Program and Abstracts

Celebration of Student Scholarship

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Showcase of Student Research, Scholarship, Creative Work, and Performance Arts

April 12-14, 2007

Celebration of Student Scholarship

April 14, 2007

Table of Contents

Program Overview **Adron Doran University Center**

Registration	8 – 8:50 a.m.	3rd Floor Lobby
Continental Breakfast	8 – 8:50 a.m.	Commonwealth Room
Welcome	8:50 – 8:55 a.m.	Commonwealth Room
Dr. David Magrane, Showcase Organizer		
Student Presentations	9 a.m. – 3 p.m.	
15' Oral Presentations	9 – 11 a.m.	301, 302, 312, Riggle Room
Poster Sessions	11 a.m. – 12 p.m.	3rd Floor Lobby
Lunch	12 – 12:50 p.m.	Crager Room
15' and 25' Oral Presentations	1 – 3 p.m.	301, 302, 312

I am pleased to welcome you to the inaugural event of the Celebration of Student Scholarship at Morehead State University scheduled April 5-8, 2006. During this campus-wide event, the University community will acknowledge the excellent efforts of students in research, scholarship, and creative productions. I take great pride that at MSU, scholars teach and empower a diverse population of students to succeed in pursuing their educational goals.

As president of this great University, I believe teaching, scholarship, and service go hand in hand to provide the most effective learning environment. Faculty members, who effectively mentor students at the University, provide a vital spark that challenges and stimulates these creative minds. As a result, our academic programs provide abundant opportunities for students to work side by side with faculty in meaningful research and creative initiatives. This special week-long event provides a unique opportunity for everyone to see the outcomes of these faculty-mentored student projects. The work presented by these students is truly amazing!

As you review the Celebration of Student Scholarship program, you will find an array of undergraduate accomplishments in individual and group research projects, creative efforts, and artistic performances in a variety of academic disciplines. By attending this showcase, you provide support and encouragement to our young scholars and artists.

The vision for our University is to be recognized for our superb teaching and learning. Through the efforts of our dedicated faculty, Morehead State University will become a premier "institution of choice" for students who want to engage in the process of discovery and become outstanding citizens in an ever challenging and changing world.

Most sincerely,
Wayne Andrews, Ed.D., President

Welcome to Morehead State University's first Celebration of Student Scholarship. I have been pleased to see the continuing growth in student scholarship across campus, whether it is students engaged in independent research or creative production or faculty and students engaged in collaborative scholarship. I am proud of this scholarship and celebrate its growth.

As you review the contents of this program, hear the presentations of students or view their posters and performances, please note the great diversity in disciplines and types of scholarship represented. Within the context of Ernest Boyer's construct of scholarship, you will find all four types represented in this program: *discovery* of new knowledge about scientific principles or processes; *integration* of the theories and findings of others; *application* of principles and creative works; and you will find scholarship of *teaching* illustrated in posters, presentations, creative productions and performances.

This Celebration is an excellent illustration of the integration of scholarship, teaching, and learning. I wish to thank the many faculty who have committed themselves to the intellectual and artistic growth of our students. I also wish to congratulate the students who accepted the challenge to engage in the role of student scholar; to stretch their minds and talents; and to become role models for their peers. Please enjoy our Celebration of Student Scholarship.

Michael R. Moore, Ph.D., Provost

"The Student Research and Creativity Celebration is the capstone event that recognizes the important contributions of faculty and student collaborative research to the overall education of our students at Morehead State University. Our faculty and students alike benefit tremendously from these one-on-one teaching and learning experiences."

Robert Albert, Ph.D., Dean, College of Business

"This Celebration Week showcases MSU's students - their talents, their enthusiasm, and evidence of their research projects. The College of Education faculty and staff are proud of these awesome students."

Cathy Gunn, Ph.D., Dean, College of Education

"Those within the arts, humanities and social sciences applaud a new focus and priority placed on collaborative learning between faculty and undergraduate students engaged together in research and creative productions. A curriculum based upon 'Undergraduate Scholarship' will advance interdisciplinary activities, promote learning communities, and enhance a student's entire academic experience."

Michael Seelig, J.D., Dean, Caudill College of Humanities

"The annual Celebration of Student Scholarship is the most exciting and stimulating event of the academic year. It marks the culmination of the collaborations among students and faculty that take place throughout the year."

Gerald DeMoss, Ph.D., Dean, College of Science and Technology

"Undergraduate research is the best way to actively engage students with faculty in enterprises that extend teaching and learning well beyond the classroom. When students and faculty get involved in undergraduate research their skills, knowledge, and capacity are significantly impacted and their enthusiasm and intellectual imaginations go off the charts!"

David Rudy, Ph.D., Dean, Institute for Regional Analysis and Public Policy

Celebration of Student Scholarship

Adron Doran University Center
Morehead State University

April 14, 2007

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15 Minute Session-ADUC 301

Program Schedule

9 – 9:15 a.m. **Establishing VHF/UHF and S-Band Command Nodes for KySat-1**

301

***Jennifer B. Carter, Jeffrey Kruth, Mentor,* Department of Industrial Engineering, College of Science and Technology**

KentuckySat (KySat) is a cubesat project currently in development, for launch in early 2008. Cubesats are small (pico-class) satellites that are 10 cm^3 and weigh 1 kilogram or less. CubeSats are complex systems with their own on-board computer controller, communications systems, associated antennas, power condition system, batteries and solar cells, directly mimicking much larger and costlier systems. KySat-1 has two transceivers (VHF/UHF and S-band) requiring two ground stations to be maintained. In the proposed work, we plan to design, implement, and operate two ground stations, a VHF/UHF ground station and an S-band ground station utilizing the MSU 21 M Space Tracking Antenna. This project will be undertaken in conjunction with the KySat consortium, NASA Ames, and Stanford University.

9:20 – 9:35 a.m. **Microvariabilty in Active Galactic Nuclei at Centimeter Wavelengths**

301

***James W. Atwood, Thomas G. Pannuti, Mentor,* Department of Space Science, College of Science and Technology**

Active Galactic Nuclei (AGNs) are some of the most distant objects known in the universe. One of the interesting characteristics of AGNs is that they vary in brightness over a variety of time scales, ranging from long term (years or decades), to intraday (days or weeks), to extremely short (hours or minutes). Using the Morehead State University 21m Space Tracking Antenna we can measure short term variations (microvariability) of the radio frequency radiation of these distant objects. Initial observations of a set of target AGNs have been undertaken. Additional observations of these target objects will be made at 1.4, 2.4, and 12GHz to measure microvariability and to produce data points for broadband SEDs of these AGNs. These data sets will be correlated with simultaneous optical (Bell observatory) and The Gamma Ray Large Area Space Telescope (GLAST) observations to produce broad band, multiwavelength observations of a selected target set of AGNs. An additional goal of this project is to become a node in the NASA GLAST network.

9:40 – 9:55 a.m. **Defining gain and system temperature of the Morehead State University 21-Meter Space Tracking Antenna**

301

***Megan E. Ennis, Dr. Benjamin K. Malphrus and Jeffery Kruth, Mentors,* Space Science Center, College of Science and Technology**

The Morehead State University 21-Meter Space Tracking Antenna is a medium aperture centimeter-wave length radio telescope. The performance of this antenna is highly dependent upon the instrument's radio frequency (RF) performance characteristics. Primary among these are antenna gain and system temperature, which are determined in this study

primarily using an L-Band (1.4-1.7GHz) system. While it is difficult to directly measure antenna gain or system temperature, a characteristic known as G/T (often referred to as the antenna figure of merit) can be empirically measured. Both antenna gain and system temperature can be numerically derived from the G/T measurements. The value of G/T serves as a predictor of the instrument's ability to detect and measure characteristics of distant astronomical sources.

10 – 10:15 a.m. **A Study of Pulsating White Dwarfs and Sub-Dwarf B Stars**

301

***Sarah E. Smith[1], Dr. Dwight Russell, Dick Campbell, Mentors,* Center for Astrophysics, Space Physics, and Engineering Research, Baylor University, Space Science Center[1], College of Science and Technology**

Research was conducted to determine if a group of white dwarfs and sub-dwarf B stars pulsate. One star that was researched is a known pulsator, that star was G226-29. This research was conducted since extensive information can be concluded about a certain star from its pulsations. Some of that information that can be gathered from studying pulsations is the stellar mass, core composition, and magnetic field strength of a certain star. Information was gathered on the KBS107, KBS08, KBS35 and KBS44 at the Paul J. Meyer Observatory near Clifton, Texas. From the information gathered conclusions, where drawn that the stars in question do not pulsate. The data that was gathered on G226-29 helped to show the triple peak in the period.

10:20 – 10: 35 a.m. **A CHARMing study of the Aurora Borealis**.

301

******Toby A. Hale*[1], **Dr.** *Craig A. Kletzing*[2], **Dr.** *Scott R. Bounds*[2], *Mentors,* **Department of Physical Sciences**, **University of Iowa**[2], **Department of Physics and Astronomy, Space Science Center**[1], **College of Science and Technology**

The Aurora Borealis creates a magnificent display in the night sky, and intrigues those of us in the field of Space Physics. In Spring 2007 a suborbital sounding rocket named Correlations of High-Frequencies and Auroral Roar Measurements will be flown from Alaska. This rocket will carry instruments known as ElectroStatic Analyzers (ESAs) that will determine correlations between waves and particles that create the Aurora. I have calibrated two types of these ESAs, a bagel style and top-hat style detector, in a vacuum chamber using an ultraviolet lamp as an electron beam source. By varying the frequency of a square wave representative of Ionospheric waves across a grid lamp in front of the source I have found the angular response of each type of detector, as well as the correlation capabilities of these instruments.

10:40 – 10:55 a.m. **Quantifying impervious surface cover for Morehead, Kentucky using aerial photographs**

301

***Nicholas Rose, Dr. Zachary Bortolot and Dr. Christine McMichael, Mentors,* Institute for Regional Analysis and Public Policy**

The fact that paved surfaces are impervious to water gives rise to a wide range of negative environmental and economic impacts in many areas. As part of a larger project working to develop a fully automated procedure for quantifying impervious surface cover, this research combined aerial photography, geographic information systems (GIS) datasets, and field work to estimate the percentage of impervious surface cover for Morehead, Kentucky in 2004. Results showed that field-derived estimates of impervious surface cover correspond well with those obtain by interpreting aerial photographs (R^2 = 0.83), and that Morehead consists of 8.84% (±1.59%, CI = 95%) impervious surface. Additional research is underway to apply the technique to historic aerial photographs, and to reduce the uncertainty using computer image processing.

15 Minute Session-ADUC 302

9 – 9:15 a.m. **Effect of calcium channel antagonists and sex on bone metabolism in aged Brown Norway Rats**

302

***Brent Kidd and Dr. Darrin DeMoss, Mentor,* Department of Biological and Environmental Sciences, College of Science and Technology**

Bone metabolism and calcium transport are fundamentally linked to one another, suggesting that calcium channels are a potential point of regulation. Calcium channel antagonists are utilized therapeutically to block voltage-regulated L-type calcium channels, theoretically decreasing Ca^{++} flow into or out of cells. This study observed the effects of representative antagonists (diltiazem, nifedipine, and verapamil) in several different methodologies: blood pressure analysis, metabolic studies, and organ isotope extraction in aged male and female Brown Norway Rats. The isotope utilized in these protocols was ^{3}H-Tetracycline, a compound readily deposited in bone and freely exchanged between both the bone fluid and calcified compartments. Data analysis allowed us to compare the effects of sex and calcium channel antagonists on various physiologic parameters.

