

Nadia Ahmad – Economics and Political Science

East Asian Monetary Crisis and the Role of IMF

Mentor / Sponsor: Dr. David Eaton

This paper will examine the role of the IMF during the aftermath of the East Asian monetary crisis. The economic circumstances surrounding the crisis and the impact of the crisis on the East Asian countries will be discussed. The primary focus of the paper will be the methods used by the countries to overcome the crisis. In particular, the results of the use of capital controls by the Malaysian government will be compared with the results of those countries which followed the IMF prescription.

John Keith Ashcraft and Jeremy Heltsley – Occupational Safety and Health

Ergonomic Analysis of Habitat for Humanity Volunteer Tasks

Mentor / Sponsor: Dr. Tracey Wortham

This project focuses on the ergonomic hazards faced by volunteers for Habitat for Humanity. Information was gathered about individuals who participated (age, height, weight, and years of construction experience). Jobs were assessed for the following risk factors: posture, repetitive motion, force, contact stress and vibration. Data was collected through interviews, checklists, questionnaires/surveys, video camera, digital camera, goniometer, and dynamometer. Exposures to the risk factors were evaluated using ergonomic analytical tools including: ErgoWeb 2D Biomechanical Tool, NIOSH Lifting Equations, Liberty Mutual Psychophysical Methods, and Strain Index, Rapid Upper Limb Assessment (RULA), and TLV Handwork methods. Results and recommendations to reduce exposure to risk factors will be discussed and provided to Habitat for Humanity.

Drew Barnard – Psychology

Family Related Variables: The Role They Play in Humor Styles

Mentor / Sponsor: Dr. Alysia Ritter

Many factors such as the display of humor by caregivers, birth order, and number of children in a family, age, and gender affect the sense of humor. A sample of 96 students from Murray State University was tested in order to assess how these specific variables affect the particular styles of humor an individual possess. Affiliate, self-enhancing, aggressive, and self-defeating was the four humor styles assessed in this study. Simple correlations were used to evaluate the data collected. Significant correlations were found between female caregivers and affiliate and self-enhancing humor. Family size, birth order, and age were also found to be significantly correlated with the affiliate style of humor while gender was found to significantly correlate with the aggressive style of humor.

Justin Barr – Electronic Journalism

The Convergence of Broadcast Media and Agriculture

Mentor / Sponsor: Dr. John Dillon

Agriculture has been the driving force of many in the Commonwealth and the Jackson Purchase area for a number of years. However, changes in the landscape of the sector have forced many to wonder if there's a future in farming. On a related note, the issues that concern farmers aren't really addressed by the media on a local level. With that in mind, I present a television program for the agrarian community of the Jackson Purchase. Tentatively titled, Future Farm, the program will revolve around topics that vary from Tobacco production alternatives to technological advances in the farming industry. The program will air potentially on MSU-TV.

Candace Barrow – Spanish

The Perfect Confusion of Juan Rulfo's "Pedro Páramo"

Sponsor / Mentor: Dr. Michael Waag

Although Juan Rulfo's "Pedro Páramo" was initially criticized for its unusual structure, it is now considered a masterpiece and a major influence on subsequent Latin-American literature. Published in 1955, it is distinguished for its innovative style and intimate look into the rural village life of Mexico. The novel is an amazing example of magical realism, and it treats the fantastic and mystical as normal and usual in the daily lives of its characters. It tells the story of Juan Preciado, who goes to the town of Comala to search for his father and slowly realizes it is a ghost town, one that he eventually becomes a part of himself. Through listening to the stories and memories of the spirits who 'live' there, Juan and the reader seemingly learn together about the life of his father, Pedro Páramo, the cacique, or local boss of Comala. Told in confusing fragments of memories and conversations in the past and present, "Pedro Páramo" has been recognized not only for its unusual structure, but its social commentary on 'caciquismo', the failures of the Mexican Revolution and the importance of death in Mexican society.



Carla Black – Zoological Conservation*Environmental Website for Children***Mentor / Sponsor: Dr. Howard Whiteman**

The purpose of this project is to design an educational website for children, focusing on basic ecology and conservation. The site will include information on the major biomes and organisms within these biomes; issues concerning the environment and how children can participate; and interactive activities and games to add entertainment in learning. A sample of children from ages 8-15 will be shown the website and will be surveyed on their overall opinions of the website. They will be given a simple quiz over the information discussed in the site and an assessment will be made on how well the information is retained by the different age groups. After improvements are made to the website, the children will be surveyed and tested again.

Rachael Brown – Conservation Biology*Population Monitoring of Ambystomatid Salamanders***Mentor / Sponsor: Dr. Howard Whiteman**

Amphibian populations are known to dramatically fluctuate from year to year because of variation in fecundity and mortality is naturally high in these species. However, recent amphibian declines make understanding the differences between natural population fluctuations and true declines an important conservation goal. In this study, I will begin marking and recapturing several populations of ambystomatid salamanders as the beginning of a long-term mark and recapture effort. As a first step in this process, I am currently evaluating two new methods of marking amphibians. Visible Implant Alphanumeric (VIA) tags and Passive Integrated Transponder (PIT) tags will be implanted into male *Ambystoma maculatum* in the laboratory and observed for a period of time. Handling time, tag visibility/reading, tag retention, and overall health will be the key aspects of determining the effectiveness and practicality of these tagging techniques. I expect the outcome of this portion of my research to reveal that both methods are effective. The VIA tags may have better retention than the PIT tags due to their smaller size and flexibility. However, the PIT tags may have an advantage in easier readability due to the VIA tag's tendency to fold or be placed too deep. Hopefully, this study will reveal new, more effective options for tagging amphibians and allow further progress toward accurately monitoring amphibian populations.

Rachael Brown – Conservation Biology*Preserve Flippin's Run as a Hardwood Wetland Habitat Area***Mentor / Sponsor: Dr. Howard Whiteman**

Flippin's Run is a small tributary of the Ohio River located near Brandenburg, KY that winds through a bottomland hardwood forest, an extremely rare wetland habitat. Flippin's Run is critical to the ecology of Brandenburg and its intrinsic and instrumental values have long been taken for granted. It is home to a wide variety of wildlife, and is an important flood control area. Without this hardwood wetland, the city of Brandenburg would face greater property damage due to flooding. Flippin's Run also plays a part in improving water quality for the city by slowly filtering water through its soil. Because Flippin's Run is so important for the species that inhabit Brandenburg and the surrounding areas, I am attempting to have the area set aside as a protected hardwood wetland habitat area. I will be approaching the Brandenburg City Council, the owner of the land, with my proposal. I will present to them information on hardwood wetlands as well the specific intrinsic and instrumental values of Flippin's Run to the city of Brandenburg. I am hopeful that the city will establish this land as protected hardwood wetland habitat since there are no immediate plans for development. Yet, I am prepared to conduct surveys or start a petition if there is any opposition. The ultimate goal of this proposal is to prevent future development of this important habitat.

Travis Brown – Biology*Searching for Cougars (*Puma concolor*) in Hickman County***Mentor / Sponsors: Dr. Terry Derting and Dr. Howard Whiteman**

Populations of many large mammals have rebounded after being decimated by habitat destruction and over-hunting in the 1800-1900's. Cougars (*Puma concolor*) are an example of such a rebound. These large cats, which once had the most extensive range of any North American felid, were eliminated from almost all of the eastern United States by the early 1900's. There is evidence, however, that wild populations of cougars have returned to areas such as northern New England and the Ozarks of Arkansas and Missouri. Also, credible sightings of cougars have surfaced in several mid-western states, and an apparently wild cougar was killed by a train in southern Illinois in July 2000. If these large cats were to reappear in the Eastern United States, there would be a broad range of ecological and social consequences, and it is therefore imperative that the status of cougar recovery in the east is monitored. Recent sightings of cougars in Hickman County (Western Kentucky) suggest that wild cats may be moving into the Jackson Purchase just as they have moved into adjacent states. I will use motion-sensitive cameras and track/scat surveys located at various places in Hickman County to explore the possibility of such an occurrence.

Lauren Buckner, Susan Davidson, and Amber Hayes – Dietetics

Effect of Behavioral Interventions on a First-Time Mother's Decision to Breastfeed

Mentor / Sponsor: Dr. C. Jeffrey Frame

Research shows that young mothers with lower levels of formal education demonstrate the lowest rates of breastfeeding. Infants of these young mothers are shown to be at higher risk for nutritional deficiencies. Although the benefits of breastfeeding are widely known, the factors which most influence a young mother's decision to breastfeed are yet to be determined. The purpose of this study was to measure the impact of various factors that influence a young mother's decision to breastfeed. Participants (n=30) were selected from referrals from the Health Access Nurturing Development Services (HANDS) program of the Purchase District Health Department, Mayfield, KY. Results showed that the greatest influence to breastfeed on young mothers (≤ 20 years) were personal intervention by friends and family members, whereas written materials had the greatest influence on older mothers (21-30 years).

William Carr – Economics

The trend towards shifting healthcare costs to the uninsured

Mentor / Sponsor: Dr. David Eaton

Those without health insurance in the United States are being charged more for the same services than what Medicare, Medicaid, and health insurance companies, are charged. Medicare and Medicaid can somewhat determine what prices they are willing to pay physicians for their services. Health insurance companies are able to negotiate with physicians the prices they pay for their services. The purpose of this paper is to examine the reasons those without insurance are charged and expected to pay more than those with health insurance for the same services.

Mary Kathryn Cash – Organizational Communication and April Steenbergen – Business Administration

The Business of Science

Mentor / Sponsor: Dr. Howard Whiteman

Science and business are two areas that aren't usually thought about in the same context, but they actually have a lot to do with each other. Many businesses and corporations put millions of dollars into scientific research for various reasons. Some do it for the advancement of their products, to create new products, public relations purposes, or for good corporate citizenship. This presentation will look at specific businesses and why and how they contribute to scientific advancement. Conversely, we will also look at how businesses can place barriers in the way of scientific advancement and the ethical problems that can occur when science and business collide.

Jessica Cherry, Candice Gray, Pan Green, and Lorrie Terry – Dietetics

Correlation Between Job Responsibilities and Job Satisfaction of Clinical Dietitians

Mentor / Sponsor: Dr. C. Jeffrey Frame

Maintaining a high level of job satisfaction among employees remains a constant challenge for management professionals. Job satisfaction is particularly important in dietetics because employee satisfaction directly affects patient satisfaction. We conducted a pilot study to measure the correlation between job responsibilities and job satisfaction among clinical dietitians. We hypothesized that job satisfaction is higher with increased patient interaction and involvement in more challenging cases. Clinical dietitians were surveyed to record time spent on daily tasks for five days. While we had a poor participant response rate and were unable to establish statistical significance, we were able to identify relationships between higher levels of job satisfaction and work tasks involving patient interaction. This pilot investigation can be used to assist management professionals in raising the level of job satisfaction among their clinical staff.

Linzie Coke, Rachel Jones, Haley Lynn, Janitha Robinson, and Courtney Thomason

Toy Tracks: The Technological Evolution of Entertainment Modules

Mentor / Sponsor: Dr. Howard Whiteman

Our project will focus on the technological evolution of toys. We will begin with a brief background introducing the general production of toys, then focus on the complexities of different categories. Each group member will discuss the cosmetic and mechanical changes for certain products. Some of the proposed topic areas include but are not limited to: dolls, board games, video games, and sports equipment. We intend to discuss the science behind the development of many of these toys throughout history, such as the progression from wooden to plastic toys with the discovery of plastics and the computer chip's connection to the marked improvement in "intelligent" toys. Our group will explore the varied uses of modern toys in methods other than entertainment. We also plan to investigate the development of current electronic entertainment phenomena such as iPods® and Palm Pilots®, which are marketed towards adults. We will conclude our presentation with speculation about the future progression of toy making and its possible effects on society.

Yavonne Colwell, Elena Krieger, Megan Gibson, Crystal Hanen, and Bianca McNeas – Psychology

Do I need a CAT Scan?

Mentor / Sponsor: Dr. Howard Whiteman

Understanding the mind is a difficult task, especially when it cannot be seen during the processing of information. The current knowledge psychologist have regarding brain function is, in large part, due to the creation and application of many technological scanning devices including the MRI, PET, and CAT scans. Today these devices are seen as a necessity in the medical field for diagnosis and understanding of disease, injury and the basic function of the brain, but these instruments were not always available. Psychology has been substantiated as a science with the use of the MRI, PET and CAT scan. Psychological theories and understanding of mental disorders have also been greatly increased by the application of these technologies. In order to understand the importance, justification, and necessity of psychological study today the synthesis, current uses, and future prospects of technology must be understood.

Landon Depue and Lauren Ashley Robbins – Occupational Safety and Health

Murray State University Seatbelt Survey

Mentor / Sponsor: Dr. David L. Fender

On October 26 and 27, 2004, at nine locations on the campus of Murray State University, observations were made regarding seatbelt use by vehicle occupants. There were a total of 1477 observations including 1,348 drivers and 129 front seat passengers. Results of the survey indicated that 50.2% of the drivers and 43.4% of the front seat passengers were restrained. Other results indicated that females were more likely to be restrained than males, faculty and staff were more likely to be restrained than students, and passengers are more likely to be restrained if the driver was wearing a seatbelt. Overall seatbelt use was significantly lower than Kentucky and national usage rates

Melissa Diette – Psychology

Psychological Conditions and Abuse that College Students Must be Armed to Fight.

Mentor / Sponsor: Dr. Mam Yassin-Sarr

My research paper deals with the experiences students might have throughout their college years. Eating disorders, depression, anxiety and rape are some of the subjects that I will discuss. I will examine how these experiences effect there academic goals, and their goals in life in general. I will discuss the steps you can take to address these problems.

Barbara (Bobbi) Dolchan - Spanish / Pre-Veterinary

Medicine The Development and Cultural Adaptation of Bulls and Bullfighting Professor Trinchet

Sponsor / Mentor: Dr. Meg Brown

When people think of Spain, most often they associate the entire country with bullfighting. While Spain may use the bull as its symbol, Spain is not entirely about Bullfighting, nor are the countries that have strong Spanish and Portuguese influence. Spain is a very modern country that has strong ties to its more traditional past, i.e. fiestas, religion, and bulls. Bullfighting has an interesting and unique history that is often misunderstood. There are several variations of it around the world, all involving a bull and man. This paper provides an explanation of a few of the variations, including the parts of, and development of the art of Bullfighting. It will discuss a few subjects involved with bullfighting, such as the breeding and selection of the bulls, and the breeding of the horses used. It will also discuss the potential of these variations in the future.

Jacqueline M. Doyle – Biology

Sampling Hyla Populations at Murphy's Pond Using PVC Pipe Traps

Mentor / Sponsor: Dr. Howard Whiteman

Due to habitat destruction and pollution, worldwide amphibian declines have been occurring. This is of primary concern because amphibians may serve as initial indicators of serious environmental change. It is therefore necessary to determine population size and species abundance so that changes can be monitored. Life history information is likewise necessary in order to adequately conserve and protect amphibian species. Twenty transects containing five PVC pipe traps each were placed at Murphy's Pond in Hickman County, KY, in an effort to sample tree frog populations and gather life history information on the different species. Mark and recapture methods were used in order to detect population dispersal patterns with season. Initial data collection has shown that *Hyla avivoca* and *Hyla chrysoscelis* are present, but not necessarily *Hyla cinerea*, another native species. Population trends will be discussed.

Jacqueline M. Doyle – Biology

Paedomorphosis in Ambystoma talpoideum: Effects of Initial Body Size Variation and Density.

Mentor / Sponsor: Dr. Howard Whiteman

Environmentally-cued polymorphisms are useful models for understanding the evolutionary ecology of phenotypic plasticity. One such polyphenism is facultative paedomorphosis, in which individuals either metamorphose into a terrestrial, metamorphic adult or retain a larval morphology to become a sexually mature paedomorphic adult. It is hypothesized that density and initial body size variation within populations are instrumental in cueing metamorphosis or paedomorphosis in salamanders, yet few studies have adequately addressed these questions using long-term experiments. Beginning in the spring of 2004, 36 experimental ponds were used to manipulate three body size variation levels (low, medium, high) and two density levels (low, high) of salamander larvae. Larvae were individually marked using visible implant elastomers, and collected every two weeks in order to measure snout-vent length and mass. Nightly sampling was used to collect new metamorphs as they appeared. Initial analysis revealed significant effects of density, size variation and morph on body size of individuals. Individuals that metamorphosed were significantly larger as larvae than those becoming paedomorphic across all treatments. These results lend support to the Best-of-a-Bad-Lot hypothesis, which proposes that the largest larvae metamorphose in order to escape unfavorable aquatic habitats. Paedomorphic individuals are those unable to obtain the critical size for metamorphosis, so that the advantages of sexual maturity at a smaller size outweigh delaying reproduction to attain larger size and subsequent metamorphosis. Further analysis should provide insight into the proximate and ultimate factors affecting this polymorphism.

