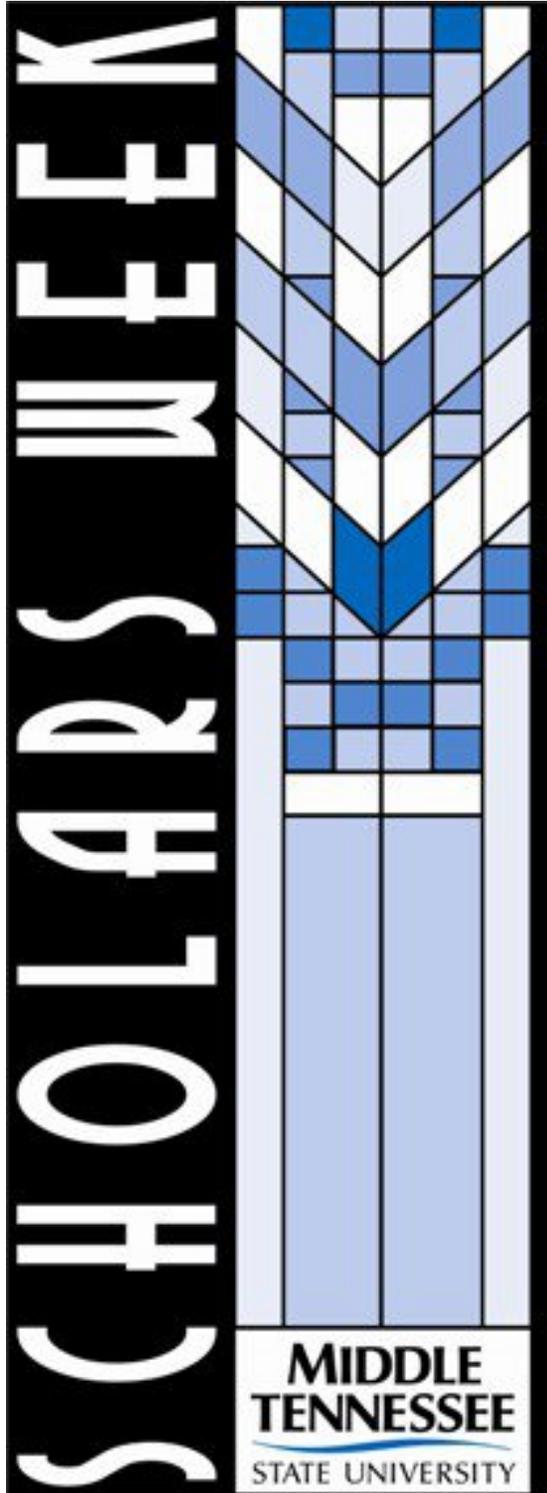


Faculty Abstracts



2011

F1

CONTRIBUTION OF AVIANS TO THE EPIDEMIOLOGY OF LYME DISEASE AND SOUTHERN TICK ASSOCIATED RASH ILLNESS

Stephen Wright (faculty)
2009-2010 MTSU Foundation Distinguished Researcher
Biology
smwright@mtsu.edu

Lyme disease, the most common vector-borne disease in the United States, is due to the bacterial spirochete *Borrelia burgdorferi* and transmitted by Ixodes ticks. *Borrelia lonestari*, transmitted by the tick *Amblyomma americanum*, may be associated with a related syndrome, southern tick-associated rash illness (STARI). *Borrelia lonestari* sequences, reported primarily in the southeastern states, have also been detected in ticks in northern states. It has been suggested that migratory birds may have a role in the spread of Lyme disease spirochetes. This study evaluated both migratory waterfowl and non-migratory wild turkeys for *B. burgdorferi* and *B. lonestari* DNA sequences. A total of 389 avian blood samples (163 migratory birds, 125 turkeys harvested in habitats shared with migratory birds, 101 turkeys residing more distant from migratory flyways) were extracted, amplified, and probed to determine *Borrelia* presence and species identity. Ninety one samples were positive for *Borrelia* spp. Among migratory birds as well as turkeys collected near migration routes, *B. burgdorferi* predominated. Among turkeys residing further away from flyways, detection of *B. lonestari* was more common. This represents the first documentation of *B. lonestari* among any birds. This study suggests that avians are competent hosts for *Borreliae* and may have a role as reservoirs allowing for continuing spread of *Borrelia*.

F2

USING MICROSOFT FLIGHT SIMULATOR IN THE CLASSROOM TO IMPROVE STUDENT PILOT DECISION MAKING SKILLS

Wendy Beckman (faculty)
Aerospace
wbeckman@mtsu.edu

In the Aerospace Department, Microsoft Flight Simulator (MSFS) has been utilized in the classroom for several semesters in an effort to develop student aeronautical decision-making (ADM) skills. This inexpensive software is used to create realistic scenarios which are experienced in class, such as the effect of load factor on stall speed, electrical and gyroscopic system failures, flight into deteriorating weather, flight into Class C airspace, and cross country navigation. In the fall of 2009, two Private Pilot ground school classes taught by the same instructor were evaluated to determine if experiencing these MSFS scenarios had an impact on student development of ADM skills. At the beginning of the semester, each student completed a baseline evaluation of their ADM skills, utilizing 20 items from the ADM evaluation instrument detailed in DOT/FAA/AM-98/7. One class was taught incorporating MSFS scenario-based training, while the other class discussed the same situations in a traditional case study format. The emphasis of each scenario or case study was making appropriate flight management decisions. At course completion, students completed a second evaluation of their ADM skills, using an additional 20 items from the before-mentioned ADM evaluation instrument. It was found that while both classes made large gains in their ADM abilities over the course of the semester, the class taught using MSFS scenarios demonstrated significantly higher gains in these skills.

