

**Third Annual Augusta State University
Student Research and Fine Arts Conference**

Celebrating Student Success

Wednesday, March 20, 2002
Science Building

Sponsored by the ASU Chapter of
The National Honor Society of Phi Kappa Phi

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Abstract Submission and Selection

The Celebrating Student Success conference is an opportunity for all students at Augusta State University, regardless of discipline, to showcase their scholarly and artistic endeavors. In a double-blind review process, participating students were competitively selected from previously submitted abstracts of their proposed conference projects.

The proposed project may have been presented elsewhere or expected to be presented elsewhere, and it must be endorsed by a full-time Augusta State University faculty member. The competition was open to all undergraduate as well as graduate students. Students and faculty Mentors were not required to be members of Phi Kappa Phi.

The abstracts, from 300-500 words in length, had to contain sufficient detail to permit reviewers to understand and evaluate the overall quality of the project.

Conference Planning Committee

Dr. Jurgen Brauer (Chair), Economics
Dr. Peggy Ruth Geren, Clinical and Professional Studies
Dr. Pamela Hayward, Languages, Literature, and Communications
Dr. Donna Hobbs, Chemistry and Physics
Dr. Stephen Hobbs, Psychology
Prof. Janice Williams, Fine Arts

Abstract Review Committee

Dr. Paul Harris (Chair), Political Science
Dr. Sharon Feaster, Teacher Education
Dr. Peggy Ruth Geren, Clinical and Professional Studies
Dr. Donna Hobbs, Chemistry and Physics
Dr. Bruce Saul, Biology
Dr. Rick Topolski, Psychology
Dr. Debbie Van Tuyl, Languages, Literature, and Communications
Dr. Ray Whiting, Political Science

Sponsors

Phi Kappa Phi would like to thank the following for their support:

- C Katherine Reese Pamplin College of Arts and Sciences, Dr. Elizabeth House, Dean
- C College of Business Administration, Mr. Jackson Widener, Dean
- C College of Education, Dr. Robert Freeman, Dean
- C Development and Alumni Relations, Ms. Helen Hendee, Director, and Ms. Ginger Chew, Coordinator
- C Public Information and Publications, Ms. Kathy Schofe, Director, and Ms. Mary Jo Luta, Computer Graphics Artist

Program

12:30 pm Registration; Atrium

1-1:50 pm Alumni Panel; Room W1002

Chair: Dr. Stephen Hobbs

- C Emma Sinkfield, Executive Director, Quality of Life Association for Warren County (1997 Sociology major/Social Work minor)
- C Lisa Wiggins, Research Project Coordinator, Department of Psychiatry and Health Behavior, Medical College of Georgia (1998 Psychology major/Criminal Justice minor, 2000 MS Psychology)
- C Elizabeth Kemple Adams, Managing Editor, "The Augusta Chronicle" (1987 English major/Communications minor)
- C Tom Lavin, Research Assistant IV, Medical College of Georgia (1996 Physics major/Mathematics minor)

Panel Session I 2-3:20 pm (three sessions)

Panel 1 Sociology Symposium; Room W1001

Chair: Dr. Allen Scarboro

- C Sandra Avery, Daniel Eyrich, Keith Wells, Cyndi White, and Mary Woods, "The Medical School is Downhill from Here: Cognitive Mapping of Medical Students" [Faculty Mentors: Dr. Allen Scarboro and Dr. Robert Ness, Sociology]

Panel 2 Research in Political Science; Room W1004

Chair: Dr. Paul Harris

- C Nancy M. Campbell, "The Capacity of Growth: Phoenix, Arizona's Urban Sprawl" [Faculty Mentor: Dr. Sandra Reinke, Political Science]
- C Hope M. Bresch, "Our Sprawling Capitol" [Faculty Mentor: Dr. Sandra Reinke, Political Science]
- C Richard Rogers, "Education and the Economy: Does a College Degree Make a Difference?" [Faculty Mentor: Dr. Sandra Reinke, Political Science]
- C Sandy Kanabrocki, "From Chaos to Order: Postmodern Thought and Organization Theory" [Faculty Mentor: Dr. Paul Harris, Political Science]

Panel 3 Diverse Trends in the Life and Physical Sciences; Room W1008

Chair: Dr. Andy Hauger

- C Bobbilee L. McDonald, "Preferred Spider Prey of Mud Daubers in Washington and Georgia" [Faculty Mentor: Dr. C. Tugman, Biology]
- C Jessica Brewster, Keith Gibbs, Kate Rankin, Lonnie Davis and Jennifer Delk, "An Index of Biotic Integrity for Beaverdam Creek in Burke County, GA" [Faculty Mentor: Dr. Bruce Saul, Biology]
- C Sam Brown, "Ballistic Bowling Balls: The Physics of a Backyard Trebuchet" [Faculty Mentor: Dr. J.A. Hauger, Chemistry and Physics]
- C Jan Miller, Arjun Sebastin, and Terry S. Lovett, "Taste Aversion, Cocaine, and Activity in TAP and TAR Rats" [Faculty Mentors: Dr. Stephen H. Hobbs, Psychology and Dr. Ralph L. Elkins, Psychology Service, Augusta VA Medical Center]

Panel Session II 3:50-4:50 pm (four sessions)

Panel 1 Research Directions in Sociology and Education; Room W1001

Chair: Dr. Kim Davies

- C Jennifer Snook and Melody London-Harshman, “Neopaganism and Marginality: Cause or Effect?” [Faculty Mentor: Dr. Kim Davies, Sociology]
- C Chad Turner, “Linking Parental Drinking Behavior and Adult Child Behavior” [Faculty Mentor: Dr. Kim Davies, Sociology]
- C Lisa Weaver, “Increasing Student Understanding through Concept Mapping” [Faculty Mentor: Dr. Sharon Feaster, Teacher Development]

Panel 2 Research and Writing in Languages, Literature, and Communications; Room W1004

Chair: Dr. Ray Chandrasekara

- C Emily Sickafoose, “The Persuasion of Pacifism on Siegfried Sassoon” [Faculty Mentor: Dr. Grace Heck, Languages, Literature, and Communications]
- C Sarah Masood, “Reading Women, Reading Islam: The Case for Gender and the Muslim Woman” [Faculty Mentor: Dr. Ray Chandrasekara, Languages, Literature, and Communications]
- C Linda Rogers, “An Analysis of the Female Role in George Eliot’s *The Mill on the Floss* and *Middlemarch*” [Faculty Mentor: Dr. Grace Heck, Languages, Literature, and Communications]
- C Lauren Garrison, “Explication of W.B. Yeats’ *The Second Coming*” [Faculty Mentor: Dr. Grace Heck, Languages, Literature, and Communications]

Panel 3 Diverse Trends in Social Science Research; Room W1008

Chair: Dr. Dee Medley

- C Billye Raye Smith, “The Bar Code Medication Administration System” [Faculty Mentor: Dr. Dee Medley, Math and Computer Science]
- C Scott Kitchens, “Past Past-Times: Tobacco Related Artifacts at the Augusta Arsenal” [Faculty Mentor: Dr. Chris Murphy, History and Anthropology]
- C Manja Jonas, “Cost and Value of Education in Guatemala” [Faculty Mentor: Dr. Jurgen Brauer, Economics]
- C Terry S. Lovett, Aimee R. Lombard, Erica L. McKnight, and Rene Monfort, “Failure to Find Fluoride-Induced Learning Deficits in Rats” [Faculty Mentors: Dr. Stephen H. Hobbs, Psychology and Mr. Gary M. Whitford, School of Dentistry, Medical College of Georgia]

Panel 4 Documenting Pre-service Teacher Impact on Student Learning; Room E1051

Chair: Prof. Beth Pendergraft

- C Amanda Moody, Jenny Pressley, Hattie Harris, Nikki Reese, Debra Clark, Cristal White, and Christa Starcher [Faculty Mentor: Prof. Beth Pendergraft]