9:20 – 9:35 a.m. **Characterization of osteoblastic cultures after acclimation to reduced levels of fetal bovine serum**

302

***Ryan D. Grey, Dr. Darrin L. DeMoss and Dr. Michael E. Fultz, Mentors,* Department of Biological and Environmental Sciences, College of Science and Technology**

To decipher the mechanism through which estrogen elicits its action on osteoblasts, experimentation necessitated a culturing environment reduced in estrogenic compounds. The media (OPTI-MEM) is enriched to sustain cultures under reduced fetal bovine serum (FBS) conditions; this media is devoid of the pH indicator phenol red, (a suspected estrogenic agent). This protocol successively reduces the concentration of FBS to 0%. The protocol does not appear to alter the viability, cell morphology, or osteoblastic phenotype of the cell line utilized (7F2). Colorimetric assays and immunohistochemical techniques have verified that the cell line still expresses osteoblastic markers. These findings suggest the culture protocol developed has not altered the osteoblastic nature of 7F2 cells and provides a model system to study estrogen's antiresorptive role on skeletal turnover.

9:40 – 9:55 a.m. **Genetic control of pigmentation in ornamental koi, *Cyprinus carpio***

302

***Thomas C. Sloas, William B. Pace, Dr. David K. Peyton, Mentor,* Department of Biological and Environmental Sciences, College of Science and Technology**

Pigmentation in most vertebrates is controlled by the biochemical pathways that regulate the expression and distribution of melanin. Many genes contribute to the final outcome but in mammals one of the most influential genes is the melanocortin-1-receptor (Mc1r). Variations in this gene are responsible for many of the coat color variations seen in domestic and wild animals, and for the red and brown hair phenotypes in humans. Recent work in goldfish indicates that the Mc1r gene may also influence pigmentation in fish, and suggests a possible determinant of the wide variety of colors seen in ornamental fish such as the koi. We have isolated and sequenced the Mc1r gene from koi to assess whether variation at the DNA level correlates with color differences among fish.

10 – 10:15 a.m. **Development of laboratory exercises for undergraduate genetics and biotechnology courses**

302

***William B. Pace, Thomas C. Sloas, Dr. David K. Peyton, Mentor,* Department of Biological and Environmental Sciences, College of Science and Technology**

Ongoing changes in DNA technology and research have necessitated constant revision of laboratory exercises for undergraduate genetics and biotechnology courses. The goals of the laboratory are to use current technology to integrate classroom learning with hands-on experiences. Under the time constraints of most laboratory courses, the experiments must be optimized prior to class to avoid as much trial and error as possible and to facilitate the acquisition of results that can be analyzed by students. We have developed new protocols for the BIOL 304 and 446 courses that include sequencing of the melanocortin-1-receptor for humans and cattle, a human DNA fingerprinting protocol, and a reverse-transcription polymerase chain reaction assay for tumor suppressor genes.

10:20 – 10:35 a.m. **Effects of melengestrol acetate on estrous synchronization in goats.**

302

***Bradley E. Galbreath, Dr. Philip E. Prater, Dr. Kim E. Peterson, and Dr. Troy J. Wistuba Mentors,* Department of Agricultural and Human Sciences, College of Science and Technology**

The purpose of this study was to monitor the luteal response and synchronized pregnancy rates in goats using the oral progesterone compound, melengestrol acetate (MGA). This particular study endeavored to demonstrate the practicality and effectiveness of orally administered MGA on estrous cycle synchronization in female goats. In the control group 0 out of 14 does demonstrated any luteal response, whereas, the treatment does had a greater luteal reponse ($P < 0.05$). Overall pregnancy rates for the control and the treatment group were 50.0% and 92.9 % respectively. These results indicate that the dose of 0.25 mg/hd/day MGA should be beneficial in synchronizing estrous in does, resulting in uniform, timely, efficient kidding season.

10:40 – 10:55 a.m. **Pteridophytes of Carter Caves State Resort Park, Carter County, Kentucky.**

302

***Channing Richardson, Dr. Allen C. Risk, Mentor,* Department of Biological and Environmental Sciences, College of Science and Technology**

In order to inventory the fern and fern allies within the park, pteridophyte specimens were collected from September 2005 through October 2006. Examination of specimens in the herbarium of Morehead State University showed that 27 species had previously been documented for the park. A survey of relevant literature revealed that an additional species, *Adiantum capillus-veneris*, had been collected from the Carter Caves area. Field work within the last year confirmed the presence of all previously documented species, except *A. capillus-veneris*, and also added an additional 16 species to those already known for the park. Additional work at regional herbaria did not result in additional taxa for the park. Species found in the park that are uncommon within Kentucky are *Trichomanes boschianum* and *Dryopteris goldiana*.

15 Minute Session ADUC 312

9 – 9:15 a.m. **MSU through a television screen: Promoting university organizations and student well being through creative programming for MSU-TV on the Eagle Vision Network**

312

***Mandy Dixon, Tim L. Creekmore, Mentor,* Department of Communication and Theatre, Caudill College of Humanities**

As a recipient of the fellowship through the Dept. of Comm and Theatre, I supervise a staff of undergraduate Electronic Media Students producing thirty-second MSU Promotional Video Spots, including PSAs, Informative videos, Student Organization Promos and University Promotional Videos targeting MSU-TV viewers. I am also the producer of an MSU student affairs talk show called *The Beak Live*, which airs live at 5:00 p.m. every other Tuesday. I am presenting examples of these thirty-second Spots, and assorted video segments from *The Beak Live*.

9:20 – 9:35 a.m. **The impact of a firm's strategic alliance on its innovation in the software industry**

312

***Nathan Mills, Fatma Mohamed, Mentor,* Management, Marketing, and Real Estate Department, College of Business**

A firm is embedded in networks of relationships that often provide resources beyond those available from internal sources alone. The most important of a firm's network of relationships are termed strategic alliances. A firm's entry into strategic alliances is about leveraging the value of its internal resources with the external resources of its partners. From this relationship, a firm may draw upon the resources those alliances generate to introduce new technologies or products to the market. To assess the effects of a firm's strategic alliances on firm innovation in high tech industries, using a sample of 49 firms in the software industry, this study proposes that there is a positive relationship between a firms' strategic alliance and its innovation.

9:40 – 9:55 a.m. **Overcoming the struggle: exploring what gays and lesbians value about homosexuality**

312

******Jennifer Martin, Dr. Bernadette Barton, Mentor,* Department of Sociology, Social Work and Criminology, Caudill College of Humanities**

Subject to institutional oppression, bigotry and hostile acts, gay people hear many negative messages about homosexuality. In spite of this, gay people find much to value about themselves as sexual minorities. Drawing on in-depth audio-taped interviews with 12 lesbians and 14 gay men in the geographic area commonly referred to as the Bible belt, this presentation explores gay and lesbian perceptions about what they esteem about their sexual identities. Subjects most often shared that they felt being homosexual gave them more empathy for other minorities, it freed them from confining gender role expectations, and they appreciated being a part of the most current wave of progressive social change.

10 – 10:15 a.m. **The pink house still stands: property rights, eminent domain, and economic development**

312

***Brandy Eden, Dr. William C. Green, Mentor,* Department of Geography, Government and History, Caudill College of Humanities**

State and federal governments have the constitutional power to take private property for a public use and to pay the owner just compensation. In *City of New London v. Kelo* (2005), the U.S. Supreme Court permitted New London, Connecticut to use its eminent domain power to take Susette Kelo's non-blighted middle class pink house and those of her neighbors and to convey them to other private owners in order to revitalize the city by generating increased tax revenue and employment. This presentation will examine the Supreme Court's decision and the firestorm of criticism it met in state legislatures and courts which have acted to protect property rights by restricting the power of state and city governments to seize private property for economic development.

10:20 – 10:35 a.m. **A qualitative overview and demonstration of various uses of non-verbal communication in the choral rehearsal**

312

***Paul W. Robinson, Dr. Greg Detweiler, Mentor,* Caudill College of Humanities, Department of Music**

Esteemed choral conductor, Rodney Eichenberger, states, "Our responses to non-verbal cues are such an integral part of our lives that most of us are unaware of the subtlety of their impact." I have conducted research on various forms of non-verbal communication in choral conducting from posture, breathing, and facial expression to vocal production, various vocal techniques, and intonation. A small student vocal ensemble will accompany my presentation as I demonstrate the effect of each of these aspects of non-verbal communication in choral conducting. Ultimately this

presentation will give an overview of my research by qualitatively demonstrating how non-verbal communication influences a choral ensemble and provide valuable insight into methods of engaging in efficient, effective, and expressive communication in the choral setting.

10:40 – 10:55 a.m. **Gallery and Exhibition Project Management and Design**

312 ***Laura Haywood, Jennifer Reis, Mentor,* Department of Art, Caudill College of Humanities**

The Undergraduate Fellowship in Gallery and Exhibition Project Management focused on both practicum and theoretical concepts related to exhibition management manifesting in eight exhibitions both at MSU and in Lexington, and emphasized project management logistics, exhibition design including design and creation of wall text, exhibition and arts programming promotion, hospitality and event oversight, public relations specific to visiting artists and scholars, and art transportation and installation (including a project consisting of seventy linear feet of artwork that took twelve consecutive hours of preparation and installation). This fellowship was designed to fully prepare one to either enter directly into gallery and/or museum work or to obtain a graduate assistantship in a university gallery in pursuit of an M.F.A.

15 Minute Session Riggle Room

9- 9:15 a.m. **Little league liability: big league problems**

Riggle ***Daniel Lorenz and *Todd Sharrock, Dr. Michael Hypes and Dr. Julia Ann Hypes, Mentors,* Department of Health, Physical Education, and Sport Sciences, College of Education**

Participation rates in little league sports continue to climb. What was once an activity viewed as "fun" for children is now seen as a formal sport career building commitment. This research project looked at legal cases and issues of risk that surround little league baseball. Much of this litigation and causative action mirrors situations and problems found in major league sport. Information found through this research that will be shared includes participation rates, little league regulations, key cases, key doctrine, and risk management tips.

9:20-9:35 a.m. **A tumor is anarchy; Adults metaphoric production about health experiences**

Riggle

***Jamie Stepp, Alena Hromish, Heather Salyers, Caitlin Linepensel, Dr. Lynn Haller, Mentor,* Department of Psychology, College of Science and Technology**

People use metaphorical language in everyday communication. A metaphor connects two objects or ideas that are not otherwise related. An open-ended survey was dispersed by mass email to the campus community including all students, faculty, and staff in order to determine if people use metaphorical language in expressing ideas about health related issues. We evaluated whether persuasive introductions and sentence structure influenced metaphor usage and creativity. A database was comprised of all metaphors produced by the participants. Metaphors were then encoded for levels of creativity. The population was divided into two conditions. The Metaphor Condition provided an introduction persuading why metaphorical language is an effective tool for expressing ideas. The Literal condition provided a persuasive introduction that literal language was an effective tool for expressing ideas. Demographic information was collected to see how subject variables may affect language and communication. Demographics included gender, age, MSU status, level of education, and area within the U.S. that they originated from. It was hypothesized that individuals in the Metaphor Condition would produce significantly more metaphors due to the suggestive introduction than the Literal Condition.

9:40 – 9:55 a.m. **The association between children's hostile attributions and their adjustment**

Riggle

***Cynthia N. Martin, Elizabeth J. Martin, Royce K. Vance, Tarah Combs, Dr. Shari L. Kidwell, Mentor,* Department of Psychology, College of Science and Technology**

Hostile attributions, in which others are believed to have malicious intentions, have been found to predict children's aggressive behavior. The aim of this study was to examine whether such tendencies would influence children's self-perceptions. Forty-four children (*M*= 4.5 years) completed an interview in which they were read nine stories involving potential conflicts. For each, they were asked whether the characters acted "on purpose" and what their response would be if the incident happened. Thirty-four children were interviewed two years later (*M* = 5.8 years) to assess self-perceptions. Children's responses to the stories predicted their report of internalizing (e.g., sadness) and externalizing symptoms (e.g., aggression), peer relationships, and academic competence. These findings suggest that preschoolers' hostile attribution biases may have pervasive effects on their subsequent functioning.

