Program and Abstracts

Celebration of Student Scholarship

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

April 7-12, 2008

Celebration of Student Scholarship

April 12, 2008

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Program Overview **Adron Doran University Center**

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Oral Presentations	9:00 – 11:30 a.m.	301, 302, 312, Riggle & Eagle Meeting Rooms
Poster Sessions	12 noon – 1:30 p.m.	Crager Room
Lunch	11:30 – 1:00 p.m.	Crager Room
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Wrap-up and Door-Prizes	2:30 p.m.	Crager Room
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Welcome

I am pleased to welcome you to the Third Annual Celebration of Student Scholarship at Morehead State University. 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 in providing the most effective learning environment. Faculty members who effectively mentor students in research and other creative activities 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 products 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 scholarship. 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.

Dr. Wayne Andrews, President

I am pleased to be part of this great event in Celebration of Student Scholarship. While the learning that takes place through structured classroom activities is important, the participation in research and creative activity provides an opportunity for students to transition from learner to scholar. Once an individual has been involved in seeking answers to research questions or in creative expression based on theories and principles, they approach learning from a different perspective.

For many of these students, it has been the opportunity to discover their own abilities in the application of knowledge. And, through the work of the faculty mentor(s), they have been challenged to look beyond the security of their knowledge base to ask "what if" or "why?" This process has awakened the desire for some students to move beyond an undergraduate degree to pursue advanced degrees and opened a new world of discovery to them.

This Celebration is an excellent illustration of the integration of scholarship, teaching, and learning. I wish to thank everyone who has been involved in planning and implementing the projects that have contributed to the intellectual and creative development of our students. I 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. I hope you enjoy the events that have been planned in Celebration of Student Scholarship.

Dr. Karla Hughes, Provost & Vice President for Academic Affairs

"This Celebration event once again affirms that the Teacher-Scholar model is alive and well at MSU! Faculty actively engaged in the scholarship of their discipline make outstanding role models and mentors, and provide students with integrative learning opportunities difficult to achieve in the traditional classroom setting.

Dr. Bruce Mattingly, Associate Provost for Research and Sponsored Programs

"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."

Dr. Robert Albert, 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."

Dr. Cathy Gunn, 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."

Dr. Michael Seelig, 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."

Dr. Gerald DeMoss, 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!"

Dr. David Rudy, Dean and Associate Provost, Institute for Regional Analysis and Public Policy, and Center for Regional Engagement

Celebration of Student Scholarship

Adron Doran University Center
Morehead State University

April 12, 2008

Concurrent Session - ADUC 301

Program Schedule

9:05 – 9:30 a.m. **The Teacher Performance Assessment: Reflections on the Instructional Decision Making Process by Pre-Service Teachers**

301 ***June A. Banks,* Natalie M. Peterson, *Laura E. Snider, and Dr. Kimberlee A. Sharp, Mentor,* Department of Curriculum & Instruction, College of Education**

The Teacher Performance Assessment (TPA) is receiving national and state attention due to it relevance to pre-service teacher competencies in instructional decision making and assessment. By design and intent, the TPA is an evaluation of the pre-service teachers' ability to facilitate learning by identifying contextual factors, challenging and differentiated instructional approaches, and differentiated forms of assessments to enhance student achievement. A corollary purpose of the TPA is to give pre-service teachers an opportunity to articulate their perceptions of the instructional decision – making process and of the classroom experience through written reflections. This panel discussion will serve to illuminate the practical and pedagogical considerations for implementing the TPA as told by 3 Clinical Practice pre-service teachers at Morehead State University and to relate the incremental stages they experienced during the TPA process in their perceptions of self – as – teacher.

9:30 – 9:45 a.m. **Determinants of educational attainment in Kentucky**

301 ***Kyle M. Moore, Dr. S. Ali Ahmadi, Mentor,* Department of Accounting, Economics, and Finance, College of Business.**

This paper investigates the role of factors such as previous generation's' education, poverty, and family structure in the educational attainment of the next generation using several multiple regression models. The cross-section data for the study were acquired from US Census Bureau as well as Kentucky State Data for all of the 120 counties in the state were acquired from US Census Data as well as from State of Kentucky data sources. Several Multiple Regression models were tested. The results of the multiple regression models indicated that although family structure, parent's income and education level do play significant roles in the poverty level for the next generation, but, for the educational attainment of the present generation, the most important factor was the education level of the previous generation.