3:10-4:10 pm Atrium: Concurrent Poster Session

- C Latoya Fields, “Nursing Care of Patients with Schizophrenia” [Faculty Mentor: Dr. Charlotte Price, Nursing]
- C Susan Coleman, “Nursing Care of a Victim of Domestic Violence” [Faculty Mentors: Prof. Jean Balogh and Dr. Charlotte Price, Nursing]
- C Lauren Boasso, Bob Texas, and Richard Jones, “Electrolytic Rust Removal Safe for Hobbyists and the Environment” [Faculty Mentor: Dr. Gary Stroebel, Chemistry and Physics]
- C Richard Jones, Bob Texas, and Lauren Boasso, “Questions About the Chemistry of Electrolytic Rust Removal: Where’s the Chlorine?” [Faculty Mentor: Dr. Gary Stroebel, Chemistry and Physics]
- C Regina Hull, “The Feminization of Poverty and Single Mothers” [Faculty Mentor: Dr. Sandra Reinke, Political Science]
- C Kristen Harden and April Crump, “An Investigation of the Impact of Special Needs Literature on General Education Populations” [Faculty Mentors: Dr. Paulette Harris and Dr. Alice Pollingue, Clinical and Professional Studies]
- C Edyta Krzemien, “Ethnic Identity and Well-Being in College Students” [Faculty Mentor: Dr. Robert A. Reeves, Psychology]
- C Billy Burroughs, “Impact On Student Learning” [Faculty Mentor: Dr. Barry Thompson, Teacher Development]
- C Tammy Lowery, “Anxiety and Affiliation in Response to Attacks on the World Trade Center and the Pentagon” [Faculty Mentor: Dr. Deborah South Richardson, Psychology]

5-5:30 pm Room W1001: Independent Film

Discussant: Prof. Rick Pukis

- C Marcey Lynn Frutchey “Girl in the Mirror: Media’s Influence on the Female Image” [Faculty Mentor: Prof. Rick Pukis]

5-6 pm Atrium: Musical Performance by ASU Fine Arts Department and Post-Conference Reception

Abstracts

The Medical School is Downhill from Here: Cognitive Mapping of Medical Students

by Sandra Avery, Daniel Eyrich, Keith Wells, Cyndi White, and Mary Woods

Mentors: Dr. Allen Scarboro and Dr. Robert Ness, Department of Sociology

We are students who want to share a project with you in a one-hour Symposia. We will share with you an ongoing project that we as a group put together and are participating in under the direction of Dr. Allen Scarboro, and Dr. Robert Ness.

Our session will describe the goals and preliminary findings of a longitudinal project (begun in Fall, 2001) investigating the development of approaches to knowing and deciding among the members of an entering class of medical students. Drawing on the work of Piaget, Dewey, Kohlberg, Perry, Kegan, Women's Ways of Knowing, and Baxter Magolda, the project centers around three related themes:

P KNOWING. How do physicians-in-training understand themselves as learners and knowers? What strategies do they use as they learn the information and develop those habits of mind necessary to cope with the voluminous and sometimes ambiguous knowledge they are required to master? What teaching strategies support and facilitate growth and competence in the students as learners and knowers?

P DECIDING. What is the process through which physicians-in-training develop a sense of their own authority? What strategies support their conceptualizing themselves as authorities and how do those strategies respond to the uncertainty inherent in most medical, as well as other, decisions? What are the teaching structures which promote appropriate senses of agency in physicians-in-training?

P ACTING. Is there a developmental path or set of paths in the identification of bases for decisions in face of ethical quandaries and uncertainties? Do different ethical frameworks shape the decisions of physicians-in-training based on different ways of conceptualizing oneself as learner, knower, and authority? What structures can medical educators develop which promote more flexible and humane frameworks for making ethical decisions?

Our presentation will include:

P History and goals of the project

P Ethnographic study of medical students

P Medical students as learners and knowers

P Cognitive mapping

P Effect of project on participants

P Discussion and questions

This research project uses an ethnographic strategy to investigate the processes and structures of learning, knowing, deciding and acting at a major medical school in the American southeast. We hope that this study will contribute to the improvement of medical education and, ultimately, patient care.

The Capacity of Growth: Phoenix, Arizona's Urban Sprawl

by Nancy M. Campbell

Mentor: Dr. Saundra Reinke, Department of Political Science

Problem: The phenomenon of urban sprawl is occurring globally, yet each city or region has independent circumstances and specifications for the cause of sprawl. The city of Phoenix, Arizona has seen mass amounts of growth beginning with the invention of air conditioning and coupled with the baby boom generation through to the twenty-first century yuppies and a huge Hispanic immigration across its southern borders. Phoenix, second to Las Vegas, has witnessed the most rapid growth in the nation with a population expected to double in the next twenty-five years (Grimm 2000).

Method: The researcher proposed the following hypotheses: 1. Leapfrogging development is a cause of Phoenix, Arizona's urban sprawl. 2. Pressure from national government organizations and high profile public interest advocates would spark the creation of anti-sprawl policies in Phoenix, Arizona. 3. The lack of policy promoting sustainable development in the urban ecosystem of the metropolis of Phoenix, Arizona is a cause of sprawl in the area. The researcher used a non-experimental approach to collect her information that is comprised of historical and descriptive data on urban sprawl and the heterogeneous components of Phoenix's demographics that relate to the metropolis' sprawl. The non-experimental method used entails the analysis of data collected to deduce the components of Phoenix's contributions to and dilemmas with the sprawl in its region. The researcher used scholarly journals, a Phoenix daily newspaper, websites of government agencies, the U.S. Census Bureau and the Environmental Protection Agency and the website for the City of Phoenix.

Findings and Discussion: The Metropolis of Phoenix is making large steps to curve and mend the impact of the rapid and leapfrogging growth it developed in the last half-century. Infill projects that work to utilize the existing infrastructure and improve the social perceptions of the inner-city has directly related to reducing sprawl (*The Arizona Republic* 2001). Policies have been created by the local government to help mend the blight and disproportionate economic issues in Phoenix's neighborhoods. Yet, up until the last few years, those policies have not been enforced. Until the Environmental Protection Agency cited the metropolis for exceeding multiple air pollution standards including smog and dust, the population of Phoenix was not as involved in or aware of the area's anti-sprawl efforts as they currently are. Finally, organizations such as the US Long-Term Ecological Research network have adopted Phoenix as a study tool to team together the multiple issues city and surrounding county governments must face to build sustainable ecological growth.

References

- Editorial, 29 July 2001. "Valley's density tops most big metro areas: Growth in city's center is reducing sprawl." *The Arizona Republic*. < www.arizonarepublic.com.80/special116/articles/0719thur2-19.html > (4 December 2001).
- Grimm, Nancy B. July 2000. "Integrated Approaches to Long-Term Studies of Urban Ecological Systems." *BioScience*. <www.findarticles.com/cf_0.m1042/7_50/64262812/print.jhtml> (28 September 2001).

Our Sprawling Capitol

by Hope M. Bresch

Mentor: Dr. Sandra Reinke, Department of Political Science

This paper is intended to be an educational piece on the factors and consequences of Urban Sprawl in Washington DC. Urban sprawl in this area threatens the environment, quality of life, education and the prosperity of Washington DC. Urban Sprawl in Washington DC does not just effect DC but, has a spillover effect on Virginia and Maryland as well. Sprawl is damaging marine areas in Maryland and the infrastructure of Virginia.

The factors contributing to sprawl, as outlined in this paper, are: crime, immigration, and sprawl itself as a path dependent process. In using the term path dependent process this paper will show that Urban sprawl feeds on itself. This process is easily described as sprawl inducing more sprawl.

Urban Sprawl has many dire consequences, most of which can be seen in the Washington DC area. Our very own capitol may cease to exist, as we know it due to the consequences of sprawl. Not only is sprawl tearing away at the infrastructure of DC, it is also eating up all of the land surrounding DC.

This paper also discusses the problems Washington DC has in trying to curb sprawl. One of the main issues is the lack of a local government. The lack of which has made it almost impossible to pass laws and policies that could curb the sprawl in DC. Another large issue in curbing sprawl is the contribution that governmental agencies have in inducing sprawl instead of curbing it.