10 – 10:15 a.m. **The Effects of Amphetamine Dose on Circadian Patterns of Food Intake in Rats**

Riggle

****Marcus B. Hundley, Dr. Ilsun M. White and Dr. Wesley White*, *Mentors,* Psychology Department, Morehead State University**

Rats administered 2.0 mg/kg amphetamine are hypophagic from hours 1-6 following treatment, have normal intake from hours 7-12, are hypophagic from hours 13-27, and have normal intake from hour 28 and beyond. The purpose of this research was to see how amphetamine dose affected the circadian pattern of food intake. Rats were housed in individual stations where, at three-hour intervals, they could respond for food for one hour. During five-day tests they received a saline treatment followed by a 48-hour assessment period, and then they received an amphetamine treatment (0.25, 0.5, 1.0 or 2.0 mg/kg, subcutaneously) followed by a 72-hour assessment period. Lower doses produced short-term, but not longer-term hypophagia, indicating that the two phases of hypophagia are not due to a unitary process. Grant support: R15DA015351 (NIDA) and P20RR016481 (NCRR)

10:20 – 10:35 a.m. **Juvenile alcohol exposure produces long-lasting cognitive dysfunction in adulthood**

Riggle

****Joseph Mayhorn, Dr. Ilsun White, Mentor,* Department of Psychology, College of Science and Technology**

Exposure to alcohol affects cognitive behaviors in both humans and rodents. Few studies have examined the long-term effects of exposure to this drug during development. Using a rodent model we examined the enduring behavioral changes resulting from exposure to alcohol during adolescent period. Juvenile rats were injected with alcohol for 2 weeks, and were tested on learning tasks in adulthood. We found that alcohol treatment during adolescence impaired performance on behavioral tasks that depend on the prefrontal cortex. Our data suggest that enduring behavioral deficit is due to alcohol exposure and subsequent damage to the prefrontal cortex. Currently, we are examining the implication of these results in humans. This study was supported by NIH grant (R15MH067606).

10:40 – 10:55 a.m. **Influence of test anxiety and symptoms of DSM-IV-TR anxiety and mood disorders on ASRS scores**

Riggle

****Courtney Brown, Richard Cates, and Bernard Voss, Dr. Sean P. Reilley, Mentor,* Department of Psychology, College of Science and Technology**

Attention rating scales, commonly used in diagnosing Attention Deficit Hyperactivity Disorder, show limited utility in discerning attention problems due to AD/HD from those secondary to psychiatric disorders. Prior work with the Adult Self-Report Scale (ASRS) has shown anxiety and depression symptoms can potentially yield false-positive AD/HD results. The present study extended these findings by examining the influence of specific mood & anxiety disorder symptoms, and test anxiety. Two hundred college adults without positive AD/HD histories completed the ASRS, PDSQ,

and TAI. Major Depressive Disorder symptoms (r > .30) afforded strongest relationships with attention problems on the ASRS. Partially consistent with predictions, anxiety symptoms contributed substantially less than MDD to ASRS scores. Finally, test anxiety yielded significant relations with ASRS after controlling for other psychiatric symptoms.

Poster Session 11:00 - 11:50 a.m. 3rd Floor Lobby

P. 1. **Links between styles of loving and reports of post-betrayal experiences**

Lobby

***Kiersten Sandfoss, Dr. Laurie L. Couch, Mentor,* Department of Psychology, College of Science and Technology**

A variety of reactions to negative romantic experiences are possible. As one explanation, the current study investigates the role of love styles. College students were surveyed and asked to recall how a negative romantic event affected them in terms of their subsequent mental and physical health. Additionally, each participant's love style was assessed. Correlational analyses suggested that love styles were linked to these effects. Specifically, those with the manic and agapic styles of love were likely to report negative physical and mental health subsequently. However, ludic lovers reported no trauma symptoms in conjunction with the betrayal. Links were not observed between betrayal reactions and the storge, pragma, and eros styles. Clinical implications will be discussed.

P. 2. **An investigation of attachment style links to physical and psychological effects of romantic betrayal**

Lobby

***Trista E. Stark, Dr. Laurie L. Couch, Mentor,* Department of Psychology, College of Science and Technology**

Attachment styles have been found to play a key role in how people cope with new experiences. The current study specifically looks at how different styles of attachment are related to physical and psychological reactions while coping with a romantic betrayal. College students completed surveys about their negative romantic experiences, and analyses of variance based on survey responses revealed that participants' attachment styles were reliably associated with the degree of forgiveness, anxiety, unfinished business feelings, major depression, acute stress, physical effects, and health effects that participants experienced during the first month after the betrayal. Specifically, participants with a secure attachment style had fewer and less severe levels of physical and psychological effects than those with a preoccupied attachment style. Results will be discussed in terms of their clinical applications.

P. 3. **All about textbooks: A literature review**

Lobby

***Belinda Riley, Dr. Lola Aagaard and Dr. Ronald Skidmore, Mentors,* Department of Professional Programs in Education, College of Education**

Research reports that a minority of college students actually read the course textbook in preparation for examinations. Although professors widely lament students' propensity to ignore the carefully chosen textbooks, research specifically investigating why this phenomenon occurs is minimal. This presentation reports the results of a literature review on the topic of textbooks. Searches were conducted in ERIC, EBSCOhost Academic Search Premier, and Scholar Google for articles dealing with textbooks in secondary or post-secondary settings. Ninety articles were reviewed, covering seven categories: a) the history of textbooks; b) their general use; c) cost of textbooks; d) their readability; e) the relation of textbooks to student learning; f) student and educator opinions of textbooks; and g) the trend toward electronic texts. Recommendations for further research are made.

P. 4. **The effect of nifedipine in sequestering ^{3}H-tetracycline in skeletal compartments**

Lobby

***Andrew J. Auxier, *Gregory C. Howard, Dr. Darrin DeMoss, Mentor,* Department of Biological and Environmental Sciences, College of Science and Technology**

Calcium is essential in many of the body's mechanisms and can be found in two separate compartments within bone, the labile pool, which consists of bone fluid and the stable pool, which is composed of calcified bone. This project investigated the positive or negative impact of nifedipine, a calcium channel antagonist, on the bone fluid compartment in normal male and female rats. The experimental model required ^{3}H-tetracycline, a compound deposited in the active mineralization front and released from the bone fluid and the calcified compartments during calcium exchange. Quantification of ^{3}H-tetracycline from the bone fluid and calcified compartments for bones obtained from both the appendicular and axial skeleton suggests that the male skeletal compartments are significantly larger than females and that individuality exists between bone types.

P. 5. **Impact of calcium channel antagonists and hormone replacement therapy on blood pressure in Brown Norway Rats**

Lobby

***Katie M. Manning, *Ashley M. Sargent, and Dr. Darrin L. DeMoss, Mentor,* Department of Biological and Environmental Sciences, College of Science and Technology**

The effects of estrogen and calcium channel antagonists were evaluated in six month old male and female Brown Norway Rats. Concentrations of estrogen were utilized which have previously prevented bone loss in rats, ensuring a maximal estrogen response. Calcium channel antagonists were injected daily, subcutaneously, at doses known to be effective in cardiovascular research. To evaluate the impact of calcium channel antagonists and/or estrogen replacement therapy on mean tail blood pressure, data was collected utilizing a non-invasive blood pressure system. Estrogen replacement therapy had no significant effect on blood pressure when compared to controls. Calcium channel antagonists significantly lowered blood pressure in both male and female rats. In females exposed to both therapy's blood pressure was still significantly lower than controls.

P. 6. **The effect of sex and calcium channel antagonists on bone turnover in Brown Norway Rats**

Lobby

***Mirissa J. Harmon, Brent Kidd, Dr. Darrin DeMoss, Mentor,* Department of Biological and Environmental Sciences, College of Science and Technology**

Bone metabolism is invariably correlated with calcium transport indicating that calcium channels are a potential point of regulation for skeletal remodeling. Calcium channel antagonists block voltage-regulated L-type calcium channels, decreasing the influx of calcium into cells. Experimentation utilized both sexes of Brown Norway Rats six months of age to compare the effects of the antagonists (diltiazem, nifedipine, verapamil), on bone turnover from both the bone fluid and calcified compartments. In order to evaluate the impact of these drugs on bone loss, bone resorption parameters were compared between normal animals, and animals receiving calcium channel antagonists. The model utilized to study bone turnover was the pharmacokinetic loss of ^{3}H-tetracycline, a compound deposited in the active mineralization front and freely released in urine.

P. 7. **Cell culture protocols required to maintain osteoblast-like cells in media devoid of fetal bovine serum**

Lobby

***Savannah Slone, *Courtney Forbis, *Rebecca Green, Dr. Michael Fultz and Dr. Darrin DeMoss Mentors,* Department of Biological and Environmental Sciences, College of Science and Technology**

Estrogen plays an important role in skeletal physiology by maintaining a remodeling balance between the activity of osteoblasts and osteoclasts. Protocols required to investigate estrogens role in osteoblastic action required a culturing

environment reduced in estrogenic compounds. Our laboratory has developed a culturing protocol that sustains osteoblast cells with minimal exposure to estrogen by decreasing fetal bovine serum supplementation. The experimental data to date suggest that the developed culture protocol does not alter the osteoblastic nature of the cell lines and provides a model system to study estrogen's antiresorptive role on skeletal turnover and the potential impact of calcium channel antagonists on estrogen's mechanism of action.

P. 8. **Effects of background color on pigmentation in dragonfly larvae**

Lobby

***Sally Maynard, Dr. Stephanie M. Welter, Mentor*, Department of Biological and Environmental Sciences, College of Science and Technology**

Larval dragonflies are strictly aquatic and experience long development times, during which they are vulnerable to a variety of predators. One way to avoid detection by visual predators is to resemble the environment in coloration. However, dragonfly larvae are found in virtually all water sources, exposing them to huge variation in substrate composition and coloration. We collected and measured pigmentation of dragonfly larvae to determine if their body coloration resembled the substrate coloration of the ponds from which they were collected. We then housed larvae on either a light or dark substrate to determine whether larvae could change pigmentation within a molt to better match their background. Our results indicate that pigmentation in larval dragonflies is a complex trait influenced by a variety of factors.

P. 9. **Determining case material preference in caddisfly larvae (Limnephilidae) in both natural and artificial environments**

Lobby

***Amberlee Byrd, Dr. Stephanie M. Welter, Mentor*, Department of Biological and Environmental Sciences, College of Science and Technology**

Prey species often depend on their ability to blend into their environment for survival, sometimes via object mimicry. A form of object mimicry exhibited by caddisfly larvae (Family Limnephilidae) is physical alteration of their appearance to resemble that of an inedible object. Limnephilid larvae use leaves, pebbles, sand, and small sticks found in their aquatic environment to construct a camouflaging case. We measured case material proportions used by caddisfly larvae in the wild. We then examined those individuals for their case material preferences in the lab by offering them a choice of four different materials. Larvae that chose case materials similar to their original case may have innate preferences for particular case-building materials, but other factors may influence case material choices.

P. 10. **Genetic diversity within patches and between patches of a single population of Japanese knotweed**

Lobby

***Kelly Murphy, Dr. Carol Wymer, Mentor*, Department of Biological and Environmental Sciences, College of Science and Technology**

Japanese knotweed (*Polygonum cuspidatum*) has an extensive rhizome (underground stem) system. Within a population, plants grow in patches. It is assumed that, within a patch, all plants are derived from a single rhizome. Adjacent patches could be plants from a separate rhizome, or buds from the rhizome of another patch. If members of a patch are from the same rhizome, they will be genetically identical. Similarly, if members of an adjacent patch are derived from a separate parent, then within the patch, plants will be genetically identical, but there will be genetic dissimilarity between patches. The genetic diversity of plants within patches and between neighboring patches was tested using DNA fingerprinting.