9:45 – 10:00 a.m. **The gender gap in twelfth-grade mathematics achievement**

301 ***Ainsley Lambert, Dr. Ed Reeves, Mentor,* Institute for Regional Analysis and Public Policy**

This study investigates the social factors perpetuating the gender gap in mathematic achievement among 12th grade high school students nationwide using the Educational Longitudinal Study Database:2002/04. We will examine the effects of different combinations of social factors on the gender gap observed in standardized math test scores. The results will be presented in graphs and in a table showing multiple regression coefficients. The regression analysis reveals that race and ethnicity, private school attendance, and family socioeconomic status influence the achievement differences between boys and girls. However, the largest source of influence appears to be that girls learn less in geometry and algebra classes than boys.

10:00 – 10:15 a.m. English literature in high school: what and how books are taught

301 ***Theresa Lang, Mrs. Kathryn Mincey, Mentor,* Department of English, Foreign Language, and Philosophy, Caudill College of Humanities**

English teachers across the state were surveyed and asked to report to us what texts were taught in each grade level. After the results were totaled, we created a website which teachers can access. Teachers can submit a lesson plan that is effective and gather lesson plans that worked in another school system. Also from the results of the survey, the university will be able to determine which books are taught to see if we need to adjust or enhance our program in a certain area.

10:15 – 10:30 a.m. ***Break***

10:30 – 10:45 a.m. P-5 teacher education: A brief review of the literature on field experiences and professional development schools.

301 ***Todd Watts, Dr. Edna O. Schack, Mentor,* Department of Curriculum & Instruction, College of Education**

The object of this study is to critically examine the literature regarding field experiences and the Professional Development School (PDS). This research will help identify the disconnect between content, instruction, and prospective teacher's beliefs by analyzing Dewey's proposed model of apprenticeship vs. laboratory experiences to perhaps refine MSU's teacher education program. By studying this data, faculty and students involved in the PDS will gain an understanding of how to balance apprenticeship experiences and laboratory experiences with the ultimate goal of the program providing more effective teachers who can bridge the gap between content and instruction practices.

10:45 – 11:00 a.m. At a loss for words: theoretical and practical problems of translating a bilingual text

301 ***Jessica Campbell, Dr. Philip Krummrich, Mentor,* Department of English, Foreign Languages and Philosophy, Caudill College of Humanities**

Over the course of the last two semesters, I have assisted Dr. Krummrich in his endeavors of translating two Portuguese plays on the Amphitryon legend by serving as a critical reader and a researcher. Though translation is tricky in itself, when the original text contains more than one language, as one of these Portuguese plays does, a new set of problems arises. I have conducted research on ways of addressing these problems in translation, looking specifically to translators of Dante for guidance, as his poem *The Divine Comedy* contains an interesting bilingual passage. I have found that translators employ a fascinating variety of strategies in attempting to deal with the special problems of bilingual translation.

11:00 – 11:15 a.m. Litigation and Little League Baseball, Inc.

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

Nearly three million children participate in Little League Baseball. As previously reported, the participation experience for most children is pleasant, however there are exceptions. We will explore landmark cases involving Little League Baseball Inc. as well as litigation indirectly affecting Little League Baseball. These cases were reviewed and their impact on Little League Baseball determined. The impact of these cases may have brought on rule changes or caused Little League Baseball, Inc. to take precautionary measures to protect all those involved.

11:15 – 11:30 a.m. The Bird On-Line: How it all happens

301 ***Scott Goforth, Jeffrey Hill, Mentor,* Department of Communication and Theatre, Caudill College of Humanities**

The Bird On-Line was begun in November of 2006. Since then it has become a well known student radio station. This is a direct result of the operations manager Scott Goforth. He will discuss the day-to-day needs of this student-run radio station.

