies has exploded in recent years. Films in almost every genre have converted to 3-D, such as *Beowulf*, *Toy Story 3*, and *Saw: The Final Chapter*. This study examined the perceptions of film audiences on the subject of 3-D films, in addition to learning which genre of film is projected to be the most successful in 3-D. The theory used for this research is the uses and gratification theory founded by Blumler and Katz in 1974. The hypotheses and research questions were tested through a random sampling of 395 college students. Through electronically surveying these students, this study determined young adults' preferences about 3-D movies and what genre of 3-D films they prefer.

11:00 • Mass Communication

Senior Research Project

Madeline Dobbs, Taylor Goodman, Thomas Smith, and Caroline Davis

The purpose of this study was to determine if MTVs hit reality show *Teen Mom* glorifies pregnancy in a way that makes pregnancy more desirable. According to the cultivation theory, television is responsible for shaping viewers' conceptions of social reality. Reality television has been and continues to be a growing trend in recent years. One estimate according to CBSNews.com, reported that one out of every four shows that airs on prime time television today is a reality show. Therefore, how do viewers perceive reality shows such as *Teen Mom*? The sample for this research project is 395 Georgia College students. The survey was composed of 18 questions all tailored to specifically address the demographics, behaviors and attitudes of the respondents.

12:45 • Literature

Gender Roles in *Corneille* and *Diderot*

Kelsey Brennan

The goal of my paper is to discuss the role of women in *Corneille's Le Cid* and *Diderot's The Natural Son*. There are noteworthy differences in how the women function in the plots of each play, which speaks to their importance in the story and their importance as characters. *Chimne*, of *Le Cid*, proves to be unique in terms of traditional gender roles and assumes some traditionally masculine qualities. However, *Rosalie*, of *The Natural Son*, effectively illustrates the typical role that women are expected to fulfill in the play but also in society.

1:00 • Literature

The American Persona in Ralph Waldo Emerson's *Self-Reliance*
Drew Thomas

This paper covers Ralph Waldo Emerson's work *Self-Reliance*, specifically the way that it represents American society. It includes a basic overview of the text and discusses its multitude of interpretations in various areas of American culture, including politics, religion, and social issues such as slavery and women's suffrage. The paper suggests that the number of different interpretations of the text creates the diversity that characterizes the United States.

1:15 • Literature

Moral Ambiguities in Willa Cather's *A Lost Lady*

Kaoru Kobori

Many critics seem to agree that Willa Cather's *A Lost Lady* is a novel that mourns the loss of a heroic period and take it as a nostalgic account of the glory of the Westward expansion. This is an interpretation that is often supported by the view that Mr. Forrester and Ivy Peters represent opposing values, such as good and evil. In this paper, I will examine the ways in which such binary oppositions are often false or ambiguous, and demonstrate that Mr. Forrester is in fact no better than Ivy Peters.

1:30 • Literature

Power Accrual Via Language

Abigail Gibson

In this paper I will discuss how power can influence the direction of conversation. The research of Dell Hymes and Ken Hyland is a precursor to this conversational discourse about power and are helpful in analyzing the external elements that are influencing the way people interact with each other. It is vital to fully understand the control power has over the speakers and listeners in a conversation; it is imperative that power differences are understood by both parties. By evaluating a conversation between a male professor and a female student, the effects and methods of language hierarchies when used within the power context will be made clear. Using Hymes' SPEAKING acronym I outline the different devices at play during the conversation. It is easy to see the need for such an analysis, since this reveals the intentions and deeper meanings of both participants.

GC HEALTH SCIENCES BUILDING • ROOM 304

9:00 Music Therapy & Nursing

Community Assessment of Lizella, Georgia

Stephanie Griffin, Jared Brodie, Rebecca Jenkins, Megan Shaw, Lauren Miller

In our assessment of the community of Lizella, Ga, we observed a severe knowledge deficit in relation to sun exposure and its long-term effects, as well as the importance of adequate hydration. The citizens take full advantage of the nearby lake, which increases their risk of sun damage and dehydration. In our windshield survey we observed a rural landscape utilized for agriculture. This increases the risks of sun damage and dehydration for those working the farm. The elderly, who are inherently at an increased risk for dehydration and skin cancer due to advancing age, make up a large portion of the population. These risks are not limited to adults in the community but also affect children, who may be at the lake or playing in their yards in the heat of the day. The lack of stores within Lizella minimizes access to adequate resources to reduce these risks. One downfall is that Georgia heat and humidity predisposes people to dehydration, especially if they cannot afford to adequately cool their house in the summer, which is another problem identified in the windshield survey.

9:15 • Music Therapy & Nursing

Entrainment: The Effect of a Drum Circle on Class Participation

Jenna Watkins and Sarah Seo

This study analyzes the effects of entrainment on class participation. The researchers used a drum circle in a beginners' high school choir class to help the participants rhythmically entrain. The researchers hypothesized that as the participants entrain rhythmically, they would also entrain socially. The researchers predicted that the participants will feel more comfortable in their classroom environment among their peers as they entrain socially. Since there is a lack of singing and speaking in class, these two behaviors were defined as class participation. As the participants feel more comfortable in class, the researchers predicted that class participation will increase. Results will be presented and discussed.

9:30 • Music Therapy & Nursing

A Comparison of Music Medicine and Music Therapy Interventions on Anxiety Levels

Sean Richardson

This study will address the effect of music medicine and music therapy interventions on anxiety levels of college students from all class standings. Music medicine, in this study, is defined as a session involving only music listening. The music therapy session is defined as a collection of musical activities including music listening, lyric analysis, and live recreation of the song. Ten participants are involved in this study; five in the control (music medicine) group and five in the experimental (music therapy group). A self-survey of nine questions about anxious feelings, thoughts, and physical symptoms will be given as a pre and post-test to each participant and will serve as the measurement tool. The changes in anxiety levels of each group will be compared.

10:15 • Music Therapy

**Does Eurhythmics Practice Affect People's Speech Accuracy?
Ting Ting Chang**

Speech disorder may have resulted from the brain dysfunctions of coordination aspect. The experiment is to see whether treatment involved eurhythmics will positively affect peoples speech, and to provide the future treatment a clinical conclusion for patients with speech disorders. The experimenter will set up a route for subjects walking. The subjects need to follow the speed that sets up by metronome to walk forward while one of experimenters plays piano improvisation, and when they finish walking, they start to speak three English tongue twisters. The 3 unfamiliar tongue twisters are selected and will be showed on the screen. Ten participants who are college students who have not been diagnosed with any physical and/or psychological impairment will be recruited in each group.

10:30 • Music Therapy

**How Does Participating in a Drum Circle Affect Heart Rate?
Daniel Maley**

The purpose of this study is to see if participation in a drum circle will have any affect on heart rate. Drum circles may be considered the most well known activity in music therapy. Not only are they used for therapeutic purposes but also they have become an activity that can be done anytime, anywhere, by anyone and for any purpose. It has been hypothesized that drumming can improve some aspects of heart health such as heart rate, blood pressure, and stress levels. This study focuses on one of these aspects to determine, if in fact, drumming in a drum circle can improve heart health.

10:45 • Music Therapy

**A Survey of Music Therapist' Awareness of the Field of
Fostercare
Mark Toole**

This descriptive study is meant to broaden the base of knowledge about music therapy involvement in the foster care system. The researcher implemented a survey to all professional members of the American Music Therapy Association in the state of Georgia, asking questions about length of time working with children in foster care, music therapy methods, and referrals.

3RD FLOOR MOVEMENT LAB

Poster Session

11:30 a.m. – 12:30 p.m.

Study of the Improved Gelation Times of TMOS: Acetone Sol-Gels

Mike Arnold, Matthew Yonz, and Ben Ottoson

Sol-gels have many practical industrial applications; however, sol-gels usually require several weeks to solidify. Many attempts have been made to add drying agents, such as dimethylformamide (DMF), to sol-gels in order to decrease the drying time while maintaining a crack-free monolith. A type of sol-gel comprised of TMOS, acetone, and water was found to have a substantially shorter drying time only a few days while maintaining an optically transparent, crack-free monolith. The synthesis, characterization, and functional properties of these materials will be presented.

Modeling Potential Impacts of Kaolin Mining and Agriculture on Microbial Transport in Washington County, Georgia **Loribeth Berry**

Drinking water in rural areas is usually drawn directly from aquifers and consumed without going through a treatment process. Research in La Crosse, Wisconsin has shown the presence of enteric virus contamination of groundwater. The current study investigates the potential impacts of kaolin mining and agriculture on microbial transport in the subsurface, which could lead to drinking water contamination. Surface water and groundwater samples were analyzed in the field using geochemical probes and by using a colorimeter and spectrophotometer in the lab. Preliminary results showed high levels of iron phosphate and sulfate concentrations. One groundwater sample had a low pH value of 4.5 while the surface water samples had relatively higher values. These conditions are probably due to impacts from mining and agriculture and create an environment that may be conducive to the movement of viruses into groundwater supplies. Microbial transport was modeled using VS2DTI and VIRULO modeling software.