P. 11. **UmuD as an upregulator of *ddrR* in *Acinetobacter baylyi* strain ADP1**

Lobby

***Sara N. Perkins, Dr. Janelle M. Hare. Mentor*, Department of Biological and Environmental Sciences, College of Science and Technology**

E.coli can respond to DNA damage in a process known as SOS mutagenesis by expressing DNA polymerase V from the *umuDC* operon. The soil bacterium *Acinetobacter baylyi* strain ADP1 possesses unusual forms of these two genes

including a form of *umuD* that is 45% larger than its homolog in *E. coli*. *umuD* is also unexpectedly required for the full DNA damage induction of *ddrR*, a gene of unknown function. To further examine the relationship between *umuD* and *ddrR* we have created plasmids that will allow us to investigate the nature of UmuD as an upregulator of *ddrR*.

P. 12. **Evaluation of preliminary results on the possible oxidative protection of DNA by raloxifene**

Lobby

***Megan A. Darrell, Dr. David J. Saxon, Mentor,* Department of Biological and Environmental Sciences, College of Science and Technology**

Raloxifene is a selective estrogen receptor modulator used for treatment and prevention of osteoporosis and breast cancer. 17-β estradiol is reported to reduce oxidative damage of DNA. This study was designed to determine if raloxifene has similar activity. When supercoiled DNA was incubated in a reactive oxygen species (ROS) generating system of H_2O_2 and Cu(II), strand breaks produced by the system converted supercoiled to open circle DNA. Neither Cu(II) or H_2O_2 alone produced damage. Samples electrophoresed in agarose gels treated with ethidium were used to identify supercoiled and open circle DNA. Preliminary results indicate that when supercoiled DNA was pre-incubated with raxolifene and incubated in the ROS system, supercoiled was converted to circular, and increased pre-incubation time with raxolifene produced breaks in open circular DNA.

P. 13. **Efficient ligation of terminal transferase extended plasmids**

Lobby

***Lindsay Young and Dr. Craig Tuerk, Mentor,* Department of Biology, Morehead State University, College of Science and Technology**

Random sequence libraries are used for several types of investigative purposes, but are limited by the size of oligonucleotide that can be synthesized (usually less than 100 nt long.) In previous work, Qingbei Zhang showed that terminal transferase (TdT) could be used to create long single-stranded stretches of random DNA sequence on PstI-digested plasmid which could heterodimerize and form ligation products that can transform bacterial cells. The efficiency of transformation indicated that only 1/256 of the products ligated, suggesting that those that did ligate were complementary to the CTAG-3' overhang. To increase the ligation efficiency (and increase the searchable sequence space in such libraries), blunt-cut plasmid (SmaI) will be extended with a short stretch of polyC, followed by random insertions, then a short stretch of polyG.

P. 14. **PCR techniques for exploring the SOS response system in *Acinetobacter baylyi* strain ADP1**

Lobby

***Clint Banks and Dr. Janelle Hare, Mentor,* Department of Biological and Environmental Science, College of Science and Technology**

The soil bacterium Acinetobacter baylyi strain ADP1 possesses a novel SOS response system to DNA damage. I have used splicing and overlap extension PCR techniques to mutate the *ddrR-umuD* intergenic promoter region. Mutations were created in two inverted repeats, ligated into plasmids, and transformed into E. coli. I have also been working on transforming the plasmid pEX18Gm to contain tetracycline resistance, since gentamicine did not work well in the laboratory as a selection agent. I will use traditional PCR to amplify the tetracycline resistance gene from pBR322 with a NcoI site overhang on the outside of the primers. Inverse PCR will be used to remove the gentamicin resistance gene from pEX18gm with NcoI overhangs on the inside of the primers. The two PCR products can be ligated together to create a plasmid which has tetracycline resistance.

P. 15. **English language learners in the art classroom: art teacher perceptions of instructional afforadances and constraints**

Lobby

***Ryan P. Newberry, Dr. Emma G. Perkins, Mentor*, Interdisciplinary Cultural Department of Art, Caudill College of Humanities**

This research examined the art teacher perceived affordances and constraints of classroom instructional practices for English Language Learners (ELLs) and Limited English Proficiency Students (LEPs) as mapped to the ELL teaching strategies defined in the literature. The observation and qualitative interview included the areas: 1) schoolwide demographic information regarding ELL students, 2) classroom practice and art teacher perceptions of affordances and constraints within the school climate, and 3) correlation of observed strategies to those identified in the literature.

P. 16. Sex offenders: a curse on society, or is there a cure?

Lobby

***Brian Babcock*, *Dr. Paul D. Steele, Mentor,* Department of Sociology, Social Work and Criminology, College of Humanities**

Increasingly, sex offenders have been stigmatized in American society. Citizens fear having sex offenders living in their communities, and governments have reacted by enacting punitive laws and stringent policies. While well intentioned, restrictive policies have the potential effect of marginalizing sex offenders and possibly increasing their risk of committing new sex crimes.

This project examines the patterns of sex offender recidivism. Noting that all sex offenders are not at equal risk of re-offending, it considers the impact of risk reduction strategies, as well as risk enhancing factors, on recidivism. The research concluded that while intervention procedures should be tailored to the individual, some community-based rehabilitation, treatment and support programs create situations where sex offenders can reintegrate into society as productive, law abiding members.

P. 17. A Correlation of the Kodaly Philosophy and the Music Teachings in the Early Appalachian Singing Schools

Lobby

***Frances J. Lotz, Dr. June Grice, Mentor,* Department of Music, Caudill College of Humanities**

This research addresses the correlations revealed between the pedagogical techniques applied in the Appalachian Singing Schools, specifically in Kentucky between 1750 and 1900, and in the pedagogical techniques reflected in the Kodaly Music Methodology. This historical approach investigates how the basic components of the Kodaly Methodology involving melodic and rhythmic teachings were used in the early Appalachian Singing Schools. Both the Singing Schools and the later schools adopting the Kodaly Methodology used music that was aurally.

P. 18. Curriculum alignment in 8-16 English: a statewide teacher survey

Lobby

***Margaret Gulley, Kathryn Mincey, Mentor,* Department of English, Foreign Languages, and Philosophy, Caudill College of Humanities**

Based on data collected from a survey of Kentucky secondary English teachers, this project will analyze data that describes typical local curricular decisions and their relationship to Program of Studies and Core Content. In an effort to determine educators' perceptions of literacy, the survey will collect responses from English departments in school systems statewide to discover what Kentucky students are typically asked to read at various levels. Likewise, it may investigate the degree of alignment in teacher education programs that prepare future English teachers to teach those texts.

P. 19. The impact of specific symptoms of DSM-IV-TR anxiety disorders on ASRS scores

Lobby

***Bernard E. Voss, Dr. Sean Reilley, Mentor, Department of* Psychology, College of Science and Technology**

Studies have shown that anxiety symptoms negatively impact attention. Many anxiety disorders share symptoms which overlap with Attention Deficit/Hyperactivity Disorder, and AD/HD frequently coexists with Anxiety Disorders. The degree to which AD/HD rating scales are susceptible to symptoms of DSM-IV Anxiety disorders is unknown. This study

hypothesized that symptoms of several DSM-IV Anxiety Disorders with a broad worry component would yield significant relations with scores on the ASRS without a positive history of AD/HD. Two hundred college-adults without positive histories of AD/HD completed the ASRS and the Anxiety Disorders subscales of the Psychiatric Disorders Screening Questionnaire. Partially consistent with predictions, the strongest correlations ($r > .30$) between the ASRS and scores on the PDSQ Anxiety Disorder subscales were for those with a broad worry component.

P. 20. **Impact of test anxiety on reports of inattention and hyperactive-impulsive behaviors on the ASRS**

Lobby

***Richard Cates, Dr. Sean P. Reilley, Mentor,* Department of Psychology, College of Science and Technology**

Assessment of AD/HD includes self-report attention rating scales, which rarely have comparative clinical data from psychiatric groups. In a recent study, chronic high arousal yielded significant false classifications of AD/HD on the well-used Adult AD/HD Self Report Scale (ASRS). The present study examined relationships between a related anxiety construct, test anxiety, and ASRS scores. Based on prior work demonstrating significant relations between reports of chronic, high arousal and frequent attention problems, it was predicted and found ($r > .30$) that test anxiety would yield significant relationships with inattention and hyperactive-impulsive symptoms.

P. 21. **Readability and comprehension of online privacy policies**

Lobby

***Heather M. Flynn, Dr. Michelle B. Kunz, Mentor,* Department of Management, Marketing and Real Estate, College of Business**

This project analyzes the comprehension of online privacy policies, based upon Flesh-Kincaid Readability Scores (FKRS) and format of presentation. Privacy policies on major online retailers were downloaded, and revised from the original FKRS of 12 to approximately 8. Student subjects were asked to read two policies and then answer survey questions concerning policy content. Students were randomly assigned to one of two presentation formats, policies printed on paper and those presented on computer screen. Results are analyzed to determine if FKRS and/or presentation format influence accuracy of content comprehension.

P. 22. **Theoretical Foundations for American Privacy**

Lobby

***Cody Hawkins, Dr. Michael W. Hail, Mentor,* Institute for Regional Analysis and Public Policy**

This project involved an in depth examination of the key epistemological texts of Western Tradition upon which the American idea of the right to privacy is founded along with a study of privacy issues across the states with respect to technology and surveillance. Key texts by political theorists including Aristotle and John Stuart Mill were examined in regard to their influence on various sections of the U.S. and state constitutions as well as the recent emergence of Supreme Court jurisprudence on privacy rights. The research study included development of a comprehensive grid of the 50 states treatment of privacy issues with respect to technology and surveillance. The grid includes the dimensions of constitutional roles, bureaucratic organization, and policy authorities and the principal regulatory infrastructure for Third Party Federalism... Research from this study attempts to gain a better understanding of American constitutionalism and public policy-making in today's changing political institutions and society.

P. 23 **Behind the "Razzle Dazzle": A Scholarly Approach to Costume Design for the Popular Musical "Chicago"**

Lobby

***Lauren Dickerson, Denise Watkins, Mentor,* Department of Communication and Theatre, Caudill College of Humanities**

Most individuals can appreciate theatrical costume design in an aesthetic sense. This project however, focuses on design from a research perspective. A costume designer must take into consideration time period, geographical location, and

historical and social perspective, as well as the play's placement in theatre history. Each costume must reflect these aspects while dealing with character analysis, theme, style, and the director's artistic vision, the research and artistic process involved make theatrical design a more scholarly project than many realize. This project aims to demonstrate the process of designing costumes for the popular musical "Chicago".

P. 24. **The spanish golden age bibliography project**

Lobby

***Kayla Meadows, Dr. Philip Krummrich, Mentor,* English, Foreign Languages, and Philosophy Caudill College of Humanities**

This project is intended to provide a source where researchers can easily find the English translations of Spanish works of the 16th and 17th centuries. Our efforts could be the first step in a large collaboration that will provide information about many different languages and eras of literature. We intend to make this bibliography comprehensive and complex. It will be available in the form of a website. Alphabetical organization will simplify searching for a particular author, and publication dates will be included to assist decisions regarding the relevance or accuracy of a translation. With the Spanish Golden Age Translation Bibliography, it will be possible to do many tasks more efficiently. This will save researchers time, and perhaps also suggest new ideas and connections.