Concurrent Session - ADUC 302

9:05 – 9:30 a.m. **Evaluating the success of the NewCities Institute**

302 ***RAPP 300 Class: Michael Anteau, Susan Brown, Aaron Dourson, Cody Hawkins, *Josh Hicks, Seth Jenkins, Ainsley Lambert, Joe Means, *Tara Nanny, Channing Richardson, Nick Rose, Thomas Stevens, Chris Westendorf, Grant York, Dr. Stephen Lange, Mentor,*** **Institute for Regional Analysis and Public Policy**

The effectiveness of the NewCities Institute in fostering civic engagement and community development was examined in theory and practice. First, a comparison of the Institute's principles and procedures to the social science literature suggests that the Institute's work is in harmony with the findings of current research on the promotion of community development, organization, and engagement. Second, the effectiveness of the Institute's work in Morehead was evaluated using the IRAPP Progress Report. Both qualitative and quantitative data were collected on local government, community organizations, civic participation, education, youth programs, health, and cultural events. While this data set constitutes a baseline for comparison in future research, preliminary results suggest levels of community engagement and development that create a strong likelihood of the success of NewCity Morehead.

9:30 – 9:45 a.m. **The impact of a firm's alliance portfolio diversity on its innovation and performance in the software industry**

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

A firm is embedded in networks of relationships (e.g. strategic alliances) that often provide resources beyond those available from internal sources alone. A firm's entry into strategic alliances is about leveraging the value of its internal resources with the external resources of its partners. In this study, the diversity of the industries in which a firm constructs its strategic alliances is considered that firm's alliance portfolio. From this portfolio, a firm may draw upon the resources those alliances generate to introduce new technologies or products to the market. This study proposes that a more diverse alliance portfolio enhances a firm's innovation and performance. Using a sample of 49 firms in the software industry, the results show that alliance portfolio diversity has positive effects on both firm's innovation and performance.

9:45 – 10:00 a.m. **Who's shopping on the internet? examining the societal values of online shoppers**

302 **** Michael Fitzner, Dr. Ahmad Hassan, Mentor,*** **Department of Management, Marketing and Real Estate, College of Business**

Societal values have long been used as important tool in predicating consumer behavior in a variety of contexts. The research performed here describes the relationship of those values with the values of consumers who purchase goods on the internet. Results suggest that strongest predicators of potential online shopping are security, social, and achievement values

10:00 – 10:15 a.m. **College students' knowledge of basic personal finance**

302 ***Erica Belmont, Janet Ratliff, Mentor,*** **Department of Accounting, Economics, and Finance, College of Business**

The financial issues that face adults in everyday life are extremely important to their overall success; therefore, preparing

students with the appropriate financial knowledge is a core responsibility of a University personal finance class. This study will explore the personal finance knowledge of college students prior to and after completion of a personal finance course. Common demographic factors influencing knowledge will be examined and recorded to determine which of these factors most influence financial knowledge.

10:15 – 10:30 a.m. **Break**

10:30 – 10:45 a.m. **Theoretical foundations of economic development policy**

302 **** Stephanie Webb, Katherine Tapp, and Erica Allen, Dr. Michael W. Hail, Mentor,*** **Public Policy and Administration Department, Institute for Regional Analysis and Public Policy.**

Research on the "core" epistemological texts of the Western tradition is essential for understanding American constitutionalism and public policy. And in policy areas such as economic development policy, a much broader understanding of the epistemology and methodology of economics and political science is essential to understand the long-term forces at work on structures and institutions that explain change and its causal antecedents. This research develops a comparative methodological analysis of the fields and the applied policy process for economic development. Our motivation for this work was based upon our frustration that the economic development literature remains under the tyranny of the urban development paradigm. While this urban leviathan is the *de facto* standard of politicians, the media, public administration professionals, and academics, it is uncritically accepted in general and in particular, it is inappropriately applied to rural areas.

10:45 – 11:00 a.m. **Apocalypse now? Judicial and administrative barriers to state-based climate change initiatives**

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

The United States is the leading emitter worldwide of greenhouse gases, but not a policy leader in designing solutions to climate change. In this policy vacuum, states have taken the initiative, but they have encountered legal barriers which have frustrated their efforts to make climate change policy. State tort suits against auto companies have been dismissed because they involve political questions. State greenhouse gas statutes have confronted preemption claims. State challenges to federal agency inaction have met the standing to sue requirement. These barriers were lowered in 2007. The Supreme Court in *Massachusetts v. EPA* (2007) disposed of the standing barrier and subsequently, three federal courts eliminated preemption barriers, but the political question doctrine continues to limit state tort suits against the automobile industry.