Calibration of Sound Frequencies Using the fast Fourier transform (FFT)

Bryan Bill and Kristopher Schock

Acoustics is the study of different characteristics of sound. The acoustic array is designed to pick up sound flowing through both ends of a pipe and collect samples of that sound at many different position points. Microphones installed into the pipe approximately 2.000 apart totals 128 microphones. Each microphone records one aggregate sound flowing through the pipe. The individual sounds are conditioned through an amplifier to receive a more uniform signal. The signal is transmitted to an Analog Digital Converter which provides the computer the digitize information. The 128 frequencies are computed and calibrated using a Fast Fourier Transform (FFT). Calibration is important in that it provides a known magnitude so that variations in frequency can be differentiated.

An Ecological View of the Lake Sinclair Dam **Jeff Brittain**

This research takes a look at the Lake Sinclair Dam in Milledgeville, Georgia to explore the benefits and consequences that it has on the sur-

rounding area, and evaluates the impact that it has made. Dams have been constructed for centuries and have aided in the development and expansion of human societies. Large dam structures are primarily erected to impound water for hydroelectric generating purposes. As future energy demands are increased all power generating processes must be evaluated for their viability in a world that seeks the maximum returns on their investments. With concerns about environmental degradation on the rise, an environmental assessment is vital to achieve the greatest output with the least damage.

Impacts of NAFTA on Maize Diversity in Mexico **Amanda Burke**

The North American Free Trade Agreement, ratified in 1994, has served to reduce the diversity of maize in Mexico. NAFTA has made it easier for cheap, genetically modified American corn to infiltrate the Mexican corn market. The price of Mexican corn is higher than that of imported American corn, forcing Mexican farmers out of business, and often across the border illegally into America in search of new jobs. Mexican corn, which is more genetically diverse and often naturally disease-, drought-, and pest-resistant, has seen a loss of native strains. The loss of farmers, in effect, has caused a decrease in maize diversity, which is both bad for Mexico and the world as a whole. Often, countries seeking resistant maize turn to Mexico for genes, but with decreasing native strains, the whole world will see an increased vulnerability in maize production.

An Updated Beers Law Experiment for Quantitative Analysis Laboratory **Will Carter**

Beers Law involves the determination of the concentration of an analyte by the amount of light absorbed by the analyte. The purpose of this research was to adapt an existing Beers Law experiment to include use of a small footprint diode array spectrometer for absorption measurements. Using the spectrometer, its software, and standard solutions of potassium permanganate the concentration of an unknown can be determined. The pedagogical relevance is that the experiment has been updated to involve the use of a state of the art instrument which is of benefit to students of quantitative analytical chemistry.

Development of Molecular Protocols for Efficient Algal Genomic DNA Extraction **Michael Christopher**

Although algae are an important environmental indicator, the great diversity requires an assortment of approaches for identifying and characterizing species. Our studies focus on development of protocols for molecular assessment of algal communities. Genomic DNA extraction cannot be achieved the same way for different algal groups due to varying chemical nature of algal cells. We hypothesize that different protocols for isolating genomic DNA from single field sample would allow us to identify wider variety of algal communities than using a single extraction method.

Investigation of Water Quality in the Oconee River Basin **Ashley Collins and Allison Barfield**

A research group of undergraduate chemistry majors have come together to monitor the water quality of the Oconee River Basin. The parameters that were monitored include nutrient levels, temperature, pH, dissolved oxygen, conductivity, and turbidity using on-site water testing kits. The testing locations were mapped using global positioning systems technology to ensure that reproducibility studies can be completed in the exact locations. In order to bring water samples back to the lab, the research students have been trained using EPA guidelines on proper water sampling techniques. This poster highlights the pre-work done this semester and future plans for research next year.

Feeding Adaptations of the Osprey, *Pandion Haliaeetus* **Haley S. Davis**

As part of a long term study of Osprey, *Pandion haliaetus*, nesting on Lake Sinclair, Baldwin County, Georgia we have undertaken a comparative morphology study to understand the specialized feeding adaptation of this species. The Osprey is a raptor that is adapted to eat only fish. To understand their specialized feeding adaptation we have compared the flight feathers and skeleton of a common buterine raptor, the Red-tailed Hawk (*Buteo jamaicensis*), to that of the Osprey. There are significant differences in the shape of the wing (airfoil), the foot covering, and the skeleton of the wing, trunk, and legs of the Osprey as compared to this hawk.

Synthesis of Transition Metal Complexes of a Perfluorinated Porphyrin **Paige Eber**

Water-soluble cobalt(II) porphyrins have demonstrated the ability to reversibly bind oxygen, making porphyrins good candidates for ligands. This characteristic enables cobalt(II) porphyrins to have great potential as fuel cells and as catalysts for oxygenating small molecules, such as methane to methanol, and in the deactivation of toxic materials such as nerve agents. The purpose of our work is to synthesize an electron-deficient cobalt(II) center that will readily react with dioxygen and function as an oxygen transfer agent. To achieve this goal, we have synthesized the Co(II) derivative of meso-tetrakis-2,3,7,8,12,13,17,18-octafluoro-tetra(2,3,5,6-tetrafluorophenyl-4-N,N,N-trimethylamino)porphyrin. The synthesis and spectroscopic investigations will be present.

Algal Reference Database **Caitlin Eilers**

Phycology is a dynamic but small field globally, and finding recourses is problematic. References are a critical part of preparing a report and searching for information found in other studies. In order to ease the process of finding sources and citing references in a paper, 70% of the published journal articles available in the Phycology research lab were entered into an online reference database, which can be accessed by students and faculty. The database allows a student to search for a particular author, title, keyword, etc. Each article that is entered is set up by the database in a format allowing it to be viewed and ready to be copied into citation and or reference pages for publication. This database is extremely valuable and many of the articles that are in the lab or have been scanned into the database are not available in the GCSU library. The articles related to diatom studies date from the mid 1800s to current published studies.

With the database, we have a 95% increase in reference finding for any of the projects currently in the lab. The database helps with abundance and distribution of all algal groups and when available, species distribution maps. Currently, this allows web discussions on different topics with students from other institutions.

The Effect of Structure on Motivation in Adventure Education Environments

J. Whitney Evans, Kimberly Love, Andrew Paracca, Nicole Wagner, and Ansley Campbell

Play is what parents, teachers, facilitators, and mentors once called the essence of adolescents' childhood. The American Academy of Pediatrics has confirmed the importance of unstructured play in child development. However, adolescents today encounter structure with constant learning in the form of direction parameters and rules. The purpose of the present study is to discover whether structure or unstructured play affects participants' motivation and to capture participants' need for structure. In this between-subject design, participants are exposed to either a structured or unstructured environment during an activity creation task. Participants then complete a motivation inventory to rate their effort in the task. Ultimately, the study hopes to gain further insight into the dichotomies of play and their effects on motivation. This study hopes to equip classrooms, camp organizations, and parents with the necessary tools to better assist the development of adolescent well-being.

TLC of Over-the-Counter Drugs **Katie Fredo**

The goal of this experiment is to design a laboratory experiment that uses thin layer chromatography (TLC) to identify the separate components of certain over-the-counter drugs. TLC is a characterization technique used to identify how many components are in a substance and to match the identity of a compound with a known substance. In this research, TLC was used to identify the different compounds of three over-the-counter drugs: Benadryl, Benadryl D, and Sudafed PE. These three drugs all contain variations of the components diphenhydramine HCl, and phenylephrine HCl. The retention factor values were recorded and each component was identified.

Tellico OHV Closing and the Associated Economic Impacts **Zachary A. Gilbert**

Tellico Off-road Area, located just outside of Murphy, North Carolina in the Nantahala National Forest, is a mecca of off-roading since the end of the Second World War. In 2007, the North Carolina and Tennessee chapters of Trout Unlimited, along with the Southern Environmental Law Center, issued a Notice of Intent to commence civil action in violations of the Clean Water Act. The US Forest Service has permanently closed Tellico off-road area while legal proceedings are underway. This action has severely impacted the economy in the tri-county area surrounding Tellico. In the year following the closing of Tellico, the average decline in business sales across all business types was 43.5 percent. The projected expenditures in the area by off-road users is almost \$3.1 million, which has been lost from the local economy due to the closing. Alternatives to an extended closing have been presented, including raising prices for users.