P. 25. **Post-civil war perceptions of Appalachia: a case study of the Rowan County War**

Lobby

***Valerie Ratliff, Dr. Janet Rice McCoy, Mentor,* Department of Communication and Theatre, Caudill College of Humanities**

This study analyzes twenty-four articles about the Rowan County War published in the *New York Times* between 1878 and 1900. Two questions explored in relation to the data set are: What stereotypes, if any, do the articles exhibit? Did these stereotypes make it easier for large corporations to exploit Kentucky's natural resources including coal, timber, and clay? The articles were divided into three categories: editorial, hard news, and feature stories. Then, using textual analysis, Appalachian stereotypes were identified in each category along with the stereotype's perceived impact at county, state, and national levels. In closing, this study explores whether or not lingering stereotypes of Appalachian culture create hurdles for Kentucky in today's global job market.

P. 26. **Tobacco through time: spatial expansion and contraction of tobacco growing in the U.S.**

Lobby

***Emily Howard, Dr. Verdie Craig, Mentor,* Department of Geography, Government and History, Caudill College of Humanities**

This study is a visual representation of the spatial diffusion and contraction of commercial tobacco production in the U.S. and Canada through a series of thematic maps showing quantities of tobacco grown in each state or province since 1850. It also includes a narrative concerning historic policies that shaped the tobacco economy into the current, limited tobacco producing regions of the two nations.

P. 27. **Research on the properties and applications of left handed negative refractive index metamaterials.**

Lobby

***Wayne Staggs, Dr. William Grisé (Department of Industrial and Engineering Technology) Dr. Bedri Cetiner (Space Science Center), Mentors,* Department of Industrial and Engineering Technology, College of Science and Technology**

The results of research on an exciting technology in the microwave electronics discipline. Negative refractive index metamaterials display negative dielectric permittivity and negative magnetic permeability. When propagating through these structures, electromagnetic waves show properties such as backwards power flow and the ability to focus subwavelength radiation. Thus, an NRM focuses both propagating waves along with evanescent waves that originate from an object, so bypassing the conventional diffraction limit – so-called perfect lensing. The research has utilized the facilities of Morehead State University's Space Science Center to design and simulate the circuitry and to test the

resulting circuits. The circuits include a microstrip transmission line as a proof of concept, as well as a dual-band branch-line coupler.

P. 28. **Product Placement in Reality TV Game Shows**

Lobby

***Erin Nowak, Dr. Tricia Farwell, Mentor,* Department of Communication and Theatre, Caudill College of Humanities**

This study will investigate the role of product placement in reality television game programs. The researchers will look at one reality television show from each network and analyze the product placements in each show. Product placement in reality television is the current trend in advertising and it is important to study the impact it has on different types of reality television. The goal of this investigation is to look at the impact that advertising, in the form of product placement has had on various reality television shows.

P. 29. **Electromagnetic analysis of a MEMS integrated frequency reconfigurable antenna**.

Lobby

***Toby A. Hale, Dr. Bedri A. Cetiner*, *Mentor*, Space Science Center, College of Science and Technology**

The necessity for reconfigurable antennas increases as wireless technology is modified and improved, since many wireless devices utilize more than one frequency band. One class of antennas that can be employed as reconfigurable is the annular slot. By using a full wave analysis tool based on finite element method, modeling of a two concentric annular slot antenna has been performed to determine the resonant frequencies and radiation patterns of this micro-electro-mechanical systems (MEMS) integrated multi-frequency antenna. This design and analysis is executed for a low frequency bandwidth when the inner slot is neglected and only the outer slot is excited. Then, by using MEMS switch to connect the feed to the inner slot, and shorting the outer slot, a model of the antenna for a high frequency bandwidth is created, and an analysis of its return loss, as well as its radiation patterns, is performed.

P. 30. **Readiness for physical activity and symptoms of depression among older women in Eastern Kentucky.**

Lobby

***Kari Beth Stacy, Dr. Jenny Dearden, Mentor,* Department of Health, Physical Education and Sport Sciences, College of Education**

My research interest is in the area of physical activity and the factors that influence participation. This project was a result of using secondary data from a pre-existing study on older women and physical activity. The purpose of this study was to describe the characteristics of physical activity and symptoms of depression for consideration of further study. This study was conducted on 150 subjects using the 15 Item Geriatric Depression Scale and the Readiness for Physical Activity Questionnaire. It was found that women who engaged in physical activity showed fewer signs of depression. Overall, women who were physically active also maintained many of their past activities and interests, didn't feel worthless, hopeless, or thought that people were better off than them.

P. 31. **The effect of breed type and year on ultrasound carcass traits, performance and pelvic measurement of heifers.**

Lobby

***B. E. Galbreath, Dr. Troy J. Wistuba, Dr. Phil E. Prater, Dr. Kim E. Peterson and Dr. Judy G.Willard, Mentors.* Department of Agricultural and Human Sciences, College of Science and Technology**

Young heifers were weighed, pelvic-measured, and ultrasonically scanned to study breed and year differences for performance, pelvic area, 12^{th} rib fat depth, logissimus muscle area, intramuscular fat, and rump fat in February of 2005 and 2006. There were no statistical differences for the breed by year interaction, therefore data were combined and analyzed for breed type differences. Initial, mid test and end weights did not differ between breed ($P > 0.05$). However, differences were detected in total gain and ADG in that the gelbvieh cross heifers had increased total gain and ADG

when compared to the other breed types (P<0.05). In addition, Angus and Angus-cross heifers had the greatest (P<0.05) 12th rib fat depth, intramuscular fat, and rump fat of the heifers. These results support the knowledge that earlier developing breeds of cattle have increased intramuscular fat and subcutaneous fat depots.

P. 32. Behavioral activation and inhibition, dysphoria, and sensitivity to rejection

Lobby ***Brian Brock, Lauren Faulkner, Dr. David R. Olson, Mentor,* Department of Psychology, College of Science and Technology**

Two regulatory mechanisms, the behavioral activation (BAS) and behavioral inhibition (BIS) systems have been implicated as risk-factors for depression. The present study examined the relationship between these systems and dysphoria (sub-clinical depression) as well as rejection sensitivity. One hundred thirty men and women completed measures of approach and inhibitory tendencies, dysphoria, anxiety, and sensitivity to rejection. Correlational analyses revealed that low levels of BAS and high levels of BIS were associated with increased levels of dyphoria; when controlling for anxiety, only the relationship between BAS and dysphoria remained significant. High levels of rejection sensitivity were related to high BIS and low BAS scores. These findings replicate results involving the BAS/BIS and clinical depression and are consistent with conceptualizations of the differential responsiveness of the two systems to environmental stimuli.

P. 33. Serendipity Studios: Sam McKinney

Lobby ***Megan Goforth, Jeffrey Hill, Mentor,* Department of Communication and Theater, Caudill College of Humanities.**

Serendipity Studios is a documentary investigating the artist Sam McKinney. Born in 1951 in Lexington, Kentucky, Sam McKinney spent his childhood in coal studded Fleming-Neon in Southeastern Kentucky. After receiving an AB and MA in Art at Morehead State University, he has made Morehead, Kentucky his home. He resides in a log house and connecting studio, (that he considers a functional sculpture) reconstructed of eighteenth and nineteenth century structures designed and built by himself. A figurative freelance painter and sculptor for over thirty years, Sam McKinney works mainly on commission, with portraiture as his mainstay. His work in oils, watercolors and bronze sculpture are nationally collected.

P. 34. Adolescent literacy awareness through teacher professional development

Lobby ***Sarah Ruark, Dr. Melinda R. Willis, Mentor,* Department of Curriculum and Instruction, College of Education**

Selected middle school teachers from three public school districts in MSU's service region participated in a year-long professional development initiative which involved developing, implementing, and evaluating research-based learning strategies in their classrooms. A description of the professional development initiative will be outlined and resources displayed. Pre- and post-participation survey data will be presented as well as information regarding adolescents' responses to these instructional practices. These data were analyzed to evaluate the strategies that were most often utilized as well as the strategies which were determined to be most effective by the teachers. Finally, Ms. Ruark will offer her observations and responses to the process from the perspective of a pre-service teacher.

P. 35. Amy Beach: American Composer, Female Composer

Lobby ***Melanie L. Everman, Dr. Roma Prindle, Mentor,* Department of Music, Caudill College of Humanities**

This research looks into the life, times, and works of Amy Beach as one the most famous American composer and one of the most famous female composers. Amy Beach was born into a musical family with a very pronounced musical gift. However, being a female child of the Victorian Era, Beach was not allowed to explore her talents. She was not allowed

to study composition or piano in Europe. After her marriage, she was limited to one recital a year. Amy Beach taught herself composition and did a great number of incredible things with very little formal music training.

P. 36. **Variables influencing success of minority teacher education candidates**

Lobby

***DeMontreal Dillard, *Ashia Garrett*, and Morgan Smith, Dr. April D. Miller, Mentor,* College of Education**

Given that Caucasian students score higher on tests (ACT, Praxis I, and Praxis II) and are admitted to teacher education programs at a higher rate than minority students, this study will examine possible variables contributing to success or failure to be admitted such as grades, major selected, admission criteria, mentoring programs and perseverance. We will be using data collected via tK20, student information systems, Praxis examination scores, and Teacher Education Program admission and exit data.

P. 37. **Using mathematics and historical aerial photographs to quantify landscape changes**

Lobby

***I-Chun (Naomi) Wu, Dr. Sherif Rashad, Mentor,* Department of Mathematics and Computer Science, College of Science and Technology, *Dr. Zachary J. Bortolot, Dr. Christine E. McMichael, Mentor*, Institute for Regional Analysis and Public Policy,**

Urban forests and impervious surfaces play important roles in urban environments. This project aimed to quantify changes in urban forest cover and impervious surface cover in Morehead using historical aerial photo. Photographs dating from 1959 to 2004 were acquired and processed using a variety of statistical techniques in conjunction with data collected on the ground and from manual photograph interpretation. Results showed that several statistical measures are highly correlated with urban forest cover and impervious surface area, suggesting that aerial photographs are an important source of historical information.

P. 38. **Kaleidoscope multi-cultural issues and Hear Me Roar – the lives and issues of modern woman**

Lobby

***Scott Goforth, Dr. Ann Andaloro and Dr. Rita Abell, Mentors,* Department of Communication, College of Humanities**

I plan to show how I have worked on two separate MSU television shows: Hear Me Roar and Kaleidoscope. Hear Me Roar is a show devoted to women's issues. This show posed a challenge to make due to the fact that I, being a man, didn't really have anything in common with these ladies or their subjects, but still worked to make the show represent their point of views. Kaleidoscope is a multi-cultural show dealing with people from all races and cultures. This show allowed me to get an insight into many different cultures and was lots of fun to make. I will report on my experiences and the lessons it taught me.

P. 39. **Gallery and Exhibition Design and Project Management**

Lobby

***Lori Votaw, Jennifer Reis, Mentor,* Department of Art, Caudill College of Humanities**

The Undergraduate Fellowship in Gallery and Exhibition Design and Project Management focused on both practicum and theoretical concepts related to exhibition management specifically focused on gallery and arts programming graphic design, exhibition design including design and creation of wall text, exhibition and arts programming promotion, hospitality and event oversight, and public relations specific to visiting artists and scholars. This fellowship was designed to fully prepare one to either enter directly into gallery and/or museum marketing and/or graphic design or to obtain a graduate assistantship in a university gallery in pursuit of an M.F.A

P. 40. **Unique medical treatments for post operative complications, including infections and decreased oxygenation to peripheral tissues**

Lobby

***Missie Pelfrey, Shelly Slagle, Brian Kegley, Dr. Patricia Yaros, Donna J. Corley, Mentors,* Department of Nursing, College of Nursing and Allied Health, Nursing Research, College of Science and Technology**

It is not uncommon for patients who have undergone surgery to suffer from post operative complications such as decreased oxygenation to peripheral tissues. One unique therapy that is being used to help with this complication is the use of leeches being applied to the body in various areas to increase the oxygenation to those tissues. A second unique treatment is the use of maggots for debriedment of dead tissue that can form as a post operative complication. Although these seem uncommon for alternative treatments, they actually have been used for decades and appear to be beneficial.