F3

THE BOTSWANA "I AM PROUD TO BE A NURSE" PROJECT

Debra Rose Wilson (faculty)
School of Nursing
drwilson@mtsu.edu

Botswana is a landlocked, middle income country in Southern Africa with a population of less than two million. There are approximately 7500 practicing nurses in Botswana. Many nurses work in difficult circumstances, exposed to shortages of equipment, medicines, and poor practice environments. Over time, the scope of nursing practice has expanded enormously. Nurses are performing many roles and activities that, in North America or Europe, would be implemented by members of other health care professionals. The high prevalence of HIV/AIDS, like elsewhere in Africa, has affected nursing more than any other profession. In Botswana, the image of nursing has become somewhat tainted. We think we have a nursing shortage in the United States. In the United States and Canada, there are between 10 and 15 nurses per 1000 people. The nursing shortage is felt particularly sharply in Botswana. The ratio of nurses is about 3.8 per 1000 people in Botswana. When healthcare is not up to expected standards, it is often the nurses who are blamed. In response to this concern the Nurses Association of Botswana (NAB) has started an "I am proud to be a nurse". Outstanding nurses from each of the health regions in Botswana were chosen and trained to speak about the essence and image of nursing, to inspire nurses to feel pride in their profession, and to educate the public. Currently these nurse ambassadors are spreading the message to the public and colleagues, and distributing a pin to every nurse in Botswana. This poster presentation outlines the "I am proud to be a nurse campaign" in Botswana, my role as an international visiting scholar. It will highlight my and the MTSU student nurses' work to raise money and send a lapel pin to each nurse in Botswana that says "I am proud to be a nurse".

F4

HOW STUDENTS ARE TAUGHT TO WRITE AND WHAT THEY ARE EXPECTED TO READ IN GENERAL EDUCATION COURSES

Rachael Kirk (faculty)
Walker Library
rakirk@mtsu.edu

The purpose of this study is to explore the relationship between how students are taught to write in first-year English composition classes and what they are expected to read as part of the general education requirements of the undergraduate curriculum at Middle Tennessee State University (MTSU), and then to determine whether a gap exists between the two. If a gap is found to exist between the preparation of students in their English composition courses and the ability to read and understand material that has been assigned by the teaching faculty, then these students are less likely to be considered information literate by any rubric. This study uses a mixed-methods approach where content analysis is employed to examine the assigned readings students encounter and interviews are conducted to explore how students perceive and make sense of the academic writings assigned to undergraduates in general education classes. The readings represented writing instruction examples used in English Composition at MTSU and assigned journal articles from the syllabi of two general education courses: American History and Introduction to Psychology. Thirty-one texts were analyzed. This study uses a mixed-methods approach where content analysis is employed to examine the assigned readings students encounter, and interviews are conducted to explore how students perceive and make sense of the academic writings assigned to undergraduates in general education classes. Significant differences existed between readings from English Composition classes and assigned scholarly journal articles in American History and Introduction to Psychology in incidence and placement of topic sentences, use of signal words or phrases, and readability. In addition, thematic analysis of the interviews of students found that they experienced gaps between their expectations of text composition and their experience reading assigned journal articles.

F5

WHAT STUDENTS CAN TELL US – ASSESSING PERFORMANCE LEVELS IN A FUNDAMENTALS OF COMMUNICATION COURSE

Virginia Donnell (faculty)
Speech and Theatre
vdonnell@mtsu.edu

Margaret McCree (faculty)
Speech and Theatre

Meghan Kelley (undergraduate)
Speech and Theatre

In 2009, the first comprehensive assessment of the Fundamentals of Communication course (Comm. 2200) was completed at MTSU. This presentation will include a brief description of this continuing assessment project and a presentation of the outcomes with specific focus on gender, age, major and ethnicity and their affect on student performance. The study consisted of 221 participants in spring semester, 2010. This quantitative study examined the student performance in oral presentations and preparation of presentation outlines. The study was based on an examination of Tennessee Board of Regents (TBR) general education core competencies for communication. The assessment also incorporated the seven competencies for the competent speaker that has been identified by the National Communication Association (NCA). The process used in the assessment was likewise based on the recommendations of the NCA as well as recommendations made in several publications that focused on assessing post-secondary performance based public speaking courses (The Competent Speaker Form, 2000). This study was conducted following a two-year pilot study started in 2009. Student performance levels in oral presentations and outline preparation were examined overall and by demographics of classification, gender, age, ethnicity, and academic college of major. The purpose of this study was to determine the level at which students in COMM 2200 were meeting the TBR General Education Competencies for communication. The results will serve as a baseline for determining improvement in instructional strategies and student communication development. Overall, findings revealed that the majority of students were meeting the communication competencies at a satisfactory level. The study is an on-going investigation of performance levels and variables that affect student performance in COMM 2200.