11:00 – 11:15 a.m. **The down home south: The elevation of white southern identity**

302 ****Matthew Hurle, Dr. Kristina DuRocher, Mentor,*** **Department of Geography, Government and History, Caudill College of Humanities**

After the end of the period of the American Civil War and Reconstruction the United States was still divided in many ways. Physically the nation was whole but differences in Northern and Southern economies, ideologies, and even identities remained. Despite these differences white supremacy would, to a certain extent, unify the nation resulting not only in Jim Crow laws but also an elevation in black degradation. This degradation provided for the rise of an impression of the South as where blacks knew there place. Advertisements, such as Aunt Jemima, and other examples of Southern hospitality were analyzed to see how they allowed Southern Whites to reflect upon their own Southern identity.

11:15 – 11:30 a.m. **Motherhood, ambivalence, and modern psychology: Findings from medieval French text and art.**

302 ****Rachel Messer, Dr. Karen Taylor, Mentor,*** **Department of English, Foreign Languages, and Philosophy, Caudill College of Humanities**

Although much has been done to more precisely define and identify the role of the Virgin Mary, it remains the most challenging to feminist scholars. Literature from the Middle Ages portrays Mary as a model of femininity, complete with meek and mild attributes and maternal tendencies, while reinforcing patriarchal and fundamental perspectives of the past and today. This paper will focus on a specific aspect of the Marian role in the French Middle Ages: her ambivalence and violence in *La Miracle de Théophile* by Rutebeuf, and will attempt to counter the archetypal standards set in so many texts. Finally, modern psychological theory with regards to parenting styles, archetypes, and feminine psychology will be utilized to further examine the Virgin Mary's complexity.

Concurrent Session- ADUC 312

9:00 – 9:15 a.m. **Seed Keepers: Preserving Heirloom Seeds**

312

***Lynn Embleton, Dr. Judith Stafford, Mentor,* Department of Sociology, Social Work, and Criminology, Caudill College of Humanities**

The loss of biodiversity in our country is affecting a very important aspect of our life, our food. With funding from the Kentucky Historical Society I spent five months helping to interview local farmers and gardeners in Rowan, Elliot, and Carter counties who preserve and use heirloom seeds. These seed keepers not only protect biodiversity but they also preserve the rural heritage and culture, the methods of seed saving and growing, and the history of their families with seeds.

9:15 – 9:30 a.m. **Assessing external factors that influence college students' food choices.**

312

***Megan E. Huellemeier, Donna J. Corley, Mentor,* Department of Nursing, College of Science and Technology**

The effects of diet on health status are well documented. College students represent a population vulnerable to poor eating habits. Adjustment to college life introduces difficult food choices. Economic strains, convenience, and individual preferences influence students' meal decisions. This study will assess external factors that influence college students' food choices. Forty-eight junior and senior BSN students will complete a computer based food frequency questionnaire (FFQ) and survey specific to food choice. This sample is assumed to have a basic level of nutritional knowledge based on the required curriculum courses and content completed by each student. Data from this study will be used to guide preventative health interventions targeted towards this population

9:30 – 9:45 a.m. **The effect of breed type on ultrasound longissimus muscle area and fat thickness of sheep in the state of Kentucky**

312

***Heather Nauman, Brad Galbreath, Drs. J. Michael Phillips, Kimberly E. Peterson, Philip E. Prater, Judith G. Willard and Troy J. Wistuba, Mentors,* Department of Agricultural and Human Sciences, College of Science and Technology.**

Young lambs were weighed and ultrasonically scanned to study breed differences for 12^{th} rib fat depth and longissimus muscle area. Dorper, Polypay, Suffolk, and Texel/Polypay cross lambs (n = 63) were measured on farms throughout the state of Kentucky when they weighed 120 pounds. The Suffolk lambs had the largest ($P < 0.05$) longissimus muscle area (12.5 cm^2) and the Texel/Polypay cross lambs had the smallest (6.05 cm^2) where as the Dorper and Polypay were intermediate, in addition, the Suffolk and Polypay lambs had the greatest ($P < 0.07$) 12^{th} rib fat depth. These results support the knowledge that ram breeds of sheep that are highly selected for heavier musclings indeed have greater longissimus muscle areas. However, we would have also expected for those same animals to have less 12^{th} rib fat depth.