Community Assessment Intervention of Lizella, GA
Stephanie Griffin, Kimberly Van Ness, Charlotte Peacock,
Michelle Dinser, and Mikayla Latham

Based on the assessment, we will be educating the citizens of Lizella on proper skin care, times of the day that harmful sun rays are at their peak, and skin cancer and dehydration screening tools. We will be hosting a health fair in the community at the local church providing skin care products, water, and pamphlets educating about related topics. We will also set up educational games to keep the children engaged. We will evaluate the effectiveness of our interventions and education of the potentials for change and the need for continued intervention.

Hardwick Community Intervention
Cameron Hatlevig, Chandler Murray, Lacy Foster, Kelly Smith,
Anna Winkler, and Kayla Pippin

The purpose of this presentation is to discuss community intervention outcomes in Hardwick Community of Baldwin County. Health education needs and lack of awareness of resources were found of the community people of Hardwick during a community assessment conducted in January. In collaboration with community members and community agencies, a Health Fair is planned. Information regarding various funding supports, resources such as WIC, Medicare, Medicaid and the nearby Baldwin health department, fire department, police force and other programs are introduced. The aim of the intervention is to assist in the development of proper community health and safety.

Water Privatization
Nathan Holman

Millions of people live without daily access to safe drinking water. Currently, water privatization is being proposed as a solution to this water crisis. There are six different models of water privatization which range from the state simply contracting businesses for monitoring or building infrastructure to the private sector running and controlling everything, including the water source. Certain countries have been privatized for quite some time. Because of this, experienced companies have become very adept to profiting from running water as a commodity. There are still many arguments for and against water privatization, including the ethical concern that access to clean water should be held as a human right. If water is privatized and someone is unable to afford it, then access to clean water may become more exclusive than it is currently.

Comparing ArcGIS Groundwater Toolbox to MODFLOW
Groundwater VISTAS
Nathan Holman, Brendan McGee and Blair Borries

A hydrologic analysis was conducted to understand surface and ground water interactions at Andalusia. This study focused on assessing the performance of the Groundwater tool in ArcGIS 9.3 in tracing and quantifying flow from a pond to the stream. The water table was mapped using a series of piezometers installed at the site while hydraulic parameters of the subsurface were estimated using data from slug tests and permeameters. Riverbed conductivity was estimated using in-stream piezometers and seepage meters. Topography and elevation were measured using a total station while depth to bedrock was estimated using electrical resistivity and field observations. Results from the Hydrology package were compared to those from MODFLOW in Groundwater VISTAS to determine which program was the most effective. Despite not performing as well as

MODFLOW, the ArcGIS Groundwater tool box has the potential to be useful in groundwater modeling.

Micah Hudgins

This presentation is a case study of a 21 year old male motor-cross athlete. This athlete sustained severe injuries to his left foot. His injuries consisted of fractures and dislocations to the navicular and cuboid bones. The athlete required open reduction and internal/external fixation. This presentation outlines the the procedures taken to repair function and reveals the uniqueness of this injury.

Modeling a Cure for Amyloids and Prions in Yeast
Laurel Jenkins, Zachery Deckner, Cara Teske,
and Jessica Miller

Amyloids are a unique class of aggregate proteins implicated in many human diseases. Efforts are underway in many labs to find chemical agents that eliminate or cure cells containing amyloids. We used an amyloid, the [PSI⁺] prion of the yeast *Saccharomyces cerevisiae*, to model the potential of a curing agent, rapamycin, known to eliminate amyloids in animal models. To compare curing effects, we used a known [PSI⁺] curing agent, guanidium hydrochloride (GuHCl), as a positive control. At low concentrations, GuHCl cures [PSI⁺] by inhibiting the protein-disaggregating yeast chaperone Hsp104. Rapamycin, a known inducer of macroautophagy, may be assisting the clearance of the [PSI⁺] amyloid by this mechanism in our model system. By developing this model system in yeast, we will have a genetically powerful, rapid, and cost-efficient means to discover amyloid and prion curing agents and investigate the cellular mechanisms by which curing occurs in eukaryotic cells.

Identification of Benzene from Fabric Samples Contaminated
with Cigarette Smoke
Marissa Johnsey and Chelsey Williams

Benzene, a known carcinogen, is a volatile organic compound that is present in cigarette smoke. Four fabric samples: cotton, polyester, muslin and fleece were subjected to the environmental tobacco smoke of a 100mm Marlboro red cigarette. To qualitatively determine the presence of benzene on the contaminated fabric sample, a purge and trap auto-sampler was coupled with a gas chromatograph mass spectrometer (GC/MS) to analyze the organic compounds, more specifically benzene, in cigarette smoke. The experimental design and results of the research will be presented in this paper.

Overview on Production and Implementation of Biofuels
Colin Maldonado

With continuous global increase in energy demand, fossil fuel supplies are diminishing. To compensate for this demand, there is a growing need for biofuels. Taking into consideration the negative consequences of using the agricultural industry to provide biofuel crops, this research is aimed at the utilization of crop residues and other cellulosic biomass for fuel production. Also examined are the technological improvements within the separation and purification of biomass for biofuels. Though the ability to create renewable energy through the use of biofuels is physically attainable, an infrastructure geared towards providing such fuel to consumers is a huge challenge and requires strong national policy decisions.

Using Chemical Analysis to Study Groundwater and Surface Water Interactions of a Lake at Andalusia Farm in Milledgeville, GA

Branden J. McGee and Nathan Holman

The goal of the project was to study the flow of groundwater into and out of a small lake to a nearby stream, and how this in turn affects the stream at Andalusia. The objective was to utilize chemical analyses of water in the lake, stream, and groundwater. Groundwater flow was quantified using water levels measured in piezometers installed in the lake, around the lake, below the dam and along the stream. Water samples were collected and analyzed for sulfates, phosphates, nitrates, and chlorine using a colorimeter and a spectrophotometer. Temporal variability in concentration of these nutrients was monitored. For most of the time the lake was losing but switched to gaining during rain events. Results from this study also showed some unusually elevated chlorine levels of 0.24 mg/L in the fall. At this site phosphate levels can be used to determine whether the lake was losing or gaining.

The Hydrology of the Oconee River Greenway (ORG) Wetlands in Milledgeville Georgia

Christine Melvin, Charles Lampkin, and Evan Crowe

This research examines the hydrologic connections among surface water, groundwater, and sidewalk overtopping. One of the goals of the research was to investigate the sources of water in the wetlands and flooding of the sidewalks during rainfall events. A detailed analysis of the wetlands topography, hydraulic conditions, and soil profiles were carried out. Sources of water in these basins were determined using geographic information system analyses and field observations. We determined that the wetlands received water from a combination of interflow and overland flow. These basins do not have well established outlets and, therefore, mostly lose water through subsurface flow and evapotranspiration. Understanding the hydrologic connections, as well as estimating the amount of water needed to overtop the sidewalks, allows us to present the ORG Authority with recommendations for the best location of a next culvert. It also provides crucial information required for future sustainable development of the ORG.

The Introduction of Constructivist Methods in the History Classroom

Michael Mosely

History has often been taught using simply lecture-based methods and PowerPoint presentations. While these are not ineffective methods of instruction, many teachers only use lecture when teaching. Experts such as Gardener have found that constructivist learning, or discovery based learning, have been very beneficial in the classroom. Presenter Michael Mosely will give a presentation illustrating the effectiveness of these constructivist methods compared to lecture-based methods.

Implementing Plans for Promoting the Health of the Eatonton Community

Amy Nation, Sarah Coxwell, Megan McFaddin, Jamie Hayes, Lisa Galetta, and Samantha Arthur

Once the assessment and the analysis of data phases of the community nursing process were completed, multiple community nursing diagnoses were identified. Collaborating with community partners, the highest priority need identified was elementary health promotion and education activities to prevent future health discrepancies in Putnam County.

Partnering with Putnam County Elementary School personnel, objectives were established to plan a day of health activities and education. Health stations will be set up during physical education class. Each health station will be designed to cover an aspect of healthy living to ensure important aspects of healthy living are communicated. Once the intervention activities are completed, an evaluation of the effectiveness of the interventions will be conducted. Our goal is to present the information in a manner to facilitate the best understanding to make healthy living a desirable lifestyle for the children of the Eatonton community.

Microscale Extraction of Lycopene

Drew Norby

The purpose of this research is to design a micro-scale experiment from an existing macro-scale lycopene extraction procedure to make it feasible for implementation into an introductory organic chemistry lab. Lycopene is an organic compound native to the pigment found in red vegetables. In this experiment a sample of lycopene (beta,beta- carotene) is extracted from tomato paste. This is accomplished by extracting the pigment via liquid-liquid extraction and separating the two compounds (lycopene and carotene) via column chromatography.