F6

ARTS ORGANIZATIONS OF THE FUTURE: THEA 3800 INTRODUCTION TO ARTS MANAGEMENT

Virginia Donnell (faculty)
Speech and Theatre
vdonnell@mtsu.edu

Lourdes Benavente, Brenden Taylor, Buddy Jones, Christian Woodard-Swett, Megan Blevins, John Woodlee, David Bennett, Courtney Fix, Jennifer White, Marquee Doyle, Rebecca McGrath (undergraduates)
Speech and Theatre

Entrepreneurship and creativity is key to success in the Arts. This presentation will highlight three student projects from THEA 3800: Introduction to Arts Management. Each hypothetical project consists of operational, programming, and fiscal plans for a startup no-profit arts organization. These student projects illustrate the planning, assessment and creativity in developing a successful Arts organization. In this project, students focused on need to deliver the Arts and the feasibility of starting an Arts organization in the Tennessee. The presentation will include the complete organizational proposals and materials from the following projects:

The Nouveau Espace Theater is dedicated to delivering new and innovative material to the Nashville theatrical scene; Youth at Play is a safe, fun, and educational space where the youth of Middle Tennessee can explore and develop skills in theater arts; The High Five Arts Center will provide people, especially the students in Kindergarten through twelfth grade of Bristol, TN and the surrounding area with quality children's theatre and other programs to encourage reading and develop reading abilities.

F7

PHILANTHROPY DURING WORLD WAR I: A CASE STUDY OF EDITH WHARTON'S CHARITABLE WORKS

Tricia Farwell (faculty)
Journalism
tfarwell@mtsu.edu

World War I (WWI) provided opportunities for more than 25,000 American women to assist through nursing, feeding and supplying the military with comfort, food and entertainment. Women were able to work in essential roles to keep the world on track in terms of factory output and communications. Yet not been much scholarly attention directed towards women's voluntary efforts during the War. In other words, scholars have seemed to overlook one of the primary outlets for middle and upper class women to contribute to the war effort. By the start of the military action in WWI, Edith Wharton was a best-selling author, a divorcee, and an expatriate living in France. Her initial comments of the war effort were, as with many people at the time, wrapped in rumor and disbelief. She remarked that "the daily necessary business of living, continued calmly and convincingly...[as] Paris went on steadily about her mid-summer business of feeding, dressing, and amusing the great army of tourists who were the only invaders she had seen for nearly half a century" (Fighting France, 7). Yet, eventually, the impact became greater and Wharton was able to use her connections to not only get to visit the front on numerous occasions, but also to help the war effort in the only way available to her as an upper-class woman. She started charitable entities to help the refugees. While she found her visits to the front to be both a horror and an adventure, she found that "the great army of the Refugees" needed her attention (Fighting France 33). Eventually, her charitable efforts earned her the status of Chevalier of the Legion of Honor. This presentation explores Wharton's charitable efforts in support of the war effort in context of public relations theory.

DEREGULATION AND THE DEMISE OF SHAM LITIGATION: A STRUCTURAL TIME-SERIES APPROACH

Christopher Klein (faculty)
Economics and Finance
cklein@mtsu.edu

Sham litigation is the term for lawsuits brought by businesses to gain collateral competitive advantages over their rivals in violation of the antitrust laws. Data on 93 appellate court decisions on sham litigation claims from 1972 to 2006 are analyzed here. Counter to theoretical expectations, there is no statistically significant break in the trend of sham litigation appellate decisions around a 1993 change in the case law. The significant break in the trend occurs in 1986-87. In previous work, examination of specific decisions by industry and issue suggests that relaxation of regulation in the transportation, energy, and telecommunications industries is responsible for the decline of sham litigation claims rather than change in the case law. This paper examines the role of patents in more detail and makes use of a structural time series model to test for the presence of an unobserved component. The presence of an unobserved component may support the role of deregulation in limiting opportunities for sham litigation.

F9

**OPTIMAL CONTROL APPLIED TO NATIVE-INVASIVE POPULATIONS
COMPETITION VIA A PARTIAL DIFFERENTIATION EQUATIONS MODEL**

Wandi Ding (faculty)
Mathematical Sciences
wding@mtsu.edu

Volodymyr Hryniv (faculty)
Computer and Mathematical Sciences
University of Houston-Downtown

Daniel Kern (faculty)
Chemistry and Mathematics
Florida Gulf Coast University

Xiaoyu Mu (graduate student)
Mathematical Sciences
University of Tennessee, Knoxville

This project presents a system of partial differential equations model for population interactions between an invasive and a native species, where the effect of disturbance in the system (such as flooding) is modeled as a control variable in the growth terms. The motivating example is cottonwood-salt cedar competition, with flooding being detrimental at low and high levels and being advantageous at medium levels, which led us to consider quadratic growth functions of the control. An objective functional is formulated to maximize the native species while minimizing the cost of implementing the control. A new existence result for an optimal control with these quadratic growth functions is given. Numerical results are examined for various parameter values. The results provide suggestions for managing the disturbance regime when invasive species are present.

F10

YOUNG URBAN BILINGUAL PRESCHOOLERS' RESPONSE WITH CRITICAL TEXTS

Jeanne Gilliam Fain (faculty)
Elementary Education and Special Education
jfain@mtsu.edu

Diversity in the United States is moving to represent a more racially and ethnically diverse population in schooling. According to the U.S. Department of Commerce, Bureau of the Census, 2003, over 3.6 million immigrants entered the U.S. population. Young urban learners need to be included in the wider goals of democratic education. Their voices need to be integrated into curriculum in real ways as they respond and formulate their perspectives and engage critically with texts. The purpose of the paper is to share findings from a study that examined the engagement of young bilingual Arabic, Spanish, African American dialect, and English preschoolers in literature discussion in a classroom setting. Of interest in this presentation is the role of literature in readers' construction of social interaction and young children's participation and response in literature discussion. The researcher examines young bilingual children's response, patterns from the discussion, and their connections to the literature. The study used sociocultural theories of learning and reading. From a sociocultural-historical perspective, literature mediates both cognitive change and the human experience. To examine this mediation, researchers focused attention on the cultural authenticity of texts and the talk generated by those texts. Preliminary findings related to various ways young bilingual children participated within these interactions in the literature discussions. The first category includes content of the child's response (experience, representation of connection to the text, and language(s) used) and the second category consists of processes employed in child's response (narrates, interprets, evaluates, and questions).