9:45 – 10:00 a.m. **Comparison of phytophthora tolerance between Rps1c and Rps1k isolines in soybean.**

312 ***Kevin Dillon, Drs. J. Michael Phillips, C. Brent Rogers and Troy J Wistuba, Mentors,* Department of Agricultural and Human Sciences, College of Science and Technology.**

Phytophthora is a disease in soybeans associated with wet soil conditions commonly occurring on heavy, poorly-drained or compacted soils. The optimum temperature for infection is 60-80°F and the severity of loss depends on environmental conditions, Phytophthora races present in field, and the genetic resistance or tolerance of soybean variety. Yield losses from phytophthora infection can range from 5-50% of the total crop. To make the comparison three segregating experimental lines were grown in South America for purification purposes, plant pulls were done for the Rps1k Phytophthora gene and Rps1c Phytophthora gene. Scoring of PRT (Phytophthora Tolerance) was done on a 1-9 scale with 1 equaling a dead plant and 9 equaling a completely healthy root system (tap root unaffected). Scoring was based upon root growth and plant death which allowed us to assess the plant's ability for root health and adventitious root regrowth. This study resulted in no statistical differences between the isolines investigated, however, anecdotal observations of plant root systems did show some general tendencies.

10:00 – 10:15 a.m. **The effect of breed type and year on real-time ultrasound carcass traits, performance and scrotal circumference of bucks enrolled in the Kentucky Buck Development Program**

312 **** Kim May, Brad Galbreath, Rudi Pitzer, Shannon Touroo, Drs. J. Michael Phillips, Phillip E. Prater, Kimberly E. Peterson, Judith G. Willard and Troy J. Wistuba, Mentors,* Department of Agricultural and Human Sciences, College of Science and Technology.**

Bucks were weighed, scrotal measured, and ultrasonically scanned to study breed and year differences for performance, scrotal circumference, and 12th rib fat depth, in August of 2005, 2006 and 2007. On test weights were greatest for 2005 ($P < 0.05$) followed by 2007 and then 2006. Mid-test weights followed the same trend where weights were greatest for 2005 ($P < 0.05$) followed by 2007 and 2006. However, there were differences in total gain and ADG in that the bucks in the 2007 test had increased total gain and ADG than in the other years ($P < 0.05$). There were no consistent results for scrotal circumference although the bucks on test in 2005 did have larger ($P < 0.05$) scrotal circumferences than 2006 or 2007 bucks.

10:15 – 10:30 a.m **Break**

10:30 – 10:45 a.m. **Effects of stage of maturity at harvest and hybrid on production characteristics of corn silage.**

312 ***Rudi Pitzer, Dr. Brent Rogers, Brad Galbreath, Heather Nauman, Dr. J. Michael Phillips, and Dr. Troy J. Wistuba, Mentors,* Department of Agricultural and Human Sciences, College of Science and Technology.**

Agronomic characteristics were evaluated for five corn silage hybrids harvested at two stages of maturity. The hybrids were planted in a randomized complete block design on May 5, 2007. Plant population was set for 24,600 plants per acre and rows were thinned to meet that standard. Hybrids were harvested at 80% milk-line and seven days post black layer and data were collected for whole-plant, fodder, and ear dry matter (DM), as well as, yield data for whole-plant, fodder, and ear. Forage DM yields were greater ($P < 0.05$) at the 80% milk line stage of maturity than for the seven day post black layer stage of maturity. Dry matter contents of the whole plant hybrids ranged from 35 to 49% and was greatest ($P < 0.05$) for the seven day post black layer silages. Furthermore, DM was greatest ($P < 0.05$) for the seven day post black layer fodder and ear fractions.