Broken Fibula in a High School Senior Football Player

Lauren Renee Palmer

Background: 17-year-old African American male football player. Athlete was helped off of the field and complained of pain in the ankle joint and had immediate swelling with an obvious deformity. He was sent to the emergency room for x-rays. The athlete had no previous history of ankle problems. Differential Diagnosis: Fractured fibula, Syndesmotic sprain. Treatment: After x-rays were reviewed, the athlete was diagnosed with a broken fibula. Surgical repair included a plate and seven screws inserted into the fibula. Athlete was immobilized for five weeks following surgery. Week one included the use of a boot while weeks 3-4 incorporated a cast. The athlete participated in a rehabilitation program while immobilized to help prevent atrophy and maintain cardiovascular levels. After the removal of the cast, the athlete immediately began physical therapy. The athlete progressed quickly through range of motion and strengthening exercises and within 10 days had improved ROM and strength tremendously. Agility and sport-specific exercises also had a rapid progression and the athlete was able to return to practice at the beginning of week four. Uniqueness: The suspected syndesmotic injury in the left ankle repaired itself once the plate and screws were inserted into the fibula which reduced the amount of surgery the athlete had to endure. Considering that the repair was strong from the beginning there was thought that the athlete would return to play in 6-8 weeks compared to a normal 8-10. Once the athlete began rehab that time decreased even farther and was at full return to play status 66 days after his initial injury with only 3 full weeks of rehabilitation.

Tibia Tubercle Transfer

David Patch

This poster details the case of a 15 year-old female patient, high school track sprinter, who sustained multiple patellar subluxations of the right knee. Prophylactic knee braces were unsuccessful in treating her condition. More than two years after the initial injury, the patient elected to have tibia tubercle transfer, to re-align the patellar tendon to reduce the onset of subluxation. Rehabilitation included physical therapy three times a week for 10 weeks to restore functionality. The first five weeks 5 weeks

included the neuromuscular reeducation, and restoration of range of motion, proprioception, and balance. Through functional progression, strengthening exercises were added to enable weight bearing activities. The last five weeks improved endurance and sports specific activities. This case is unique in that most individuals her age are not recommended to undergo this procedure due to a lack of physical maturation.

Fire Safety Educational Intervention in a Rural Head Start Program

Heather Pederson, Jessica Christopher, Kait Finley, Bethany Harrison, James Latty, and Natalie Mosher

This intervention is based on data collection from the clinical group visiting Davisboro and observing potential health hazards in the community. One of the largest issues we saw was an aging housing stock causing potential fire hazards. How we plan to address this issue is visiting the Head Start program located in Davisboro, GA and educating the children about fire hazards and fire safety.

The Slide Collection of Georgia College

Mary Alice Richardson

Collections of specimens from different environmental conditions and geographic areas are an invaluable source for understanding species abundance and distribution from the past and today. The diatom slide collection of Georgia College was counted, reorganized, and cataloged so it can become a searchable part of the Natural History Museum of GCSU. Each slide was labeled given its own unique reference number for Georgia College, along with its preexisting number according to the state or country the sample originated. There are more than 2000 slides catalogued and we estimate this is less than 40 % of the available slides in the collection. A map was then constructed showing the locations of the collections slides; this shows the range of the samples from all over the United States and other countries including Australia and Bolivia. This reorganization and assignment of a Georgia College reference numbers for each slide dramatically improved the ease of finding specific slides for researchers and students. The collection also holds two personal collections acquired as donations, isotypes and other type material for species described by members of the lab and is a depository for all algal collections from the State of Georgia.

Investigating Magnetic Propulsion for Zero Emission Vehicles

Michael Rodriguez and Brad Williams

A number of renewable energy sources are available for transportation purposes to build zero emission vehicles. Magnetic propulsion can be used to propel those vehicles in a more efficient way than can be done with conventional methods. This project investigates the plausibility of using these magnetic forces as a means of efficiently transferring power to a bicycle wheel by applying a magnetic propulsion device to that bicycle. To do this, neodymium magnets are mounted at even intervals around an aluminum bicycle wheel, which is fed through a series of copper coils. A spoke-less rim only wheel is replacing the conventional wheel design. Several bearing and mounting methods are being explored for minimal friction losses and optimal handling of the wheel. In addition several magnetic coils, magnets and control systems are being tested for optimal power transfer to the wheel. The coils will have a current running through them that is alternating in sequence with the rotational velocity of the wheel in order to pull and then push the permanent magnets through the coils. At present the current will be supplied by a battery mounted on the

bike but it is planned that they can be replaced with fuel cells in the future. The GCSU Astronomy and Physics Club is funding this project.

Motivating Shy Students To Be More Involved In The Classroom Community

William Rogers

Some students demonstrate markedly less social skills and interactions than that of their peers. These students may suffer from some form of disability such as a social phobia or shyness. This work focuses its attention on these students and how to best motivate them to have more social interactions and be more involved in the classroom community.

Desalination strives to become the solution to freshwater shortages, but at what cost? Insight of how an eastern Australian desalination plant has taken measures to reduce adverse effects

Sasha Rojas

Proposed water desalination plants must address water demands, government regulations, community concerns, and environmental morale before they can be constructed. With more than 15,000 desalination plants worldwide, each desalination plant must face slightly different obstacles imposed by its surroundings. The Gold Coast Desalination Plant (GCDP) in South East Queensland, Australia is located in one of the driest continents with many unique flora and fauna species. By studying the responsibilities and concerns of the GCDP, many general conclusions can be made about desalination plants worldwide. The principle concerns of desalination plants should include strategic ways of mitigating the adverse effects of reverse osmosis within the terrestrial and marine environment, life forms in those environments, and the community that benefits from it. The project briefly examines how GCDP is acting to decrease the negative effects of the plant in the surrounding community, the Coral Sea, and in the local environment.

Analysis of Urban Storm Water Runoff in Milledgeville, Georgia

Kathleen Roll

During precipitation events, rainwater amasses and transports contaminants from highways and surface roads to nearby surroundings, including soil, ponds, lakes, and streams, and in some cases marshes and oceans. The contaminants in rainwater are numerous and originate from a plethora of sources. This experiment will focus on pollutants from automobiles and power plant emissions in Milledgeville, Georgia. Grab samples will be collected during and shortly after rainfall. This study will investigate if copper, zinc, cadmium and lead are present in runoff sampling, as well as important characteristics of rainwater. The samples will be analyzed for pH, water temperature, chlorine, nitrate, and phosphate as well as analyzed using a gas chromatography mass spectrometer (GC/MS) for the presence of heavy metals such as copper, zinc, cadmium and lead, and organic compounds. This study will also consider some of the detrimental health problems associated with these heavy metals as well as possible sources of remediation.

Nitrogen Deposition

Maria (Victoria) Rowe

Nitrogen deposition levels are increasing globally. Nitrogen can enter the atmosphere through multiple anthropogenic ways including the burning of fossil fuels and the widespread use of fertilizers. There are concerns about

the effects of nitrogen deposition on terrestrial ecosystems. Nitrogen deposition can affect plant and insect communities. Experiments have shown that nitrogen deposition can impact plant biomass, plant species richness, plant diversity and insect abundance and diversity. We conducted an experiment examining the effects of different levels of nitrogen. The experiment was conducted at Bartram Forest in Milledgeville, Georgia and this is the first year of treatment and collecting data. We measured plant biomass, arthropod abundance and arthropod species richness. The response of plants and invertebrates can give us an idea of the impact that human-induced nitrogen has on the environment.

Community Health Education for a Better Tomorrow: Toomsboro Health Fair 2011

Megan Savaransky, Andre Miller, Ashley Godby, Elaine Denovellis, Erin Oshust, Evelyn Larson, and Lindsey Jenkins

This poster presentations purpose is to reveal community assessment findings of the Toomsboro community in Wilkinson County. A windshield survey, in-depth interviews, and a literature review were conducted during the month of January 2011. Interviews were conducted in Toomsboro [with the mayors office, the post office, a small business owner (flower shop), the property manager of area historic buildings, and individuals at the local retirement center]. Additionally, interviews were conducted in Irwinton, the county seat, where Toomsboro residents utilize county schools, the department of health, and county government offices. Findings to be included are related to demographic, economic, environmental, social issues, and availability of resources. Based on the findings of the community assessment, the significant issues currently impacting the community members will be addressed during a community wide health fair. At the health fair, attendees will be provided with information regarding physical activity programs, asthma and diabetes care and/or prevention education, nutrition guidelines, community resources for health and wellness, BP screenings, and septic tank care information. The goal of this community intervention is to improve the quality of health and wellness in Toomsboro by addressing the current concerns that have been identified. Outcomes of the health fair will be measured through a participant survey.