F11

STUDENT INTEREST IN EXPERIENTIAL LEARNING AND ONLINE CLASSES IN A PROPOSED MINOR

Janet McCormick (faculty)
Speech & Theatre
jmccormi@mtsu.edu

Sharon Smith (faculty)
Speech & Theatre
sssmith@mtsu.edu

As part of a feasibility study conducted for a proposed minor in Organizational Communication, the researchers administered 112 questionnaires to students in six general education sections (COMM 2200 Fundamentals of Communication). Respondents were initially read a brief statement informing them that the Department of Speech and Theatre is developing a minor in Organizational Communication that encompasses a combination of skills and courses in Organizational Communication theory, analysis, and application. The questionnaire included 10 questions gauging interest levels/opinions on a regular Likert scale about: a) organizational communication courses; b) the likelihood that the proposed program will help in their intended career; c) the likelihood that they would consider the program for their minor. The survey found support for the general course topics of organizational communication, and strong support for the specifics of the proposed program. Students most interested in courses in the proposed minor are majors in the College of Behavioral and Health Sciences and in the College of Basic and Applied Sciences. The questionnaire also gauged interest in online courses and in experiential learning (EXL). Currently, the majority of courses in the Organizational Communication major are offered online and are designated EXL. Thirteen percent were very interested in online availability of courses and 38% were somewhat interested. Seventy-four percent indicated that they value experiential learning including opportunities for hand-on projects and activities, and 21% somewhat value experiential learning.

F12

SCRAPBOOKS OF KENTUCKY'S PACK HORSE LIBRARIANS (1936-1943)

Jason Vance (faculty)
Library
jvance@mtsu.edu

Kentucky's Pack Horse Librarians, whose services were partially funded through the United States Works Progress Administration Program, delivered books to remote Appalachian communities on the backs of horses and mules during the 1930-40s. These librarians, mostly women, also created unique, handmade scrapbooks to supplement their meager library collections and circulated them to patrons along their routes. These scrapbooks were assembled using magazine/newspaper clippings, dismembered books, pictures from seed catalogs, and original drawings and local recipes. These physical manifestations of cultural memory not only documented local culture, but also signified an expansion of librarians' roles from collectors of information to authors, editors, and publishers of information. Though thousands of these scrapbooks were created, few remain in existence today. This study examines a small collection of these scrapbooks held in the Franklin D. Roosevelt Presidential Library in Hyde Park, N.Y. This research project was funded in part by a grant from MTSU's Faculty Research and Creative Activities Committee.

F13

SCIENCE WRITING HEURISTIC: A WRITING-TO-LEARN STRATEGY USED IN SECONDARY CHEMISTRY

Nancy Caukin (Master Teacher Fellow)
caukinn@rcschools.net

Dorothy Craig (mentor)
Educational Leadership
dvraig@mtsu.edu

The purpose of this mixed-methods study was to determine if employing the writing-to-learn strategy known as a Science Writing Heuristic (SWH) would positively affect students' science achievement, science self-efficacy, and scientific epistemological view. The publications Science for All Americans, Blueprints for Reform: Project 2061 and National Science Education Standards (1996) strongly encourage science education that is student-centered, inquiry-based, active rather than passive, increases students' science literacy, and moves students towards a constructivist view of science. The capacity to learn, reason, problem solve, think critically and construct new knowledge can potentially be experienced through writing. SWH is a tool for designing science experiences that move students away from "cookbook" experiences and allows them to design experiences based on their own ideas and questions. This non-traditional classroom strategy focuses on claims that students make based on evidence, compares those claims with their peers and compares those claims with the established science community. Students engage in reflection, meaning-making based on their experiences, and demonstrate those understandings in multiple ways. This study involved secondary honors chemistry students in a rural K-12 school in Middle Tennessee. There were $n = 23$ students involved in the five-week study of gases. Results of the post-tests showed that females in the treatment group outscored their male counterparts by 11% on the science achievement portion of the study. Two representative students, one male and one female, were chosen to participate in a case study for the qualitative portion of the study. These students constructed meaning and enhanced their understanding of how gases behave, had a neutral (male) or positive (female) perception of how employing SWH helped them to learn, had a favorable experience that positively influenced their self-confidence in science, and increased their scientific literacy. Support from the National Science Foundation is gratefully acknowledged.

F14

INTRAPOPOPULATION NICHE DIFFERENCES: DO THEY EXIST FOR NORTHERN TAMANDUA ANTEATERS?