Kelly Jo Drane – Organizational Communication

What is the Relationship Among Sycophantic Behavior, Supervisor-subordinate Communication, Co-worker Relationships, and Trust?

Sponsor / Mentors: Dr. Lou Davidson Tillson and Dr. Edward Brewer

The purpose of this study is to discuss the relationship among sycophantic behavior, supervisor-subordinate communication, co-worker relationships, and trust. The variables are tied together with the Leader-Member Exchange Theory and Machiavellianism. By reviewing the literature, and in light of the two theories, a tentative conclusion is drawn: that subtle sycophantic behavior does have a positive influence on supervisor-subordinate communication and co-worker relationships, providing trust in maintained.

Candi Duffer – Liberal Arts and Sociology

Repatriation: The Art Conflict of Germany and Russia

Mentor / Sponsor: Dr. Ted Brown

Repatriation is the returning of objects, art and other materials, to their country of origin. During and after World War II an exceptional amount of art was stolen or "misplaced" by both nazis and Russians. After fifty years of hiding the looted art, Russia presented some of the art in an exhibition, bringing astonishment to the art world; who thought it had been lost forever. This research is primarily to understand how repatriation came about and how it is affecting such countries as Russia in these situations. Currently Germany wants the stolen arts returned, while Russia insists that the artworks are to replace their own art and culture that was ruined and destroyed by Germany and the Nazi army. International policies and specific cases will be examined to fully understand the meaning and consequences involved with repatriation of art works between Russia and Germany.

Adrienne Dumke and Sarah Powell – Public Relations

Claudia Dishon – Fine Art

Janet Robb – Journalism

Jackelyn Vargas – Spanish

Wafa Shaheen – English

Preston (Trey) Pearson – Sociology

Class Equality: What Is In It For Me?

Mentor / Sponsor: Dr. Mam-Yassin Sarr

The extent of poverty in this country, as well as in others, is extreme. The underclass is struggling to be accepted and even just survive in a country where everyone is supposed to be equal. Our group, from Mam-Yassin Sarr's MCG 201 class, recognizes the effect that poverty has on the United States and us, as individuals. Our poster presentation will demonstrate the effects of poverty and why everyone, both the poor and the wealthy, should help minimize poverty. We will do this by showing stereotypes of different classes, presenting the myths vs. reality of poverty, asking thought-provoking questions, and examining solutions to poverty. The main goal of our presentation and involvement in Scholar's Week is to use facts, statistics, and reality to show people that equality of classes and diminishing the stereotypes of classes is beneficial to everyone.

Kimberly Dunlap and Anna Brown – Chemistry

Mathew Williamson – Water Science

Preliminary Studies on Atrazine Levels in Selected Ponds from Westernmost Kentucky

Mentor / Sponsor: Dr. Bommanna G. Loganathan

Atrazine (2-chloro-4-ethylamino-6-isopropylamino-1,3,5-triazine) is the main herbicide used in Kentucky (approximately 1 million pounds annually), primarily on corn crops. Widespread use of atrazine causes environmental contamination. Exposure to atrazine causes endocrine disruption leading to harmful health effects in aquatic organisms, including reproductive toxicity and immunotoxicity. However, very little is known on the levels of atrazine contamination in regional ponds and the amphibians inhabiting the ponds. The objective of this study is to determine the levels of atrazine compounds present in water, sediment, and amphibian tissues and explain the distribution, environmental transformation and fate of atrazine in ponds in Western Kentucky. Ten sampling sites were selected including: Terrapin ditch, Terrapin Creek, CLBL, Golden Pond (LBL), Elk and Bison pond, LBL-142, Starcamp, LBL Power line pond, LBL-Cedar Skunk and Grand Rivers pond and were sampled for water, sediment and amphibians (frogs and salamanders). Atrazine analyses were done using RaPID Assay Atrazine Test Kit. Results reveal that triazine concentrations in water samples ranged from below detection limit to 0.40 ppb. All of the sediment samples from the ponds showed the concentrations below the detection limit. Tissue sample analysis is in progress.

Julia Earl – Water Science

Fluctuating Asymmetry in Trophy Deer Antlers in Relation to Pollution Levels

Mentor / Sponsor: Dr. Howard Whiteman

Fluctuating asymmetry is an indicator of developmental instability that measures the deviations from perfect bilateral symmetry. It has been correlated with various environmental stresses, such as high levels of pollution. This study investigates the possible relationship between high water and air pollution levels and the fluctuating asymmetry of trophy Whitetail Deer (*Odocoileus virginianus*) antlers, using data from the Boone and Crockett Club trophy database. The study looks at pollution levels in a spatial, as well as temporal, analysis to see how antler asymmetry changes over time and space in relation to pollution. This study is important, as it will determine the effectiveness of using antler asymmetry as a measure of environmental stress on deer. Additionally, data on Whitetail Deer could be extrapolated to other more sensitive members of the deer family.

Jamus Edwards - Organizational Communication

What Is the Relationship Between Organizational Change, Conflict Management, and Transformational Leadership?

Sponsor / Mentors: Dr. Lou Davidson Tillson and Dr. Edward Brewer

This study examines the unique and intricate relationship that exists among organizational change, conflict management, and transformational leadership. Each of the three variables are independently analyzed and ultimately condensed into a significant research finding utilizing both the Communication Accommodation Theory and the Institutional Theory. Essentially, it was found that when any of these three variables are present in an organization, the other two are likely to offer eventual complement. This was proven to be the case not only in the secular organization, but in the local church, as well.

Adam Elias – Sociology

An Ethnolinguistic Analysis of Gaelic Scotland

Mentor / Sponsor: Dr. Sheryl Lidzy

There is much more to Scotland than battles and bagpipes. Two months as a nomadic backpacker offered me an intimate glimpse into the heart of the Highland people that often lies buried beneath media-influenced stereotypes. Even more profound, however, was what I learned of the life of the Gaelic speakers—those who cling to the dying Celtic language of their foregatherers and their clans, fighting a never-ending uphill battle against English encroachment that threatens not only their language, but a way of life that has flourished for centuries. Living among the Scottish Gaelic speakers in the Western Highlands and Islands as an ethnographic researcher revealed the role of a language in a minority people group, as well as the prominent institutions within that group that play a vital role in preserving the language and, in turn, the very culture itself.

Adam Elias – Sociology*Language, Power, and the Struggle for Identity Among Minority Groups***Mentor / Sponsor: Dr. Lillian Daughaday**

Throughout history, the struggle for power and identity has consistently resulted in the dominance of one group and the oppression of another. Though commonly observed in the context of ethnicity, religion, and politics, a struggle no less epic exists in the realm of language. Language has often played a key role in the establishing and maintenance of identities among minority groups. Yet not only is it a fundamental component of a minority group's identity, but language is a primary source of conflict and power struggles as well. The maintenance of such an identity often involves overcoming oppression at the hands of the majority group, usually for the very survival of the group's identity. This analysis examines the role of language as a basis for power and identity struggles among linguistic minority groups. The specific situations of Welsh and Scottish Gaelic-speakers in Great Britain are explored in the context of the analysis. Both historical and modern sociological perspectives are considered.

Andrea English - Spanish*Female Archetypes in "Los De Abajo", "Pedro Páramo" and "La Muerte de Artemio Cruz"***Sponsor / Mentor: Dr. Michael Waag**

Mother. Lover. Virgin. Seductress. Soldier. These are the female literary archetypes in the Mexican novels "Los de Abajo," "Pedro Paramo," and "La Muerte de Artemio Cruz." What is a literary archetype? An archetype is an original pattern. It is an idea or model that is copied. Archetypes in literature are created from the historical, political and social forces of a culture. In Mexican literature, feminine archetypes are influenced by the patriarchal ideology of Mexico. The females in "Los de Abajo," "Pedro Paramo," and "La Muerte de Artemio Cruz," are mainly in supporting roles as wives, mothers, and lovers. From Camila and La Pintada in "Los de Abajo," Susana and Dorotea in "Pedro Paramo," and Regina and Catalina in "La Muerte de Artemio Cruz," we find the perfect examples of mothers, lovers, virgins and soldiers. Why is the study of these archetypes important? Literature reflects culture. When we learn about archetypes, we learn how these images influence our reality and our behavior. Through this exposure, we can learn not to restrict male or female roles in literature or in life.

Sara E. Klaus Estorer – Biology*Gravel Bar Hyporheic Nitrification Rates in Agricultural and Forested Streams***Mentor / Sponsor: Dr. Susan Hnedricks**

Agriculturally impacted and unimpacted forested streams were studied to determine if the increased concentration of some nutrients in the impacted stream would produce significantly different nitrification rates within each stream and between the streams. The streams, in southwestern Kentucky and northwestern Tennessee, were sampled 4 times during the spring and summer of 2002. PVC hyporheic sediment chambers were installed in the gravel bars of both streams and allowed to colonize before sediment samples were taken and combined with unfiltered stream water from each stream. Nitrapyrin in dimethyl sulfoxide (DMSO) was used to inhibit nitrification in the experimental flasks, and chemical amendments [ammonium (NH_4^+), nitrate (NO_3^-), glucose, and NH_4^+ glucose] were added to the experimental flasks to mimic nutrient loading. There were no significant differences in the nitrification rates between the agriculturally impacted and unimpacted forested streams. When samples from the unimpacted forested stream were amended with NH_4^+ they produced significantly higher nitrification rates than the other samples from within that stream (control $p=0.005$, NO_3^- $p=0.005$, glucose $p=0.004$). The results could not conclusively show that the agricultural activity in the impacted stream basin influenced the nitrification rates within the stream. It is possible that the nutrient concentrations in the streams were too low to produce higher nitrification rates. It is also possible that the nitrifying bacteria in the streams were not present in large quantities.

Amanda Felber, Jon Balridge, Matt Elliott, and Ashley Tucker – Psychology*Depression on University Campuses***Mentor / Sponsor: Dr. Mam-Yassin Sarr**

We have studied the presence of depression on university campuses such as Murray State University. We have looked at the various causes of depression, statistics on depression, effects of the disorder, and theories of psychology and how they explain depression. After conducting this research, a viable plan was developed to help solve the problem of depression on college campuses.

Jennifer Franklin – Economics*Natural Disaster Relief and Public Policy***Mentor / Sponsor: Dr. David Eaton**

This paper will examine the impact of Federal disaster relief programs. In particular, it will examine the extent to which Federal disaster payments encourage people to live and rebuild in disaster prone areas. This paper will also examine the impact of Federal disaster programs on local property taxes and insurance rates in areas that have received disaster assistance.

Laura Gabel – Psychology*Domestic Violence in Spain Post Franco***Mentor / Sponsors: Dr. Leon Bodevin and Dr. Mark Malinauskas**

The position of women during the government of Francisco Franco was quite controversial. Many of the rights of women were denied and wife-beating was technically allowed. When the democratic government came back into power, many rights of women were reinstated. However, domestic violence is still a very controversial issue in Spain. Although the legislation to combat domestic violence has improved drastically, many argue that the mentality of the people concerning domestic violence has not caught up with the current times. This paper will explore the position women possessed in Franco's time concerning domestic violence and also the position they are currently in concerning the same issue.

Susan Garnett – Wildlife Conservation Biology*Scouting Out Conservation***Mentor / Sponsor: Dr. Howard Whiteman**

"Scouting out Conservation" is a service learning project that was designed to provide conservation education to teenage girls through the medium of Girl Scouts of America. It provided members of the Bear Creek Service Unit (Murray-Calloway County, KY) the opportunity to complete the "Eco-Action" patch workshop. The workshop was held in early April, and consisted of seven specific activities regarding conservation that each girl had to complete to earn the patch. These activities ranged from learning about recycling and alternative energy to actively participating in the clean-up of a local stream. Each girl was given a pre and post test to determine her knowledge base of conservation before and after the project, and to assess the degree of change in that knowledge base because of the project. Results of this assessment will be discussed.

Eric Gilliland – Earth Science*Mapping Flood Boundaries Using Landsat TM and DEM Data***Mentor / Sponsor: Dr. Burl Naugle**

It can be difficult to discern water boundaries, especially during flood events, using imagery alone. By observing reflectance of water using Landsat TM images before and during flood events and incorporating DEM's an accurate flood assessment can be made. DEM's make it possible to estimate the extent of flood water that is hidden by forest cover. The use of Landsat TM bands 4 and 7 prove most useful in discriminating water pixels from asphalt and other pixel values. The extent of flooding will be explored using these methods.

Corbie Gómez - Spanish/Organizational Communication*A Comparison of the Film, Viva Zapata, and the Novel, Los de Abajo***Sponsor / Mentor: Dr. Michael Waag**

Emiliano Zapata is one of the great heroes of the Mexican Revolution that has been remembered throughout time. There have been many books and movies made about both Emiliano Zapata and the Mexican Revolution. This paper will look at the movie entitled Viva Zapata and compare it to a fictional novel entitled Los de Abajo. The paper will explore the possibility that this influential film has sections of it based on the fictional novel. This paper will examine the similarities between the film and the novel and discuss the concept that this film, which has shaped the public's perception of the Mexican Revolution, may have been strongly based on a fictional interpretation of the history of the Mexican Revolution.

Anthony Graves – Biology*The Effects of Light Exposure on Immunity in Wax Moth Caterpillars***Mentor / Sponsor: Dr. Claire Fuller**

The environmental in which an animal lives may affect their immune systems, and these effects can have far-reaching consequences. For example, animals living in poor quality habitats may have reduced immunity, presumably due to stress, and be more susceptible to disease. We are examining the impact of one environmental factor, light level, on the immune system of wax moth (*Galleria mellonella*) caterpillars. Caterpillars were reared in 24 hours light exposure or 24 hours dark exposure. Because wax moth caterpillars live inside beehives, we predicted that animals reared in a dark environment would be less stressed and have greater immunity. We examined two measures of immunity: levels of phenoloxidase (PO) – an enzyme important in invertebrate immune systems, and overall protein levels. Both of these parameters were measured in hemolymph (blood). We also measured animal size (head width and total length). We found that, per unit of hemolymph, both PO activity and protein levels increased with animal size. In addition, animals reared in light were significantly smaller, pupated earlier, and weighed less as newly emerged moths than animals reared in dark environments. These findings suggest that animals reared in light had reduced immunity compared to animals reared in more natural (i.e., higher quality) environments.

Roger Greer – Geosciences*Vegetation Classification of Land Between the Lakes NRA with Hyperspectral Imagery***Mentor / Sponsor: Dr. Burl Naugle**

The purpose of this project is to determine the best method of pre-classification image enhancement of AVIRIS hyperspectral imagery for vegetation classification at Land between the Lakes National Recreation Area. This enhancement will consist of the selection of the most appropriate bands or linear band combinations for vegetation classification. Hyperspectral sensors typically collect hundreds of narrow wavelength, contiguous bands. Previous methods for classification of remotely sensed images work relatively well for images consisting of ten or fewer bands. This project will attempt to explore newly available techniques for classifying imagery with a large number of bands.

Justin Grooms, Mike Voyles, and Krissa Dudley – Occupational Safety and Health*PSI Ergonomic Analysis***Mentor / Sponsor: Dr. Tracey Wortham**

My team members and I will be conducting an ergonomic case study that will investigate ergonomic problems associated with incorrect postures, inappropriate work environments, strenuous workloads, etc. The study is being conducted at PSI in Calvert City, KY. PSI is a structural steel fabrication facility located in the industrial park of Calvert City. We will analyze metal fabrication processes from a material-handling standpoint. Our primary interest will be to reduce the chances of workers developing repetitive motion type injuries. Although our primary focus is on these types of injuries, we are not overlooking things such as awkward postures, cumulative trauma disorders, and other ergonomic related injuries. My team has completed an action plan and will be using this tool as we go through our observation process. The plan is devised in a way that will help us to evaluate the job(s) more efficiently. Tools we will be using include, but are not limited to, a digital camera, video camcorder, goniometer, protractor, tape measure, and calculator. Analytical tools we will be using include, but are not limited to, the NIOSH Lifting Equation, Rapid Upper Limb Assessment, Strain Index, and the 2D Biomechanical tool for lifting, pushing, and pulling tasks. Workers will also be interviewed as part of the analysis process. After our observation, we will use these analytical tools to identify potential problems. Once these problems have been identified we will be able to suggest changes to the task or activity that will decrease the risk of injury.

Maggie Grosser – Wildlife Biology*Measuring the Diversity in the Methanogenic Community of Kentucky Lake with Fingerprinting Techniques***Mentor / Sponsor: Dr. Timothy Johnston**

The littoral zone of Ledbetter Bay in Kentucky Lake provides an increased environment for microbial diversity because of the water level fluctuations and varied nutrient input throughout the year. Differing water levels offer a variety of habitats and niches for the bacteria to occupy. Because the littoral zone is not an extreme environment, it is expected that the only Archaeal organisms found will be methanogens. Previous research at our study site has suggested succession within the methanogenic community of Ledbetter Bay. Sediment samples from Ledbetter Bay were collected once a month from the five sites within the littoral zone and two control sites, one that is always submerged and one that is always dry. DNA was extracted from each sample and amplified with Archaeal primers. The DNA was then purified, cut into fragments with restriction enzymes and run on electrophoresis gradient gels to produce DNA fingerprints. Bands from each month were compared, and it was determined that there is succession occurring in the methanogenic community throughout the year. Presently, we are subjecting our data to a statistical analysis and comparing the fingerprints to the nucleotide sequences of methanogens isolated from this environment.