In closing, this piece will discuss ways in which sprawl can be curbed in the Washington DC area. There are many steps that can be taken by citizens to deter the spread of sprawl and to do away with the amount of sprawl that already exists. Finally the issue of the National Government taking responsibility for their role in causing and curbing sprawl is

outlined.

Education and the Economy: Does a College Degree Make a Difference?

by Richard Rogers

Mentor: Dr. Sandra Reinke, Department of Political Science

Problem: In recent years, a debate about educational standards has flared up across the United States. Many people believe that we must improve our educational system and improve the educational attainment among Americans in order for the U.S. to remain the most productive and economically stable nation in the world. This research paper focuses on education and economic indicators of the State of Georgia in contrast to the United States as a nation.

Method: In order to assess whether the economy is affected by the rate of college graduates in Georgia, one must look at the census data from the U.S. government, which is divided by individual states and the District of Columbia. Many of the statistics discussed relate the percentage of people with a bachelor's degree or higher (also referred to as "the college graduate rate"). T-tests were performed to determine if a relationship between the college graduate rate and the economy exists using certain economic indicators, such as unemployment rates, poverty rates, and personal income per capita. A t-test was also used to determine whether Georgia's college graduate rate is significantly statistically different from the national rate. The results in this non-experimental research project are derived from U.S. Census Bureau data, the National Center for Education Statistics, and scholarly literature relating to the subject of education and the economy.

The researcher also chose to look at the percentage of people living beneath the government-defined poverty level because the strength of the economy can be partially determined by poverty statistics. The U.S. Census Bureau says that the poverty level is updated every year based on the consumer price index changes. Poverty figures for 1998 are used in the research.

Summary of Results: The results of the research indicate that the percentage of Georgians who held a college degree increased from 1990 to 1999. However, the percentage of educated citizens rose slower in Georgia than the United States as a whole. Therefore, Georgia ranked 25th in the nation in 1990, but in 1999 fell to a rank of 38th in the nation. A statistically significant difference exists in the college graduate rate between Georgia and the United States. Also, U.S. government statistics showed that in 1993, adults ages 25-34 years earned a higher median annual income if they had earned a Bachelor's degree or more. The income figures for the more educated group were significantly higher than for those who had some college education, but obtained no degree.

In summary, the results show that a college education appears to be at least partly responsible for an individual's success. However, the percentage of people living in a particular region who hold a college degree does not necessarily indicate economic strength, low unemployment, and a positive economic future in that region.

From Chaos to Order: Postmodern Thought and Organization Theory

by Sandy Kanabrocki

Mentor: Dr. Paul Harris, Department of Political Science

Free will and the freedom to think and contemplate are often given as one of the greatest benefits of being human as opposed to being any other mammal that roams the earth. Throughout the years many brilliant minds have made the choice to study organizations in an attempt to make them run more effectively and efficiently. This study attempts to shed light on postmodern theory and its attempts to do just that.

In order to test the theory of postmodernism and its influences on the effectiveness and efficiency of an organization, the author relied on previously published scholarly literature as well as information from various websites. The literature was analyzed in order to reveal not only exactly what postmodernism is, but also to evaluate whether or not the theory would benefit an organization attempting to accomplish certain goals.

Preferred Spider Prey of Mud Daubers in Washington and Georgia

by Bobbilee L. McDonald

Mentor: Dr. C. Tugmon, Department of Biology

Mud daubers are solitary wasps that construct chambered nests from mud. These nests are then provisioned with paralyzed spiders for the maturing young to feed on during development. This study determined the family and genera of spiders as well as the number of spiders collected by mud daubers in rural and urban areas of Georgia and Washington states. The percentage of the family Araneidae identified in Georgia rural and urban areas (74 and 72 percents respectively) coincides with several previous studies. Mud dauber nests in Washington rural areas predominately had spiders from the families Araneidae, Agelenidae, and Clubionidae (38, 20, and 10 percents respectively) and urban areas predominately had Araneidae, Agelenidae, and Linyphiidae (42, 18, and 12 percents respectively). A significant difference was found between the number of spiders collected from mud dauber nests in Georgia versus Washington, Georgia mud daubers provisioning their nests with more spiders than Washington mud daubers. However, there was no difference between rural and urban areas in either Georgia or Washington. This may be due to the way in which this study defined "urban;" the urban areas may have had enough vegetation available for spiders to inhabit providing a food source for the mud dauber's nest. Also measured were the mud dauber nest volumes with a trend suggesting that mud dauber nests in Georgia are larger than in Washington, which may be due to the longevity of the warm season in the respected states. The mean nest volumes in rural areas were only slightly larger than the mean nest volumes in urban areas in either Washington or Georgia.

An Index of Biotic Integrity for Beaverdam Creek in Burke County, GA

by Jessica Brewster, Keith Gibbs, Kate Rankin, Lonnie Davis, and Jennifer Delk

Mentor: Dr. Bruce Saul, Department of Biology

James Karr created the Index of Biotic Integrity (IBI) in 1981 to analyze the ability of a stream to support and maintain a balanced, integrated, adaptive community of organisms having a species composition of diversity and functional organization comparable to that in natural habitats of a region. Karr based his IBI on 12 metrics that looked at fish assemblages and habitat to judge the basic health of the stream. Due to the regional differences in the fish fauna and community structure, modifications were required for the use of IBI in Burke County (in the Piedmont ecoregion of GA). In 2000 the GA Department of Natural Resources modified Karr's original 12 metrics into 13 and based on these modified metrics, we performed an IBI on Beaverdam Creek. Each metric relates to a different aspect of the health of the stream. We chose 3 sites along the creek to electroshock and collect fish, placing them into their proper metric and thereby determining the overall health of Beaverdam Creek. Our results proved Beaverdam Creek to be in good biotic health with an overall score of 44. After the survey was completed we looked at different reasons why our score came out this way. Some had to deal with the environmental factors affecting the creek and others dealt with the lack of experience and manpower of the researchers. In the end we came to the conclusion that more research needs to be conducted to establish a sound foundation when devising a plan for stream recovery.

Ballistic Bowling Balls: The Physics of a Backyard Trebuchet

by Sam Brown

Mentor: Dr. J.A. Hauger, Department of Chemistry and Physics

This multimedia presentation describes the history, construction and operation of a siege engine known as a trebuchet. These machines were used during the Middle Ages to lay siege to large cities and fortified towns. Their purpose was to hurl large objects into or over the ramparts and walls to cause massive destruction. At times, dead animals or the heads of prisoners from the town were thrown over the walls to spread disease and fear among the townspeople. Trebuchets use the basic principle of energy conservation to throw large objects long distances. They are similar to a severely unbalanced seesaw. Large counter-weights are suspended from the short end of the seesaw arm and a simple

sling is connected to the longer end. When the counter-weight is released the arm rotates causing the tip of the long arm to rise. The sling rotates around the tip until the arm is nearly vertical. Eventually the sling disconnects from the tip of the arm and the projectile is released from the sling to wreck havoc on whatever is in its path.

A modern version of a trebuchet was constructed as a project for the Fall of 2001 Honors Introductory Physics class at ASU. The purpose was to test the principles behind the machine and to evaluate the efficiency of such a device. It was tested by throwing a nine pound bowling ball using various amounts of counter-weight. Projectile range predictions were compared to the actual distances that the ball was launched. The ratio of the two values yields the efficiency of the machine.