Danielle Brown (faculty)
Biology
dabrown@mtsu.edu

The Northern tamandua (*Tamandua mexicana*) is a common ant- and termite-eating mammal from Central America and northern South America. The few existing studies of tamanduas have all focused on feeding ecology, therefore, little is known about their population structure, home ranges, or how they use their habitat. Observers have recorded wide individual variation in the degree of arboreality, the timing of activity periods, and diet. If this variation exists, it reflects more flexibility than would be expected for this specialized species and suggests that individuals within a population can behave differently enough that they actually occupy different ecological niches. Newly-developed technology can attempt to answer this question unrestricted by many of the limitations of traditional observation-based studies. I attached telemetry tags that contained an accelerometer, a global positioning unit (GPS) and a radio transmitter to free-living Northern tamanduas on Barro Colorado Island in the Republic of Panama. Using a combination of behavioral observations and the data collected by the tags, I measured home range sizes and compared activity patterns and habitat use between 16 individual anteaters in the island population. Preliminary results suggest that the Northern tamanduas are not territorial, that males and females have similar home range sizes, and that individuals are generally active at the same time of day. Habitat use analyses are pending, but also suggest similar behavior between individuals. Feeding preferences, which were not examined systematically in this study, may be the only behaviors that differentiate individuals in this population. This study has deepened scientific knowledge of this unusual mammal and will provide a modern resource for Tamandua anteater management and conservation efforts and awareness throughout Central and South America.

F15

FACULTY MENTORING

Timothy Graeff (faculty)
Management and Marketing
tgraeff@mtsu.edu

Additional faculty co-authors:

Charlene True (Educational Leadership)
Melissa Wald (Recording Industry), Chris Stephens (Mathematical Sciences), Kimberly Ujcich
Ward (Psychology), David Rowe (History), Jessica Gentry Carter (Agribusiness and
Agriscience), Linda Wilson (Nursing), Vivian Alley (University Studies)

In the spring semester of 2011 the Learning, Teaching & Innovative Technologies Center (LT&ITC) at MTSU conducted an online needs assessment survey of all MTSU faculty members. This poster session presents the results from that survey related to faculty members' desire for various types of mentoring. Four specific types of mentors were identified: teaching mentors, professional and career mentors, research mentors, and service mentors. This poster session presents the results showing how desire for these four types of mentors varies by (1) the number of years a faculty member has been teaching, (2) the number of years a faculty member has been teaching at MTSU, (3) the number of years a faculty member expects to continue teaching in the future, (4) academic rank, and (5) the college in which a faculty member teaches. A total of 173 MTSU faculty members completed the online survey. Results suggest that research and teaching mentors are the most desired among MTSU faculty members. The desire for a professional mentor, a research mentor, or a service mentor is greater for faculty members who have fewer years of teaching experience and who expect to teach a greater number of years in the future. Interestingly, the desire for a teaching mentor does not vary much by years of teaching experience or the college in which a faculty member teaches. However, the desire for a professional mentor, a research mentor, and a service mentor does vary by the college in which a faculty member teaches. Further, the results suggest that the desire for a mentor (of any type) decreases with increasing academic rank. These results can offer significantly guidance when developing mentoring programs at MTSU and other universities.

REPRODUCTION AND PLASMA CORTICOSTERONE LEVELS IN FREE-LIVING FEMALE FENCE LIZARDS

Matthew Klukowski (faculty)
Biology
mklukows@mtsu.edu

Numerous factors have been shown to alter stress responsiveness in vertebrates including age, sex, season, body condition, and social status. The potential role of reproductive state has received less attention, particularly in reptiles. Since maternal steroids may be transferred to the yolk, elucidation of the influence of reproductive state on plasma corticosterone levels has important implications for offspring development and phenotype. Here I tested whether females of differing reproductive state (early-, late-vitellogenic, or gravid) differed in baseline or stress-induced levels of plasma corticosterone. Adult female fence lizards were captured in the field and bled as quickly as possible to obtain baseline blood samples. Females were subsequently confined for one hour in a cloth bag, bled again, and then brought into the laboratory where laparotomies were performed to determine each female's reproductive condition. Females were released the following day. Plasma triglyceride and lactate levels were measured in addition to corticosterone. Gravid females had significantly higher baseline corticosterone levels than the vitellogenic groups and exhibited the weakest stress responses in terms of both corticosterone and lactate. All three groups differed in plasma triglyceride levels with the highest levels observed in late-vitellogenic females. Altogether these results indicate a substantial influence of reproductive condition on plasma corticosterone levels in female fence lizards. In particular, whether the relatively high baseline corticosterone levels observed in gravid females is indicative of chronic stress or plays some role in reproduction deserves further study.

F17

SOUTHERN MYTHS AND THE NINETEENTH AMENDMENT

Jane Marcellus (faculty)
Journalism
jmarcell@mtsu.edu

In 1920, Tennessee became the final state to ratify the Nineteenth Amendment, which eliminated sex restriction on voting rights. This article uses the concept of myth to examine how Nashville newspapers made suffrage part of the discursive battle for regional identity. While the Nashville Banner amplified anti-suffragists' "Old South" propaganda of the Lost Cause and southern honor, Nashville Tennessean coverage was grounded in the "New South" myth's national, progressive focus. The two newspapers' publishers took their positions beyond their pages by becoming participants in the political contest. The work presented here was published in *Journalism and Mass Communications Quarterly* Vol. 87, No. 2 Summer 2010 241-262 and won 2nd place in the Inaugural Farrar Media and Civil Rights History competition, University of South Carolina.