Maggie Grosser – Wildlife Biology

Conserving Biodiversity Through Public Awareness: A Brochure for Clarks River National Wildlife Refuge

Mentor / Sponsor: Dr. Howard Whiteman

Clarks River National Wildlife Refuge (CRNWR) is a tract of land currently consisting of 8,500 acres located in Marshall, McCracken and Graves counties in Western Kentucky. It is composed mainly of bottomland hardwood forests, an incredible asset that is fast declining in today's world. The refuge was established to provide habitat for the natural diversity of wildlife associated with the Clarks River floodplain, including migratory waterfowl and neotropical songbirds. Because of the recent establishment of the CRNWR, a general brochure is not available for the public to learn more about the establishment, purpose and rules and regulations of the refuge. In conjunction with officials from the United States Fish and Wildlife Service, I have designed a general brochure to inform the public about the history, purpose, wildlife, management, and rules and regulations of CNWR. Conserving biodiversity begins with public awareness, and this brochure is an important step in showing the general public what resources we need to protect.

Brandon Hale – Mathematics & Biology

An Introduction to Population Ecology Using Maplets

Mentor / Sponsor: Dr. Maeve L. McCarthy

The ability to predict the population size of a group of individuals is extremely useful to the study of ecology. It allows for the estimation of the various effects imposed upon a group by intraspecific as well as interspecific forces. The basic population models (Logistic and Explosion\Extinction) and the various forms of the Lotka-Volterra Predator-Prey Model will be presented using programs written during the Fall 2004 semester.

Brandon Hale – Mathematics & Biology

Experimental Test of the Depletion of Resources Model

Mentor / Sponsors: Dr. Tim Johnston, Dr. David Roach, and Dr. Howard Whiteman

During the past year, a program was developed by Brian Hale, Lance Harris, and me that modeled the population growth of an E. coli culture based on a limited amount of glucose. Since then, I have continued to work with Dr. Roach to refine the model and program. Now, with assistance from Dr. Johnston, data from an experiment designed to test the model will be presented.

Chadrick Hall and Whitney Shirley – School of Agriculture

Evaluation of Dark Fire-Cured Experimental Tobacco Varieties

Dr. Pat Williams, Murray State University

University of Kentucky Collaborators: Dr. Robert Miller, Robert A. Hill, and Tim Lax

Murray State University annually grows five acres of dark fire-cured tobacco for research test plots. Research results enable dark-fired tobacco producers to select the best varieties of tobacco to grow in their operation. Replicated trials were conducted to compare the advantages and disadvantages of experimental dark-fired tobacco varieties during the 2004 season. The layout of the test plots was a randomized complete block design with four replications. Each plot measured 40' x 75', with plants set at a spacing equivalent to 4,900 plants per acre. The amount of fertilizer applied to the plots was 300 lbs N, 30 lbs P₂O₅, and 80 lbs of K₂O per acre. Two emergent herbicides were used during the growing season. Prowl was applied at a rate of 41.6 oz/acre and Spartan (liquid form) at a rate of 12 oz/acre. The plots were transplanted into the field on June 9th. In early August the plants were detopped. Butralin and a fatty alcohol mix was applied for control of sucker growth. The plants were harvested and housed in the MSU tobacco barn in mid-September. This was followed by the traditional curing method known as firing. Statistical analysis was conducted to determine differences between the varieties. Significant differences were found between experimental and commercial varieties and leaf weights. No significant differences were seen in weights of lugs or seconds.

Rebecca Hardin – Psychology

Did You Just See That?

Mentor / Sponsor: Dr. Paula Waddill

Facial recognition has been investigated by numerous researchers for very good reason. Recognition of faces has many applications, one of the most important being eyewitness testimony where the accuracy of the eyewitness is essential. Previous studies have examined levels of processing, different recognition test formats, and full vs. divided attention at encoding. The present study sought to determine if any interactions exist between these variables that would affect facial accuracy. It also tested the hypotheses that people will have better accuracy during a deeper level of processing, a full-attention condition at encoding, and when using a sequential (one at a time) recognition test as opposed to a simultaneous (6 at a time) test.

Jill Harrington, Tara Pool, Morgan McCall, Jessica James, and Jill Pierce – Psychology

Psychological Conditions and Abuse That College Students Must Be Aware Of.

Mentor / Sponsor: Dr. Mam-Yassin Sarr

Our presentation will be focused on the effects of depression and anxiety on college students. We will come up with an idea for a group of peer educators that can teach ways to effectively deal with the results of depression and anxiety. We will be presenting posters that will display these helpful tactics for students to overcome or handle their depression and anxiety. Some of the tactics that will be covered: test anxiety by using note cards with group study sessions, overwhelming anxiety of classes and failing by keeping in contact with advisors and teachers, and separation anxiety by setting up scheduled calling or emailing along with care packages to let each other know what is going on in the other's life. Other tactics for depression will deal with alcoholism and having the buddy system so that it is limited to being in that situation, and that the situation is under control. This will apply to other addictions that are developed through depression. Also, we will discuss the management of the depression by developing a close relationship with someone, so that it is not too overwhelming. Time management will also help limit the depression by letting the individual know that they have more control over their life than they actually feel.

Susan M. Hatcher – Accounting

The Transformation of Cost Accounting: The Merging of Two Worlds

Mentor / Sponsors: Dr. Margie Boldt and Dr. Mark Malinauskas

A new form of cost management system is emerging in the managerial accounting industry. Resource consumption accounting is a comprehensive management system that combines German cost management principles with activity-based costing. Traditional systems typically provide distorted cost data and do not produce the detail that is available through the use of resource consumption accounting. This new system integrates both resource and activity analyses to capture information in order to more accurately determine costs and achieve proper valuations. By using more accurate cost drivers, resource consumption accounting produces more detailed and useful information than traditional cost methods. This allows changes in the business environment to be reflected in the cost model in a timely manner, which ultimately leads to quality information for business management resulting in optimal decision-making. In this presentation, I will first provide a broader understanding of the basic concepts and underlying principles of activity-based costing and resource consumption accounting. I will consider the advantages and disadvantages of the German costing method and activity based costing. Next, I will examine how these are combined into the concept of resource consumption accounting and how this cost management system is able to provide more accurate information for business management enabling them to make more informed decisions to fulfill company strategies. Finally, I will discuss why this cost management system is so effective and the benefits companies could reap from introducing it into their organization.

Jason Hinson – Political Science

Laurie LeCompte – Mathematics

Adam Moore – International Affairs

Voting Technologies and Their Inherent Fallibilities

Mentor / Sponsor: Dr. Howard Whiteman

Over the past five years, we have witnessed more election fiascos than probably all of our ancestors combined. The presidential election of 2000 has caused many Americans be suspect of our electoral process, questioning how the votes were being counted and, eventually, recounted. The 2000 election is not the only election in recent years with controversy. Many Americans feared that there would be similar problems with the 2004 election. The United States is not alone. In the recent elections held in Iraq, tens of thousands of ballots were declared invalid for fear of tampering or having been delivered too late. In this study, we seek to uncover the reasons why the act of voting and tabulating of results have become controversial and fallible in the eyes of many citizens. We will look at questions like, "what voting technological advancements have taken place, what advancements need to take place, and what is the goal we are striving for?"

Scott Holbrook – Physics*Bounding the Zeros of a Polynomial***Mentor / Sponsor: Dr. John Porter**

Polynomials are some of the most common and basic functions in mathematics. They have applications extending into nearly every field imaginable: calculating interest rates in economics, standard distribution and deviation in statistics, population and growth curves in biology, and forces, velocities, accelerations in physics applications, to name a few. The most important information that can be obtained from polynomial functions occurs at the zeros of the function, that is, those numbers z such that $f(z)=0$. It is well known that no such formula exists for finding zeros of polynomials degree five or higher. For this reason there has been much research on approximating the zeros of functions in general. These methods usually require an initial guess of a zero. It is reasonable to assume that the closer your guess is to the zero, the fewer calculations one needs to make for a reasonable approximation. So then, how does one make a judicious initial guess? Numerous methods of placing bounds on the zeros of these polynomials have been published. The focus of this research is to compare and contrast various methods of “bounding” the zeros of a polynomial with the goal of determining which methods give better bounds. To help expedite our calculations, codes in the computer algebra system MAPLE will be written to perform the calculations described by respective algorithms.

Jason Horne – Horticulture*Criterion Development For Delivering Web-based Plant Identification Courses At Murray State University***Mentor / Sponsor: Dr. Pat Williams**

Murray State University is developing an on-line delivery for the four plant identification courses offered in the horticulture option program. Reasons for developing online courses are to provide more efficient use of limited faculty time, to utilize new technologies in the delivering of courses, and to provide an interactive teaching assistance to students outside of class. The American Society for Horticultural Sciences (ASHS) was contacted for a listing of universities in the United States that offered horticulture programs. E-mails were sent to 109 universities and 44 surveys were received for a 40.4% return rate. None of the responding universities were using new technologies in the form proposed by MSU. Of the respondents, 27.3% were interested in a course of this type and thought it was a good idea to pursue whereas 11.4% were not interested in developing a course and 15.9% said a course of this kind would not have applications in their universities. Currently 25% are using computer-aided delivery for their horticulture courses. Macromedia Dreamweaver MX is being used for its versatile and accessible format over current Blackboard PowerPoint options.

Seth Hunt – Water Science*Hyporheic Diatom Heterotrophy Beneath Two Streams of Contrasting Land Use in Western Kentucky and Tennessee***Mentor / Sponsor: Dr. Susan Hendricks**

Previous studies have shown certain species of benthic diatoms to exhibit heterotrophic capabilities under aphotic conditions. An aphotic environment such as the hyporheic zone provides entrained diatoms with enough organic matter and nutrients to function heterotrophically for long periods of time. Subsurface sediments from two streams of contrasting land use (agricultural versus forested) were examined for the presence of diatoms using burn-mount preparations. The most abundant diatom genera found in both streambeds included Navicula, Cymbella, and Melosira. Cells were observed to contain pigments prior to slide preparation, denoting potential photosynthetic capability even after having resided under aphotic conditions for unknown time periods. Furthermore, procedures measuring uptake of radioactively labeled bicarbonate using hyporheic sediments under both light and dark conditions demonstrate primary production capability. Current attempts are being made to culture subsurface diatoms using an enriched soil agar medium. Measurements of organic substrate uptake such as ^{14}C -glucose and ^{14}C -acetate under dark and light conditions are on-going. Hyporheic diatom heterotrophy may represent a significant fraction of total microbial respiratory processes found within subsurface streambeds and thus may further influence whole-stream metabolism.

Rebecca Ijames – Biology*The American Chestnut***Mentor / Sponsor: Dr. Howard Whiteman**

The American chestnut, *Castanea dentata*, at one time made up approximately twenty-five percent of the total stand along its natural range. In 1904, the first signs of the Chestnut blight, (*Endothia*) *Cryphonectria parasitica*, appeared in New York. Within a period of forty years, the blight had devastated approximately 3.5 million trees, and by 1950, the tree was nearly extinct. Conservation efforts began in the late 1960's, and have been continued by the American Chestnut Foundation and the American Chestnut Cooperator's Foundation. In spring of 2003, a student planted a total of 24 seed nuts, provided by TACCF, in two locations at the Hancock Biological Station on Kentucky Lake. Part of this project is to monitor these young trees and plant a total of 12 more seeds, with 6 seed nuts being planted directly in the ground and 6 seed nuts being reared in a greenhouse. As with the work done by the previous student, the seeds will be monitored for their survival and success rates.

Ashley Ireland – Sociology/English Literature*The 30-Year War: Anti-Feminism in the Popular Women's Magazine Cosmopolitan***Mentor / Sponsor: Dr. Edward Armstrong**

This paper is a comparative content analysis of two issues of Cosmopolitan magazine dated thirty years apart. The units of analysis are individual articles appearing in both of the magazines. Articles were analyzed for three criteria: 1) length of articles, 2) reading levels, and 3) the nature of the article topics. Upon analysis, the contemporary Cosmopolitan shows a broad-based negative shift in women's values after the issue from 1974. The celebrity attention has shifted from celebrities who are political, powerful, philanthropic, and controversial to celebrities who are little more than entertainers. The length of articles has decreased substantially, from eleven pages in the longest article in 1974's issue, to four pages in 2004. The reading levels, as well, have decreased dramatically, from a ninth to eleventh grade reading level to a sixth to eighth grade level. Finally, the nature of the article topics has shifted from empowering women and promoting a wide basis of knowledge to denying the female self in order to please men, and promoting fear.

Reagan Jenkins – Economics*Rising Cost of College Textbooks***Mentor / Sponsor: Dr. David Eaton**

The rising costs of college textbooks have been a major concern for many individuals in the past few years. This has led to changes in the purchasing behavior of many college students who seek to find lower cost textbooks. In this paper I will examine the reasons why the prices of college textbooks are rising and the price practices that is prevalent in the industry. Also, I will look at the impact of changes in purchasing behavior due to technological innovations along with other factors and how these changes are influencing the college textbook industry's future.

Sarah Terese Johnson – Accounting*The Social Security Debate***Mentor / Sponsor: Dr. Don Chamberlain**

President Bush has announced that reforming Social Security is one of his top domestic agenda priorities for his second term. He is currently promoting personal investment accounts as a major element of that reform. Many major players in the policy debate question both how urgent the issues are and the best avenues for addressing the future financial shortfall. This paper summarizes the major questions on the table and some of the proposed solutions.

Heather Jones – Accounting*The Streamlined Sales Tax Project***Mentor / Sponsor: Dr. Don Chamberlain**

Sates currently do not have the authority to force remote (often Internet) vendors to assess, collect, and remit sales taxes unless those vendors have a physical presence in the state in which the buyer is located. The courts have ruled that such a requirement would represent an unreasonable burden, given the myriad of tax rates and definitions of taxable goods across the country. As a result, states have been losing billions of dollars in revenues and "bricks and mortar" businesses have been crying foul play. Recently, state officials have joined together in an effort, called the Streamlined Sales Tax Project (SSTP), to develop a sales tax system that would meet the Supreme Court's objections. This paper describes the pertinent issues and the progress of the states with the project to date. Both financial pressures and political forces will likely play a role in the final resolution of this high profile undertaking.

Ross E. Jones and Jonathan B. McGregor – Biology**Patraranee Limphong, Ryan J. Provost, Matthew E. Kelleher, and Fouzia Begum – Chemistry***Two-photon-induced Electron transfer Between Beta-carotene and Carbon Tetrachloride***Mentor / Sponsor: Dr. Mark Masthay**

Beta-carotene (BC) is the plant pigment responsible for the orange color of carrots, oranges and other "yellow" fruits and vegetables. It is also present in green leaves, where it serves to protect plants from light-induced damage during photosynthesis. Because plants lacking BC die upon exposure to light, some "light-activated herbicides" are designed to mediate their toxicity by destroying this pigment via a BC-to-herbicide "photo induced electron transfer" (PET) process. In similar fashion, we find that solutions of BC in chloromethane solvents are stable upon exposure to diffuse visible light, but rapidly turn colorless upon exposure to intense, green laser pulses. The rate of color loss depends on the square of the laser intensity, suggesting that either BC or solvent molecules absorb two photons and subsequently generate free radicals which degrade BC. To specify whether BC or solvent molecules absorb two photons, we have characterized the yield of chlorine radicals ($\bullet\text{Cl}$) and chloride (Cl^-) ions by placing BC-chloromethane solutions in contact with pure water and aqueous potassium iodide and silver nitrate. We find that two photons are absorbed and Cl^- and $\bullet\text{Cl}$ are generated only when BC is present. Accordingly, we propose a "two-photon BC-to-solvent" PET mechanism which is consistent with our results and discuss the implications of this mechanism for herbicide design and development.

Beth A. Kobylarz – Biology

I-Lun Chien, Prachya Mruetusatorn, and Kimberly Dunlap – Chemistry

The Impact of Age and Sex on Chemical Exposure and Developmental Stability in North American Bullfrogs (Rana catesbeiana)

Mentor / Sponsors: Dr. Howard H. Whiteman and Dr. Bommanna G. Loganathan

Recent alarm over amphibian declines and malformations around the world has been particularly disturbing because amphibians are thought to be reliable indicators of ecosystem health. Two of the many tasks that biologists and wildlife managers face when confronting declining or deformed populations is identifying stressed individuals before they undergo drastic changes and identifying the stressor(s) affecting the populations. However, developing an early warning system to identify stressed populations without understanding basic life history and potential stressors may prove to be unsuccessful for creating management plans. Thus, a multivariable approach to examining stress and its effects on populations is needed. In this study, I am comparing the responses and susceptibility of male, female, and immature bullfrogs, *Rana catesbeiana*, to anthropogenic stress occurring in their natural habitats in southwestern Kentucky. Developmental stability (DS) is being used to investigate the developmental stress of bullfrogs in relation to the stressors present in their environment. DS is also being evaluated for its potential to serve as an early warning system for amphibian declines and malformations. To examine the relationship between age and stress, skeletochronological analysis is being utilized to estimate the age of each individual. Results from these analyses will be compared to organic, organometallic, and trace element tissue assays, as well as to habitat variables. The data obtained from this study will aid in forming the baseline for future studies of stress and bioindicators in amphibian populations.