10:45 – 11:00 a.m. **The effect of bovine leukosis virus infection on the proportion among bovine leukocyte populations in cows.**

312 ***Shannon Touroo, Elizabeth Carson, Brad Galbreath, Barb Lewis, Drs. J. Michael Phillips, Kimberly E. Peterson, Phillip E. Prater and Troy J. Wistuba, Mentors,* Department of Agricultural and Human Sciences, College of Science and Technology.**

The effects of Bovine Leukosis Virus (BLV) infection on the proportion among bovine leukocyte populations in blood (WBC) was investigated using differential staining and a CBC profile. Eighty Angus cows (51 positive and 29 negative) were bled by jugular venipuncture on October 2, 2007. Cows had previously tested positive for the presence of BLV and were retested by ELISA on the day blood samples were taken. The model included presence or absence of BLV infection and sex. Total white blood cell count and total eosinophils were greater ($P < 0.09$ and 0.005) in the cows that tested positive for BLV. Proportions of lymphocytes were greater ($P = 0.11$) for uninfected cows. However, there were no differences in total counts or proportions of neutrophils, basophils, or monocytes. This study supported previous research in its findings that BLV infection has an impact on the relative proportions of white blood cells.

11:00 – 11:15 a.m. **Agriculture, international labor, and custom harvesting in the Great Plains**

312 ***Eric Patton, Dr. Jason Holcomb, Mentor,* Department of Geography, Government and History, Caudill College of Humanities**

Harvest in the Great Plains places constraints on the region's labor supply due increased seasonal demand for a short duration. The Great Plains' sparse population has required an especially mobile harvest workforce since the late Nineteenth Century. Mobile custom harvesting operations developed during WW II and still travel south to north during the summer months to meet the needs of farming operations. Custom harvesting operators hired American workers almost exclusively until the middle 1990s when they began hiring international labor. Questionnaires reveal that custom harvesters are currently hiring workers from Australia, New Zealand, South Africa, and many European countries. Harvest operators are hiring international labor through the U.S. Government's H-2A program for temporary or seasonal agricultural work. Supported by MSU Undergraduate Research Fellowship.

11:15 – 11:30 a.m. **Pteridophytes of Carter Caves State Resort Park, Carter County, Kentucky. How does this park compare?**

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

In order to inventory the ferns and fern allies within the park, collecting trips were made from September 2005 – Fall 2007. Specimens were identified and a species list was created. Additional work was done at other regional herbaria to search for vouchers of taxa within the park. A review of the pertinent literature was conducted to analyze the diversity of this study site with that of other sites, a Sorenson coefficient of similarity was calculated for these other floras. Also a species area curve was created to indicate the very high diversity of the pteridophyte flora within the park.

Concurrent Session - Riggle Room

9:05- 9:30 a.m. **Conodonts from target bedrock and impact Breccias of the Haughton Impact Structure, Devon Island, Nunavut, Canada**

Riggle

**** Wesley C.Smith*, Charles E. Mason, M*entor, Department of Physical Sciences, College of Science and Technology , [1]*John E. Repeski,* [2]*Paula Lindgren,* [2]*John Parnell; and* [3]*Pascal Lee***

Samples of carbonate bedrock (n=5) near, and melt breccia clasts (n=31) within the Haughton impact structure (Tertiary), Devon Island, Canada (75.2 deg. N. Lat.; 89.4 deg. W. Long.) yielded 95% recovery of conodonts. This study is the first to examine conodonts from Haughton Crater, which provide new data on the impact especially it's thermal history. Most of the target bedrock samples produced conodonts that are indicative only of Late Ordovician age (for some, a Silurian age is possible), which is consistent with the Allen Bay Formation (Upper Ordovician-Lower Silurian) as mapped in the area. Most of the samples of clasts from breccias also fall within this age range; however, some contain faunas of latest Early to earliest Middle Ordovician age, consistent with the ages of some of the underlying units, e.g., the Eleanor River Fm., displaced as ejecta and as parts of the central uplift. Conodont color alteration index (CAI) values in the regional bedrock are about 1.5, indicating minimum post-depositional, long-term heating in the approximate range of 50-90 degrees C. Some samples contain conodont elements having higher CAI values - up to 4. Some of these samples also contain co-occurring conodonts having several different CAI values, and some of the elements in these samples display surface features characteristic of the effects of contact with hydrothermal conditions. These surface features, and the co-occurrence of multiple within-sample CAI values are another of the many indicators of hydrothermal activity associated with the impact. Conodonts may provide some additional constraints on some of the thermal history parameters of this event. For example, one larger carbonate clast (~25cm x 20cm x 10cm) was split into two samples, the outer edges and the center of the clast, which were processed separately. CAI of conodonts in the outer sample range from 3.5 to 4, whereas most elements from the inner part of the clast range from 2 to 3, demonstrating the insulation effect of the poor heat conductivity of rock. Splits of these two samples processed by one of us (PL) using biological marker maturity parameters (pregnane/sterane and tricyclic terpane/hopane) also showed this insulation effect. Additional results of this study include; 1) confirms the use of chemical biomarkers for thermal maturation, 2) correlation of Devon rocks with Greenland, and 3) discovery of a new species of the rare conodont genus *Wandellia*.