F18

NATIONAL REGISTER TESTING AT THE COATS-HINES SITE, WILLIAMSON COUNTY, TENNESSEE

Tanya Peres (faculty)
Sociology and Anthropology
tperes@mtsu.edu

Aaron Deter-Wolf (community member)
Tennessee Division of Archaeology

Shannon Hodge (faculty)
Sociology and Anthropology

In 2010, Tennessee Division of Archaeology archaeologists were awarded an Historic Preservation Grant through the Tennessee Historical Commission and the National Parks Service to conduct archaeological testing at the Coats-Hines site. Previous excavations at Coats-Hines have recovered Pleistocene faunal material and documented rare evidence of human-mastodon predation. Archaeological testing was conducted in October with the aid of Dr. Tanya Peres, Zooarchaeology students from MTSU, and Texas A&M doctoral candidate Jesse Tune. The excavations identified an intact Pleistocene bone bed approximately 10 feet below ground surface, and have generated data to support nomination of the site for inclusion in the National Register

F19

CHARACTERISTICS AND STUDENTS' PERCEPTIONS OF TEACHER BULLYING

Mary Ellen Fromuth (faculty)
Psychology
mfromuth@mtsu.edu

Teresa Davis (faculty)
Psychology

Krystal Owens (undergraduate)
Psychology

Candias Sadler, Jonathan Prokop (graduate students)
Psychology

The present retrospective study examined teacher bullying in grades K-12. Participants were 453 undergraduate students recruited from the psychology research pool. The majority of the participants were 18-21 years old (92%), Caucasian (60%), and female (63%). The study focused on specific teacher behavior and the participants' perceptions of these experiences. In groups, participants completed anonymous surveys about their past educational experiences. Specifically, participants were asked to consider their least favorite teacher from K-6th grade and, in a separate set of questions, their least favorite teacher from 7th-12th grade. Regarding perceptions, over 40% of the participants viewed at least one of these experiences as abusive. Similarly, a little over half of the participants perceived at least one of these relationships as involving teacher bullying. The more frequently reported examples of mistreatment were being shouted at, being blamed for things they did not do, and being humiliated in front of others. The majority of participants believed that the behavior of at least one of their teachers had a negative impact on their life and negatively impacted their later view of school. Results are discussed in terms of the need for more research and education regarding teacher bullying.

F20

FORAMINIFERA AS WATER QUALITY INDICATORS IN ST. ANDREW BAY, FLORIDA

Melissa Lobegeier (faculty)
Geosciences
mlobeg@mtsu.edu

Panama City in Florida is a popular Spring Break destination for college students. To the south of the city lies St. Andrew Bay, a 27,900 hectare (69,000 acre) high-salinity estuary, which was designated an aquatic preserve by the Florida legislature because of its exceptional water resources. Studies from the 1980s and 1990s have found that St. Andrew Bay has been impacted by environmental contamination. Sediments from the open bay are mostly considered to be free of contamination, while the most acute impacts have been seen in some of the 59 bayous of the bay system. Watson Bayou has been impacted by a variety of activities including runoff from a sawmill and a papermill, fuel storage, wastewater treatment plants, boat construction, commercial fishing and residential development. Microscopic invertebrates, known as foraminifera, have been collected from sediment samples taken from throughout St. Andrew Bay and the bayous. Foraminifera are very responsive to environmental change and have been used in many studies throughout the world as indicators for monitoring pollution. Foraminifera can be used as indicators of pollution through the quantitative analysis of population density, species diversity, community structure, shell morphology and level of shell deformation. Unfortunately there are no universal marker species of foraminifera that are used as indicators for pollution. In this study, we will document the composition of the foraminiferal communities in different locations to determine if there are species that can be used to assess water quality in St. Andrew Bay and possibly other areas in the Florida panhandle.

F21

ASN362 INCREASES ZINC AFFINITY OF LEUKOTRIENE A4 HYDROLASE

Michael Thompson (faculty)
Biology
mthomps@mtsu.edu

Alexis Schaible (undergraduate)
Biology

Frank Bailey (faculty)
Biology

Rebecca Seipelt (faculty)
Biology

Leukotriene A4 hydrolase (LTA4H) is a pro-inflammatory zinc metallopeptidase / epoxide hydrolase that contains an atom of zinc at the active site. This zinc ion is bound to two histidine residues and a glutamate residue at the active site center. In order to more fully understand how catalysis occurs in the peptidase mechanism of the enzyme, conserved residues that were identified as possibly influencing zinc binding in the yeast version of the enzyme were altered by site-directed mutagenesis to study their functions. One of these residues, Asn362, was mutated to Gln (N362Q), Glu (N362E), and Leu (N362L). While the N362E and N362L mutants exhibited minimal catalytic activity and reduced zinc affinity, the N362Q mutation exhibited reduced catalytic activity and slightly reduced zinc affinity, indicating that Asn362 likely influences the chemical environment of one of the nearby zinc coordinating residues, either Glu363 or His344, through possible hydrogen bond interactions. A better understanding of catalysis by LTA4H will help further the design of drugs to target the inflammatory process.

F22

TRENDS IN PARTICIPATION IN PHYSICAL EDUCATION AMONG HIGH SCHOOL STUDENTS IN TENNESSEE, 2003-2009

Yun Soo Lee (faculty)
Health and Human Performance
yslee@mtsu.edu

Peter Hart (graduate student)
Health and Human Performance

Youngdeok Kim (graduate student)
Health and Human Performance

Minsoo Kang (faculty)
Health and Human Performance

According to the Centers for Disease Control and Prevention (CDC), the prevalence of adolescent obesity has increased in the United States, especially in Tennessee. Considering that school physical education (PE) can play a fundamental role in reducing obesity rates, it is important to examine the trends in the number of PE classes in high school. Seven years (2003-2009) of Youth Risk Behavior Survey data (ages 13 to 17) were analyzed. Descriptive statistics and one-way ANOVA was used to analyze the data. Descriptive data showed decreasing trends in the average number of days participating in PE by grade and by year. There were statistically significant differences on the average number of days participating in PE between grades as determined by one-way ANOVA, $F(3, 7339) = 414.94, p < .001$. There were also statistically significant differences between years, $F(3, 7365) = 12.11, p < .001$. The required number of PE classes should be increased to prevent adolescent obesity.