Amy Krzton-Presson – Wildlife Biology

Bald Eagle Nest Monitoring

Mentor / Sponsor: Dr. Howard Whiteman

The bald eagle population on the Land Between the Lakes National Recreation Area is a conservation success story that continues to develop today. Conservation efforts to bring eagles back to Land Between the Lakes began in the 1980's and have thus far been successful. My service-learning project will center around the protection of two bald eagle nests located on LBL. The condition of each nests and tree and the level of activity in the nest will be recorded each week and turned in to the LBL Nature Station. If there is any significant human activity within 750 feet of the nest, authorities will be notified immediately to remedy the situation. Because bald eagles are very sensitive to possible threats surrounding their nest, human activity must be discouraged and reduced within 750 feet of a nest. I will also pick up any litter in the area to reduce any signs of human impact. The reports that I turn in will be logged and saved to help keep track of which nests are no longer active. This project will thus assist in the protection and future growth of the local bald eagle population.

Victoria LaFont – Liberal Arts

Race, Class, Gender, Sexual Orientation...Equality: What Is In It For Me?

Mentor / Sponsor: Dr. Mam-Yassin Sarr

This presentation focuses primarily on how we as a group, and ultimately the community of Murray State University, can make a positive difference in the area of gender relations within our everyday lives, using the knowledge, facts, and techniques that will be discussed. We will present this subject in such a way as to empower the audience, also allowing them to see the self benefit of working toward gender equality.

Kevin Lankheit – Geosciences

Spectral Mixture Analysis of Urban Reflectance in Murray, Kentucky

Mentor / Sponsor: Dr. Burl Naugle

The application of multiple end member spectral mixture analysis (MESMA) to map the physical composition of urban morphology in Murray, Kentucky, using Lands at Enhanced Thematic Mapper (ETM+) and Quickbird data is tested. MESMA models mixed pixels as linear combinations of pure spectra, called end members, while allowing types and number of end members to vary on a per-pixel basis. Three-end member models were applied to the Lands at ETM+ and Quickbird data and compared for efficiency. End members were selected using a minimum noise fraction (MNF) model along with comparing two-space plots to generate pixel purity index images (PPI). Original images and MESMA-generated images are compared through visual interpretation and statistical analyses.

Brian Larbes – Economics

A Study of the Relationship Between Economic Freedoms and Economic Growth

Mentor / Sponsor: Dr. David Eaton

It has been frequently asserted that freedom leads to greater prosperity. But is this true, and if so, to what degree. The object of this paper is to determine whether this linkage exists and how strong a factor it is. In order to do this, we examine the economic history of various countries and compare it to their track records on economic freedoms. Specific attention is given to their real GDP per capita, income distributions, as well as other economic statistics. In the interests of clarity and brevity, this paper is largely limited to the ramifications of economic freedoms, and does not examine the economic importance of political freedoms.

Lance Lee - Spanish

Out with the Old and in with the New: A Structural Comparison of the Latin American Traditional and New Novel

Sponsor / Mentor: Dr. Micheal Waag

When one thinks of Latin American literature, the great Columbian novelist Gabriel García Márquez and his *One Hundred Years of Solitude* may come to mind. However, the novel as a literary genre has not always thrived in Latin America. Since the literary tradition of Spain focused on poetry and theater instead of the novel, the same tradition was carried to Latin America by the Spaniards during their colonization of the new continent; Latin American authors had few novels as models to emulate. At first, the novelists imitated European and American works. As a result, Mariano Azuela's novel of the Mexican Revolution, *Los de abajo*, which was written in 1915, exemplifies a traditional novel, being very chronological in structure. In 1955, Juan Rulfo wrote his most famous Mexican novel *Pedro Páramo*, and by then the literary tradition of the Latin American novel had developed a great deal more, abandoning the standard chronological model of Europe for a style uniquely Latin American. I will explore the structure of these two Mexican novels in order to compare what makes a traditional versus a new Latin American novel.

Nicholas Lemonds – Spanish

Barefoot and Running: What We Have Forgotten about Saint Teresa of Avila

Sponsor / Mentor: Dr. Mica Howe

Saint Teresa of Avila is well known in both the religious and secular worlds as a great Spanish religious and spiritual writer of the 16th Century. It seems the consensus among society today is that the writings of Teresa were the basis for her sainthood. The opposite, however, is true. Were it not for the Catholic Church's canonization of Teresa as a saint, her literary work would have been lost. The reason for her canonization lies not in her writings but in her foundation and reformation of the Carmelite Order of religious life as well as her mystic experiences including visions of Christ, and Hell. Another factor is that after over four hundred years, Teresa has defied science by remaining physically incorrupt despite the lack of embalming. The purpose of this paper is to explore the life of Teresa and discover the reasons for the rise in popularity of her writings.

Ashley Lipham, Maria Ratliff, Suzanne Glisson, Tara French, and Heather Stroupe – Psychology

Depression on Campus

Mentor / Sponsor: Dr. Mam-Yassin Sarr

This study explores the presence and effects of depression in the college experience while generating practical solutions to the problems found within depression. This includes, but is not limited to the causes, preventative measures, symptoms, campus resources and myths revolving around depression. Resources include one-on-one interviews, periodicals, Internet sites, surveys and scholarly articles. Basic goals involve increasing awareness about depression on college campuses and producing practical solutions that can be used on a daily basis by those suffering from depression.

Sarah Loecken – Conservation Biology

*Distribution and Abundance of the Green Tree Frog (*Hyla cinerea*) in Calloway County, Kentucky*

Mentor / Sponsor: Dr. Howard Whiteman

The green tree frog (*Hyla cinerea*) is found throughout the Southeastern United States, yet; there are a few known populations in the Jackson Purchase region of Kentucky. The purpose of this study is to determine the relative distribution and abundance of this species in Calloway County, in order to determine its conservation status in the region. Sites throughout the county will be chosen and PVC pipes will be used in sampling. At each site, four pipes will be placed part of the way in the ground and four pipes will be hung 4 m from the ground in trees. The pipes will be checked daily for the time they are left in the ground and the trees. I expect that a majority of the frogs captured will be taken during April, the frog's breeding season. I also predict that most will be found in the Blood River area, where there have been previously documented sightings of the Green Tree Frog. This study is important in conserving the populations of *Hyla cinerea* that are left in the Jackson Purchase region.

Angela Madden – B. S. Degree in Music

The Evolvement of 20th Century Flute Music and Techniques

Mentor / Sponsors: Dr. Stephanie Rea and Becki Majors

This project consists of the expansion and development of the music repertoire in the 20th century for flute. Composers of the 20th century explored the flute's musical ability by adding special techniques that create different musical sounds and effects. Some of these special effects will be performed during the presentation.

Jason W. Marchmon – Sociology/ History

Double Helix As Key or Chain?: Current and Future Uses of Biometrics In an Open Society

Mentor / Sponsor: Dr. Edward Armstrong

Biometrics--the use of biological properties to identify individuals--is increasingly utilized by business and government entities to regulate access to data and buildings. The collection and verification methods include fingerprint and iris scanning, facial recognition, and signature capture. Many who share the fear of a national identification card also share the hope that biometrics offer an acceptable replacement. But is the growing use of these technologies cause for alarm? Does it pose an undesirable invasion of individual privacy, or an unprecedented advance that generates benefits for society? My analysis reveals positive results through effective implementation, but also misinterpretation and misunderstanding regarding the limits and uses of collected data.

Jason W. Marchmon – Sociology/ History

We're on a Road to Nowhere: Federal Interstate Privatization in the United States

Mentor / Sponsor: Dr. Pat McCutcheon

Is privatization the future of administering services? Advocates espouse the belief that privatization increases efficiency and productivity through real cost information and competition. Detractors posit that shifting responsibility to private entities creates profits for companies, but little benefits for taxpayers. As more states look to possible shifts to privatize public hospitals, mental health care, prisons, and public schools, the Federal government looks at privatizing social security and the federal interstate system. I hold that a compromise is possible; through utilization of currently available commercial and government technologies, the federal system of interstate maintenance can be privatized in a cost-saving and convenient manner to taxpayers while providing high standards and profits to contracting companies.

Lindsay Marlow – Wildlife and Conservation biology

An Education in the Local Flora and Fauna of Calloway County

Mentor / Sponsor: Dr. Howard Whiteman

It is crucial for the public to be aware of and knowledgeable about local flora and fauna if they are to support conservation efforts. Most students at Murray State have little awareness of the many species of animals and woody plants they pass everyday on campus. A quick and easy way is needed for individuals to gain familiarity with campus biota and its fragility. This will be accomplished through two avenues: signs on campus listing the species and common names of woody plants, and a website containing information on animal species prevalent in the area. The website will also contain links to additional sources of valuable information from other agencies about the biota in question.

Misty Mason, Gladys Ngezem, and Tiffany Emerson – English

Jacobean Drama Symposium

Mentor / Sponsor: Dr. Barbara Cobb

Graduate English students will present papers on three different plays from the Jacobean period (early 17th century) in England. Each paper provides an overview of the play treated, plus a discussion of a scholarly issue of importance in the study of that play. The papers were originally presented as part of ENG 649, 17th Century Literature, Fall 2004; one of the three presenters, Misty Mason, presented her paper at the Kentucky Philological Association conference in March, 2005.

Mary Mather – Music**Whitney Medley – Nursing**

The Mental and Physical Effects of Music with Regards to Human Health Care

Mentor / Sponsor: Dr. Howard Whiteman

The focus of this project is to better understand the effects of music on the human body. According to "The Fundamentals of Nursing," the human body has a "fundamental vibrating pattern." This research also states that "...music vibrations that are closely related to the body's fundamental frequency...can have a profound healing effect." Music is also utilized as a non-pharmacologic pain reliever, and also as a form of distraction in patient facilities. In addition, music is used by patients for a pre-operation relaxant, as well as an in-operation relaxant for the surgeon. Music has also been studied regarding its affect on children in the fetus stage. This study will analyze the correlation between music and human health. We will also examine the effects of music on emotions, organs, hormones, enzymes, and cells. We will use music during our presentation, with the assistance from the audience, to further illustrate the emotional and physical affects of different musical genres. Finally, we will examine the future of music in the area of healthcare.

Mary Mather**Murray State University**

A Comparison of the Female Characters of Rodgers and Hammerstein to Those of Stephen Sondheim

Faculty Sponsor: Dr. Sonya Baker

This project compares the female characters in the musicals of Richard Rodgers and Oscar Hammerstein to those of Stephen Sondheim. The musicals of Rodgers and Hammerstein and those of Sondheim have been chosen because they were innovative and trendsetting for their time. Rodgers and Hammerstein, who began composing together during the late 1940's, produced the first musicals in which theatre, music, and dance were integral to the plot of the musical. Their musicals were some of the first to address serious issues such as racism, war, prejudice, and abuse. Sondheim began composing during the 1970's. While Rodgers and Hammerstein were innovative in their synthesis of theatre, music, and dance, Sondheim is innovative in his marriage of text, music, set, orchestration, etc., so that each of the elements supports his underlying purpose. Sondheim's musicals, like Rodgers' and Hammerstein's address serious issues; however, while Rodgers and Hammerstein often resolved these issues in an "idealistic" manner, Sondheim writes from a more "disillusioned" perspective. The focus of this study is on the choices made by the female characters and how they reflect the time period in which the musicals were written. The project includes a brief biographical background of Rodgers, Hammerstein, and Sondheim, an analysis of the female characters, and a survey of MSU students' perceptions of women's issues and how they are relevant to the musicals. In an effort to further understand these issues, original lyrics and dialogue will be displayed, as well as a scene and song from Rodgers' and Hammerstein's "Carousel" which has been re-written by Ms. Mather in the style of Stephen Sondheim.

Laura Mattingly – Wildlife and Conservation Biology

Assessment of Domestic Resource Conservation on Murray State University Campus

Mentor / Sponsor: Dr. Howard Whiteman

We are facing a crisis. We are polluting our environment and quickly using up our natural resources. Twenty percent of our population is currently dealing with water shortages, yet Americans use water as if its supply is abundant, using up to 176 gallons of water a day in the home alone. Americans also emit more greenhouse gasses than any other country and use five times more energy than the average global citizen. It is obvious that steps need to be taken to educate the American public about the importance of conservation in every day life. From insulating your home more efficiently to simply turning off the lights when you leave a room, conservation in the home can reduce resource use and therefore be beneficial to our environment. The purpose of this study is to assess the attitudes and actions of individuals about conservation in everyday life and to encourage and inform the public about the importance of this simple practice. This will be done by administering face-to-face surveys on the Murray State University campus and distributing informative cards on how to conserve resources.

Robert W. McDonald – MPAC

Medicaid: Huge Problem, Few Answers

Mentor / Sponsor: Dr. Don Chamberlain

Medicaid has quickly risen to the forefront as the most significant issue facing state financial planners. Participation in the program has risen dramatically in recent years and the approaching retirement of "Baby Boomers" will surely mean even larger commitments for resources on the part of the states. The problems are both financial and political, and the escalating cost of medical care and long-term care mean that answers will have to be forthcoming. This paper explores the history of the program, the structural nature of the problems, and some of the solutions being proposed.

Lindsey Melton – Biology

Assessment of Litter on Kentucky Lake Beaches for Long Term Improvement of Wildlife Habitat

Mentor / Sponsor: Dr. Howard Whiteman

Litter was assessed on two beaches along the shores of Kentucky Lake, once weekly during the months of February, March, and April 2005, in order to determine whether visibility of trash cans lead to a decrease in the amounts of litter found on each beach as compared to a third beach, which was used as the control. The two beaches under observation received brightly colored trash cans placed in visible locations, differing from a non-brightly colored trash can on the beach being utilized as the control. With the data observed at each location, I hope to find that increased visibility of trash cans on public beaches of Kentucky Lake will lead to decreased amounts of trash in the areas. With these decreased amounts of trash, I hope to lessen potential hazards to wildlife flourishing in these areas while providing long term improvements of their natural habitats.

Jolene Miesner - Spanish and Liberal Arts

Her Story: The Plight of the Women in Spain

Sponsor / Mentor: Dr. Leon Bodevin

The women of Spain are no different from the women in the rest of the world in the fact that they have suffered extreme injustice at the hands of their families, husbands, and government. One thing that does set them apart from women in other countries is the political backdrop surrounding the role of women. The political system in power has dictated the social role, as well as the legal rights of women, throughout Spanish history. The four eras of interest include: the liberal Second Republic and Civil War, the dictatorship of Francisco Franco, the institution of the Constitution of 1978 and democracy, and the present day stance of women. This presentation will explore the positions of women in Spain throughout history, focusing on the effect of the political situation on the lives of the Spanish women.

Elizabeth Miller – History

The United Nations As A Peace-keeping / Making force: An Assessment of Its Structure, Origin, and Experience In Achieving Its Mandate to Further Peaceful Relations Among Nations.

Mentor / Sponsor: Dr. Mike Basile

In the world today, there are many problems and many different organizations that pledge to rid the world of these problems. The United Nations, established in 1945, is one of these organizations. One of the purposes of the U.N. is peacemaking and peacekeeping. The purpose of this study is to examine the U.N. as a peace keeping/making body to determine if it is effective in maintaining peace. The study looks at the relevant history of the U.N. to examine the peacekeeping aspirations of why it was founded, the strengths and limitations of its current peacekeeping structures, the concept of transnational communication and how it is implemented, and its deliberative and security bodies. The case of Macedonia will be examined to determine the effectiveness of U.N. peacekeeping operations there and to draw conclusions generally.

Sean Mitchuson – History

Japan's Position as an Industrial Trading Power

Mentor / Sponsor: Dr. Mike Basile

A heavily industrialized state like Japan with very little domestic natural resource reserves is in a vulnerable economic position. This study looks at the special circumstances of a nation committed to the exportation of finished industrial goods and how it deals with the problem of having no real natural resources either to sell or for domestic use. Specifically, it examines the international trade strategies it has developed and implemented to maintain its status as one of the most successful exporters of finished goods to the benefit of its people. It also examines the longer term implications of this position and the need to modify some of these strategies as world conditions change.

Brad Modlin – Organizational Communication

How Do organizational Socialization and Group Tasks Influence Community Building in the Summer Camp Setting?