P. 41. **Preventative measures for breast cancer: helping to eliminate health disparities in women.**

Lobby

***Kim Blevins, Brittany Deskins, Katie Hurst, Victoria Fannin, Donna Corley, Mentor,* Department of Nursing, Nursing Research, College of Science and Technology**

According to the Center for Disease Control, breast cancer is the second most prevalent cancer in women. In 2003, 181,646 women were diagnosed with breast cancer, while 41,619 women died. Many measures are used in preventing breast cancer in women. These include: self-breast exams, mammograms, yearly physical exams, and doing nothing. The National Cancer Institute states that in 2003, 70% of women age 40 and older received a mammography screening within the past two years. The purpose of this study was to determine what research indicates as being the best measures in preventing breast cancer in women

P. 42. **Confirmation of nasogastric tube placement: traditional practice or evidence based**

Lobby

***Roberta Butler, Dena Kommer, Elizabeth Loan, Angela Crisp, Donna Corley, Mentor,* Department of Allied Health Sciences, College of Science and Technology**

Confirmation of the nasogastric tube placement is a very important practice used to reduce the risks of complications that may arise from misplaced nasogastric tubes. What are the complications? What are the best ways to assure correct placement? Are these practices evidence based or traditions that have been practiced and passed on over the years? We propose an investigation study to answer these questions for our audience.

P. 43. **Complimentary music therapy used by nurses to help manage their patients' pain and anxiety.**

Lobby

***Kathy Aylor, *Allison Shaffer, and *Corey Frasier; Dr. Patricia Yaros, Donna J. Corley, Mentors,* Department of Nursing and Allied Health, College of Science and Technology**

Pain and anxiety are two of the most common symptoms manifested in patients. Studies have shown that music therapy, when used in conjunction with pharmaceuticals, can decrease anxiety, therefore increasing compliance with pain management techniques. The purpose of this literature review is to determine the usefulness of music therapy in pain management as an alternative or complimentary therapy to traditional pain control techniques.

P. 44. **Facilitating enhanced pulmonary function in respiratory exercises**

Lobby

***Falissa Birchfield, Andrew Ruggles, and Tommy Sawyers, Donna Corley, Mentor,* Department of Nursing, College of Science and Technology**

Respiratory exercises including incentive spirometry, coughing, and deep breathing facilitates enhanced pulmonary function by maintaining maximum oxygen exchange and elimination of secretions. These exercises have proven beneficial for postoperative clients as well as clients with complications such as immobility and respiratory problems. Does this reduce the risk of infection, such as pneumonia, in these types of clients? Does the frequency and client compliance influence the outcomes? Do these respiratory exercises decrease the length of stay for respiratory compromised clients as well as postoperative clients?

P. 45. **Prevention of pressure ulcers: home care**

Lobby

***Honey Baker, Denise Burgess, Ashley Land, Dr. Patricia Yaros and Donna Corley, Mentors,* Department of Nursing and Allied Health Sciences, College of Science and Technology**

The purpose of this review was to identify preventative measures for avoiding pressure ulcers acquired in home care. Evidence-based research has provided us with many interventions that can prove to be invaluable when applied to care practices for the immobile homebound patient.

P. 46. **Effects of kangaroo care on the preterm infant, maternal perceptions, and the familial relationship**

Lobby

***Angel Johnson, Megan Fields, Stephanie Chesshire; Donna Corley and Dr. Patricia Yaros, Mentors,* Department of Nursing and Allied Health Sciences, College of Science and Technology**

Kangaroo care is a technique that can be found in various neonatal intensive care units (NICU) across the country. This technique was derived from necessity in other countries, where mothers would provide skin to skin contact with their infants, facilitating thermoregulation. Families providing kangaroo care have been examined to decide if kangaroo care had positive, negative, or neutral outcome. Preterm infants and families have been evaluated in the following areas: ability to self-regulate, neuromaturation, maternal perceptions, and familial relationships. This research supported the positive impact on these four areas.

P. 47. **Hand to hand combat: the association of MRSA and hand washing**

Lobby

***April Estep, Kim Cook, Debbie Linkous, Jennifer Duke, Donna Corley, Mentor,* Department of Nursing, Morehead State University**

Methicillin Resistant Staph Aureus (MRSA) has become a problem of epic proportion. MRSA can occur by being either hospital acquired or community acquired. MRSA can affect all ages but affects the young, old and very ill most frequently. Hand washing is considered the most important tool to use to stop the spread in hospitals and other health care facilities. In community acquired MRSA stopping the spread can be more difficult and it has taken the medical field by surprise. There has been little evidence on what causes MRSA. Research makes it evident that further education needs to be done in order for people to understand what causes MRSA and its prevention. Does research show that proper hand hygiene is the most important tool to help in the prevention or spread of MRSA?

P. 48. **Alcohol-based hand rubs and soap and water: the battle for infection control**

Lobby

***Jared Castle, Courtney Elam, Ericka Kellum, *Amy Potter; Donna Corley and Dr. Patricia Yaros, Mentors,* Department of Nursing, College of Science and Technology**

Almost everyone knows how important it is to wash your hands, but many feel they do not have the time to complete this very important task. Hand washing is important because it helps to prevent the spread of bacteria and viruses. In the hospital setting, patients fall victim to secondary infections that could have been prevented by health care workers washing their hands between patients. Many studies show that alcohol-based hand rubs take less time to use, and are just as effective as using soap and water to cleanse your hands.

P. 49. **Heart disease, what women need to know: heart disease risk factors for women**

Lobby

***Stephanie McNeal, *Colleen Stark, Rebecca Bradford, Jenny Johnson; Donna Corley, Mentor,* Department of Allied Health and Nursing, College of Science and Technology**

Research shows more women die from heart disease each year than all types of cancer combined. Heart disease is the number one killer of women in the United States. Studies show heart disease of women is the same as for men, yet it may present differently. Heart disease risk factors for women are: age 55 and older, menopause (decreased estrogen), stress, birth control pills, hormone replacement therapy, unhealthy lifestyle/inactivity, obesity, elevated cholesterol levels, and smoking. Educating about risk factors and health improvement before and after heart disease is diagnosed is what women need to know.

P. 50. **The effect of chloraprep vs alcohol on infection rates in peripheral venous access**

Lobby

****Ashley See, Ashley Moore, Miranda Craft, Dr. Patricia Yaros and Donna Corley, Mentors,* Department of Nursing, College of Science of Technology**

The purpose of this literature review is to examine infection rates with peripheral venous access using alternate skin cleansers Chloraprep (Chlorhexidine) vs. isopropyl alcohol. These results support the knowledge that rates of infection are equal with either antiseptic in peripheral venous access. Therefore, due to cost containment efforts, alcohol is the preferred cleansing agent for peripheral venous access.

P. 51. **Exploring the Barriers to Web Accessibility in an Aging Population**

Lobby

****Michelle Spurlock, Dr. David Green, Mentor,* Department of Information Systems, College of Business**

The US Census estimated the 2004 65 and older age group as comprising approximately 24.7% of the total US population, while the 45 and older population made up 72.9% of the total. The sizable, aging US population will begin to experience declines in physical mobility, potentially increasing the appeal of making purchases, banking transactions, and government agency interaction via the Web. The present study uses a usability analysis methodology to examine a sample of websites from four categories: government, healthcare, B2C e-commerce, and banking. Evaluators used software to determine compliance levels based on the W3C Web Accessibility Initiative guidelines and Section 508 of the US Rehabilitation Act. Results from this research in progress are presented. This research was supported by MSU Undergraduate Research Fellowship.

P. 52. **The thematic implications of trombone writing in Mahler's symphonies**

Lobby

****Ryan Miller, Dr. Jeanie Lee, Mentor,* Department of Music, Caudill College of Humanities**

For decades, numerous concert-goers have been enthralled, inspired and confused by the symphonies of Gustav Mahler. The musicians performing these works have been equally frustrated with the interpretation and expression required of these pieces. The purpose of this study is not only to offer an interpretation of the trombone's role in the thematic texture of Mahler's symphonies, but to evoke an awareness and appreciation of Mahler's, and other orchestral composer's works. The project demands a developed interpretive sense to process and collect creative representations of the music in another more tangible and obvious medium.

P. 53. **Establishing VHF/UHF and S-Band Command Nodes for KySat-1**

Lobby

****Jennifer B. Carter, Jeffrey Kruth, Mentor,* Department of Industrial Engineering, College of Science and Technology**

KentuckySat (KySat) is a cubesat project currently in development, for launch in early 2008. Cubesats are small (pico-class) satellites that are 10 cm^3 and weigh 1 kilogram or less. CubeSats are complex systems with their own on-board computer controller, communications systems, associated antennas, power condition system, batteries and solar cells, directly mimicking much larger and costlier systems. KySat-1 has two transceivers (VHF/UHF and S-band) requiring two ground stations to be maintained. In the proposed work, we plan to design, implement, and operate two ground stations, a VHF/UHF ground station and an S-band ground station utilizing the MSU 21 M Space Tracking Antenna. This project will be undertaken in conjunction with the KySat consortium, NASA Ames, and Stanford University.

P. 54. **Microvariabilty in Active Galactic Nuclei at Centimeter Wavelengths**

Lobby

***James W. Atwood, Thomas G. Pannuti, Mentor,* Department of Space Science, College of Science and Technology**

Active Galactic Nuclei (AGNs) are some of the most distant objects known in the universe. One of the interesting characteristics of AGNs is that they vary in brightness over a variety of time scales, ranging from long term (years or decades), to intraday (days or weeks), to extremely short (hours or minutes). Using the Morehead State University 21m Space Tracking Antenna we can measure short term variations (microvariability) of the radio frequency radiation of these distant objects. Initial observations of a set of target AGNs have been undertaken. Additional observations of these target objects will be made at 1.4, 2.4, and 12GHz to measure microvariability and to produce data points for broadband SEDs of these AGNs. These data sets will be correlated with simultaneous optical (Bell observatory) and The Gamma Ray Large Area Space Telescope (GLAST) observations to produce broad band, multiwavelength observations of a selected target set of AGNs. An additional goal of this project is to become a node in the NASA GLAST network.

P. 55. **Defining gain and system temperature of the Morehead State University 21-Meter Space Tracking Antenna**

Lobby

***Megan E. Ennis, Dr. Benjamin K. Malphrus and Jeffery Kruth, Mentors,* Space Science Center, College of Science and Technology**

The Morehead State University 21-Meter Space Tracking Antenna is a medium aperture centimeter-wave length radio telescope. The performance of this antenna is highly dependent upon the instrument's radio frequency (RF) performance characteristics. Primary among these are antenna gain and system temperature, which are determined in this study primarily using an L-Band (1.4-1.7GHz) system. While it is difficult to directly measure antenna gain or system temperature, a characteristic known as G/T (often referred to as the antenna figure of merit) can be empirically measured. Both antenna gain and system temperature can be numerically derived from the G/T measurements. The value of G/T serves as a predictor of the instrument's ability to detect and measure characteristics of distant astronomical sources.