F23

INTEGRATING INFORMATICS COMPETENCIES INTO A BACCALAUREATE NURSING CURRICULUM

Cathy Cooper (faculty)
Nursing
cacooper@mtsu.edu

Essentials of Baccalaureate Education (American Association of Critical Care Nurses) requires that baccalaureate nursing programs include content related to *informatics*. New information systems and resource management systems appear daily in patient care settings.

Understanding the basic concepts underpinning information technology, how they work, and their overall application to safe patient care delivery, is essential to helping students adjust to the plethora of new technologies they will encounter in their nursing career. The content and integration of informatics competencies into curricular offerings are at faculty discretion. In Fall 2009, the MTSU School of Nursing was charged to develop a plan integrating this content into the five-semester program. The initial step in development of that plan was a comprehensive assessment of: a) faculty understanding of the term *informatics*, b) what content was currently being taught, in which courses, and c) whether the content should be offered as a separate course, or integrated throughout multiple courses. A survey developed by a faculty expert in informatics was made available to faculty, including a series of questions about specific courses (didactic and clinical) related to *informatics*. Examples of informatics terminology (i.e. POC – point of care - glucometer testing) were provided as part of the survey. Results indicated that faculty did not understand some terminology even with examples, and may not have accurately identified current content. Follow-up meetings were held with faculty at each curricular level during which survey findings were shared and conflicting or confusing responses were clarified. A comprehensive plan for integrating competencies was developed for each nursing course that identifies specific learning outcomes, learning activities/skill development, content outline, and competency addressed. Regulatory, accrediting and professional standards from the American Nurses Association, Technology Informatics Guiding Education Reform, Quality & Safety Education for Nurses, and the National Council Licensure Examination Test Plan 2010 guided recommendations. In Fall 2010, informatics content was introduced in the first-semester courses of the nursing program with subsequent content building on previous knowledge.

F24

EXPLORATION OF PATTERN SCALE IN PLAY ENVIRONMENTS FOR PRE-SCHOOL CHILDREN

Janis Brickey (faculty)
Human Sciences Interior Design
jbrickey@mtsu.edu

Preschool children enrolled in daycare settings learn important skills during play activities. The role of the physical environment to enhance play activities was part of a series of research collaborations between interior design and child development nearly twenty years ago. The effects of spatial scale in play and task environments and changing the pattern scale in the near environment of children while they played were researched. Today's young child encounters more distractions and environmental influences from technology and expectations of early learning. Recently reduced attention span in children was linked to peripheral environment interference from television during play. Pattern and movement in the near environment are distractions in the development of more creative and sustained play episodes. Research on children's play and pattern scale was reviewed to see if significant findings could support contemporary research to investigate ways to enhance play opportunities during the critical preschool years of development.

F25

**MAPPING DEVELOPED LAND IN A 1,500 SQ. KM AREA AROUND MOBILE BAY,
ALABAMA**

Mark Abolins (faculty)
Geosciences
mabolins@mtsu.edu

Emily Anderson (undergraduate)
Geosciences

Elouise Lopez, Garrett Macdonald, Kristian, Olson, Shea Atkins, Lauren Camfield, Ben Fultz,
Sandra Niazi (undergraduates)
Geosciences

During late 2010 and early 2011, nine Tennessee Space Grant undergraduate researchers used late 2010 Landsat scenes and Census 2010 TIGER/Line road data to map land cover/land use (LCLU) in a 1,500 sq. km (580 sq. mile) area around Mobile Bay, Alabama. Their map includes watersheds along the entire eastern shore of the bay as well as the Fowl Creek watershed on the western shore. They also mapped an area centered on Mount Vernon, Alabama to the north of the bay. The undergraduate map depicts 5 to 9 LCLU classes (depending on the watershed), including developed, forest, and agricultural classes. In most areas, LCLU is based on unsupervised or supervised classification of Landsat data, although overall map quality is improved by including Census 2010 TIGER/Line roads and by employing various geospatial techniques (e.g., filtering). Undergraduates are evaluating the accuracy of their LCLU map at hundreds of random locations by examining 2009 air photos and by visiting sites on the ground during early March, 2011. After completing the accuracy assessment, the undergraduates will calculate the amount of urban growth between 2001 and the present within the mapped watersheds. They seek to compare actual growth with estimates made by researchers who used Census 2000 data and 2001 LCLU to predict growth.

F26*

ONLINE INTERACTIVE GRAPHICS: GOOD FRIDAY TORNADO AND FORTRESS ROSECRANS

Philip Loubere (faculty)
Journalism
ploubere@mtsu.edu

Floris Moriceau (undergraduate)
Journalism

In this presentation, two journalism projects completed in 2010 are featured. The first, *Good Friday Tornado*, was a 1-year retrospective of the tornado that struck Rutherford County in 2009. The graphic portion shows the path of the tornado and houses destroyed or damaged. This project was done in cooperation with students from a team-taught reporting class, who interviewed storm survivors and either wrote stories or made audio or SoundSlide files, which are embedded in the graphic. *The Daily News Journal* ran a special section on Sunday, April 9, in which they linked to the online graphic from their website, and used a print version of the graphic in their print edition, along with several of the students' interviews. Reporting, research, graphics and design were done by Professor Loubere, and the coding was done by one of his students, Floris Moriceau, a French exchange student in the spring of 2010. What is unique about the coding is that it is done entirely in open source code, meaning that it will run on any device including Apple iPhones, iPods and iPads, without the need of a Flash plug-in.