Sponsor / Mentors: Dr. Lou Davidson Tillson and Dr. Edward Brewer

This study explores how a distinct sense of community is established during the summer camp experience via organizational socialization tactics and specific group tasks. Utilizing Tuckman's Stages of Group Development and Geertz and Pacanowsky's Cultural Approach to Organizations, it is determined that group membership and experiential activities can facilitate organizational identification and commitment.

Brianna Moore – Middle School Education

The Factors Controlling the Growth of the Ledbetter Embayment Mudflat, Kentucky Lake Reservoir

Mentor / Sponsor: Dr. George Kipphut

The Ledbetter embayment mudflat of the Kentucky Lake Reservoir in western Kentucky has been actively growing for over half a century. This study is focused on identifying the factors that contribute to a growing reservoir environment as well as documenting the growth rate of such an environment. The project is aimed at learning more about the interaction between physical, geological, and biological aspects of the mudflat. A major research objective is to determine whether the growth of the mudflat is episodic, as a result of flood and stream events, or if the growth of the mudflat is steady and constant over time. The project is investigating how water movement and vegetation growth move and hold the sediment, and how the sediment types, accumulation, and flow affect the shape and growth of the mudflat. The potential significance of this research lies in the creation of a database about similar environments in reservoirs. Such a database does not exist for the Kentucky Lakes region currently. Research methods include stratigraphy analysis, mapping of the mudflat using GPS technology and Arc Map software, and ground and aerial photograph analysis. Aerial photograph analysis will play a large part in helping to determine the factors that influence the changes in the mudflat, as well as set the foundation for a comprehensive database about reservoir embayment.

Billie Dawn Moss, Chris Rodgers, and David Hayden – Agriculture Science

Evaluation of Dark-Fire Cured Tobacco Commercial Varieties

Mentor / Sponsors: Dr. Tim Lax, Dr. Jay Morgan, and Dr. Bobby Hill

Five acres of dark-fire cured tobacco was grown on Murray State University's West Farm. Research trials were conducted to better enable dark-fired tobacco producers to select the best varieties of tobacco and improve new varieties for future selection. Replicated trials compared gross pounds per acre yield of current commercial dark tobacco varieties during the 2004 season. The dark-fired varieties tested are as followed: DF 911, DT 538, DT 518, KY 171, TN D950, VA 359, VA 309, Little Crittenden, TR Madole, and Narrow-leaf Madole. SN 2108 was a black shank resistant variety tested that will be available on the market next year. The layout of the test plots was a randomized complete block design with four replications. Each plot was 300 ft² with 4,350 plants per acre. The following herbicides were applied: 1.1 pounds of pmdimethalin per acre and 4 ounces of sulfentrazone per acre. The plots were transplanted in the field on May 28, 2004. No irrigation was applied throughout the growing season. The plants were detopped on July 28, 2004. Suckers were controlled by applying butralin and a fatty alcohol mix to each plant. The plants were harvested through the dates of September 20th through the 22nd. The tobacco leaves from each plot were stripped and separated in to three quality categories: lugs, seconds, and leaf. The weights were determined for each category with in each plot. The data was analyzed for the randomized complete block design analysis of variance (SAS Institute Inc., 1989), (P=0.10) followed by a means of separation using the least significant difference.

Erin Mosser – Sociology

Domestic Violence: A Historical Overview

Mentor / Sponsor: Dr. Dr. Lillian Daughaday

Domestic violence is not a new phenomenon, though only in recent years has it been recognized as a social problem. This paper will provide a historical overview of domestic violence, examining societal attitudes as well as laws and policies, with the goal of determining the effectiveness of policies as they relate to prevention and treatment of domestic violence.

Tera Rica Murdock – Chemistry and Spanish

Christopher Sperry – Chemistry

Using Diverse Aromatic Systems as Inhibitors of Aminoglycoside Antibiotic Kinases

Mentor / Sponsor: Dr. James R. Cox

Aminoglycoside antibiotic kinases (APHs) are a large family of enzymes that are responsible for the inactivation of a broad spectrum of aminoglycoside antibiotics. One approach to combating the public health concern of antibiotic resistance is the development of inhibitors of aminoglycoside kinases that may serve as potentiators of aminoglycoside action. A series of small, (hetero) aromatic compounds have been identified through steady-state kinetics that block the ATP-binding site of two aminoglycoside kinases, APH (3')-IIIa and APH (3')-IIa. Several of these compounds are more potent inhibitors than the adenine ring itself, which is known to form pi-pi stacking and hydrogen-bonding interactions in the nucleotide-binding sites of the IIIa and IIa enzymes. Electrostatic potential maps of the compounds, in conjunction with molecular docking studies with the IIIa enzyme, have provided details on how these compounds bind in the adenine-binding pocket and block the inactivation of aminoglycoside antibiotics.

Tera Rica Murdock - Spanish and Chemistry

The Failure of the Mexican agrarian Revolution through "Los de Abajo" and "La Muerte de Artemio Cruz"

Sponsor / Mentor: Dr. Michael Waag

The Mexican Revolution of 1910 was a bloody upheaval of government whose violence lasted for 10 years and political transformations still affect Mexican society today. The Revolution has been classified as a conglomerate of three distinct movements, the first and the most recognized of which was the agrarian revolution, led by men such as Pancho Villa. "Los de Abajo" by Mariano Azuela was written during 1915, one of the most violent periods of Mexican Revolution. "La Muerte de Artemio Cruz" by Carlos Fuentes was written a half-century after the Revolution but has a pivotal moment of the novel set in the year 1915. Both of the authors seek to explain the downfall of the agrarian revolution and its projected legacy through the eyes of revolutionary fighters. While history texts describe the defeat of Pancho Villa in 1915 as the turning point, Azuela and Fuentes point to the corrupt decisions and flawed characters of the revolutionary fighters themselves as the basis for the descent of the agrarian revolution. The paper will be an analysis of "Los de Abajo" and "La Muerte de Artemio Cruz" as an introduction to the failures of the Mexican agrarian Revolution.

Eryn Murray – Theatre & Spanish

The Benefits of Acquiring a Second Language

Mentor / Sponsor: Dr. León Bodevin and Becki Majors

America is a melting pot of cultural diversity. Statistics show a steady increase in the Hispanic populations. As of last year, there has been a steady increase of "300 percent" in Kentucky public schools. Yet, compared to other countries, such as Switzerland, the American educational system has failed to place the needed importance on fluency in a language other than the native tongue – English. If the educational system places significance on this matter, it would answer the question of what America would be like if its citizens were fluent in another language. Although plenty of natives have knowledge of a second language, the majority does not. America is already a national leader in foreign markets and policies, but it could become even more powerful by teaching its citizens to be fluent in foreign languages. The following topic will be discussed in the form of a persuasive argument based on a comprehensive look at current literature. The presentation highlights how an increased aptitude of foreign languages can help Americans improve individually, and as a nation, in economic, political, and social aspects.

Todd Neal – Computer Science/Mathematics

Efficient Plagiarism Detection using a Rolling Hash Scheme

Mentor / Sponsors: Dr. Robert Pilgrim and Dr. William Lyle

I devised a method for detecting similarities between an input text and a large body of preprocessed text by using a rolling hash. I compute a series of hashes based on sequences of words in the known text and then store it in a database. By using a rolling hash I can then compare a document to the stored set of documents merely by searching for the matching hashes instead of doing a character by character string comparison. This allows for quick searching for matching text among many documents simultaneously.

Laura Nixon - Spanish/Communication Disorders

The Evolution of Media as a Reflection of the Post Franco Spanish Society

Sponsor / Mentor: Dr. Jorge Trinchet

The ideas, the mentality, and the changes that occur within a society are often reflected within the media and cinema. As a reflection of the society, the media in Spain has mirrored the changes that have occurred throughout history, especially during the dictatorship of Francisco Franco and the transition period following his death. While much study has been devoted to the Franco Era and the censorship and restrictions on media, cinema, and society, little definitive study has been devoted to the changes that occurred in the media, cinema, and society during the Post Franco Era. While censorship inhibited the media during the Franco Era, freedom of expression and change characterized the Post Franco Era. This study will examine the themes found within the media and cinema during the Franco Era in Spain and how these themes changed during the Post Franco Era. The paper will deliver a brief history of the Spanish media, cinema, and society during the Franco Era followed by a study of the changes that occurred during the Post Franco Era, as well as an analysis of the reflection of the changing society seen through the eyes of the media and cinema.

Michael O'Brien – Biology*Blood Parasites of Tiger Salamanders***Mentor / Sponsor: Dr. Howard Whiteman**

The Arizona tiger salamander (*Ambystoma tigrinum*) can diverge into two separate morphs after the larval stage. As adults, some will lose their gills to become terrestrial metamorphic adults. Others retain their gills and continue living in ponds as mature adults, called paedomorphic adults. Because of the habitat differences between morphs, one might expect exposure to different communities of parasites. This project is designed to determine if blood parasites differ between metamorphs or paedomorphs, and thus might affect the fitness benefits for each morph. We collected sixty slides of blood stains from larval, metamorphic, and paedomorphic tiger salamanders during the summer of 2004 in south-central Colorado. The slides are currently being examined for parasites under a microscope, and results of this research will be presented.

Mitchum Owen – Electronic Media*Postcards from Spain***Mentor / Sponsors: Dr. Jeremy McKeel and Dr. Bob Lochte**

To complement my semester of study abroad, I started a yearlong project titled "Postcards from Spain." For this series, I obtained grants, recorded 20 hours of on site footage, conducted research, wrote scripts, interviewed students, faculty, and Spaniards, composed theme music, and edited using Media 100 I-Finish. These (11) 15-minute shows aired weekly and as needed on MSU TV11/KET II and "Round About Murray" during the Fall of 2004, reaching over 200,000 households. TV-11 will continue to air these episodes as needed.

Cowann Owens, Kate Cushing, Paul Elfen, and Ashley Crouch – Psychology**Laura Vanmeter – Elementary Education***The Dangers of Eating Disorders***Mentor / Sponsor: Dr. Mam-Yassin Sarr**

For our Scholars Week presentation, our group has decided to discuss eating disorders and the detrimental effect that these disorders have on their victims. We will study an array of eating disorders and present the importance of making Murray State students aware of their signs and how to prevent each. Our presentation will begin with testimonials from people who were actually affected by eating disorders. We feel that while there are many groups on campus that do make an effort to spread the importance of healthy eating habits to the student body, the importance of preventing eating disorders cannot be stressed enough! Although our main focus is going to be addressing the most extreme eating disorders, we will also touch basis on the importance of a well balanced diet. While most college students are not suffering from bulimia or anorexia, the majority do practice poor eating habits.

Kristin Page – MA-Elementary Education*Reading Fluency: What's the Big Idea?***Mentor / Sponsor: Dr. Renee Campoy**

This study looks at the correlation between reading comprehension and reading fluency. Research has shown that reading fluency and comprehension have a reciprocal relationship. If a student is strong in fluency, it is likely he will also be strong in comprehension. If a student is weak in fluency, it is also likely he will be weak in comprehension. The scores from a standardized assessment given in a rural 3rd grade classroom will be used to determine the relationship between the two variables.

Stephen Perry – MBA*Fraud and Waste in Government***Mentor / Sponsor: Dr. Don Chamberlain**

Despite efforts to monitor and more effectively control government programs, fraud and waste continue to be almost commonplace. Newspapers regularly report abuse in taxpayer funded programs ranging from Medicare to welfare to government subsidy programs. This paper reports on the magnitude of fraud and waste in government, the political implications of these abuses, and some of the more recent initiatives to improve accountability in government programs.

Benjamin Pierce – Conservation Biology*Service Learning Project: Volunteering With The Nature Conservancy***Mentor / Sponsor: Dr. Howard Whiteman**

The Nature Conservancy (TNC) has been working with communities, businesses and people to protect nearly 117 million acres around the world. The mission of the TNC is to preserve the plants, animals and natural communities that represent the diversity of life on Earth by protecting the lands and waters they need to survive. The Nature Conservancy has chapters in all 50 states helping to preserve what the TNC identifies as high priority places. High priority places are landscapes and seascapes that if conserved promise to ensure biodiversity over the long term. The Grand Rivers Corridor in Western Kentucky is one such high priority place. The Grand Rivers Corridor encompasses more than 513,000 acres in the watersheds of the Cumberland and Tennessee Rivers. This includes all of Livingston County and parts of Caldwell, Crittendon, Lyon, Marshall and McCracken. I will be volunteering my time to Grand Rivers Corridor Project Manager, Shelly Morris. Ms. Morris will going to develop a GIS landowner database for Livingston County, beginning with the area around Mantle Rock. This will involve placing public value administrator's data (PVA)—landowner name and address—into an Excel file and attaching it to an Arc View layer. The PVA data would be attained from the PVA offices at the Livingston County Courthouse in Smithland, Kentucky. With the PVA data collected and put into an easily accessible Arc View layer conservationist, citizens of the Livingston County area will be better able to communicate and resolve environmental issues.

Tara Pruitt – Organizational Communication*Democratization or Demolition: Justifying the Costs of the Bush Doctrine and the Global War on Terrorism in Light of the Retreat from Domestic Responsibilities***Mentor / Sponsor: Dr. Michael Basile**

Since 9/11 the “War on Terrorism” has been used to justify a colossal build-up of government resources to support the Iraq war and strengthen Homeland Security. This study examines the extent of this shift in resource priorities, its underlying causes, and its potential impacts on domestic social programs and the introduction of a “back-door draft.” Specifically, the study will identify those domestic responsibilities either being ignored or made to suffer from the Bush Administration’s foreign policy, with particular attention to the “Bush Doctrine.”

Kacey Puricelli, Molly Carter, Ryan Anderson, and Richard Rowland – Engineering Physics*Water Fountain Clock***Mentor / Sponsor: Dr. Ted Thiede**

As a part of the Engineering Physics Department, the Senior Design project for our group is to plan, analyze, and build a water fountain clock. The clock will represent the time using a fountain like water system. The pipes that carry the water will be ran by stepper motors that pulse every minute, and then there will be gears that turn the shafts, that turn the pipes, to rotate every minute and every hour with two streams of water at the correct place on the clock. This project involves detailed research of mechanical and electrical systems that work together in order to function properly. The design will also be aesthetically pleasing. The outside and the numbers of the clock will be a stone like finish. The inside of the tub will be blue to enhance the water color, and the pipes will also be painted blue in order to not stand out.

James Ramsey – Biology*A Review of Current Literature Pertaining to Fluctuating Asymmetry Among Insect Populations***Mentor / Sponsors: Dr. Claire Fuller and Dr. Howard Whiteman**

In recent years, phenotypic measures of developmental instability have become popular as possible indicators of environmental quality. Fluctuating asymmetry (FA) has been the most common measure presented by studies focusing on developmental instability and environmental/developmental stress. Studies have focused on different aspects of FA, such as its heritability, genetic basis, and potential causative agents. Conclusions of many of these studies have been conflicting and have called into question the reliability of using FA among indicator species populations as a reliable indicator of environmental quality. The application of FA measurements among insect species as a potentially more sensitive measure of environmental quality has great appeal due to the practicality of using insect indicator species. In this review, literature pertaining to insect FA is compiled; methods and conclusions of similar research are analyzed; a list of causative agents under investigation is presented; measurement error as a possible confounding factor in results is discussed; and conclusions about the usefulness of FA among insect indicator species populations are made.

Kristen Rankin - Spanish and English*The Dualities of Frida Kahlo***Sponsor / Mentor: Dr. Mica Howe**

The queen of the unibrow and graphic self-portraits has many faces to her work and her personality. Through her life represented in her works, society meets and understands a very interesting and complex woman. In her masculine dress and feminine and flirtatious personality, her bisexuality and even her political ideals, we are able to see that Frida is a woman not content with one. She likes things in pairs. Mexican with Indian roots, Frida Kahlo has a rich heritage that is a backdrop to an amazing yet tragic life. By examining her paintings, we can see the aspects of her dualistic life and begin to understand the importance of art as a means of expression of confusion.

Jesse Ray – Conservation Biology*Supplemental Feeding of Wildlife***Mentor / Sponsor: Dr. Howard Whiteman**

Supplemental feeding is often used as a wildlife management tool. Through literature review, I am trying to see if it is actually beneficial to wildlife or if it may actually harm some wildlife.

Teresa Ray – Journalism*William Caxton: A Man of Language***Mentor / Sponsor: Dr. Amy Berry**

This talk presents the life and times of William Caxton, father of the modern English language printing press. Topics include youth and education, life in the court of Phillip of Brugges, Philip the Kind, life in London as translator of Chaucer, Thomas Malory, and classics from German, Latin, French, and British dialects of the Middle Ages.

Beverly Reed – Organizational Communication*How Do Sender Self-esteem and Impression Management Influence Receiver Perception of Persuasive Messages?***Sponsor / Mentors: Dr. Lou Davidson Tillson and Dr. Edward Brewer**

Two variables that affect perception are self esteem and impression management, or self-presentation. These variables are explored with respect to whether or not they affect receiver perception of persuasive messages. Examples of low self esteem and poor impression management are provided, while the Implicit Personality Theory is utilized to examine how a person's perceptions are altered due to positive or negative impression management and self esteem.