Lunch 12:00 - 12:50 p.m. Crager Room

15 Minute Session-ADUC 301

1-1:15 pm **Investigation of resonant enhanced laser triggered air spark gap switch**

301

***Jared Cordray, Dr. Steven Adams and Dr. Kent Price, Mentors,* Department of Physical Sciences, College of Science and Technology**

We are studying the performance of a laser triggered spark gap laser enhanced by resonance-enhanced multi-photon ionization (REMPI) in atmospheric pressure air. An ultraviolet REMPI laser transition in air recently discovered by

AFRL/PRPE researchers is the focus of our investigation. This new REMPI transition relies on energy transfer by collisions between O2 and N2 electronically excited states to complete the laser photo ionization process. The spark gap ignition is being characterized by measuring the applied voltage across the gap, the current through the gap, and the spectral emission from the gap, all as a function of time after the laser pulse. In general a lower breakdown voltage, faster turn-on time, and less jitter is desired from the resonant enhanced laser triggered switch.

1:20-1:35 pm **Temperature Dependence of Electroluminescence Intensity in Cdte Solar Cells**

301

***E. Brady Doepke, Dr. Kent Price, Mentor,* Department of Physical Sciences, College of Science and Technology**

In response to the need for new alternative energy sources, Cadmium Telluride (CdTe) solar cells are generating great scientific interest. Learning more about characteristics common to higher efficiency cells we can improve CdTe solar cells and develop better fabrication techniques. Electroluminescence (EL) is one experiment we use to characterize solar cells. The EL technique involves sending current through the solar cell and measuring the amount of light the cell produces. We find that the EL intensity L depends on current I as $L = aI^b$ where a and b are constants. We find that "a" increases with temperature and "b" is a constant value around 1.5. By comparing cells of differing efficiencies we hope to develop a correlation between certain EL characteristics and efficiency.

1:40-1:55 pm **Finding nearby sources of continuous gravitational waves**

301

***Grant Webb, Dr. Greg Mendell, Dr. Mike Landry, and Dr. Capp Yess, Mentors,* Department of Physics, College of Science and Technology**

Asymmetric compact spinning objects such as neutron stars are thought to be sources of continuous gravitational waves. Although these periodic signals are expected to be weak, LIGO may be able to detect them by powerful match filtering and power-averaging techniques. Currently LIGO ignores the effects of proper motion, which has an effect on the phase and beam pattern of gravitational waves produced by nearby sources that are monitored for a period of time. After analysis we have determined the loss of detection efficiency as a function of observation time when the proper motion parameters are included in the source simulations. We have found that for long observations proper motion must be included or LIGO risks losing a majority of the signal from continuous wave sources.

2-2:15 pm **Reducing infection: care of the peripherally inserted central catheters**

301

***Stephanie Auxier, Jamie Cook, Mary Griffith, Eric Herell; Donna Corley and Dr. Patricia Yaros, Mentors,* Department of Nursing, College of Science and Technology**

Peripherally inserted central catheters (PICC lines) are a form of intravenous access that can be used for a prolonged period of time. Proper insertion by certified personnel is essential, as well as daily care of the PICC line, are essential to reduce the risk of infection that can occur. Numerous devices are available to help reduce the risk for infection. PICC usage and its subsequent success in both the inpatient and outpatient setting has been extensively researched and documented. Studies show that complications for PICCs are minimal, but can be serious if not cared for appropriately.

2:20-2:35 pm **Breastfeeding: Why is it falling short of Healthy People 2010 National Guidelines?**

301

***Dana Newton, Lisa Elkins, Aundrea Raleigh; Donna Corley, Mentor,* Department of Nursing, College of Science and Technology**

Breastfeeding is an important factor to consider when a mother has a newborn. Although most mothers are physically able to breastfeed, the initiation and duration of breastfeeding falls short of the national goals set by Healthy People

2010. According to a study done by the Center for Disease Control and Prevention in 2005, the initiation of breastfeeding falls short by 4% and the continuation of breastfeeding for 6 months after birth falls short by 36%. What are the reasons that breastfeeding is falling short of the national goals and what nursing interventions can be done to promote and support breastfeeding? There are several risk factors and barriers that are proved by studies that decrease the initiation and duration of breastfeeding.

2:40-2:55 pm **Identification of nutrient dense lower sodium food choices from local fast food menus**

301

***Heather Hazelrigg, Donna Corley, mentor,* Department of Nursing, College of Science and Technology**

Background: Obesity is recognized as a national health care issue. The Center for Disease Control (CDC) reports 60% of adolescence consume too much fat and only about one-third of young adults meet the recommended intake for fruits and vegetables. Eating out contributes to high fat, high sodium and decreased nutrient intake. **Purpose:** This study investigated fast food menus for low sodium, nutrient dense food choices meeting USADA recommendations for young adults. **Methods:** Local restaurant menus were analyzed for macronutrient and sodium content. "Healthier" selections were placed in daily menus. **Findings:** A daily food plan meeting USADA recommendations was not easily identified but was available in most restaurants. **Conclusions:** Careful selection from restaurant menus can provide healthier choices for eating out.

25 Minute Session-ADUC 302

1 – 1:25 p.m. **The impact of meteorological events and municipal sewer system installation on water quality in Copperas Hollow stream.**

302

***Kelsey Lamb,* Institute for Regional Analysis and Public Policy, ***Thom Platt,* Department of Biological Sciences, *Dr. Brian Reeder, Mentor,* Department of Biological Science, College of Science and Technology and Institute for Regional Analysis and Public Policy**

Water samples were collected in Copperas Hollow stream from 22 August 2006 to 21 February 2007. The different collection periods included samples from rainfall periods, snow melt periods, and dry periods, as well as before, during, and after municipal sewer system installation. Nutrient and fecal bacteria tests were performed on each sample. The data were analyzed to compare water quality trends between the different meteorological events, and to evaluate the effect of the new sewer system. Although all but two households connected to the new sewer line, surface waters still do not meet EPA approved standards for primary recreational contact.

1:30 – 1:55 p.m. **Millennium tower: windproof high-rise or fantasy?**

302

***Trisha Edington, Dr. Mike Dobranski, Mentor,* Department of Mathematics, College of Science and Technology**

The viscosity of wind is extremely low and therefore causes random movement of particles in all directions at speeds greater than 2 mph. Therefore, wind is analyzed with statistics. The Millenium Tower on the drawing board by architects Andy Miller and David Nelson claims to have beaten the battle against wind. This structure would stand 2,755 ft tall and 170-stories. The tallest buildings today are no more than 1500ft tall. This cone-shaped building is made of steel. Is this structure really "wind-proof"? This presentation will cover a project that will dive into this question and perform wind analysis on this structure, and search for a way to study wind efficiently.

2 – 2:15 p.m. **Seeking immediate treatment during an MI**

302 ***Mary Teresa Vice, Deanna Hartsock, Stacey Hall, Amy Smith; Donna Corley, Mentor,* Department of Nursing, College of Science and Technology**

Seeking immediate treatment during a MI is truly an emergency. Many people do not understand the importance of seeking immediate care during a MI. Delaying treatment only causes more damage to their heart in the end. Why do people delay treatment during a MI? Do they fail to identify the signs and symptoms? On the other hand, are there factors that impede immediate treatment such as access to emergency healthcare? We should limit our research to education on why people delay treatment and educate audience on S&S of an MI. This research will briefly discuss what an MI is, what is happening to the heart and why interventions are necessary.

25 Minute Session-ADUC 312

1—1:25 p.m. **Identifying visual arts resources and needs in Kentucky's Appalachian Counties**

312 ***Kendrick Holbrook, Dr. Joy Gritton, Mentor,* Department of Art, Caudill College of Humanities**

This project is in the initial stages of identifying and documenting arts resources of Kentucky's Appalachian counties, including public school and/or university instruction, public classes or workshops, extension office programs, special grant initiatives with art components, individual practicing artists and craftspeople, facilities that exhibit and/or sell art, community arts groups, arts related websites originating in and/or serving these counties, and other resources that promote the arts. Our long-term goals include identifying possible service learning venues for art students and compiling our data into a website that can serve as a reference for the region's artists, educators, students, and communities. We will discuss some of the challenges of this undertaking and some initial findings.

1:30 – 1:55 p.m. **The arts and sustainable economic development in eastern Kentucky**

312 ***Erin Ceddia, Michael Harford, Mentor,* Department of Management, Marketing and Real Estate, College of Business**

Sustainable economic development is economic development that meets the needs of the present but preserves resources for future generations. This paper examines the role of the arts in economic development policy and practice in selected Appalachian Kentucky communities, reviewing the presentation and preservation activities of various actors in the communities. This paper presents findings related to the hypothesis that sustainable economic development activities are possible in the arts, but these activities require appropriate capacity building in communities where arts may be chosen as a component of economic development policy.

2:00-2:25 pm **Contemporary works for saxophone quartet**

312 ***Patrick Mosser, *Erica Johnson, *Lucas Sanders, *Nicholas Denham Nathan Nabb, Mentor,* Music Department, Caudill College of Humanities**

The Lakegee Quartet has experienced great success in performing contemporary masterworks for saxophone quartet. They have, for two consecutive years, won the MTNA/KMTA Chamber Music competition, participated in numerous master classes with renowned pedagogues, and have recently been accepted to perform at the North American Saxophone Alliance Region VII conference in Greensboro, NC. As the leading saxophone quartet in the music department, they have set a consistently lofty example of performance scholarship in the fine arts. A performance of contemporary works will demonstrate the current direction of music for saxophone ensemble. Works to be performed include: *Howling at the Moon* by Dana Wilson and *Tango Virtuoso* by Thierry Escaich.

Recipients of Undergraduate Research Fellowships

Morehead State University supports the initiative for students to engage in research, scholarship, performance activities and creative works. Listed below are the 2007-2008 awardees and their mentors.

COLLEGE OF BUSINESS

Student URF	Class	Department	Mentor (s)
Kyle Moore*	Sr.	AEF	S. Ali Ahmadi
Erica Belmont*	Soph.	AEF	Janet Ratliff
Michael Fitzner*	Fr.	MMRE	Ahmad Hassan
Samantha Westerfield	Fr.	MMRE	Lindsey Godwin
Nathan Mills*	Jr.	MMRE	Fatma A. Mohamed
Heather M. Flynn	Jr.	MMRE	Michelle Kunz

COLLEGE OF EDUCATION

Student URF	Class	Department	Mentor (s)
Rebecca Jefferson	Fr.	CUR. INST.	Edna Schack
Leslie Todd Watts*	Sr.	CUR. INST.	Edna Schack
Laura Ashley Reynolds*	Sr.	CUR. INST.	Lesia Lennex
Ashia Garrett	Fr.	CUR. INST.	Lesia Lennex
Sarah E. Ruark	Soph.	CUR. INST.	Melinda Willis
Daniel Lorenz*	Jr.	HPES	Julia Ann Hypes
Todd Sharrock*	Jr.	HPES	Michael Hypes
Kari Beth Stacy*	Sr.	HPES	Jennifer Dearden
Belinda Riley	Sr.	PPE	Lola Aagaard/ Ronald Skidmore
Demontreal Lane	Soph.	PPE	Timothy Conner

CAUDILL COLLEGE OF HUMANITIES

Student URF	Class	Department	Mentor (s)
Ryan Newberry*	Sr.	ART	Emma Perkins
Kendrick Holbrook*	Sr.	ART	Joy Gritton
Laura Haywood*	Sr.	ART	Jennifer Reis
Allen Fitzpatrick*	Sr.	COMM/THEA	Robert Frank
Kristin Hausstein*	Soph.	COMM/THEA	Robert Frank
Misty Skaggs	Sr.	COMM/THEA	Ann Andaloro
Kayla Meadows*	Soph.	COMM/THEA	Bob Willenbrink
Savannah Varble	Soph.	COMM/THEA	Tim Creekmore
Brittany Behn	Sr.	COMM/THEA	Ritta Abell
Amanda Dixon	Sr.	COMM/THEA	Tim Creekmore
Scott Goforth*	Soph.	COMM/THEA	Jeffrey Hill
Allison Stanley	Soph.	COMM/THEA	Tricia Farwell/ Tony Glover
Theresa Ann Lang*	Soph.	EFLP	Kathryn Mincey
Mary O'Brien	Soph.	EFLP	Sylvia Henneberg
Margaret Gulley	Sr.	EFLP	Kathryn Mincey
Rachel Messer*	Sr.	EFLP	Karen Taylor
Lindsay Wintermute*	Sr.	EFLP	Wendell O'Brien
Jessica Campbell*	Sr.	EFLP	Philip Krummrich
Jacob Mincey	Sr.	EFLP	Wendell O'Brien