<http://www.mtsujournalism.org/tornado/>

On the DNJ site: <http://www.dnj.com/section/tornado>

The second project, Fortress Rosecrans, is a historical overview of the Civil War site in Murfreesboro. Graphics and design are by professor Loubere, and coding by Floris Moriceau; both did reporting and research. It also is done entirely in open source code. It was offered to the National Park Service, who linked to the graphic from their Stones River website.

<http://mtsujournalism.org/rosecrans>

National Park Service site: <http://www.nps.gov/stri/historyculture/foro.htm>

F27*

RENT: A BOHEMIAN EXPLORATION ON-STAGE.

Scott Boyd (faculty)
Speech and Theatre

Rent, a rock opera with music and lyrics by Jonathan Larson based on Giacomo Puccini's opera *La Bohème*, tells the story of a group of impoverished young artists and musicians struggling to survive and create in New York's Lower East Side in the thriving days of Bohemian Alphabet City, under the shadow of HIV/AIDS. This scenic design is the culmination of months of planning, research, collaboration, and creating with various students and faculty from the Speech and Theatre Department and the Recording Industry Program. The various elements of design (line, color, texture, scale, movement) are utilized in a harmonious arrangement allowing the audience to both see into the world of the late 1970's from a safe and protected distance as well as become immersed in it. The inspirational source for this artistic expression comes from Belgian Impressionist Alfred Émile Steven (1823-1906), primarily his paintings *The Bath* (1867) and *Moonlit Seascape* (1892).

F28*

BLOGGING ON EDUCATION: USING BLOGS TO ENCOURAGE DISCOURSE AND DIALOG IN GRADUATE COURSES

Dorothy Valcarcel Craig (faculty)
Educational Leadership

Barbara Young (faculty)
Educational Leadership

This poster will present findings from a qualitative study which examined the use of blogging among graduate students enrolled in several Masters' of Education and Education Specialist programs. The goal of the study was to determine if the use of the blog—one Web 2.0 tool—would encourage depth of reflection, discourse, and classroom application. The study was structured with a set of overarching research questions and involved a variety of data sets, which were collected throughout two academic semesters. Components of qualitative research reflected in the study included prolonged engagement, fieldwork, multiple forms of data, and grounded theory. Findings indicated that although most students had never interacted with blogs, the perceptions of blogging changed as the interactions increased –therefore promoting depth of reflective discourse as students became more comfortable with the process of blogging as a means of online journaling. The poster presentation will include artifacts and additional, detailed findings.

F29*

HERE COMES THE BRIDE- STUDENTS EXPLORE NON-TRADITIONAL LIGHTING DESIGN

Anne Willingham (faculty)
Speech and Theatre
awilling@mtsu.edu

The Spring 2010 Advanced Lighting class studied nontraditional forms of theatrical lighting. Among the projects was a large tent wedding. Students met with assigned faculty “clients” multiple times and presented their ideas for approval. Each student then generated a plot, renderings, gear list and budget. While all students used the same size tent and basic program parameters, faculty “brides and grooms” were allowed to create their own vision for the style of party. Themes ranged from a “Winter Wonderland” to “Lady Gaga meets the Disney Princesses”. This project was based on the professional experiences of the MTSU lighting faculty and closely mimicked a popular field of commercial lighting design. It allowed students the opportunity to experience "real life" client relations. For many it was their first experience creating client_based design. In post-project discussions, much mention was made of how different this experience had been from "normal" student centered work and how beneficial they felt it to be for career development. This presentation will highlight the project expectations and showcase the completed student work.

F30*

THE INTEGRATION OF FASHION AND CULTURE IN AN APPAREL DESIGN AND MERCHANDISING COURSE

Jasmin Kwon (faculty)
Human Sciences
kwon@mtsu.edu

Thomas Brinthaupt (faculty)
Psychology

Fashion is going global. Apparel manufacturing and retailing engage in global sourcing and in global marketing. These changes highlight the need to expose today's fashion students to the complexity of the global textile and apparel marketplace and the issues that exist in the profession they are preparing to enter. In this paper, we describe the development and evaluation of a cross-cultural fashion project for a Social Aspects of Clothing course. The Social Aspects of Clothing is a junior-level, 3-credit course that is required for apparel design and merchandising majors. The objectives of the course are: 1) to develop an understanding of the interdisciplinary nature of clothing and clothing-related research; and 2) to develop an understanding and appreciation of the cultural, social, psychological, aesthetics, physical, and economic influences which shape human behavior and consumption related to clothing. For the final project, students complete a cross-cultural fashion project. The purpose of the project is to understand the relationship between clothing and culture and develop an appreciation of culture. The project pairs U.S. students with international students. The project requires three reports which include general information about the partner's culture, consumer behavior, and fashion industry information on the partner's home country. Students submit their PowerPoint presentations summarizing their experiences using various visual sources for the final project. Students' evaluations of the project indicated that it broadened their perspectives on the global fashion industry, and was especially effective in moderating stereotyping and prejudice. A sample student comment was "This project has been a very enlightening experience and was very enjoyable to complete. From my perspective the information gained from this project will be help in future endeavors." Additional results, student feedback, and details about the structure and implementation of the cross-cultural fashion project will be presented.