Taste Aversion, Cocaine, and Activity in TAP and TAR Rats

by Jan Miller, Arjun Sebastian, and Terry S. Lovett

Mentors: Dr. Stephen H. Hobbs, Department of Psychology, and Dr. Ralph L. Elkins, Psychology Service, Augusta VA Medical Center

Problem: Taste aversion prone (TAP) and taste aversion resistant (TAR) rat lines have been developed at the Augusta VA Medical Center via selective breeding as part of a comprehensive research program concerned with addictive behaviors. In particular, the lines were produced as a means of studying individual differences in the propensity to acquire an illness-induced aversion to a normally palatable solution. Once clear separation in conditionability was obtained between the two lines, they were maintained with random, within-line breeding. The initial phase of this study attempted to determine if there has been any "phenotypic drift" by the two strains on taste aversion acquisition during the 15 most recent generations. Second, we were interested in whether the two strains differed on general activity, a behavioral index which could be linked to learning propensity. Finally, the study sought to determine if cocaine differentially affects general activity in the two strains. It was hypothesized that (1) there has not been a "phenotypic drift" by the two strains on taste aversion learning, (2) the TAP strain of rats would show greater amounts of general activity, and (3) that the TAP strain would also show greater reactivity (in terms of activity) to cocaine.

Method: Nineteen mature female rats (TAP=10, TAR=9) were deprived of fluids for 24 hours prior conditioning. Rats were given a 10-min exposure to a solution of saccharin in tap water, followed by an i.p. injection of either cyclophosphamide as the illness-inducing agent (TAP=7, TAR=7), or isotonic saline (TAP=3, TAR=2). Beginning one day later, rats were given four days of simultaneous access to two bottles, one filled with water and the other with the saccharin solution. The amount of liquid consumed from each bottle was monitored.

Twenty-three adult female rats (17 coming from the previous phase) were monitored for general activity for 20 minutes: 12 from the TAP strain and 11 from the TAR strain. Activity counts were generated by a commercial infrared system placed at the top of an operant chamber.

The animals used in the previous phase were injected subcutaneously with cocaine hydrochloride (10 mg/kg) (TAP=8, TAR=8) or saline (TAP=4, TAR=3) and returned to the operant chamber for hour-long monitoring of general activity.

Results: A multivariate ANOVA indicated that very strong phenotypic strain differences in conditionability remain between the TAP and TAR strains. TAP rats were found to be somewhat more active than TAR animals, with both strains showing a common pattern of activity reduction over time in the chamber. Cocaine tended to elevated activity in both strains, especially in the TAP animals.

Discussion: That the two strains maintained their distinct response to taste aversion conditioning is important for the continued use of these animals in basic studies of addiction and its treatment. The difference in activity levels between the two strains requires additional investigation to determine if this bears any relationship to their learning differences. Although it is not surprising that cocaine can elevate activity levels, it again remains to be determined why there would be a differential effect on the two strains. It is known that cocaine can have aversive as well as reinforcing properties, and this may be an important aspect to investigate with the two strains.

Neopaganism and Marginality: Cause or Effect?

by Jennifer Snook and Melody London-Harshman

Mentor: Dr. Kim Davies, Department of Sociology

In this study we seek to find possible correlations between common social experiences and traits and the adoption of Neopaganism by individuals. We aim our focus at understanding the socially constructed identities of Pagans in a local southeastern metropolitan area in which conservative religious norms prevail. Through detailed interviews with self-identified pagans, we attempt to answer the question of whether or not marginality is a pathway to or a product of Paganism. We conclude that the disenchantment with the rigid structure of mainstream religions plays a vital role in the participants' adoption of Neopaganism in addition to the attraction to the religious system's support of active religious practice and the creation of ritual and personal progress. Previous research, the results of interviews, and the future goals of the study are discussed.

Linking Parental Drinking Behavior and Adult Child Behavior

by Chad Turner

Mentor: Dr. Kim Davies, Department of Sociology

The link between parental use of alcohol and the early use of alcohol by children is a highly debated subject. In this paper, I review four studies that examine the correlation between the use of alcohol by parents and the age of first use by children. All four studies report a strong correlation between parental and child use of alcohol, as well as a strong correlation between certain parenting practices and the use or non-use of alcohol by children. Thus in this replication study, I propose that parental alcohol use is correlated with the age of initial use of alcohol. Using a convenience sample of 320 college students from six universities east of the Mississippi, I use cross tabulations and chi square to determine whether there is a statistically significant relationship between parental use of alcohol and the age at which one first tries alcohol. Unlike other studies, I find that there is not a statistically significant relationship between parental use of alcohol and the age at which college students in my sample reported they first used alcohol. Finally, I discuss possible explanations for these unexpected findings and future research directions.

Increasing Student Understanding through Concept Mapping

by Lisa R. Weaver

Mentor: Dr. Sharon A. Feaster, Department of Teacher Development

Problem: Frequently high school students think mainly on the knowledge level about the content in the courses they take. Getting these students to use higher-level thinking skills is a challenge. Using a framework that requires students to develop critical-thinking skills as a necessary element of their final product should result in products which reflect deeper thinking about content and relationships among concepts in the content.

Method: Concept mapping is a strategy that encourages students to think more deeply and to make more connections across the content they are studying. The presenter, an experienced high school English teacher and an M.Ed. student ASU, began learning about concept mapping while taking graduate courses. She decided to use concept mapping to help her students develop a deeper understanding of the concepts in her mythology course. Maps served as part of her planning process for the course as well as tools for learning that her students constantly refined during the course. The final exam was a concept map in which the students choose three of the elements of myths and developed a concept map to at least three levels. The presenter will show and explain the rubric that she developed and revised for assessment of the students' concepts maps.

Results: A comparison of the early maps and the final maps showed definite improvements in students' thinking skills. The maps became more complex and showed more relationships among the ideas and across levels. Several of the

students also took their maps to a level that the teacher had not anticipated. The presenter will display several student maps and explain the development of the students' understanding of concepts. Analysis of the whole process as it occurred over a semester led to the teacher's refining the processes and requirements for subsequent classes. She will provide a chart of her procedures and discuss the refinements.

The Persuasion of Pacifism on Siegfried Sassoon

by Emily A. Sickafoose

Mentor: Dr. Grace Heck, Department of Languages, Literature, and Communications

From the Quaker movement of early American history to the "hippie movement" of the 1960s, pacifism has remained an engaging force in American culture, sometimes dominating the political and societal landscapes. Pat Barker, in her historical novel *Regeneration*, presents pacifism through the life and actions of Siegfried Sassoon, a real-life British, company commander who was treated for shell shock during World War I. Sassoon, who protested the war by writing a well-publicized letter to British newspapers, felt that sanctions by British politicians had unnecessarily prolonged the war and its horrors. In order to avoid a court-martial, Siegfried found himself at a mental institution at Craiglockhart under the evaluation of Dr. H. R. Rivers, whose job it was to send him back to the battlefields of France. In her novel, Barker eludes very little to the pacifistic influences that dominated Sassoon's thinking. This paper describes pacifism's influence on Sassoon's life, the internal turmoil between his anti-war convictions and his loyalty to his fellow soldiers, and examines these same conflicts within society as a whole.

The methodology for conducting this research paper consisted of extensive literature review and examination of pacifism, its relationship to historical contexts, and the psychological, ethical, political, and biological ramifications associated with it. On-line resources proved to be very general and available literary and historical think tanks had minimal amounts of information on the pacifist movement. However, a large amount of information lay within the biographies of the individuals themselves. Sassoon's memoirs and journals revealed much about his personal experiences and thinking. Biographies written on Ottoline Morrell - a leading feminist/pacifist during the early 20th century, who introduced Sassoon to Bertrand Russell and other leading pacifists - proved to be most helpful in understanding the culture Sassoon grew up in and the pacifist and nationalistic movements of his time. Russell's writings revealed the complex thought processes of members of the peace movement during and after World War I, including the evolution of the pacifist movement in the period leading up to World War II.

The results were a thorough examination of the general history of pacifism and a deeper understanding of the debate between nationalists and the "Opposers of War". Comparison of the perspectives of leading pacifists with those of passionate nationalists, such as Winston Churchill, produced a broad perspective of the subject and its influences on Sassoon and the modern world. In the end, Sassoon's moral obligation to his men during time of war was stronger than his pacifism and he returned to the battlefield. Individuals and nations are often faced with Sassoon's dilemma and the complexities of each historical moment make it impossible to predict how each will choose.