Evaluation of Microbiological Parameters of Water Quality and Detection of Fecal Pollution in the Andalusia Farm

Samendra Prasad Sherchan

Andalusia Farm has been listed on the National Register of Historic Places since 1980 and is home to world renowned writer Flannery O'Connor. Analysis of the microbiological parameters assessing water quality in the Andalusia farm indicated it is contaminated with low levels of fecal bacteria. After analyzing the PCR results, Bifidobacterium adolescentis, which is a putative marker for human fecal pollution, was not detected in any water samples from the creek and pond. Overall, the water quality outcome indicated a relatively pristine environment which is really important for aquatic habitats.

The Presence of Atrazine Degrading Bacteria in the Water Samples from Puerto Rico

Samendra Prasad Sherchan

Atrazine (2-chloro-4-ethylamine-6-isopropylamino-1, 3, 5 triazine) is a member of s-triazine herbicide family, which is widely used to control broad-leaf weeds in golf courses and even in residential lawns. It is an

endocrine disruptor and even as low as 0.1g/l concentration is believed to be detrimental to aquatic organisms. Quantitative PCR technique was developed for assessing the presence of atrazine catabolism gene responsible for atrazine degradation. After analyzing the QPCR results, atzA gene (atrazine chlorohydrolase) was detected in five sites, Boquilla, Oro Creek, Fishers Association, Ceiba Creek and Sabalos Creek. Using this method, it was possible to detect atrazine degrading bacteria in water samples within few hours.

Nicaragua Fair-Trade Coffee

Josh Smith

Nicaragua has the perfect climate for growing some of the worlds most formidable gourmet coffee. Coffee is Nicaraguas number one export and deforestation is a growing problem due to land being cleared for coffee plantations. Fair-Trade practices encourage coffee growers to practice shade growing techniques to ensure the protection of forests. Fair-Trade was designed to ensure farmers and workers fair wages for the products they produce. The problem with Fair-Trade coffee growing is that in some regions of Nicaragua the costs of producing the coffee are so high that it is difficult for farmers to earn a living. The high production prices are an aspect of Fair-Trade coffee because Fair-Trade encourages organic coffee. Some coffee plantations in the mountains of Nicaragua have been practicing organic and shade growing techniques for centuries. In these mountainous regions Fair-Trade has allowed these cities to build schools and hospitals.

The Role of Deprotonation in Flavonoid Activity: A Computational Investigation

Katie M. Smith

Pigment flavonoids, found in plants, are frequently consumed by humans from foods such as, herbs, fruits, vegetables, tea, and wine. Flavonoids are of great interest to the pharmaceutical community due to their potential to destroy pathogenic protozoan, kill bacterial strains, and inhibit important viral enzymes, as well as for their anti-oxidative, anti-inflammatory, and anti-cancerous properties. The action and mechanism of flavonoid activity within the body is not well understood; however, studies have shown that the placement and number of hydroxyl functional groups have a significant effect on their anti-oxidant efficiency. We have undertaken a computational study using density functional theory to determine which hydroxyl groups are more favorable for deprotonation and therefore more likely to participate in anti-oxidant/radical scavenging activities for various flavonoids.

Bait Cars: A New Form of Entrapment

Heather Snyder

Bait Cars are a new policing phenomena sweeping the nation. While their aim is to "crack down" on car theft and catch experienced car thieves, they actually target juveniles in impoverished areas who are not likely to be the larger threats to society that the police are trying to arrest. By examining the way in which police carry out these bait car arrests, it is shown that this new technology is actually a form of entrapment.

Production of Biodiesel Through Ozonolysis and the Clemmensen Reduction

Evan Sova, David Wilder, Matt Hilliard, Jim McPhail, and Kyle Dickens

Biodiesel is being synthesized through the process of ozonolysis followed by a Clemmensen Reduction of the starting material, peanut oil. Peanut oil is made up of long hydrocarbon chains, and biodiesel is composed of shorter carbon chains (approximately C15-C20). Similar to the traditional biodiesel techniques, the ozonolysis method performed breaks down the carbon chains producing smaller carbon chains (C9-C11) containing ketones. The Clemmensen Reduction was then carried out to reduce the carbon chains containing ketones to hydrocarbons and water. Future plans include reverse engineering of a diesel engine.

Steel Magnolias: A Backstage Look at Hair, Makeup, and Costumes

Marsha Stinson

Steel Magnolias: Costume Design is a detailed look into the exciting world of theatrical design by examining how the costuming for the stage production of *Steel Magnolias* performed in the Fall of 2010 at Georgia College & State University was achieved. Observe the entire process for a costume designer from conception to execution over the course of the production period.

Water Recovery Through the Use of Constructed Wetlands

Lauren Vason

The efficient filtration of wastewater around the world is an expensive and energy-consuming process. Although many of the current treatments are effective in their goal of purification, they are often not economical. Alternatives are being explored to replace the conventional systems, including the use of constructed wetlands. It has been common knowledge for hundreds of years that wetlands purify wastewater, yet wetlands have not been fully utilized as the main source of filtration until recently. Constructed wetlands are built for the sole use of human benefit, however wetlands provide vast additional benefits. Housing hundreds of wildlife species along with an economical and aesthetic attraction, wetlands have few detractors as a source of water recovery. If water treatment plants were supplemented with constructed wetlands, humans would be harnessing nature's benefits while simultaneously benefiting nature.

Shigella-like Toxin in Marine Environments of the Caribbean

Trisha (Phillips) Walker

Suburban, urban, and rural sites were sampled around the islands of Puerto Rico and Trinidad and tested for the presence of *Escherichia coli* and a shigella-like toxin. Shigella-like toxins are found in enterohemorrhagic *E. coli* O157:H7, a zoonotic pathogen linked with severe human illnesses. Quantification of *E. coli* and a toxin linked to *E. coli* O157:H7 was evaluated using MI plates, Colilert and qPCR. Molecular detection and quantification using the *tuf* and *stx2* genes was conducted and the toxic *stx2* gene was found in a few sites, showing an epidemiological threat for outbreak in those areas. Further studies quantifying the *stx2* gene as a threat indicator for outbreak would be helpful in providing stronger evidence of the validity of using this method for determining the effects of different watershed developments on aquatic systems.

Sec15p: A Screen for Novel Suppressors of the Sec15-1 Mutants and Characterization of Additional Sec15 Mutants

Emily Wilkinson

Sec15 is a protein subunit of the Exocyst complex, which plays a role in tethering vesicles to the plasma membrane prior to fusion with the membrane via SNARE complexes. The *sec15-1* allele of *S. cerevisiae* is a truncated version of the SEC15 gene, which causes a temperature sensitivity. To dissect the function of Sec15 further, we performed genetic screen to identify novel suppressors of the mutant phenotype based on yeast 2 genomic library. We extracted the plasmids from yeast colonies grown at 37C, and amplified the plasmids in *E. coli* for further analysis. Additional alleles of Sec15 mutants that have been generated are currently under characterization to identify the mutant phenotypes.

Water Quality Study in Kenya, Africa during the Summer of 2010

Chelsey William

Water samples were taken from Kenya, Africa from rivers, concrete holding tanks, and rain water collection tanks all used by the people in the area for drinking purposes. The water was collected from Narok, Morijo, and The Fig Tree Inn on the Masai Mara in the summer of 2010. Nutrient tests were done on the samples such as free and total chlorine, orthophosphates, ammonium nitrogen, and nitrate tests. Levels of turbidity, conductivity, pH, and dissolved oxygen were also analyzed. The water samples were tested for volatile organic compounds using a purge-n-trap coupled with a gas chromatograph/mass spectrometer. From the data, a comparison was done on the nutrients and VOCs from each source and compared to EPA allowable limits. The results of this project will be presented in this paper.

Georgia College Showcase of Graduate Research

April 14, 2011
GC Macon Center



4:45-5:00 p.m.	Registration & Check-in	GC Macon Center / 4th Floor
5:00-6:00 p.m.	Paper Session #1	GC Macon Center / 4th Floor
6:00-6:15 p.m.	Reception & Poster Session	GC Macon Center / 4th Floor
6:15-7:15 p.m.	Paper Session #2	GC Macon Center / 4th Floor

GC MACON CENTER • ROOM 406

5:00 • Master of Arts in Teaching
How Does Study Opportunities, Questions's Asked, and Study Guides Affect Performance of Currently Failing Students?
Tashina Johnson

The purpose of this research is to diagnose whether classroom instruction in Computer Applications correlates with students' performance on both formative and summative assessments and find tools that effectively increase student achievement. The students are fully engaged in the differentiated learning task provided for them in class.

5:15 • Master of Arts in Teaching
Interactive Notebooks in the Science Classroom
Mary Allene Veazey

This project concentrates on the effectiveness of using interactive notebooks in the science classroom, with a focus on student achievement. I will look into how interactive notebooks affect student achievement through test scores, student surveys and student work. I will also look into strategies that work best with in the frame of interactive notebooks.