Jessica Reed – Biology*Conservation Biology Service Learning Symposium: Recycling on Campus***Mentor / Sponsor: Dr. Howard Whiteman**

The University currently utilizes an award winning recycling program. The money received for recycling is used for University funds, which benefits all within the University community. Various materials are currently recycled including paper, newspaper, and aluminum, among many others. Through surveys, competition, and a rally, this project will create awareness among the campus community about recycling, educate the campus community about recycling, encourage the campus community to recycle more, specifically those housed in the Residential Colleges, and finally evaluate effectiveness at the end of the semester.

Drew Roe – German*Germany and the European Union***Sponsor / Mentor: Dr. Meg Brown**

The European Union and Germany have had a very important relationship ever since the EU's inception, basically because Germany was one of the six founding states (they have since received 19 more members, with others hoping to join). The relationship between Germany and the EU has much to do with many different themes. Recycling being one of them, Germany tends to have a very strong recycling program which is somewhat of both a pest and a good thing for the EU. They also have to worry about the new EU Constitution, which Germany seems to be taking a leading role in ratifying. Germany is also one of the participating countries in the euro, and the EU tends to be pretty upset over Germany's high unemployment rate. There are also many different influences on Germany's current role, most notably WWII and the Nazis. Much of Germany's focus tends to be on keeping anything similar to what they did in WWII from ever happening again. My paper discusses all of these themes and how they affect the relationship between the two.

Lindsey L. Rogers – Biology*To Recycle or Not To Recycle: That is the Question***Mentor / Sponsor: Dr. Howard Whiteman**

Each year, Americans generate about 400 billion pounds of trash. Although one quarter of this trash is recycled, up to 45 percent more could be included in recycling efforts. Murray State University's current recycling program will soon be expanding to include aluminum containers as well as provide additional paper bins on campus. With nearly 3,000 students living in the Residential Colleges, nearly 12,000 pounds of non-recycled waste could be produced every day. With a recycling program, 8,400 pounds of this total could theoretically be converted into a usable form if the means were available. The purpose of this study is to determine whether people recycle, when given the option. Two surveys will be issued to students who live in the Residential Colleges: one prior to the placement of recycling bins on campus, and one afterward. I predict that students will be more likely to recycle if they participated in a similar program at their home and that students will modify their waste discarding routine when a recycle container is accessible. This project could increase awareness of Murray State University's recycling system, leading to improvement of participation in the program. With this increased involvement, Murray State University would save money, as well as increase employment opportunities on campus. Also with participation in recycling, the Murray Sanitation Department could observe a decrease in the amount of waste deposited, while Calloway County Disposal Services could see an increase in the amount of waste recycled.

Ryan Rogers, John Davis, Alan Rowe, Jason Smith, Matt Yandell, and Amanda D'Angelo – Engineering Physics*Moonbuggy Squared***Mentor / Sponsors: Dr. James Rogers and Dr. Ted Thiede**

As space exploration begins a whole new era, thanks to the Bush Administration \$12 Billion in funding over the next five years, the specific need for vehicles capable of space travel and terrain exploration will increase. President Bush has proposed man walk on the moon again by the year 2020, and for man to walk on Mars by the year 2030. Based on these goals and funding projections, there is a need to develop vehicles capable of operating on extraterrestrial surfaces. The National Aeronautical and Space Agency (NASA) sponsor a moonbuggy competition that is held annually at the Marshall Space Flight Center in Huntsville, Alabama. This program provides a location to stimulate development of these vehicles and also encourages growth in the development of engineering students. Last year, Murray State entered the competition for the first time. After suffering a failure during each run, the team still managed to place eighth, the highest placing rookie team at the competition. The project itself has many significant changes to last year's design which the team feels will help it to be competitive and finish the course without any penalties. The prototype will be constructed of various commercially available parts. Testing of the prototype will be done on campus and during Murray State's Regional Moonbuggy Competition on a simulated course.

Lauren Romanelli, Sabrina Johnson, Shelly Adams, Amanda Enochs, Amy Garmon, Issian Redding, Katie Adams, Lillian Phillips, and Connie Donley*Sexual Orientation... Equality: What Is In It For Me?***Mentor / Sponsor: Dr. Mam-Yassin Sarr**

Our poster will look at sexual orientation on many levels, including local and throughout the world. It will ponder the myths versus the realities of being straight or gay and the questions that are often associated with sexual orientation in the world today. Our presentation will be addressed in a "solution" approach and how our audience can make a positive difference in regard to the subject. Information will be easy to relate to and have practical steps to make living with diversity easier in Murray and everywhere.

Collin Schaumburg – Wildlife Biology

Effects of Diet Quality on Stress and Immunocompetence in Male White-footed Mice (Peromyscus leucopus)

Mentor / Sponsor: Dr. Terry Derting

Diet quality is known to affect immune responsiveness. To determine what aspects of diet affect immunity and what aspects of the immune system are most vulnerable, we tested the null hypothesis that diet quality has no effect on immunocompetence and stress levels in adult male white-footed mouse (*Peromyscus leucopus*). Adult males were trapped live from random patches of forest in western Kentucky. The mice were put on four diets of differing levels of protein and fiber. Health was assessed through measurement of daily metabolic rate, white blood cell counts, hematocrit, serum corticosterone level, and body organ masses. Differences in the four diets were confirmed by differences in the masses of the gastrointestinal organs, kidneys, and liver. Protein was more influential on organ masses than fiber. Despite differences in digestive efficiencies, final daily metabolic rates on all four diets were similar, confirming that all mice used similar amounts of metabolic energy per day. The differences in diet quality among groups were not associated with differences in immunocompetence or stress levels. Our results indicated that differences in diet quality, which mimicked variation that occurs seasonally in the field, did not have a direct effect on immunocompetence and stress. We propose that the relationships between diet quality and immunocompetence which occurred in a previous field study were simply correlative and not causal. Alternatively, immunocompetence may be more influenced by environmental stressors that are directly or indirectly correlated with diet quality such as predation, parasitism, or habitat quality, than by dietary factors alone.

Collin Schaumburg – Wildlife Biology

Diel Variation in Gnathiid Isopod Infestation: Evidence of a Causal Link Between Ectoparasites and Cleaning Interactions on Caribbean Coral Reefs.

Mentor / Sponsor: Dr. Paul Sikkel

Cleaning of larger, host-fish species by small fishes and shrimps is common on Caribbean reefs. Although cleaning interactions are considered an excellent example of mutualism, there is limited evidence that clients benefit from cleaning in terms of reduced ectoparasite loads. The actual causes of cleaning behaviors are also controversial. In this study, we quantified loads of gnathiid isopod larvae on long fin damselfish (*Stegastes diencaeus*), a common coral-reef fish client of cleaning gobies (*Elacatinus spp.*), from St. John, US Virgin Islands. Parasites were collected from fish that were caged on the coral reef substratum for 2-3 hour blocks over a 24 hr cycle. Caging prevented fish from interacting with cleaners. We found that gnathiid loads peaked strongly at dawn. This correlated with variation in gnathiid emergence from the substratum and loads on free-living fish at sites in both Puerto Rico and St. John. Free-living damselfish clients observed at the same study sites also spent significantly more time posing for and being inspected by cleaners at dawn than at other times of the day. Our results confirm recent experimental results on captive clients and are consistent with the mutualistic interpretation of cleaning symbioses.

Collin Schaumburg – Wildlife Biology

Sex and Habitat Differences In Parasite loads among Centrarchid Sunfishes (Lepomis spp.) In Western Kentucky

Mentor / Sponsor: Dr. Paul Sikkel

Parasites have been found to affect behavior and fitness in some fishes (Bartoli et al 2000), including reproduction (e.g., mate choice and parental investment) and habitat choice. For example sticklebacks (*Gasterosteus*) in vegetated microhabitats have higher parasite loads than fish in open microhabitats (Poulin and Fitzgerald 1988), and fish change their swimming paths in the presence of parasites. Centrarchid sunfishes (*Lepomis*) are among the best-studied North American fishes. Considerable data exist on their reproductive habits, diet, and habitat choice. While descriptive studies have characterized parasite communities of sunfishes, not much is known about parasite communities on fishes in this region, or the relationship between parasites and the behavior and ecology of sunfishes generally. As a first step in addressing this lack of knowledge, I plan to compare ectoparasite loads between males and females, among habitats, and during the spawning and non-spawning seasons. I will collect fish by seining at 5 different sites in Kentucky Lake, Kentucky. Only adult males and adult females will be kept; non-target species and juveniles will be released. Once caught, fish will be sexed and processed in the laboratory for parasites (primarily monogeneans). Sampling of fish will be done pre-spawning (water temperature <65° F), spawning, and post-spawning periods. I hypothesize that: 1) males will have a higher rate of parasitism than females due to decreased mobility from defending the nest, and increased testosterone and corticosteroid levels; 2) parasite loads will correlate positively with vegetation; and 3) the amount of parasites will be highest during spawning season.

Kelly Seely – German*Hitler's Ideology: The Religious-like Qualities***Sponsor / Mentor: Dr. J. Milton Grimes**

Was Adolf Hitler's ideology a view on how a government should be run, or was it a religious view? Hitler was one of the most powerful and influential people of all history. Hitler's ideology forever changed Europe's borders and outlook on foreign policy. Hitler's ideology was formed during three major periods in his life starting out with his childhood. This presentation will highlight how Hitler's family life and small-town atmosphere shaped him as an authoritarian. His time in Vienna with his friend August Kubizek will highlight the formation of his political views. The process that brought the self-proclaimed fanatical conservative, Hitler, to an ideology that was quasi-religious will be explained in the historical context of WWI as he was fighting in the Germany army. In the presentation, I will argue that Hitler's ideology is religious-like in that it surrounds a central powerful figure, addresses a "problem" of impurity and moral right, and provides a cleansing of the impurity that caused the problem. I will support the fact that his control of the masses characterizes his own belief that his ideology was more than political, and that it was in fact religious-like.

Brittain Sexton – English: Creative Writing*Driving Through the Rear-View Mirror***Mentor / Sponsors: Dr. George Hovis and Dr. Mark Malinauskas**

I have written a short story entitled "Driving Through the Rear-View Mirror." My story follows the life of a jaded record producer in modern-day Los Angeles. Through depiction of the tragedies, dark humor, and ordinariness in this man's life, I touch upon themes of alienation, vanity, and pride as attributes of modern America. In many ways, my story is a direct reflection of American life and the evolution and future direction of our culture.

Jessica Lynne Shaw – Wildlife Biology*Comparison of Parasites Among Life Stages in *Ambystoma talpoideum****Mentor / Sponsors: Dr. Leon Duobinis-Gray and Dr. Howard Whiteman**

This study will give a unique look at the differences between the parasite load and occurrence within two life stages in mole salamanders, *Ambystoma talpoideum*. Individuals in the pedomorphic life stage reach maturity while retaining larval characteristics such as gills, and a membranous tail. It is also these characteristics which bind them to an aquatic lifestyle. Metamorphic individuals transform before becoming adults and lose their larval characteristics, allowing them to enter the terrestrial environment. These life stages separate the individuals into two ecosystems (aquatic and terrestrial) which suggest that differences between parasites in the same host species might occur according to life phase. Juveniles were also sampled for parasites, providing a third life stage for comparison. Mole salamanders were collected from known populations in Land Between the Lakes recreation area using minnow traps and dip nets. Individuals were placed in isolation to collect their feces. Parasites are separated from fecal samples with a sucrose gradient floatation and prepared on a slide for further observation under a microscope. Results of this analysis will be presented.

Keytonia Shepard – Psychology*The Under Representation of Minority Characters on Network Television***Mentor / Sponsor: Dr. Stephanie Muller and Becki Majors**

Television has evolved considerably since its origins in the twentieth century. However, the portrayal of minority characters on television has remained primarily the same. It is important to investigate this surprising trend because of the implications it has on perceptions of minorities held by those who infrequently come into contact with persons of color. Of course there are more minority characters on television than there have been in the past, but a 1996 study in which participants viewed a segment of *Cops* found that subjects enjoyed the segment of *Cops* more when the criminal suspect was African American (Oliver, 1996). Research conducted by Mastro found that minorities appeared mostly on crime shows (1996). When paired with a 1998 study (Li-Vollmer) that found that minorities were overrepresented on television but in roles considered to be subservient, it becomes clear that the perceptions television is painting for America is unrealistic. For many Americans whose exposure to minorities is limited, these depictions influence perceptions of persons they have never met. Further research is necessary because it appears that television has not come as far as many of us would like to believe, and this research can provide the foundations for change in the media.

Sarah Shook - French with Teaching Certification

America in France: A Love-Hate Relationship

Sponsor / Mentor: Dr. Janice Morgan

The United States is accused by many for having a culture that invades other countries. France, because of its acceptance and resistance of the infiltrating American culture, demands particular attention. There are different terms that can be associated with what is happening culturally in France right now with the ever-increasing emergence of the American culture. These terms, globalization, cultural imperialism, and Americanization are examined in the paper both through definition, and a look at different issues related to each. By exploring both sides of these issues, the split spirit of the French is presented.

Whitney Shirley, Lindsey Donoho, Emily Tilford, Billy Hooks, Billie Dawn Moss, Chris Rodgers, David Hayden, and Chadrick Hall – Agriculture

Effectiveness of Sulfonylurea Herbicides Applied to Nutsedge and Broadleaf weed

Species in Dark Fired Tobacco Production

MSU Faculty Sponsors: Ken Bowman, Jay Morgan, and Patrick Williams

Added Sponsors: Andy Bailey, Tim Lax, Robert A. Hill, and Robert Miller

In the Donoho, Tilford, Hooks and Bowman study, the effectiveness of two different herbicide applications that are not currently labeled for tobacco were evaluated. Two separate experiments were conducted to evaluate the potential for the use of two sulfonylurea herbicides, CGA362622 (Trifloxysulfuron-sodium) and halosulfuron-methyl, in dark tobacco. Currently sulfonylurea herbicides are applied post emergence over-the-top in corn and soybeans to control broadleaf weeds. Sulfonylurea herbicides controls a wide variety of weeds at low rates, exhibit crop/weed selectivity, have low environmental persistence, and low mammalian toxicity. Each herbicide was applied either post emergence over-the-top on month after setting or post emergence directed eight weeks after planting. Herbicides were planted at rates of 0.07 or 0.10 oz/A for trifloxysulfuron and 0.07 or 1.0 oz/A for halosulfuron-methyl. Applications were made with a CO₂-pressurized backpack plot sprayer calibrated to deliver twenty gallons per acre with flat fan spray nozzles. Over-the-top applications were made with a 4-nozzle spray boom with twenty-inch spacing. In the Moss, Rodgers, Hayden, and Morgan study, replicated trials were conducted to compare the advantages and disadvantages of current commercial dark tobacco varieties during the 2004 season. Varieties tested include DF 911, DT 538, DT 518, KY 171, TN D950, VA 359, VA 309, Little Crittenden, TR Madole, and Narrow-leaf Madole. SN 2108 is a black shank resistant variety tested that will be available in the market next year. The layout of the test plots was a randomized complete block design with four replications. The following herbicides were applied: 1.1 pounds of pendimethalin per acre and 4 ounces of sulfentrazone per acre. The plots were transplanted in the field on June 9, 2004 and no irrigation was applied. Plants were detopped on July 28, 2004. Suckers were controlled by applying a butralin and fatty alcohol mix to each plant. The plants were harvested between the dates of September 20th through 22nd. The overall yields, yield of each leaf grade, and the quality of the leaves from each variety will be reported. Statistical analyses will be conducted to determine differences between the varieties. Hall, Swiney, and Williams hoped to better enable dark-fired tobacco producers to select the best varieties of tobacco. They conducted replicated trials to compare the advantages and disadvantages of current commercial dark tobacco varieties during the 2003 season. The layout of the test plots was a randomized complete block design with four replications. Each plot was 300 ft², with 4,900 plants per acre. The amount of fertilizer applied was 300 lbs N, 30 lbs P₂O₅, and 80 lbs of K₂O per acre, respectively. Post emergent herbicides used were Prowl at a rate of 1 and 1/3 qt/acre and Spartan (liquid form) at a rate of 12 oz/acre. The plots were transplanted into the field on June 9th. On August 4-7 the plants were detopped. Applying Butralin and a fatty alcohol mix to each plant controlled suckers. Plants were harvested, or housed in the barn on September 15-19. We will be reporting the overall yields, yield of each leaf grade, and the overall average income per acre of each variety. Statistical analyses were conducted to determine differences between the varieties.