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Reading Women, Reading Islam: The Case for Gender and the Muslim Woman

by Sarah Masood

Mentor: Dr. Ray Chandrasekara, Department of Languages, Literature, and Communication

In this paper I hope to talk about the question of identity in Islam—the religion of Muslims--- which is the fastest growing religion in the world and whose underlying principle is equality for all humanity. Islam does not hold man superior to woman. In fact, in some aspects, Islam elevates woman's status beyond that of men. A few aspects of life in which Islam has established an equal, in some cases, high, status for women are the spiritual, intellectual, and social aspects. The spiritual aspect encompasses the obligations of both Muslim men and women towards God. "Do good deeds and you will be rewarded"— this is the underlying theme of spirituality which applies equally to both men and women.

The intellectual aspect of Islam covers the acquisition of knowledge which is very much encouraged for "both" men and women. The social aspect, being the broadest aspect, covers the status of women in Islam as mother and wife. As a mother, a woman is held in high esteem because of the pain and trouble she undergoes for her child. Islam defines roles for woman in society as a wife. An important part of a woman's social life, marriage, is discussed in terms of monogamy and polygamy, and the emphasis of Islam on the former is quite evident.

I will conclude the paper with a brief exposition on the *hijab* which is unilaterally seen around the world as being oppressive to women in Muslim countries and attempt to clarify its (the *hijab's*) status as viewed by Muslim women themselves.

An Analysis of the Female Role in George Eliot's *The Mill on the Floss* and *Middlemarch*

by Linda Rogers

Mentor: Dr. Grace Heck, Department of Languages, Literature, and Communications

Through an analysis of George Eliot's novels *The Mill on the Floss* and *Middlemarch*, this essay explores George Eliot's resistance to society's gender boundaries as observed in her complex female characters, who also resist the Victorian viewpoint. The essay uses psychological critical theory and explores Eliot's literary allusions to such works as Defoe's *History of the Devil* to define the problem of the "dark women" and their triumph in Eliot's novels; in *Middlemarch*, for example, Dorothea's greatest antagonist is "an imperfect social state" that seeks to limit her intellectual horizons. In addition, this essay draws upon reader-response critical theory to understand the reception of Eliot's political and social views by examining a feminist journal of the time, *The English Woman's Review* and *The Saturday Review* of the period. The essay speaks to the historical issues of Eliot's world which one hundred and fifty years later still have not been resolved. Thus, I have studied these novels as cultural documents.

Explication of W.B. Yeats' "The Second Coming"

by Lauren Garrison

Mentor: Dr. Grace Heck, Department of Languages, Literature, and Communications

In the wake of events such as the one that occurred on September 11th, 2001, many seek comfort in the wisdom of the

past. Proverbs and lessons from history are reviewed in an attempt to make sense of present suffering. Each new generation is faced with the struggle to understand why evil exists and how it can be prevented.

One of the poems most often referenced during times of calamity is W. B. Yeats's "The Second Coming." On the surface of the text, "The Second Coming" is deceptively disjointed. Images of a spiraling falcon give way to veiled political references, a vision from the occult, and overt allusions to the Christian conception of a savior. To understand the brilliant connection among these symbols, one must examine the author's background. Otherwise, one who is not familiar with the poem may wonder what value exists for those suffering today in such seemingly separate symbols from the past.

During my research, I discovered that the three traditions that exerted the most profound influence upon Yeats's composition of the piece were his foray into spiritual mysticism, his Anglo-Irish culture, and the literary movement known as Romanticism. One element that deserves considerable attention is his interpretation of history. Yeats's conception of time as the alternate rising and falling of two distinct ages is alluded to throughout "The Second Coming." It is necessary that one reflect thoroughly upon the author's perspective of time before attempting to understand several of the major symbols within the poem.

The overall meaning of the piece, however, cannot be gleaned from a simple investigation into the life of the author or a basic comprehension of his historical theories. One must also consider the various revisions that Yeats subjected the poem to prior to its publication. As a result, I have focused on the original manuscripts as collected by Cornell University Press. These documents, which reveal clear references to those involved in the French Revolution, are crucial to understanding the connection between the struggles of the past and the present. They are, therefore, the key to unlocking how Yeats was able to transform his own unique experiences into a text with universal application.

The Bar Code Medication Administration System

by Billye Raye Smith, RNC, BSN

Mentor: Dr. Dee Medley, Department of Math and Computer Science

When a computer program is developed and implemented, it is the ethical responsibility of the developers to assure that the program works as intended, runs smoothly and maintains the integrity of the system that it enters. Furthermore, it should never increase the workload for its users. Study of the Computer Science curriculum has provided insight and understanding in to what constitutes a poorly designed computer program.

In 1999, the Institute of Medicine released a report stating that between 44,000 and 98,000 patients die each year as the result of 'adverse events' due to medical care. Of this total, nearly 7,000 patients die specifically from medication errors. In response to the report, then-President Clinton proposed a five-year plan aimed at halving these numbers through additional studies and oversight groups as well as a mixture of safety programs. The Veteran's Administration (VA), the largest single health care entity in the world, took the lead in this initiative. Bolstered by decades of medication error data, the VA launched a computerized medication tracking and delivery system in a majority of its hospitals in an effort to reduce the number of medication errors. The system is known as the Bar Code Medication Administration (BCMA) system.

The VA developed the BCMA during the mid-90's and pilot-tested the system at two hospitals in Kansas under limited conditions, with one setting reporting a reduction in medication errors by 70%. Bolstered by the numbers from these two sites, the VA moved to implement the BCMA throughout the entire VA medical system, with introduction to the Augusta VAMC in the beginning of 2000. Users received introductory training, hardware was installed, software was loaded, and the BCMA was operational by the end of 2000.

Information and results on the effectiveness of the system are premature as it has only been in place for one year. However, early figures from the Quality Assurance Nurse indicate that the number of medication errors prior to and after the introduction of the BCMA have remained relatively unchanged. In addition, the BCMA has introduced an entirely new set of problems to the hospital setting that have threatened patient care and safety. The software has been riddled with bugs and errors while the program interface is not user-friendly with its primary customer – nursing. The hardware, to include battery-powered laptop computers, was poorly chosen and has not always been able to keep up with the demands of a twenty-four-hour-a-day, seven-days-a-week work schedule. Orders from physicians have been lost in

cyberspace for as long as 8 to 16 hours and the system routinely shuts down without warning and with little to no back up. These are just a few of the problems that have plagued the BCMA locally. Poorly designed, tested, and implemented, the BCMA has not delivered an improved medication delivery system, only a more cumbersome one.

Past Past-Times: Tobacco-Related Artifacts of the Augusta Arsenal

by Scott Kitchens

Mentor: Dr. Christopher Murphy, Department of History and Anthropology

I will present the global diffusion of the use of tobacco and the tobacco pipe in their historical context and display the tobacco pipe's value as an archaeological resource in the analysis of a site. I will display how this information relates specifically to the tobacco-related artifacts recovered from excavations on the main campus of Augusta State University, formerly the Augusta Arsenal (Site number 9-Ri-1045 in Georgia Site Files).

The introduction of tobacco to western cultures dates to the landing of Christopher Columbus in 1492. The consumption of tobacco required another century to achieve popularity in Europe. When smoking tobacco (or "drinking" it, as it was first called) became fashionable, pipe manufacturers raced to keep up with demand.

As a result of this method of tobacco use, thousands of pipe fragments dot archaeological sites in the historic period. Pipes made of clay can last for centuries in the archaeological record, even in the destructive soils of the southeastern United States.

Pipes and pipe fragments can be useful chronological markers for archaeologists as well as providing clues to explain the cultural habits of the people who used them. Mid twentieth century archaeologists used maker's marks and changes in bowl shape to date tobacco pipes. These methods were augmented when Jean Harrington discovered that a relationship existed between the bore diameters of pipe stems and their ages (Deetz, 1977:19).