[1]U.S. Geological Survey, MS 926A National Center, Reston, VA 20192
[2]Dept. of Geology and Petroleum Geology, University of Aberdeen, Aberdeen AB24 3UE, UK
3Mars Institute, SETI Institute, and NASA Ames Research Center, MS 245-3, Moffett Field, CA 94035-1000

9:30-9:45 a.m. **Characterization of photovoltaic decay in CdTe based solar cells**

Riggle

**** Kyle Bentley, Dr. Kent J. Price, Mentor,* Department of Physical Sciences, College of Science and Technology**

We have measured the open-circuit photovoltaic decay of CdTe based solar with and without the presence of a constant bias background light source. Several high-power Light Emitting Diodes (LED's) provide different color light sources for our research; mainly red, blue and yellow. The cell is illuminated by these different LED's and allowed to reach an equilibrium state. The light source is removed and a careful measurement of the voltage as a function of time gives a characteristic exponential decay. The constants in this exponential decay provide insight on the inner workings of the cell. Each different combination of colors yields a different result, and in turn gives more information about the cell. This research is supported by a MSU Undergraduate Research Fellowship.

9:45 – 10:00 a.m. **Development of the Radio Astronomical Calibration System of the Morehead State University 21m Space Tracking Antenna**

Riggle

****James W. Atwood, Jeffery Kruth, Benjamin Malphrus and Michael Combs, Mentors,* Space Science Center, College of Science and Technology**

Morehead State University has implemented a test inject system to calibrate flux measurements made with the 21m Space Tracking Antenna (STA). The test inject system uses a signal that is coupled directly into the feed of the antenna system from a separate noise source. This strategy makes it possible for direct comparison between the source being observed and a known flux density. An absolute value for the antenna temperature induced by an astronomical source can be obtained from this method. Induced antenna temperature can then be converted to an absolute radio flux in janskys (Jy). The system has been optimized to restrict unintended noise injection which leads to interference with useable data. The test inject system is being calibrated itself from known astronomical radio sources. The test inject system was constructed and installed by faculty and students at Morehead State University. The system is an alteration that was made to the original L-band feed system that Vertex-RSI provided during the 21m installation. A statistical method will be applied using signals (on source, off source, on source with calibration, off source with calibration) to minimize error in these flux measurements.

10 – 10:15 a.m. **Added-mass effects on the motion of symmetric and asymmetric bodies in a fluid**

Riggle

*** *Rebecca Scott, Dr. Antonino Carnevali, Mentor,* Space Science Center, College of Science and Technology**

An unexpected, asymmetry-induced, steady particle drift in viscous liquids filling a horizontal cylinder rotating around its axis was first reported by Bluemink *et al*. [Physics of Fluids **17**, 2005]. A similar type of motion has been studied by Seddon and Mullin [Journal of Fluid Mechanics **583**, 2007]. We have explored the motion further, particularly its dependence on the aspect ratio (L/r) of the cylinder and on the fluid viscosity. We investigate the forces acting on the particle and the possible sources of this unusual axial drift.

10:15 – 10:30 a.m **Break**

10:30 – 10:45 a.m. **Defining gain and system temperature of the Morehead State University 21-meter space tracking antenna**

Riggle

***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 radio telescope capable of making observations at centimeter wavelengths. The performance of this antenna is highly dependent upon the instrument's radio frequency (RF) performance characteristics, primarily the antenna gain and the system temperature. While it is difficult to directly measure system temperature, the antenna gain and a characteristic known as G/T (often referred to as the antenna figure of merit) can be empirically measured. The system temperature can be numerically derived from the antenna gain and G/T measurements. The measurements of the antenna gain and G/T are presented as well as a G/T elevation profile, which demonstrates the dependence of G/T on the elevation angle.