Journey McAndrews	Jr.	EFLP	Glen Colburn
Chris Leadingham*	Soph.	GGH	John Ernst
Brandy Eden*	Sr.	GGH	William Green
Teara Jessie*	Fr.	GGH	John Ernst
Eric Patton*	Jr.	GGH	Jason Holcomb
Matthew Hurley*	Sr.	GGH	Kristina Wilson
Lydia Stamm*	Sr.	MUSIC	Brian Mason
Kyle Samples*	Sr.	MUSIC	Glenn Ginn
Paul Robinson*	Sr.	MUSIC	Greg Detweiler
Michael Tyler Spence Harris	Sr.	MUSIC	Glenn Ginn
Mallory Draughn*	Sr.	MUSIC	June Grice
Melanie Everman*	Sr.	MUSIC	Roma Prindle
Jessica Roe	Sr.	SOC.SW.CRIM.	Bernadette Barton/ Eric Swank
Tammy Lynn Embleton*	Jr.	SOC.SW.CRIM.	Judy Stafford
David Lee Daniel, Jr.	Jr.	SOC.SW.CRIM.	Edward Breschel
Michelle Fiore*	Jr.	SOC.SW.CRIM.	Bernadette Barton/ Eric Swank

INSTITUTIONAL REGIONAL ANALYSIS AND PUBLIC POLICY

Student URF	**Class**	**Department**	**Mentor (s)**
Susan Brown*	Jr.	IRAPP	Brian Reeder
Danielle Akhlaghi*	Sr.	IRAPP	Timothy Hare/ Christine McMichael
Ainsley E. Lambert*	Jr.	IRAPP	Ed Reeves

COLLEGE OF SCIENCE AND TECHNOLOGY

Student URF	**Class**	**Department**	**Mentor (s)**
Shannon Touroo*	Jr.	AGR/HS	Phil Prater
Rudi Pitzer*	Sr.	AGR/HS	Troy Wistuba
Kimberly May*	Sr.	AGR/HS	Troy Wistuba
Courtney Forbis*	Jr.	BIOL.	Darrin DeMoss
Amberlee Byrd*	Jr.	BIOL.	Stephanie Welter
Kelsey Lamb	Soph.	BIOL.	Brian Reeder
Andrew Auxier	Jr.	BIOL.	Janelle Hare
Kristen Mitchell*	Soph.	BIOL.	Geoff Gearner
Megan Minch*	Soph.	BIOL.	David Peyton
Logan Murphy*	Soph.	BIOL.	David Saxon
Thomas Platt	Soph.	BIOL.	Brian Reeder
Tyler Elam*	Jr.	BIOL.	Janelle Hare
William Hankinson	Soph.	BIOL.	Michael Fultz
Kristen Fultz	Soph.	BIOL.	Carol Wymer
Andrew Stacy	Soph.	BIOL.	Sean O'Keefe
James Channing Richardson*	Sr.	BIOL.	Allen Risk
Kendra McQuerry*	Jr.	BIOL.	Craig Tuerk
Sally Maynard*	Jr.	BIOL.	Stephanie Welter
Ashley Loan*	Soph.	BIOL.	Craig Tuerk
John Kyle Gartin	Soph.	BIOL.	Sean O'Keefe
Joshua D. Bowes	Soph.	IET.	Yuqiu You
B. Nicholas Wahle*	Sr.	MATH	Doug Chatham
Brian Salyer*	Jr.	MATH	Robin Blankenship/

			Doug Chatham/ Robert Skaggs
Heather N. Hazelrigg	Sr.	NURS/ADNP	Donna Corley
Megan Huellemeier*	Jr.	NURS/ADNP	Donna Corley
Elizabeth Lyon*	Fr.	PHYS.SCI.	Jennifer O'Keefe
Tabitha Carwile	Soph.	PHYS.SCI.	Jennifer Birriel
Kyle Bentley*	Sr.	PHYS. SCI.	Kent Price
Tabitha Marie Aldridge	Jr.	PHYS. SCI.	Ignacio Birriel
Kiersten Sandfoss*	Sr.	PSYCH	Laurie Couch
Jared Dillow*	Jr.	PSYCH	Sean Reilley
Christina Miller*	Soph.	PSYCH	Lynn Haller
Bernard Voss	Soph.	PSYCH	Sean Reilley
R. Kendall Vance*	Sr.	PSYCH	Shari Kidwell
Cassie Watkins*	Jr.	PSYCH	Sean Reilley
Caitlin Linepensil*	Jr.	PSYCH	Lynn Haller
Alexia L. Callihan	Soph.	SPACE SCIENCE	Ben Malphrus/ Jeff Kruth
Daniel C. Graves*	Fr.	SPACE SCIENCE	Thomas Pannuti

Other Activities During *Celebration of Student Scholarship* Week

Department of Art
April 2-11, 2007
Claypool-Young Art Gallery

The Claypool-Young Art Gallery on the campus of Morehead State University held the '2007 MSU Sophomore Art Exhibition' April 2 – 11, 2007. Sophomore art students participate in the exhibition allowing them an opportunity to exhibit their work in the professional realm. The '2007 MSU Sophomore Art Exhibition' is followed by a required participation in the Sophomore Review. In the Sophomore Review, each student will meet with two art faculty to review their exhibited art work, discuss their direction and progress in the art program, and determine the resources, courses, and special activities that will enable them to achieve their goals.

Sophomore Art Exhibition List
April 2007

Ryan Andersons	James Carr	Amanda Keathley	Brittney Otis
Brittany Applegate	Melissa Collins	Rachel Kendall	Zach Potter
Matthew Armitage	Amy Cummings	Eric King	Rachel Roberts
Kristen Arnett	John Feather	Katherine Kunkel	Whitney Sibcy

Amy Bales	Jordan Hampton	Michael Lauletta	Tammy Staton
Laura Ball	Dwight Harris	James Lewis	Gloria Stepp
Kimberly Baker	Rachel Hayes	Richard Mabry	Pam Truesdell
Eden Bolin	Laura Haywood	David Moore	Lacey Whitley
			Leah Waltz

INSCAPE 2007
Student Artist Works Published

INSCAPE, is the poetry/prose/visual arts magazine that is published each April. The work of the 15 students listed below were selected from over 70 that were submitted.

INSCAPE Cover Design: Ivy Oddis
INSCAPE Logo: Steven Rodgers
INSCAPE Interior Art:

Brittany Applegate	Jordan Hampton	Daniel Keltner	Erica Seagraves
Stephen Creech	Laura Haywood	Dusti Rose Lewis	Gloria Stepp
Colin Daugherty	Britney Huron	Casey McCown	Jacqueline Underwood
Mandy German	Ria Keeton	Tiffany Oldaker	

Department of Communication & Theatre
April 19-21, 2007
Button Auditorium

Student Cast List of Chicago

Stage Manager: Shade Chaffin
Assistant to the Choreographer: Morgan Meaney
Assistant Stage managers: Kacey Gill , Kayla Meadows

Women Character	Performer
Velma-	Brittany Behn
Roxie	Beth Anne Humphrey
Matron Mama	Molly Maynard
June/Squish (dance captain)	Christina Jeans
Liz/Pop	Jessica Moulis
Annie/Six	Ashley "Suzie" Long
Hunkak/Uh Uh	Maggie Morris
Mona/Lip Shitz	Amanda Wells
Go to Hell Kitty/Dancer	Jolene Brewer

Dancers:

Stephanie Adams	Sarah Robinette	Heather Pennington
Amanda Carter	Brittany Stacy	Lacey Whitley

Men Character	Performer
Billy Flynn	Cal Harris

Amos……Justin Stalkmap
Mary Sunshine……..Andrew Chang
MC, Charlie (Velma's Partner)……. Zack March
Fred Casely……Travis Clark
Sgt. Fogarty, Alvin Lipschitz (Lip Shitz Partner)……..…Mat Caudill
The Judge, Wilbur (Squish Partner)……..Bryan Edwards
Ezekial Young (Six Partner) ……..……..Anthony Sublett
Bernie (Pop Partner)…….……...…… Alan Pleiman
(Hunkak-Uh Uh Partner)……...…… Cody Dermon

Department of Music
April 2007

The 20th annual **A. Frank and Bethel C. Gallaher Memorial Music Competition** was held on the April 5, and is included in the *Celebration of Student Scholarship* week. This Performance Competition, established in 1987, honors the memory of the parents of Department of Music Chairperson Emeritus, Dr. Christopher S. Gallaher, who were strong advocates for education and particularly, the arts. The winner of the Gallaher Competition receives a $1000 cash prize and is featured in performance at the annual Academic Awards Convocation. The finalists in the Gallaher competition were:

Aaron Cummins, Voice
Heather Gibson, Trombone
Matt Hornbeck, Guitar
Cassandra Manning, Voice
Erica Johnson, Saxophone
Lucas Sanders, Saxophone
Catherine Strobel, Bass Clarinet

Additional Music Concerts and Recitals

April 15- 3 pm-Flute Choir Recital, Robert Pritchard, director, Location: Duncan Recital Hall
5 pm-Senior Recital: Misti Burke, clarinet, Duncan Recital Hall

April 17- 7:30 pm-Black Gospel Ensemble Spring Concert, Duncan Recital Hall

April 19-21 7:30 pm-Theatre production of Chicago, Button Auditorium

Kickoff Speaker for "Celebration of Student Scholarship" Week
April 12, 2007 4:15 – 5:15 p.m.
Reed Auditorium

Dr. Jude Grosser, Professor of Horticultural Sciences, University of Florida, presented a talk on **"Biotechnology - An Evolving Tool Box For Improving Modern Agriculture with Focus on Citrus Variety Improvement"** This talk was sponsored by the **Kentucky Biomedical Research Infrastructure Network**. The lecture was followed by a reception at the Kentucky Folk Art Center (see below) from 6-8 p.m.

President's Reception for Showcase Mentors
April 12, 2007 6 – 8 p.m.
Kentucky Folk Art Center

The President's Reception Kentucky Folk Arts Center to honor all faculty mentors who provided direction to students in independent research or creative production, and who are presenting their outcomes in the Celebration for Student Scholarship. The reception was held from 6-8 p.m. on Thursday, April 12, 2007.

Phi Kappa Phi Banquet
April 14, 2007
Crager Room

The Morehead State University Chapter 148 of the National Honor Society of **Phi Kappa Phi** will hold its *Annual Celebration of Academic Excellence Banquet* at 6 p.m. on April 14, 2007 in the Crager Room of the Adron Doran University Center. Following the banquet, PKP members, faculty and student inductees, parents, and guests will hear banquet speaker, **Dr. C. Nelson Grote, President Emeritus, Morehead State University, who will speak on "Living in a Global Society."**

Notes

Celebration of Student Scholarship
Sponsored by:

Office of the President
Office of the Provost

Members of the Celebration of Student Scholarship Committee

Dr. Deborah J. Abell
Dr. Marshall Chapman
Dr. Robert J. Franzini
Dr. Timothy Hare
Dr. David Magrane
Ms. Cynthia Martin
Dr. Bruce Mattingly
Dr. Scott McBride
Dr. April Miller
Dr. Michael Seelig

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