Unfortunately, this relationship tapers off at the beginning of the nineteenth century and only applies to English manufactured clay pipes. Tobacco pipes can also be dated by their historical context. Some styles and characteristics are specific to certain time periods. Historically documented changes in the technology of pipe manufacture and consumer trends can also help determine the age of a pipe fragment.

In addition to their utility in dating deposits, an assemblage of tobacco related artifacts could provide information on socio-economic status. Nineteenth century individuals consumed tobacco in a variety of ways. Particular methods of tobacco consumption carried differing status implications (Joseph, 1993: 322). More commonly working class smokers used clay smoking pipes, while cigars were reserved for the elite.

Taking these factors into account the presentation will attempt to interpret the tobacco-related artifacts recovered from the Augusta Arsenal site. The interpretation will include determining the age of artifacts for dating an archaeological feature and their social implications.

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Cost and Value of Education in Guatemala

by Manja Jonas

Mentor: Dr. Jurgen Brauer, College of Business Administration, Economics

Problem: Education plays a significant role in the economical process of developing nations. The survey's purpose was to measure the financial benefits that accompany certain levels of education in Guatemala. The goal was to emphasize the role of education by presenting different income levels and calculating approximate lifetime earnings.

Method: The study was conducted through a survey that consisted of different parts, targeting different groups of Guatemala's population. The first part of the survey was directed at students from first grade to university. It determined how much the students pay for their education and how much time they spend in the educational institution. The second part of the survey was directed at the working population including children, to determine their income and education level. A small comparative study was conducted in rural areas with limited access to schools. A total of 180 people were personally interviewed for this study.

Results: One of the results is the presentation of the average cost of each school year in a private or public institution of Guatemala. With the obtained information about the income according to particular levels of education, a lifetime benefit was determined. Education is expensive in Guatemala, but this investment yields a high rate of return. For example, a person with a Masters degree will earn about 21 times as much as a person without formal education, and about 7 times as much as a person with a 12-year degree, over the course of work life. Interesting information about family size and working hours in different income levels and about child labor in Guatemala also resulted from the survey.

Failure to Find Fluoride-Induced Learning Deficits in Rats

by Terry S. Lovett, Aimee R. Lombard, Erica L. McKnight, and A. Rene Monfort

Mentors: Dr. Stephen H. Hobbs, Department of Psychology, and Dr. Gary M. Whitford, School of Dentistry, Medical College of Georgia

Introduction: The practice of adding fluoride (F) to drinking water to reduce dental carries has enjoyed widespread acceptance in this country for a number of years, but there have been critics. For example, a 1995 study by Mullenix, et al. concluded that exposing rats to elevated F levels in their drinking water produced possibly toxic F accumulations in CNS tissue, accompanied by behavioral changes that might indicate learning deficits. By extension, the authors expressed concern about possible learning and cognitive impairments in children from municipalities with fluoridated water. Given the importance of this conjecture to public policy, the present study was undertaken as a systematic replication of the Mullenix, et al. study.

Methods: Thirty-two weanling female Spague-Dawley rats, initially housed at the Medical College of Georgia, were randomly divided into 4 groups. Rats were fed a special low-F food together with varying doses of sodium fluoride (NaF) via their drinking water. Group dose levels were as follows (mg NaF/kg body weight): Control Group-0, Low Dose Group-3.3, Intermediate Dose Group-8.5, and High Dose Group-15.6.

After seven months, the rats were relocated to the Animal Vivarium at Augusta State University. Rats were put on a reversed light-dark cycle (12:12 LD, with lights on at 1800h), with testing occurring during the dark phase. Rats had restricted access to food to increase response motivation on the food-reinforced operant conditioning task. Rats were not permitted to lose more than 10% of its pre-experimental weight.

Rats were shaped to press a lever in an operant chamber to receive reward pellets to a criterion of 75 or more times on two consecutive days or after 5 days of shaping, whichever occurred first. Animals were then subjected to five consecutive days of fixed ratio (FR) responding, with the reinforcement requirement increasing each day (FR2, FR4, FR6, FR8, FR10). Finally, rats were put on ten days of a differential reinforcement of low rates of 20 sec (DRL-20).

Results: Experimental results were analyzed by parametric statistical tests using the .05 level of significance. When checked at the termination of the study, rats in the High Dose F Group weighed significantly less than either the Control Group or the Low Dose Group. Nevertheless, there were no differences among the groups on the number of days taken to meet the criteria for lever pressing or on the amount of responding upon reaching criterion. Additionally, there were no performance differences among experimental groups or interactions between groups across days for either the FR or DRL schedules.

Conclusions: Finding weight differences related to amount of F intake indicates that the F dosages used in this experiment were physiologically effective. However, there was no indication whatsoever that even massive F ingestion had an adverse effect on appetitive-based learning in rats. These results stand in stark contrast to those reported by

Mullenix et al. (1995), so additional studies may be needed to resolve the discrepancy.

Acknowledgments: The authors wish to thank Dr. T. Edward Orr and Jennifer L. Stoddard for design assistance; and Shannon Lariscy, Nicole Peck and Janice Smalley for data collection.

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Documenting Pre-service Teacher Impact on Student Learning

by Amanda Moody, Jenny Pressley, Hattie Harris, Nikki Reese, Debra Clark, Cristal White, and Christa Starcher
Mentor: Beth Pendergraft, Department of Teacher Development

Augusta State University undergraduate students in the field of Early Childhood Education are required to administer diagnostic reading assessments for two elementary students and then prepare and implement one-to-one tutoring for the students. The goal for the ASU student is to document and reflect on their impact on student learning while attempting to improve student achievement through intensive tutoring sessions completed during their field experience at a professional development school. The students develop a series of individualized lesson plans, each building on an analysis of the previous lesson's success. After completion of the tutoring sessions the ASU students administer another assessment to determine their impact on student learning. The impact on student learning is documented through reflective journals and rubrics.

The ASU students will share the pre and post assessment data which documents their impact on student learning. The students will also demonstrate several strategies that they employed during the tutoring sessions. The impact on student learning documents and artifacts from the actual tutoring sessions will be on display in student created portfolios. The students will show and explain the rubric that is used to assess their Impacting Student Learning component and they also discuss how this project has impacted their own learning and teaching abilities. They will discuss how the Impacting Student Learning component fits into their overall portfolio which is based on the ten Conceptual Framework Principles which is the foundation of the teacher development program. Seven ASU students will participate in this round table discussion.

Girl in the Mirror: Media's Influence on the Female Image

by Marcey Lynn Frutchey

Mentor: Rick Pukis, Department of Languages, Literature, and Communications

The average woman views 400 to 600 advertisements per day and will be exposed to over 250,000 commercial messages by the time she is 17 years old (Issue Briefs, 2000).

The invention of the printing press in 1450 brought with it the power to reach and influence millions of people through the form of media. In today's society, the word media encompasses not only forms written material like magazines and newspapers, but also newer products of technology, including motion pictures, television, and the Internet. Mass media, in all of its many types, has in fact permeated the world, and the scope of its influence on society is continually being researched.

Recent studies on the influence of mass media have focused on its portrayal of the female image and the effect that this created image has had on young women. Nancy Signorielli, professor of communications at the University of Delaware, studied the types of media most often viewed by adolescent girls, revealing that "one in every three (37%) articles in leading teen girl magazines also included a focus on appearance, and most of the advertisements (50%) used an appeal to beauty to sell their products" (Signorielli, 1997). Signorielli found similar results on television, in which 56

percent of commercials aimed at female viewers used beauty as a means of product appeal compared to 3 percent of commercials aimed at men. The use of beauty as commercial appeal can also appear in advertisements aimed at girls much younger than adolescence. Sarah Sobieraj, in a study of three weeks of Saturday morning toy commercials, discovered that 50 percent of the advertisements aimed at girls spoke about physical attractiveness, while none of the advertisements directed at boys discussed appearance (Media's Effect).