5:30 • Master of Arts in Teaching
To Know or Not to Know . . . A Question of Multiple Intelligences
Nicki Leigh Neufeld

Multiple Intelligences proposes that each individual has strengths in learning. Hypothetically, student understanding of these strengths would equip an individual with the tools to succeed academically. This study analyzes the relationship between student academic performance and knowledge of personal strengths and Intelligences..

6:15 • Master of Arts in Teaching
Effective Teaching Strategies
Laurie Pippen

This research project is designed to uncover what students and teachers believe to be the most effective teaching strategies. Research for this project is conducted through meta-analysis, surveys completed by students and teachers, and individual and small group interviews of students, and teachers.

6:30 • Master of Arts in Teaching
Yo quiero el ipad
Sophe Cook Pope

How does the use of student technology (ipads) in the classroom enhance student motivation and learning? Teaching a population of digital natives, it is imperative that the school system make strides toward incorporating technology in the classroom. This research explores the relationship between students' use of technology (ipads) and their motivation and learning.

6:45 • Master of Arts in Teaching
Teacher Questioning Strategies
Jacob Quilliams

As a new teacher I am constantly asking myself, "is my instruction working" or "am I reaching my students." One aspect that is important to me is how do the questions I pose in class help my students understand the material. Specifically, I find myself wondering if I am asking quality questions that reach the deeper understandings I want my students to achieve? To answer these question I have spent some time researching alternative questioning techniques that achieve the level of success I am looking for.

GC MACON CENTER • ROOM 407

5:00 • Master of Arts in Teaching
Facilitating Student's Timely Achievement of Proficiency in a Blended Learning Chemistry Class
Meredith Wood

A blended learning classroom allows the students the freedom to work at their own pace to achieve mastery in the subject. The classroom observed contains students who have never been held to this level of accountability for completing their own education. This study looks into the perspective of these students, and analyzes the techniques used to motivate the students and push them towards the success for which they are ultimately responsible.

5:15 • Master of Arts in Teaching
Once Upon a Time: Story Telling in the Chemistry Classroom
Whitney S. Rhodes

This project concentrates on the effectiveness of using interactive notebooks in the science classroom, with a focus on student achievement. I will look into how interactive notebooks affect student achievement through test scores, student surveys and student work. I will also look into strategies that work best with in the frame of interactive notebooks.

5:30 • Master of Arts in Teaching
Multigenre Projects
Andrew Wells

Teachers mainly use multigenre projects to help their students learn a certain topic or lesson in different ways. This allows the students to get different view points over the same concept. Andrew Wells will present how to use a multigenre project over a particular topic to help his students learn multiple computer applications and software programs. He will present both the pros and the cons to using this sort of project in a classroom. Diane D. Painter wrote, "Educators face many challenges in today's classrooms, particularly related to keeping pace with various instructional levels and/or the kinds of instruction students require based on their individual learning, and particular interests" (Painter, 288).

5:45 • Master of Arts in Teaching
Life's Just a Game
Steven Batchelder

I explore the idea that compition can be motivation for a class as I turn my chemistry class into a giant game.

6:15 • Master of Arts in Teaching
Let's Get Critical: Teaching Critical Thinking in Social Studies
Jarrett Moore

Improving critical thinking skills through immersion in critical thinking
Improving critical thinking skills through immersion in critical thinking activities in a secondary social studies class.

6:30 • Master of Arts in Teaching
Oh My Blog: Critical Thinking Through Technology and Digital Dialogue
Chad A. Ekey

Creating, evaluating, and synthesizing a critical thinking environment through online blogs for Secondary Social Studies classrooms.

6:45 • Master of Arts in Teaching
Curriculum
Kristen D. Tilson

In urban areas there is often a problem with limited literacies. This can cause students in a classroom to be learning at many different reading levels. In this study, Kristen Tilson will introduce ways in which curriculum can be built to teach students to reach their highest reading potential. In her research, she will discuss high-level literacy (Parsons, 2011), and how it can be incorporated into a classroom with students at varying comprehensions of the textbook, and other reading materials.

GC MACON CENTER • ROOM 408

5:00 • Master of Arts in Teaching
The Power of Choice
Josh Hollar

Having the freedom of choice can be empowering and exhilarating. It brings motivation and a feeling of self worth. Once students step into a classroom and the doors close, the freedom of choice slowly disintegrates. How can we put the power of choice back into the hands of the students and will this increase participation and quality in their homework assignments?

5:15 • Master of Arts in Teaching
Journals in Math Class . . . Are You Serious?
Lesley Murphey

What effect does journal writing have on connecting mathematics with the "real world?" Students constantly ask, "When will I ever use this again?"

Will writing in a journal help students make connections with math topics?

5:30 • Master of Arts in Teaching
Instructional Strategies That Increase Reading Comprehension
Taneisha E. Favors

My presentation will consist of multiple stategies that I have tested in order to discover which ones work best for increasing a student's reading comprehension skills. Reading comprehension is the foundation for student understanding across all subject areas. If a student cannot comprehend the content then can you say they have truly learned? Or have they just regurgitated information? After hearing this presentation you will be armed with some "tools" to "fix" your student's comprehension deficiency.

6:15 • Master of Arts in Teaching
Using Literacy Strategy, SQRW, To Improve Reading
Comprehension in Social Studies Classrooms
Allison Cavallo

This research project is designed to uncover what students and teachers believe to be the most effective teaching strategies. Research for this project is conducted through meta-analysis, surveys completed by students and teachers, and individual and small group interviews of students, and teachers.

6:30 • Master of Arts in Teaching
Creativity as the Instigator of Inquiry
Richard Thornton

The purpose of this study is to determine whether creative group activities are good strategy techniques for developing deeper understanding in social studies. Does the student have a deeper critical understanding of the course material when they experience learning through hands-on group creative activities compared to the learning that takes place during a lecture and the taking of notes. Is there any test evidence that students

learn information better through doing project work and that information is retained with better understanding?

6:45 • Master of Arts in Teaching
Learning as You Go: Evaluating Supplementary Resources for
World History Teachers
Christopher Cox

It is not uncommon for schools to occasionally ask a teacher to teach a course outside of his/her background experience, yet within his/her discipline. Christopher experienced this when his pre-service field experience placed him in front of a world history class. In these situations, having resources to supplement limited background knowledge is critical to providing the best history education possible. Christopher reflects on his experience with different world history resources and holds this experience against standards of good practice set by history teacher educators (Neumann and Hawkey). He also includes the input of students in the world history class that will observe the fruit of this research, and their opinions on which lessons seemed best informed.

GC MACON CENTER • ROOM 426

5:00 • Master of Arts in Teaching
All I Do is Win Win Win!
Shelton Brown

This research project will focus on motivation as it relates to students in an inner city school. Students will be divided into groups with each group receiving one method of motivation. Those with intrinsic motivation will be motivated only by the value of receiving a passing grade. The extrinsic group will be given incentives to include candy and prizes. The research will center around student achievement before and after the motivations were implemented.

5:15 • Master of Arts in Teaching
Encouraging Participation of Resistant Learners
Melissa Wood

I am doing a meta analysis of action research that will help me determine what types of behaviors can encourage more participation by my reluctant learners. I will look at research that focuses on student participation, student engagement, and building teacher-student relationships.

5:30 • Master of Arts in Teaching
Do Students Really Care About What They Do?
Ashlee N. Jelks

Do students really care about what they do? I am researching whether or not students will become more involved in curriculum if given more choices on how to present information and will they hold accountability for their grade. In order to test this type of research, instead of giving students one project and grading it, I am giving students the option of picking which projects they want to do to prove they understand the standards. I hope to discover that students would take more pride in their projects, especially since they chose which project(s) they wanted to do.

6:15 • Master of Arts in Teaching
Making Student-Teaching Connections Through Daily Content-
Based Journaling
Eleta Andrews

Student-teacher relationships are often a low priority in large classrooms. Teachers may place the primary focus on classroom management of the class as a whole in place of cultivating one-on-one relationships with their students. This problem juxtaposed with Nietos Theory of Care (2003) creates a dilemma in teachers of large classrooms; they know they should let their students know they care, yet they are overwhelmed with the task of managing student behavior. Eleta Andrews will present her findings about student-teacher relationships, classroom management, and academic achievement throughout a nine-week period of daily, content-based journals with bi-weekly teacher feedback.

6:30 • Master of Arts in Teaching
Does Knowing the Context of My Students Influence How I
Teach History?
Cynthia M. Madison

Contextual teaching and learning which is still being designed and implemented, is a conception of teaching and learning that help teachers relate subject matter content to real-world situations. Contextual learning motivates students to make connections between knowledge and its applications to their lives. The school is a primary context for social interaction, cultivation and interpersonal skills, formation of peer groups, self-expression and development of self. Considering the context of adolescents while teaching will influence how I teach adolescents History and ultimately make History more relative to their lives.