Mary Shultz – Criminal Justice

Trafficking of Humans

Mentor / Sponsor: Dr. Paul Lucko

I will present a descriptive oral and power point presentation on the trafficking of humans around the world. Human trafficking is the third largest commodity in organized crime today. I will focus on the Department of Justice and the "Trafficking in Humans Report" that is updated on an annual basis. I will also cover current events such as the human trafficking in the wake of the tsunami tragedy.

Jenni Siler – Organizational Communication

Katie Oller – Spanish Education

Science and Christianity

Mentor / Sponsor: Dr. Howard Whiteman

Both science and Christianity provide explanations of the world and influence the decisions of world leaders, including those in the United States. Therefore, this research seeks to identify the parallels and bridges between these two concepts of the truths or principles upon which the world operates. For this goal to be accomplished, a scientific analysis of some of the various claims of Christianity must be conducted through critical thinking, evidential reasoning, and logic. Critical thinking includes questioning, examining evidence, analyzing biases and assumptions, and considering alternate interpretations; and evidential reasoning subjects hypotheses to tests of falsifiability, logic, comprehensiveness, honesty, and sufficiency. Therefore, these scientific principles will be employed in a careful examination of the biblical record and the historical figure of Jesus Christ in an effort to determine the nature and strength of the relationship between science and Christianity.

Janet Smith, Amy Cox, and Shae Throgmorton – Dietetics

Nutrition Care Process vs. SOAP Charting

Mentor / Sponsor: Dr. C. Jeffrey Frame

The purpose of this research was to learn dietitians' opinions about their current methods of charting versus the American Dietetic Association's proposed standardized nutrition care process (NCP). We hypothesized that dietitians would prefer NCP documentation over traditional charting methods as being easier to interpret and providing a better quality of care. Questionnaires and information were mailed to area registered dietitians. We concluded that more education is needed to increase interest in converting to a standardized form of documentation.

Michael Shane Smith – Geosciences

Assessing Murray and Surrounding Areas With Multi-Sensor Satellite Data

Mentor / Sponsor: Dr. Burl Naugle

Monitoring the dynamics of Murray and its surrounding area (e.g. LBL, Purchase Area) grassland/forested boundaries is important for understanding the causes and consequences of changes observed in these areas. Remote sensing data can play an important role for mapping the characteristics and monitoring the dynamics of the boundaries. Landsat-7 and/or Quickbird data will be used in the project. These transitional areas can be characterized using multi-spectral Landsat ETM+ and/or Quickbird images, red band reflectance images, radar images, or multi-temporal and multi-spectral data. Data analysis methods will include one or all of the following: linear spectral unmixing, principal components analysis (PCA), and sensitivity of mixture modeling to end-member selection. These methods will help determine pure pixels within the image data for interpreting the change in the boundaries.

Emily Spencer, Denice Manley, Marcie Holmes, Alicia Carrington, and Adrienne Hubbard – Psychology

What Types of Depression F.F.O.s Can Cause and Various Solutions for Treatment

Mentor / Sponsor: Dr. Mam-Yassin Sarr

Have you ever heard of an F.F.O., or otherwise known as the "freshman freak-out"? If not, by the end of our presentation you will have. We will be discussing not only what an F.F.O. is, but also different types of F.F.O.s that can cause different types of depression among students on campus. Our presentation will mainly focus on depression among college freshmen, and the various solutions that can prevent an F.F.O. from causing depression before it starts. We will assess at least ten sources as literature in our presentation to justify the information we present. The research will be presented orally and be aided by at least one video and poster.

Christopher Sperry and Tera Rica Murdock y – Chemistry
A New Class of Inhibitors of an Aminoglycoside Antibiotic Kinase
Mentor / Sponsor: Dr. James Ricky Cox

The emergence of bacterial resistance to antibiotics has reached a crisis level and is considered a public health emergency. Many types of bacteria have countered the overuse of antibiotics by expressing a multitude of inactivating enzymes that render the drugs ineffective. A family of bacterial enzymes that serves as detoxifying agents of aminoglycoside antibiotics has been identified as *APH(3)*. Along with π -phosphotransferases (*APH(3)* ATP-dependent aminoglycoside 3 stacking interaction π - π hydrogen-bonding interactions, these kinases utilize a involving an aromatic amino acid to bind the adenine ring of bound nucleotides.) enzymes has not been the target of Since the adenine-binding region of *APH(3)* drug design efforts, our approach was to test a variety of hetero(aromatic))-IIIa, one of N systems, distinct from the adenine ring, as inhibitors of *APH(3)* the most prevalent aminoglycoside kinases. Steady-state kinetic experiments with two naphthalene derivatives and two isoquinoline derivatives have identified one of the most potent inhibitors of *APH(3)* enzymes identified to date.)-IIIa with respect to N5-Nitroisoquinoline was a competitive inhibitor of *APH(3)* ATP and had an inhibitory constant of 9.72 μ M. Although the other compounds tested were not potent inhibitors of the enzyme, quantum-mechanical calculations on these (hetero)aromatic systems provided valuable information on the molecular determinants needed for adenine recognition in this antibiotic resistance enzyme.

Amanda J. Stone – Psychology
Attitudes Toward Transracial Adoption
Mentor / Sponsor: Dr. Lori A. Harris

This study examined the relationship between attitudes toward transracial adoption (TRA), degree of identification with humanity, and openness to diversity. One-hundred sixteen college students (90 female, 25 male) ranging in age from 18 to 39 (mean age=19.74) received two scenarios describing a same-race adoption and a trans-race adoption and were asked three questions concerning their support for each adoption. Participants also completed the Attitudes toward Transracial Adoption Scale, (Whatley, 2003); Identification with All Humanity Scale (McFarland, 2004), and a measure of openness to diversity (Weiss & Lyon, 2001). A series of Pearson Product Moment Correlations for all measures in the study indicated that the more that participant supported same-race and trans-race adoption, the more positive their attitudes toward TRA were. Also, high supporters of TRA and those with favorable attitudes toward TRA tended to identify more closely with all humanity and be more open to diversity than those who reported lack of support for TRA. In addition, the closer participants identified themselves with all humanity, the more open they were to diversity. Finally, within-subjects ANOVA indicated that individuals were more likely to support a same-race adoption over a trans-race adoption. There is a need to better understand the attitudes that people have toward TRA. Negative attitudes toward transracially adopted children can be detrimental to a developing child's identity and to the community's support of the adoptive family. Understanding these views and attitudes can help serve the adoptive community better.

Tracy Stover, Fred Paul, and Jeffrey Henderson – Engineering Physics
Acoustic Conditioning
Mentor / Sponsor: Dr. James Hereford

It is common for audio engineers to examine a concert hall to determine how the hall reflects and absorbs sound. This allows them to adjust their equipment to work with the concert hall. No mass-market device exists that will allow consumers to do the same analysis in their own living room. It is our goal to design a device that will accept an audio input, automatically perform this analysis, adjust the frequency components of the audio input, and then send the audio onto the sound system. A prototype of this device will be designed and tested. Using Digital Signal Processing (DSP) technology, a white noise signal will be played throughout the room of interest. The frequency response of the room, captured by calibrated microphone, will then be analyzed via mathematical computer-based analysis software such as MatLab. Problem frequencies will be determined and a program developed to dynamically equalized sound in those problem areas will be developed. The program is to be loaded onto a programmable DSP chip. This chip will then be connected to the home system. Input to the chip will come from the device needing to be equalized, the signal conditioned for the specific room, and then played through the room's sound system. This is meant to enhance this home theatre system to the level of professional quality sound conditioning.

Curtis Sullivan-German*Jewish Culture in Berlin after Unification***Sponsor/Mentor: Dr. Reika Ebert**

The Holocaust is undoubtedly the worst human catastrophe of the 20th Century. One amazing story of near destruction and survival is that of the Jews of Berlin. Berlin was the Nazi's capital, and was the location where the genocide was planned. Therefore, it is ironic that thousands of Jews chose to relocate there after the war. Berlin served as a transit point for homeless, westward bound European Jews attempting to escape continued persecution. Along with some refugees from Eastern Europe, some native Berlin Jews chose to remain there, in order to rebuild their decimated community. This mix of native born Jews and those from various countries helped to shape the Jewish community in Berlin. When the Berlin Wall came down and Germany was reunified, the Jewish community in Berlin faced new challenges. This study will attempt to shed some light on how Jewish culture in Berlin is currently being expressed, i.e. through literature, music, religious and non-religious organizations, and the preservation of important Jewish cultural sites. The study will also expose some of the problems that Jews in Germany currently face, as well offer some insight into how German-Jewish relations have evolved since German reunification.

Danielle Sutterer, Cassie Abbott, Ashley Arnold, Tyler Parrott, Heather Stroupe, Kara Hopkins, Elizabeth Adams, Nicole Myers, and Darnell Hopkins*Racial Issues in Murray***Mentor / Sponsor: Dr. Mam- Yassin Sar**

The research project will look at race and race-related issues. One section of this project will include derogatory terms or statements that people might tend to conspicuously or inconspicuously make and not realize are harmful (i.e. "honkey" or "wet back"). Another topic that will be covered will be myths and realities, associated with the Racial issues, for example, the assumption that affirmative action helps blacks more so than it helps women. Thought-provoking questions and statements, as well as a section on the broader picture dealing with race as a problem area on a global scale will also be covered. Our goal will be to show our target audience, Murray, what the cost would be to them and others if they do not work towards ameliorating those problems that exist within race.

Sandra Thompson – Chemistry*Arsenic in Blackburn***Mentor / Sponsor: Dr. Harry Fannin**

The Department of Physics and Engineering acquired a plasma for arsenic etcher that had, in the past, used gallium arsenide. Since a potential for transferable arsenic possibly existed, a spot check was performed to see if there was a need for a study of the instrument and surrounding areas. This spot check indicated some levels of arsenic. A full survey was performed where samples were collected from the instrument, room the instrument was housed, classes, and offices on the first floor of Blackburn based on the recommended wipe sampling by OSHA. The method used for examining the samples was a modification of the "Silver Diethyldithiocarbamate Method" found in the Standard Methods for the Examination of Water and Waste Water, 14th Edition. The detection limit for this method is one µg of arsenic. None of the samples showed concentrations of the arsenic above the detection limit. Therefore, it can be concluded that there is no threat of transferable arsenic in Blackburn Science Building from the etcher.

Emily Tilford, Lindsey Donoho, and Billy Hooks – Agriculture*Effectiveness of Sulfonylurea Herbicides Applied to Nutsedge and Broadleaf weed**Species in Dark Fired Tobacco Production***Faculty Sponsor: Ken Bowman, Andy Bailey, Tim Lax, and Robert A. Hill**

A study was conducted in 2004 at Murray State University to measure the effectiveness of two different herbicide applications that are not currently labeled for tobacco. Two separate experiments were conducted to evaluate the potential for the use of two sulfonylurea herbicides, CGA362622 (Trifloxysulfuron-sodium) and halosulfuron-methyl, in dark tobacco. Currently sulfonylurea herbicides are applied post emergence over-the-top in corn and soybeans to control broadleaf weeds. Sulfonylurea herbicides controls a wide variety of weeds at low rates, exhibit crop/weed selectivity, have low environmental persistence, and low mammalian toxicity. Trifloxysulfuron-sodium is currently being tested for use in cotton and halosulfuron-methyl is registered for use in cotton. Both control nutsedge and broadleaf weed species. Each herbicide was applied either post emergence over-the-top on month after setting or post emergence directed eight weeks after planting. The herbicides were planted at rates of 0.07 or 0.10 oz/A for trifloxysulfuron and 0.07 or 1.0 oz/A for halosulfuron-methyl. Applications were made with a CO₂-pressurized backpack plot sprayer calibrated to deliver twenty gallons per acre with flat fan spray nozzles. The over-the-top applications were made with a 4-nozzle spray boom with twenty-inch spacing. The directed applications were made with drop nozzles placed twelve inches below the top of the plant canopy and directed into the row middle to limit herbicide contact with foliage.

Edward Zachary Tinkle – History

World Proliferation of Weapons of Mass Destruction: A Study of Policy Options Facing the United States

Mentor / Sponsor: Dr. Michael Basile

In my study, I analyze the current world situation with respect to weapons proliferation, looking at both these countries and to agencies interested in disseminating Weapons of Mass Destruction (WMDs) and those trying to stop the spread of WMDs. One of America's most important partners in promoting anti-nuclear proliferation activities has been the International Atomic Energy Agency (IAEA). The U.S. has launched the Proliferation Security Initiative in an attempt to bolster the IAEA's authority and make it more effective at preventing the dissemination of nuclear weapons and their related technologies. A key step in the prevention of proliferation activities has been the identification of nations who are engaged in the sale or distribution of WMD's or the technology to manufacture them with, and also finding those nations seeking to acquire such weapons or technology. There is also the threat of terrorists seeking to obtain these weapons. It is my goal to find some kind of workable policy between the United States and international organizations to prevent WMD proliferation.

Brandi Townsend – History and Spanish

Why a Wolf Whistle Ended in Murder: Emmett Till's Story

Mentor / Sponsor: Dr. Stephanie Carpenter

In August 1955, Emmett Till, a young black teenager from Chicago, endured a kidnapping and beating before being shot and thrown in the Tallahatchie River near Money, Mississippi. While Till enjoyed a visit to see his family in the Mississippi Delta, he didn't think his stay would end with his death. Till allegedly made mild sexual overtures to a young white woman named Carolyn Bryant in the convenience store she and her husband owned. When her husband Roy Bryant and her brother-in-law J.W. "Big" Milam heard about what had happened, they sought out make an example of Till to other blacks who tried to cross the racial line. While Bryant and Milam were acquitted of the murder, they later confessed their crime in *Look* magazine. The years after the Brown vs. Board of Education decision that mandated integration marked a tense time in racial relations. The thesis of my paper is that Till's murder was not merely about one man's vengeance toward another: the social climate in 1955 and the killers' unabashed confession indicate that Till was murdered because he had crossed the racial boundaries that white racists were determined to preserve. I examine elements of racial tension in Mississippi the 1950s and give an analysis of the killers' confession. New evidence that has been recently uncovered suggests that the crime involved more people that could be charged in a reinstated case. With the upcoming anniversary of Till's death and the possible trial of accomplices to his murder, this case is particularly note worthy.

Sara Turner – Art

Modern Meat Production

Mentor / Sponsors: Dr. Sarah Gutwirth and Dr. Lillian Daughaday

The painting begins with my interest in rationality, a topic discussed by George Ritzer in his book *The McDonaldization of Society*. Rationality has its roots in modern thinking on bureaucracies, scientific management, and mass production by German sociologist Max Weber, Frederick Taylor, and Henry Ford. Rationality is a process or search by people for the optimum means to a given end and is controlled and shaped by rules, regulations, and bureaucratic social structures. Ritzer points out how the world is becoming increasing rational. It is dominated by efficiency, predictability, calculability, and nonhuman technologies that control people. Ritzer emphasized the disenchanting and dehumanizing effects on society when rationality is sought or achieved. He coined this irrationality. One example of rationality is modern meat production. Eric Schlosser investigates the modern meat production system in *Fast Food Nation*. In the modern production of meat, big companies like ConAgra, the biggest meat packer in the world, own feedlots where thousands of cattle are kept standing in their own feces. The cattle are fed diets of corn, which is an unnatural feed for cattle; however it expedites the maturation of cattle from two to three years down to fourteen months. This increases the production of meat in less time, therefore accruing more money for ConAgra. Unfortunately more money comes with a price. Feedlots are harbors for diseases like salmonella. Procedures at the slaughterhouse, where efficiency and production become priorities over safety and hygiene, only help spread infection. My painting illustrates and creates awareness of the modern meat production system through visual elements such as color choice, repetition, and the ambiguous form of the meat.

Sara Turner – Art

“The Managed Heart” The Disenchantment and Exhaustion of Emotional Labor and Its Links to McDonaldization

Mentor / Sponsor: Dr. Lillian Daughday

My presentation will develop an understanding of Arlie Hochschild's term emotional labor, which refers to the management of emotions, primarily by women, in the service sector; (for example, jobs included are flight attendants, clerical workers, counselors, waitresses, secretaries, and prostitutes). Having researched a wide range of information, the focus of the presentation will explain how emotional labor is a by product of McDonaldization and will cite the effects of emotional labor: exhaustion, disenchantment, and creative action.

Alissa Volp – Public Relations

Discovery

Mentor / Sponsor: Dr. Ivan Pulinkala

John Locke advocated the theory of tabula rosa. Each human is born with a clean slate. Every experience a person encounters in life leaves markings on the slate. The experience of life is the seed of inspiration behind my choreography. My discoveries during the past years at Murray State University have developed me into a unique person. These years of independence have reminded me that the past is what created me. My friend recently had a baby named Ethan, which allowed me to study the actions and discoveries of someone new. Ethan was very animated-kicking, stretching, and reaching. The opening movement of the dancers is abstracted from this gentle moving of a baby. When a child is young, he radiates outwardly, continuing his journey of intrapersonal and interpersonal exploration. As he grows and interacts, he becomes more curious about the world. To show this discover, I used movement reaching from inside to extend through the limbs. Exploration results with an experience, contributing to his development. This outward growth counteracts to inward growth as he experiences pain or disappointment. His life is not new, but tarnished with the trials life heaved on him during his journey of discovery. My choreography interprets this through sharp, retracting motions that carry it through an exploration of circular growth. While thinking of Locke's tabula rosa and a life embarking on its journey, I continue to develop my choreography. I hope others can draw on my interpretations and discover their own understanding of life.