Heidi D. Posavac, in a recent study on the effects that attractive female media images have on the concern of body weight in young women, used aspects of Albert Bandura's social cognitive theory, a mass media effects theory that has served as a foundation for media research since it was introduced in the late 20th century. Bandura's theory states that "human functioning is explained in terms of a model of triadic reciprocity in which behavior, cognitive and other personal factors, and environmental events all operate as interacting determinants of each other" (Bryant and Thompson). Posavac conducted three experiments on female University of Utah students ages 18-25 that exposed women with both low and high self-esteem to images of attractive media female images. In her conclusion, Posavac stated "that exposure to media images of female attractiveness [was] capable of causing increased weight concerns among most young women" (Posavac, 1998). She noted, however, that not all women were affected with increased weight concerns, and that those women with high self-images previous to the experiment were more likely not to become concerned with their weight after viewing the images (Posavac, 1998). Therefore, it was not the mere change of environmental events that caused a change in human functioning, but also the personal factors, such as high self-esteem, that caused a change in weight concern and body image. Posavac's study, nevertheless, does indicate an immediate effect of the media's female attractive image on the psyche of some young women.

Through understanding the power and influence of the media, this presentation seeks to grasp its force in order to battle it on its own terms. Independent filmmaking gives creative control over to the individual artist, allowing him/her to express ideas and concepts onto a moving canvas. Through this medium, I will portray an abstract expression and interpretation of the effects that the media's attractive female image has on the psyche of a young woman who fails to meet that expectation. In the film, I will showcase both traditional and experimental film techniques, such as stop-motion animation, as well as, contrast the image and quality of digital video and Super 8 film stock.

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Nursing Care for Patients with Schizophrenia

by Latoya Fields

Mentor: Dr. Charlotte Price, Department of Nursing

Schizophrenia is a severe, persistent mental disorder that affects a person's cognition, emotion, perception, social and behavior functioning. An excess of normal functioning, such as bizarre thinking, hallucinations, and delusions characterizes the disease. As the disease progresses the person will soon lack normal functioning, such as loss of pleasure, poverty of speech and loss of facial expressions. Onset of schizophrenia usually occurs in late adolescents and young adulthood. Some individuals have been diagnosed as late as the age of 45. The prevalence of this disease in the general population is about 0.5% to as high as 2%.

In order for nurses to provide the best possible care for individuals with this mental disorder, they must understand

the disease process and apply appropriate nursing interventions. Priority nursing interventions include: assessment of basic physical needs, maintaining safety for the patient, family, other patients, community members, and the medical staff, educating the patient, family, and community on the disease process and effects of medications and treatments, and accessing the patient and family to other support measures. One of the major goals in the plan of care is for the patient to gain as much normal functioning as possible. To increase the chance of reaching goals the family must be included in the plan of care as well. The nurse must select appropriate family and community interventions to allow the patient to function in the community. Positive attitudes and non-judgmental behaviors from the patient, family, community members, and medical staff are need for positive outcomes.

Nursing Care of a Victim of Domestic Violence

by Susan Coleman

Mentors: Mrs. Jean Balogh and Dr. Charlotte Price, Department of Nursing

The nursing process for patients who are victims of domestic violence was researched using journals of professional nursing. Information was gathered about the needs of both the nurse and the patient, as well as the effects of appropriate intervention. It was determined that 1 in every 3 women will experience domestic violence at some point in their lifetime. The nurse must realize that, because of the prevalence of domestic violence in our society, every patient must be screened for abuse. Nurses must be educated about the incidence of domestic violence, the cycle it follows, and the interventions that can help prevent its reoccurrence. Nurses who are educated about domestic violence are more likely to screen their patients, and therefore more likely to take appropriate action. Education about domestic violence includes many things. The first is the definition. Domestic violence is a pattern of controlling behaviors including physically, emotionally, financially, and sexually harmful threats and actions. Education also includes the knowledge of what signs to look for in an abused patient. There are, of course, the expected signs such as bruises and scars in various stages of healing. However, many patients present to the health care setting with seemingly unrelated problems such as headaches, respiratory infections, anxiety, abdominal or pelvic pain, or eating disorders. Nurses must also be educated about the cycle of violence. Walker's theory states that there are three phases of violence. Phase 1 is called the "tension-building phase," phase 2 is referred to as the "acute battering stage," and phase 3 is the "honeymoon phase." Nurses must also be educated about the importance of documenting the cases of domestic violence, because this documentation often proves to be very helpful to the victim in court. It is also important for the nurse to assist the patient in developing a safety plan, which enables the patient to escape from the abuse. A safety plan should include a list of referral information consisting of crisis hotline and police phone numbers, and lists of shelters and advocacy agencies. Important papers and money should be set aside along with personal belongings. The research indicated what steps that the nurse should take in identifying patients who are victims of domestic violence as well as what steps need to be taken to eventually get the patient on her way to a life that is free from abuse.

Electrolytic Rust Removal Safe for Hobbyists and the Environment

by Lauren Boasso, Bob Texas, and Richard Jones

Mentor: Dr. Gary G. Stroebel, Department of Chemistry and Physics

The process of electrolysis can be used to remove rust from iron artifacts with minimal damage to the object. We have found that an ideal substitute for the caustic chemicals normally used in electrolytic rust removal is a common laundry detergent, which protects a stainless steel anode from erosion during electrolysis and can be safely disposed of.

Clean steel objects used as electrodes were placed in a vat of detergent solution and connected to a Helmholtz charger for quantitative studies. Under these conditions the electrical current was carried by the hydroxide ions (pH 11) released as a result of the hydrolysis of the soap, and current flow seemed adequate for rust removal at six or twelve volts. When this procedure was applied to a heavily rusted artifact, current flow was hindered by the buildup of iron oxide at the mild steel anode and the removal of rust was ineffective. However, a stainless steel anode permitted the efficient de-rusting of heavily encrusted artifacts.

When an object is removed from the bath the red rust can be readily removed by gentle scraping and brushing. The solution may be used repeatedly and is convenient and safe for rust removal even in the home. The detergent does not contain phosphates and is biodegradable, thus making it an environmentally friendly substitute for more caustic material previously used by both hobbyists and professionals. Samples of anodes and de-rusted artifacts used in the experiment will be available for examination.

Questions About The Chemistry of Electrolytic Rust Removal: “Where’s the chlorine?”

by Richard S. Jones, Bob Texas, and Lauren Boasso

Mentor: Dr. Gary Stroebel, Department of Chemistry and Physics

Electrolytic techniques have long been employed by archaeologists to clean rust from archeological artifacts without damaging the item’s surface. While this process is not new and has achieved widespread application, very little of the chemistry behind the process has been explored, particularly outside the parameters normally employed by professional archeologists. One of the myths preventing the large scale implementation of this technique more broadly has been concern over the evolution of chlorine gas during the electrolytic process. However, after extensive studies of a variety of conditions, analytical as well as computational methods were employed to determine the fate of chloride ion when used as an electrolyte; we have found no evidence for the release of chlorine gas within this context, and concerns about chlorine gas are therefore unjustified. Furthermore, an alkaline pH results in markedly slower degradation of the sacrificial anode; this makes the process less costly to implement. It is interesting to note that under extreme alkaline conditions, in the presence of chloride ions, even a stainless steel anode exhibits severe pitting and erosion. Our new findings suggest that the technique of electrolytic rust removal is reasonably safe for even the amateur archaeologist.

The Feminization of Poverty and Single Mothers

by Regina Hull

Mentor: Dr. Sandra Reinke, Department of Political Science

Over the years, the United States has seen a significant increase in the poverty rate of women. This poster presentation examines the different literature on the feminization of poverty and single mothers as they relate to current statistics. This poster presentation also examines the effects of the feminization of poverty and race. This article also looks at TANF and its policies, and examines the different programs intended to help women out of poverty. The research conducted to compose this presentation was of a non-experimental nature. This presentation illustrates the descriptive research design, where the researcher reviewed literature by various authors and combined them to form a scholarly paper. Statistics were also gathered from the Census Bureau to relate theories with current population statistics.