6:45 • Master of Arts in Teaching
Are You Smarter Than Your Smart Board?
Makesha L. White

The advantages of using interactive whiteboards in the K-12 classroom are well-documented, but these advantages can only be realized if and

when the technology is used properly. The purpose of my study is to determine whether interactive whiteboards are used effectively in the classroom and what impact their use has on student learning.

GC MACON CENTER • ROOM 429

5:00 • Master of Arts in Teaching
A Comparison of Awareness of Serving Sizes Between
Adolescent Males and Adolescent Females
Andrew Dasher, Heather Story, Sabrina Fortuny, Candice Tate,
Derrick Collier, Brandi Swats, and Kristi Gatlyn

The purpose of this study is to determine the level of awareness about serving sizes, comparing 12-17 year old males to 12-17 year old females. Research on serving size awareness is geared toward children and adults. Some information about adolescents and serving size do not compare genders. In this study, 75 adolescents were randomly selected and surveyed about food serving sizes. Recommendations for increased awareness in adequate serving sizes will be discussed.

5:15 • Nursing
Activity Specific Factors for Dietary Needs
Charles Kitchens, Kristi Gatlyn, Faybria O'Neal, Nicole Elder,
and Ryan Moyer

The purpose of this nonexperimental clinical study is to investigate the relationship between the intensity level of activity and the caloric intake in 20-35 year old adults. A literature review revealed a direct correlation between energy expenditure and dietary requirements, but failed to address age-specific factors. The aim is to educate young adults on the impact of activity, depending on the intensity level, and their nutritional choices. Utilizing a cross-sectional between-subject design, a group of randomly sampled participants in the Middle Georgia area are surveyed using a questionnaire. The questionnaire compares eating habits with varying intensity level activities. Recommendations for practice and further research will be discussed.

5:30 • Nursing
Healthcare and the Hispanic Population: Recognizing the Gap
and Need for Change
Andrew Dow

The purpose of this research study was to examine the healthcare limitations and disparities that Hispanic populations face in the United States. Many limitations were identified and studied in depth. The study focused specifically on "pediatric appendicitis" in the Hispanic population. The outcome was an educational lecture that can be taught at the community level, to help educate Hispanic parents about this illness and address several limitations and disparities they face on a daily basis.

6:15 • Nursing
The Role of the Nurse Practitioner in the Prevention of CA-
MRSA Infections
Tammie Ann Williams

Community-associated methicillin-resistant *Staphylococcus aureus* (CA-MRSA) has become a common cause of skin and soft tissue infections, which are encountered frequently by primary care providers, including nurse practitioners. CA-MRSA occurs frequently in young, healthy individuals who do not have traditional risk factors for infection. The purpose of this research study was to explore the current roles and successes of nurse practitioners in the prevention of CA-MRSA infections. A questionnaire was developed to identify gaps nurse practitioners may have in the education of patients and care givers on the prevention of CA-MRSA infections. The responses to the survey led to the development of a brochure to aid in the education of patients and caregivers in the prevention CA-MRSA infections.

6:30 • Nursing
Preconception Care: Do Women Know They Need It?
Rachel Sposito

Despite advances in medicine and technology, maternal and neonatal health has improved little over the last several decades in the United States. The infant mortality rate for African Americans is 13.63 infant deaths per 1,000 live births and is remarkably higher than the 5.76 per 1,000 live births among Caucasian Americans. This study aimed to assess the knowledge, beliefs, attitudes, and perceptions of health status prior to pregnancy and perceived barriers to care of women in a rural community in Georgia, especially African-American women. A convenience sample of 96 women were recruited from the rural southeast. A majority of the participants were African American (64.2%) and of low income (68.4%) defined as below \$25,000 per year. Participants not using birth control was 38.9%, despite reporting that they did not plan to become pregnant. 75% of these study participants fell into either the overweight or obese BMI categories. Women in the study reported adequate knowledge about concepts related to preconception care and safe practices during pregnancy as well as having adequate access to care.

GC MACON CENTER

Showcase Posters

6:00 – 6:15 p.m.

Student Engagement in High School Math Warm-Up Activities **Jennifer Blackwell**

Students in math classes are asked to participate in warm-up activities at the beginning of class in order to prepare them for thinking like mathematicians. Students in one high school classroom were reluctant to participate in these activities. This study investigates the types of warm-up activities and teacher behaviors that generate faster student engagement.

Perception of Health in the Tindall Heights Community **Karen Clubb, RN, BSN, CNOR, RNFA and Delia Collins, RN, BSN**

Tindall Heights Community is listed on the National Register of Historic Places. Located in Macon Georgia, this historic community is bound by three major thoroughfares to the East, South, and North, and a small residual street and railroad tract to the west. The community is rich with beautiful architecture including residential homes and businesses in the Queen Anne, Italianate, Romanesque, and Folk Victorian styles. However the glimpse of the historic Southern past has become overshadowed by newer, low income duplex apartments that are in dire need of replacing. This once thriving community now represents other aging southern communities as homes and business fall into disrepair. Few businesses are available to sustain a strong community such as grocery stores and green spaces, and there are a growing abundance of convenient and liquor stores. The purpose of this study was to get a better understanding of how residents viewed both their personal health and the health of their community. Three objectives for this community assessment were identified: 1.) residents' perception of their personal health and health of their community; 2.) residents' perception of access to healthcare; and 3.) residents' perception of the health needs of their community. A qualitative design using descriptive phenomenology was used to reveal residents' perceptions. Convenience sampling using face to face interviews was used to collect data from 29 residents. These interviews were audio taped and transcribed verbatim. Residents' perceptions of their health and the health of their community were both positive and negative. Most residents agreed that there were more health barriers within the community than health resources. Access to healthcare was identified as a barrier to health. Although participants were able to name a healthcare provider, most did not have access to transportation. Most residents did not view lack of exercise as a health barrier. However, 21 of 29 respondents had a BMI that placed them in the overweight and obese categories. Drugs and gang activity and the physical safety of the residents also were common themes among residents. These findings support the need for improving the Tindall Heights communities' access to affordable transportation, increasing awareness of health promotion and disease prevention measures, and addressing the safety needs of this small community. Future research recommendations include action research which would allow stakeholders involvement and educational support to improve the residents understanding of health and illness.

The Effect of a Local Farmer's Market on the Daily Intake of Fruits and Vegetables of Community Dwellers **Anna Ethridge, Gwendolyn Green, Sharon McClung, Robert Sloan, and Kemberly Smith**

The purpose of this study is to identify the impact of a local farmers market on the consumption of fruits and vegetables and its resulting health promotion behavior. Fruit and vegetable consumptions has been shown to have numerous health benefits. While we have evidence of the benefits, data reveals that most Americans do not consume the recommended amount of fruits and vegetables. This data highlights the need for interventions that will encourage increased consumption of fruits and vegetables. Research has documented the benefit of education initiatives and behavioral interventions. An intervention to increase the availability and accessibility of fruits and vegetables which has not been studied extensively is a local farmers market. Despite an increase in numbers of local farmers markets in the US along with its popularity for their use as a healthy initiative, little is documented about their effect on dietary intake of fruits and vegetables. The objective of this study is to address the question of what effect a local farmers market has on the consumption of fruits and vegetables in the Milledgeville area. We propose that there has been an increase in the consumption of fruits and vegetables in the local community with the implementation of the Milledgeville Market in Baldwin County Georgia. This local farmers market began weekly operation during the growing season of 2010 (April-November). Using an adaptation of we plan to use an adaptation of the Behavior Risk Factor Surveillance System (BRFSS) module on fruits and vegetables. Findings of this study will be discussed as well as recommendations for further studies. The aim of this study is to identify a local farmers market as an environmental factor which results in the specific health promotion behavior of increasing the consumption of fruits and vegetables.

Correlates of Commitment to Stop Smoking in Women with Known Coronary Heart Disease **Kimberly T. Evans and Cassie Smith**

Women smokers with coronary heart disease (CHD) are at increased risk for negative health effects. At the time of invasive cardiovascular (CV) interventions is a critical opportunity to make lifestyle changes to reduce future CV interventions. Increased commitment to stop smoking has been shown to predict smoking cessation. The purpose of this study, guided by the Health Belief Model, was to determine which factors are related to commitment to stop smoking in women with known CHD. A prospective, correlational design was used. An independent samples t-test was used to test the hypothesis that women who had a previous attempt to quit smoking three months prior to their invasive CV procedure had higher commitment to stop smoking than those with no previous quit attempt. Women with a previous quit attempt reported significantly higher commitment to stop smoking ($M = 30.45, SD = 5.94$) than women with no previous quit attempt ($M = 27.55, SD 5.64$) $t(74) = -2.13, p < .05$ at the time of their invasive CV procedure. A second independent samples t-test was used to test the hypothesis that women living with a nonsmoker would report greater commitment to stop smoking at the time of their procedure than

those living with a smoker. Women living with a nonsmoker reported significantly greater commitment to stop smoking ($M = 30.16$, $SD 5.33$) than women living with a smoker ($M = 27.23$, $SD 6.11$) $t(74) = 2.22$, $p < .05$) at the time of their invasive CV procedure. Interventions related to increasing commitment to stop smoking are needed for women with no previous quit attempt and for those living with a smoker.