Christine Walker – Wellness and Therapeutic Sciences

Individuals with Asperger's Syndrom

Faculty Sponsor: Dr. Betty Blodgett

This paper will examine the areas of language and social interaction abilities that are generally impaired in individuals with Asperger's Syndrome and high functioning autism, and also consider different styles of therapy and their effectiveness in improving these. I will first briefly define and explain Asperger's and high functioning autism and differentiate between the two. The main body of the paper will focus on common pragmatic problems that this population has, including problems with topic maintenance and topic appropriateness, eye contact, closeness issues, problem solving skills, repetitive behaviors and verbalizations and communication behavior appropriate to public settings. The main therapies and styles examined for effectiveness in language training will be: social interactive training, applied behavior analysis, TEACCH and the use of social stories. Each will be explained and analyzed for advantages and disadvantages as language therapy guides.

Christy Walker – Communication Disorders

Nancy Parrish – Pre-Med

Kristen Gunderson – Nursing

Effects of the 40 Hour Workweek

Mentor / Sponsor: Dr. Howard Whiteman

We will show how the 40 hour American workweek has affected American family structure and American's general health, using research in published journals and media sources as well as by surveying 200 American workers. Specifically, we will examine how the extended workweek has affected the divorce rates of couples working 40 hour weeks and the relationship between the 40 hour workweek and child/parent relationships and children's mental and emotional health. We will also examine how the 40 hour workweek has affected American workers' physical, emotional and mental health.

Janelle Walker, Nick Galyen, Austin Webb, Pete Miller, and Andrew Alexander – Engineering Physics

Vehicular Measurement Device

Mentor / Sponsor: Dr. Art Pallone

There are many dynamometers that have been developed; however, none of these measuring devices allow you to travel the actual track that the vehicle is planning on traveling. This comes in extremely handy for bicycles and moon buggies that do not travel along smooth tracts. As these vehicles go up and down rocky terrain and inclines, this vehicular measurement device will calculate acceleration, inclination, and torque. Another feature is that this vehicular measurement device will measure the heart rates of the drivers. This is important considering the vehicles in question are powered by the drivers themselves. The device will be constructed using heart rate sensors, accelerometers, and a constructed gyroscopic inclinometer which will be connected to an electronic board that will be interfaced with a computer. The data then will be presented most likely in graphical form to allow the vehicle owners to compare how different drivers performed and at how the vehicle performs at different obstacles.

**Jessie White, Megan Scott, Billie Dawn Moss,
Brad Brookshire, Jennifer Pierce, and Billy Hooks**

Fungicide Trial on Soybeans Using Two Nozzle Types

Faculty Sponsors: Dr. David Ferguson, Dr. Tony Brannon, and Dr. Rocky Napier

An experiment was conducted to test two strobilurin fungicides on soybeans with two different commonly used nozzle types. Azoxystrobin is currently being used to improve soybean productivity. Pyraclostrobin is experimental, but registration is expected in the near future. These fungicides were tested with both a flat-fan and air-induction nozzle type on separate plots. Garst 4888RR was planted on 25 May 2004 with 30-inch row width and 35 feet long plots. The treatments were applied with a CO₂ charged hand boom sprayer applying 15 gallon per acre. The treatments were: a) 0.0979 lbs. a.i. per acre of pyraclostrobin with 0.25% non-ionic surfactant with air-induction nozzle; b) 0.0979 lbs. a.i. per acre of pyraclostrobin with 0.25% non-ionic surfactant with flat-fan nozzle; c) 0.0975 lbs a.i. of azoxystrobin per acre with air-induction nozzle; d) 0.0975 lbs a.i. of azoxystrobin per acre with flat-fan nozzle; and e) as a unsprayed control treatment. These treatments were applied at the R3 stage. The plots were harvested 7 – 8 October 2004. The yields were calculated for the different treatments and statistical analysis will be conducted on the results.

K. Elizabeth Whitesell – Spanish

We Were All Going to Be Queens: A Metaphorical Autobiography of Gabriela Mistral

Sponsor / Mentor: Dr. Mica Howe

While several publications have been devoted to the life and works of Chilean poet, Gabriela Mistral, few have exclusively dealt with the cohabitation of the two and of the intimacy in which they exist in her verse. Mistral's craft was so skillfully honed that many personal allusions in her poetry are overshadowed by more decipherable—yet more superficial—themes and metaphors. A poem exemplary of this fact is *We Were All Going to Be Queens (Queens)*, from the collection, *Destruction* (1938). One of her most interpreted works; it is a beautiful illustration of her literary dexterity and how, almost imperceptibly, she wove her own history into prose. This study intends to delve deeper into *Queens*- thus delving deeper into the psyche of Mistral, herself. An analysis of the poem's four characters (Rosalia, Soledad, Efigenia, and Lucila) in cohesion with reflection over Mistral's own life will provide the framework for this investigation. The research will consider the more obscure themes and motifs of Mistral's writing as they fall into four categories: Romance, Solitude, Vapidity, and Acceptance. These four literary themes will not only identify the structure of the poem, but will also provide a more comprehensive view of Mistral's original concept.

G. Rob Whitfield – Political Science and Philosophy

Bekah Carmichael – English / Secondary Education

Jessica Crockett – History

Developing Digitally: The Impact of Technology on Youth and Young Adults

Mentor / Sponsor: Dr. Howard Whiteman

This research analysis will relate the recent expansion of personal communication and entertainment technology devices to the development of youth and young adults in the "Net Generation." The purpose of the study is to explore the roles technology play in the development of children. Specifically, the research will explore several ways recent technology, such as cellular telephones, the internet, computers and advanced video games, affects the Net Generation regarding connectivity, social interaction, learning opportunities, potential dangers, etc. The research will also investigate the possible role modern television plays on the Net Generation. The presentation will combine technological data and recent statistics with sociological research in order to assess positive and negative aspects.

Jon Wilke – Public Relations

Blogs' Influence of 2004 Presidential Elections

Mentor / Sponsors: Dr. Jeanne Scafella and Dr. John Dillon

The most obvious use of blogs in any election campaign is as information tools. Both 2004 presidential candidates' blogs were aggressively updated with the latest news and photos from the campaign trail. For example, between 12:09 a.m. and 9:38 a.m., October 27, 2004, five posts were made to blog.johnkerry.com. Of these, only one official post was actually news, two were campaign opinion pieces, one highlighted supporters' appearances on the next day's morning news shows and another was an endorsement letter from Howard Dean himself. This type of information kept readers informed on campaign positions, upcoming rallies, breaking news and the latest campaign TV ads. Many times, readers were encouraged to coordinate voter registration drives, promote fundraising events or communicate with target audiences through direct mail or other awareness raising efforts. One Dean Campaign worker said, "The blog itself is not about getting votes, it's about activating people to get votes (Cone, 2003)." Readers were also allowed to submit their own campaign ideas. Campaign blogs usually contained email links for feedback - like blog@georgewbush.com- or readers' posts were automatically placed on blogs. "Bubbling up" epitomized and later labeled in the Dean campaign was the use of blogs for "bubbling up," a bottom-up, issues-oriented approach to campaigning...

Kathryn Wimberley – Agriculture/Horticulture

The Effects of Different Fertilizer Applications on Acer rubrum 'Autumn Blaze(r)' and Acer rubrum 'Red Sunset(r)' on Pot-in-Pot Nursery Production

Mentor / Sponsors: Dr. Pat Williams and Dr. David Ferguson

Kentucky West Nursery Cooperative, producers of pot-in-pot trees, needed recommendations on slow-release fertilizer applications due to regional environmental influences affecting production. Murray State University established a pot-in-pot tree nursery to research these influences in 2004. Two different fertilizer applications in three different treatments were tested on one-year old bare-root whips of Acer rubrum 'Red Sunset®' and Acer rubrum 'Autumn Blaze®'. These trees were planted in 100% pine bark in 15-gallon pots and placed in the sockets with a complete random split-block design. Drip irrigation by spray stakes watered each pot. Nursery floor was kept clean by landscape fabric. New growth was pruned as needed to keep the trees within nursery standards. Tree calipers were measured on April 1, 2004 and December 1, 2004 at the beginning and end of growth. Leaves for chlorophyll readings were randomly selected to measure nitrogen uptake in late summer. Measurements were analyzed by SAS 9.1 and results found no significant differences among the treatments, either in caliper increase or in chlorophyll levels (SAS, 2002). This experiment recommends a treatment using one application of slow-release fertilizer, versus split or additional applications, provides equal, quality growth of Acer rubrum 'Autumn Blaze®' and Acer rubrum 'Red Sunset®'. The information gathered will direct fertilizer applications for KWNC and reduce their labor costs.

Catherine Woglom – Agricultural Education

A Comparison of Commonwealth Accountability Standardized Test Scores Between High School Agricultural Education / Career and Technical Education Students and the Kentucky State Standards

Mentor / Sponsors: Dr. Jay Morgan and Dr. Brian Parr

Throughout the history of education, assessment has been a crucial part of the teaching process. Various forms of assessment can "affect decisions about grades, advancement, placement, instructional needs, and curriculum" (Dietel, 1991). In Kentucky, the Board of Education designed the Commonwealth Accountability Testing System, or CATS, to assess its school programs. Each school has its own performance goal for every two-year period, ending in 2014. By 2014, the Board of Education hopes every school will receive a score of at least 100 out of 140. While scores can be evaluated by grade, they can also be evaluated by a number of other divisions, such as academic program. Scores in various areas can vary greatly depending on the student's curriculum choice. For example, students enrolled in an agriculture program may fare differently than those enrolled in communication classes in the areas of science, reading or mathematics. A study of these varying scores will not only improve student interest in certain educational programs, but also spotlight programs that may need assistance in reformatting curriculum or teaching styles. Through a look at the CATS scores of Kentucky's high schools in 2003, the overall scores of agriculture students compared to those of non-agriculture students can determine the effect agricultural education has on the CATS test. By evaluating these scores by educational program, the CATS tests can be used to evaluate not just the curriculum of the subjects being tested over, but also the programs that contribute to learning these subjects. Through this evaluation, Kentucky's standardized tests can be used to their fullest potential by assessing curriculum and teaching styles, and in turn aiding in the advancement of education.

Emily Woods – Wildlife Biology (Zoological Conservation)

Volunteering at Land Between the Lakes - Elk and Bison Prairie

Mentor / Sponsor: Dr. Howard Whiteman

The Elk and Bison Prairie, Land Between the Lakes' (LBL) newest visitor attraction, opened to the public in June of 1996. The prairie consists of approximately 750 acres devoted to the restoration of native grasses and wildlife to the region while serving as a wildlife viewing opportunity to educate visitors. I will be volunteering at the Elk & Bison Prairie once a week until the middle of April, serving as an assistant to the staff by observing, recording, and reporting on prairie conditions, wildlife, equipment, and events. Field Journal notes and appropriate forms will be turned in daily. By volunteering to conduct observations at the Elk and Bison Prairie, I will be making a contribution to restoring a native habitat that was lost in less than a generation.

Christin Yates – Public Relations

Preparing Murray State Students for the Music Industry

Mentor / Sponsor: Dr. Sonya G. Baker

This project explores the skills necessary to successfully work in a variety of areas within the music industry and the ways in which a Murray State University student can acquire those skills. The presentation includes information gathered from interviews with professionals in the field, including advice for success, suggested resources, and recommended college course work. Finally, this project proposes the addition of a Music Business or Arts Administration curriculum to Murray State University based upon an analysis of similar curricula in adjoining states' institutions.

Molly Goodman – English

Dr. Gilbert Dunn, University Coordinator

Jennifer Lacewell – Political Science

Dr. Sue Outland, University Coordinator

Renata Priest – Elementary Education

Dr. Janna Reed, University Coordinator

Kelly Reeves – English

Dr. Ginny Richerson, University Coordinator

Erin Schauburger – Elementary Education

Dr. Sherry Monroe, University Coordinator

Lindsey Vandiver - Math

Dr. Gilbert Dunn, University Coordinator

Catherine Woglam – Agriculture

Dr. Jay Morgan and Dr. Brian Parr, University Coordinator

Student Teacher's Eligibility Portfolio

Jeanie Robertson Coordinator of Student Teaching College of Education - Teacher Education Services

Each student teacher is required to present an eligibility portfolio and supporting material to faculty during the student teaching semester. Both a hard copy in notebook format and electronic version of the portfolio must be submitted. Developing an eligibility portfolio involves selecting appropriate artifacts to demonstrate attainment of the professional skills and dispositions represented in the New Teacher Standards. The eligibility portfolio also requires a reflective statement for each standard. While selecting a good artifact that addresses a standard is important, the reflections are where the student teachers are able to communicate their understanding and share their thinking about important teaching and learning issues. Through these reflections, they demonstrate their competencies related to each of the New Teacher Standards. The focus of the Murray State University College of Education's conceptual framework is to prepare graduates to become reflective decision-makers and to achieve Kentucky Standards. The eligibility portfolios provide the opportunity for student teachers to verify that they have achieved these goals.

Tim Alonzo, Tiffany Elam, and Naomi Sato

The Great American Smokeout

Amanda Beasley, Michael Andrews, and Amanda Saunders

Pet Care and Responsibility Program

Jenny Colson, Susan Garnett, and Jessi Porter

Helping for the Holidays

Amy Cope, Michelle McHaney Hawkins, and Ashley Scott

Keeping Kids Safe with Dogs

Nicole DeFreeze, Scott Edwards, and Lanier Sprague

FACT

Jenny Drake and Tiffany Payne

Basic Aid Training

Patrick Greer, Brian Stewart, and Angie Woolfolk

Monday Night Live

Bo Irvin and Ashley Hare

Refuge

Nuchjaree Jhanmanee, Phan Jetanalin, and Subuttama Tantayaphinant

Blanket for Life

Jamie Luker, Lucy Coffman, and Pearson Griffith

Racer Hygiene Drive

Tina Matheny

Total Tiger Fitness

Candace Nichols and Lori Upton

The Party

Ashley Roberts, Casandra Ersel, and Brandi Edwards

BAT FIRE Safety

Cheri Roberts, Leslie Hanson, and Stephanie Bumm

The Party

Kelli Watson, Amy Ramage, and Justin Lewis

Pizza and Pigskin in the Park for Big Brothers Big Sisters

Allison Webster and Lindsey Phillips

Disaster Institute

Shawn Withersopoon, Danyelle Shaw, and Laura Lee Winchester

How much is that Doggie in the Window?

Undergraduate Students in American Humanics in the Youth and Nonprofit Leadership Minor

Mentor / Sponsor: Dr. Roger Weis

American Humanics students in the Youth and Nonprofit Leadership Minor are required to complete a class in program planning. A part of that class is to divide up into teams of 2 - 3 students and plan, implement, and evaluate actual programs done in conjunction with local nonprofit organizations. The students in the program planning class developed projects for safety and health with the American Red Cross, volunteer recruitment projects with the local Big Brothers Big Sisters program, and youth outreach programs with local churches, to mention several.

Lare Allen, Aubrey Relf, and Michelle Williams

H.O.P.E. (Helping Others Pursue Excellence)

Wes Aussenbaugh, Hope King, Marcus Royster, and Aaron Pettus

Salvation Army Soup Kitchen Volunteer Training Program

Pamela Byrd, Mary Chandler, Amy Kost-Hawk, and Beverly Sims

Baby Its Cold Outside, Indoor Activities for Cold Rainy Days

Nabraunda Dickerson, Karen Davis-Vaughn, and Summer Carney

Parental Involvement Program

Erin Diel

A Reason for Thanks

Becky Luanne, Tanya Lubben, Alice Quarles, and Cory Standridge

Planting Seeds for Change

Paula Sims, Regina Huggins, and Trecia Townsend

Motherhood

Fontella Woodson, Demarcus McVey, and David Cobb

Project Safe

Graduate Students in American Humanics in the Masters in Human Development and Leadership

Mentor / Sponsor: Dr. Roger Weis

American Humanics students in the Masters in Human Development and Leadership are required to complete a class in leadership and program planning. A part of this class is to divide up into teams of 2 - 3 students and plan, implement, and evaluate programs done in conjunction with local nonprofit organizations. The students in the class developed projects for pre-natal care, parental involvement, and motherhood to mention several. Each project required an evaluation on the part of the recipients of the service and each project was reported on in class through a poster presentation.

Notes

**Program Booklet Organization and Layout: Phil Schooley, URSA Program Assistant
Program Booklet Assembled by: Brittany Binkley, Casey Gunnels, Thomas Kroner,
Amanda Rosewell, Laura Rudolph, and Phillip Wright**