An Investigation of the Impact of Special Needs Literature on General Education Populations

by Kristen Harden and April Crump

Mentors: Dr. Paulette Harris and Dr. Alice Pollingue, College of Education

The Bungalow Road Elementary Research Project was conducted by SGAE (Student Georgia Association of Educators) and SCEC (Student Council for Exceptional Children) members under the leadership of their advisors, Dr. Paulette Harris and Dr. Alice Pollingue. Seven general education classes and one special education class at Bungalow Road Elementary were selected to hear stories regarding children with disabilities. The purpose of the readings was to increase all of the children's understanding of special education students in their school environment. Results of the data collected will be reported during the presentation.

Ethnic Identity and Well-Being in College Students

by Edyta Marta Krzemien

Mentor: Dr. Robert A. Reeves, Department of Psychology

Problem: As part of a larger study, we examined the relationship between ethnic identity and well-being among Hispanic, African American, and European American college students. Previous research has shown that high levels of ethnic identity can predict well-being primarily in African American students. This study examined this relationship across several ethnic groups.

Method: One-hundred-seven ASU students completed commonly used measures of ethnic identity (which in this study was defined as how strongly the students identified with their ethnic group), anxiety, depression, life-satisfaction, and self-esteem. All participants were treated in accordance with the ethical guidelines of the American Psychological Association.

Results: Ethnic identity was significantly related to lower anxiety and higher self-esteem in general, but this result was not consistent across ethnic groups. European Americans had a stronger relationship between ethnic identity and well-being than the other two ethnic groups. These results contradict previous research, in which ethnic identity has been observed to be a better predictor for self-esteem and well-being for African Americans. In the current study, however, there was a significant negative correlation between ethnic identity and life-satisfaction for African Americans (see Table 1). Furthermore, African American females had the highest mean on ethnic identity followed by Hispanic and European American females respectively.

Interpretation: The conflicting results in this study point to the complexity of the role of ethnic identity. Further research is needed to more clearly assess the relationship between ethnic identity and well-being.

Impact on Student Learning

by Billy Burroughs

Mentor: Dr. Barry Thompson, Department of Teacher Development

The effectiveness of my teaching style was tested by leading four different sections of a freshman Biology class for an entire week. One week before I was to lead the classes, I issued a test to each Biology section that tested their pre-knowledge of the material that I would later teach. The lab was presented before the lecture for two class sections, while the lecture was presented before the lab for the other two. Following one week's worth of teaching using lecture, lab, and review I issued a post – test over the material that we had covered. The score of each individual's post - test was compared to his or her pre – test score. The number and percent change for each individual, class, and classes combined were then calculated. Furthermore, a t-test was used to determine if there was a statistically significant difference noted between the performance of the classes based on whether they had lab or lecture first.

After comparing the pre-assessment and post-assessment scores for over 75 students, I received very encouraging results. Examining both the correct and incorrect number of questions answered with the actual change in percentages, a significant increase in performance was noted. This improvement varied among the different classes, ranging from approximately 18% to about 30% for each class. Individual success revealed even greater improvements in some cases. Many students improved very low failing grades into high A's. Although this drastic improvement was balanced out by the mild improvement of other students, it revealed to me that I had presented the material in such a way as to make learning a possibility. The degree of improvement therefore appeared to largely depend on the amount that students listened during class and prepared for the test. This is best seen when examining the fifth period class, who obtained a post-assessment average of nearly 81%! Their pre-assessment scores mirrored the scores of the other classes (around 50%). However, as I found out, the fifth period class was very concerned about their grades. Therefore, they tended to pay closer attention and (presumably) prepared more for the tests. Superficial comparisons between the lab first sections and lecture first sections appeared trivial. However, a statistical analysis was necessary to accurately determine the

significance of any difference.

Anxiety and Affiliation in Response to Attacks on the World Trade Center and the Pentagon

by Tammy Lowery

Mentor: Dr. Deborah South Richardson, Department of Psychology

Problem: Based on Schachter's (1959) findings regarding the relationship between anxiety and affiliation, we predicted that people would be particularly inclined to affiliate after hearing about the attacks of 11 September 2001. That is, people would prefer to be with other people rather than alone during that day, and those who wanted to be with others were expected to experience stronger emotional reactions than those who preferred to be alone during the day of the tragedy.

Method: Seventy-one males and 103 females (mean age = 21) responded to a questionnaire that inquired about where they were when they heard of the attacks on the World Trade Center and the Pentagon, whether they were alone or with others, and whether they wanted to be alone or with others during that day. They also reported who they had made contact with and indicated the extent to which they experienced a variety of emotions (e. g., confused, sad, jittery, attentive, angry) once they "realized what had happened". Fifty percent of participants reported that they were alone when they heard about the attacks, while fifty percent reported they were with others. However, seventy-eight percent reported that they *wanted* to be with others, while 16% reported they wanted to be alone on the day of the attack. Thirty-three percent reported that they wanted to be with family members, 23% reported that they wanted to be with friends, and 12% reported that they wanted to be with their romantic partner. Remarkably, fifty-two percent of participants reported that the first person they contacted was their mother; 27% reported that they first contacted their romantic partner.

Results: The multivariate analysis of variance revealed a significant relationship between preference to be with others or alone and emotional experience, $F(27, 133) = 1.88, p = .01$, suggesting that those who wanted to be with others experienced more emotion in general than those who wanted to be alone. Specifically, they felt more scared, distressed, nervous, interested, concerned, depressed, jittery, and worried (see table).

Table: Means and F-values for Emotions Experienced on Day of Attacks

	Alone	With Other	$F(1, 159)$	p
Scared	3.52	4.57	5.54	.02
Distressed	3.72	4.50	3.82	.05
Nervous	3.08	4.23	7.21	.01
Interested	5.48	6.38	9.60	.00
Concerned	5.68	6.50	13.48	.00
Depressed	2.84	3.94	6.47	.01
Jittery	2.44	3.42	4.90	.03
Worried	4.68	5.57	4.23	.02

The results of this study are consistent with Schachter's contention that people feel a need to affiliate when they experience anxiety. Although our findings reveal a relationship between emotional experience and the need to affiliate, the direction of causality is unclear. Our expectation was that people would choose to affiliate when they experience high levels of emotion. However, the correlational nature of the data might allow of the less likely possibility that being with others would enhance the experience of negative emotion.

The National Honor Society of *Phi Kappa Phi*

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Established in 1897, the Honor Society of Phi Kappa Phi is a century-old nonprofit organization that recognizes and promotes academic excellence in all disciplines of higher education. The Society was founded to cultivate a deep appreciation and respect for scholarship and is convinced that in recognizing and honoring those persons of good character who have excelled in scholarship, in whatever field, it will stimulate others to strive for excellence. With more than one million members from across the globe and 282 chapters located on university campuses throughout the United States, Puerto Rico, and the Philippines, Phi Kappa Phi is among the oldest and most respected academic honor societies. Students elected to membership in Phi Kappa Phi include the upper 7.5 percent of last-term juniors and the upper 10 percent of seniors, along with outstanding graduate students, faculty, and alumni.

Augusta State University 2001-2002 Inductees*Juniors*

Judson Baxley
Sara Bennett
Richard Goolsby
Courtney Hamilton
May Hlaing
Kathryn Mobley
Joan Page

Seniors

Erin Addington
Markus Bacha
Jon Bashor
Jason Blanchard
Landy Boles
Brandy Bray
Deborah Cleveland
Brian Coursey
Angela Davis
Jennifer Dennis
Loretta Dominguez
Kin Tai Fong
Amy Ford
Marcey Frutchey
Lauren Garrison
Sandra Highley
Kay Hlaing
Martha Keasling
Edyta Krzemien
Maria Branch Lister
Heather MacDonald
Kristen Skidmore
Patricia de Aguiar Teixeira
Roger Williams

Graduates

Kimberly Boyd-Bowman
Elizabeth Merrell Garner
Wanda Newton
Pamela Rhea
Daniel Durham

Faculty

Professor Don Howard
Dr. Letha Lierman
Dr. Debra Van Tuyll
Dr. James Grayson

Administration

Dr. Kathy Hamrick