In What Ways Can Technology Aid in Literacy Promotion in an ELA Classroom?

Jessica Fason

Present-day high school students have different learning styles than students of the past (Oblinger, 2003). Oblinger, Jonas-Dwyer and Pospisil suggested that integrating technology in the classroom is a necessary and natural thing for teaching the millennial generation (2003, 2004). Jessica Fason is a masters in teaching candidate at Georgia College & State University. She will present her research on a four-week qualitative study where students engaged in learning activities that incorporated various forms of technology and completed projects using various forms of web 2.0. Findings suggest that students have a greater interest and higher motivation for completing student work when technology is incorporated.

Vegetarian Diets and Lab Tests

Margo Gaskins, Cayce Curry, Tracy Johns, Ali Robbins, and Angela Wells

Objectives: To compare the effectiveness of a vegetarian diet and statin therapy in lowering LDL levels in adults with a diagnosis of dyslipidemia. **Methods:** A systematic review was carried out in the CINAHL Plus with Full Text using the following search terms: vegetarian, diet, cholesterol, LDL, dyslipidemia, hyperlipidemia, blood lipids, and statin therapy. Only peer reviewed articles published between the years 2000 to 2011 were selected for review. **Results:** Multiple research studies have shown a significant reduction in LDL levels in adults following a vegetarian diet, and in adults on statin therapy. However, there was no study found in which research was completed to compare a vegetarian diet to statin therapy in lowering cholesterol levels. After comparing the two areas individually, the vegetarian diet decreased LDL levels lower than statin therapy alone. **Conclusion:** Further research is needed to compare the efficacy of a vegetarian diet and statin therapy in lowering LDL levels in adults with a diagnosis of dyslipidemia. Clinical recommendations to lower LDL levels are to change to a vegetarian diet in combination with statin therapy.

Nutrition in Burn Patients Gender Gap

Megan Hanse, Chasity Carswell, Camille Lundi, Jennifer Kildow, and Kim Yakhou

Objectives: The purpose of this literature review is to investigate the nutritional support needed to improve clinical outcomes in adult patients with third degree thermal burns. Heat, electricity, radiation, and chemicals can cause different types of burns and different levels of severity. Severe burn injuries increase metabolic demands and consequently affect nutritional requirements. Evidence-based nutritional support is needed to improve clinical outcomes. **Method:** A review of the literature was conducted using the keywords nutrition, burn, trauma, nutritional support, adults, and healing. Research conducted between year 2005 to 2010 were reviewed. Only peer-reviewed articles were included. **Results:** Research has shown that increasing calories, protein, carbohydrates, and micronutrients improves the wound healing process and helps to minimize infection in adults with third degree burns caused by heat. Increased calories are

needed for energy production since compromised skin doesn't allow burn victims the ability to retain heat. Glutamine is the most ample amino acid in our body and because large amounts are lost during severe trauma, supplementation is needed to aid in wound healing. Reviewed evidenced showed conflicting findings regarding fat supplements as non-essential for metabolic processes and increase the patients risk for cardiovascular complications while other studies showed fat as essential in providing energy to help build tissue to speed wound healing. **Conclusion:** Further research to clarify how vital fat is in a burn patients recovery is needed. There is also lack of evidence showing the most consistent amount of carbohydrates, fats, protein and calories needed for optimal nutritional support and what factors contribute to these amounts. A standardized formula might be possible for optimal clinical outcome.

Disparities in Obesity Prevalence Among First and Second Generation Hispanic Immigrants

Melissa Hardison, Alexandra Herren, Mia Hurt, Lindsay Kimbell, and Sharron Whipple

A recent study showed that one in four Mexican children ages 4-10 were classified as overweight. During the last two decades alone, Hispanic childhood obesity rates have increased an alarming 240%. While childhood obesity prevalence is readily available by gender or ethnicity what is less well known, is the rate of obesity among US immigrant adolescents. The purpose of this study is to compare obesity rates among first and second generation Hispanic-American children and adolescents ages 10-17 using a large nationally representative sample of US adolescents to determine if generational status is a contributing factor to childhood obesity rates in the Hispanic population. A quantitative secondary analysis of the data obtained from the 2007 National Survey of Children's Health (NSCH) is used to compare the obesity rates among first and second generation Hispanic children and adolescents using their BMI scores. The NSCH survey was conducted from April 2007 to July 2008 and included 91,642 completed child-level interviews. The interviews were conducted via telephone survey with the parent or guardian who knew the most about the child's health. The survey also took into account age, gender, ethnicity, socioeconomic status, amount of television watched, amount of physical activity, amount of computer use, and perceived neighborhood safety. Findings of this study will be discussed as well as recommendations for practice and further research.

21st Century Technology for the 21st Century Student

Christopher Andrew Landers

The purpose of this project was to determine if using 21st century technology would increase student interest, participation, and motivation in a business education classroom. Students are surrounded with technology at every turn of their life but technology seems not to be embraced in the public education sector. My research will show students attitudes towards using technology in a much broader way that it is currently being used. Also, the research will show concerns the students may have of learning new technologies.

Motivation in the Classroom

Allison Lynne Layfield

Allison Layfield will be presenting research on the topic of motivation. Allison Layfield set off on a journey to discover whether a teacher could somehow structure the classroom environment in a way that promoted student learning through motivation and student-teacher relationships.

Allison Layfield explored the idea that, "teachers can learn to create environments in which all students can be successful learners" (Nieto, 2004, 262). Using data collected from students she was student teaching at Perry High School in an 11th grade United States History class, Allison Layfield tested Nieto's (2004) Theory of Caring and found that through affirming relationships with the students, consistent high expectations, and encouragement, student achievement was affected in a positive way.

Cooperative Learning **Brittany McKneely**

An important principle of cooperative learning is social interaction within groups. Maihoff (1994) states that cooperative learning is reliant on student interaction and a community of learners. In the first presentation, Brittany McKneely will present results of research where the teacher uses cooperative learning groups to create a successful social environment within the classroom and establish a sense of community among students.

Motivating Shy Students to be More Involved In the Classroom Community **Thomas Rogers**

Some students demonstrate markedly less social skills and interactions than that of their peers. These students may suffer from some form of disability such as a social phobia or shyness. This work focuses its attention on these students and how to best motivate them to have more social interactions and be more involved in the classroom community.

Children at Increased Risk for Behavioral or Emotional Problems **Penny W. Sherman**

This review focuses on stress, anxiety and depression level of the female caregiver with children that are identified as having increased risk for behavioral or emotional disorders. The strain on the female caregiver is also explored as she raises a young child with behavioral or emotional disorders.

The Impact of Assigning Roles for Collaborative Student Groups

Ashley Shull and Jessica Simpson

This action research study investigates the impact of assigning roles to students during collaborative small group work. The students in this specific ninth grade gifted literature and composition class do not actively engage during collaborative group work. By setting parameters, specific goals, and roles for the students to follow I will be able to determine whether or not there will be a positive impact.

Meeting Required USDA Guidelines for Lunches in Bibb County Public and Private Schools for 6th-8th Grade

Lisa Sifford, Shannon Carr, Adrienne Earl, Jennifer Gibbs, Terri Harper, and Lawrence Howard

The purpose of this study is to examine the difference in meeting required food guidelines in public versus private schools in Bibb County. Children often do not get a nutritional, balanced diet as evidenced by the growing childhood obesity problem in the United States. In Bibb county 80% of public school students qualify for free lunch at their school. This descriptive correlational research is designed to compare a sample of daily lunch menus from three public and three private schools in Bibb County. The comparison is based on the USDA required food guidelines for 6th-8th grade students. The aim of the study is to increase awareness of the importance of offering meals in schools, private or public, in accordance with the USDA guidelines for the daily requirements of 6th-8th grade students. Findings of the study will be discussed.

The Impact of Assigning Roles for Collaborative Student Groups

Jessica Simpson and Ashley Shull

This research project will be assessing the effectiveness of assigning roles to collaborative groups, most specifically in the language arts classroom. I am investigating the way that this can create success with student learning. I am most interested in the ways in which these students create successful and meaningful inquiries with one another, and how assigning roles to these groups aids in this success.

THANK YOU

...to all who helped make the
14th Annual Georgia College Student Research Conference
and the 1st Annual Georgia College Showcase of Graduate Research a success!

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NOTES



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