10:45 – 11:00 a.m. **Chessboard problems with obstructions**

Riggle

***Casey Hufford, *Brian Salyer, B. Nicholas Wahle, Drs. Robin Blankenship, R. Douglas Chatham, and R. Duane Skaggs, Mentors,* Department of Mathematics and Computer Science, College of Science and Technology**

A famous problem in mathematics and computer science involves placing as many queens as possible on a regular 8-by-8 chessboard so that no two queens attack each other. It is well-known that no more than *n* queens can be placed on an *n*-by-*n* board. We consider a recent variant of this problem in which more than *n* queens are placed on the board through careful placement of pawns to block certain queen attacks. We present new results and some conjectures regarding the structure of the resulting separated chessboards. This research was supported in part by an MSU Undergraduate Research Fellowship and NSF KY-EPSCoR Research Enhancement Grant UKRF 3046884400-07-419.

11:00 – 11:15 a.m. **Not so fast! A small correction to the standard projectile motion demonstration.**

Riggle **** Rebecca Scott, Dr. Antonino Carnevali, Mentor,*** **Space Science Center, College of Science and Technology**

Perhaps you have watched MIT Professor's Walter Lewin's projectile motion demonstration online**. It's a standard demonstration in which the muzzle velocity V_0 of the projectile is determined by measuring the maximum height reached when the projectile is launched vertically. V_0 is then used to predict landing sites for launch angles θ_0 = 30, 45, and 60 degrees. Not so fast! That method of measuring V_0 overlooks the perhaps not well known fact that V_0 is a weakly decreasing function of θ_0, so that the projectile will be slightly slower when launched vertically. We derive the equation for V_0 as a function of θ_0 for the Pasco ME6800 launcher. We also provide experimental verification and discussion of results. * *http://ocw.mit.edu/OcwWeb/Physics/8-01Physics-IFall1999/VideoLectures/detail/Video-Segment-Index-for-L-4.htm

11:15 – 11:30 a.m. **A NumPy program for producing FITS images from output from a space tracking**

Riggle ****Marc Beck, Dr. Thomas Pannuti, Mentor,*** **Space Science Center, College of Science and Technology**

The 21-meter Space Tracking Antenna (STA) at MSU is capable of observing discrete astronomical sources with moderate sensitivity at the L, S and K_u frequency bands. Datasets collected by observations made with the STA need to be distributed in a format commonly used by members of the general astronomical community to ensure that the full potential of the datasets is realized. To reach this goal, we are currently developing a program in Numerical Python (NumPy) – an extension of the Python programming language specifically designed to store, transmit and manipulate scientific data – that will convert the collected datasets into images in the Flexible Image Transport System (FITS) format. A description of the program and initial results will be presented and discussed.

Concurrent Session – Eagle Meeting Room

9:05- 9:30 a.m. **A survey of arts resources and needs in eastern Kentucky**

Eagle Meeting ****Kendrick Holbrook, Travis Keene, Dr. Joy Gritton, Mentor,*** **Department of Art, Caudill College of Humanities**

This project is in its second year of identifying and documenting arts resources in Kentucky's Appalachian counties. Drawing on the participatory research of 15 students, a website has been designed to serve as a reference for the region's artists, educators, students, and other community members. The site provides information on public school, technical college, and university art instruction, galleries and other exhibition and sales venues, practicing artists and craftspeople, community art groups, public art, special grand-funded initiatives, and other art related resources. The project also seeks to identify arts related needs in the region and thus potential venues for student service learning projects.

9:30-9:45 a.m. **Gallery and Exhibition Project Management and Design**

Eagle Meeting **** Laura Haywood; Jennifer Reis, Mentor,*** **Department of Art, Caudill College of Humanities**

The Undergraduate Fellowship in Gallery and Exhibition Project Management focused on both practical and theoretical concepts related to exhibition management manifesting in eight exhibitions at MSU, 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.

With the exhibition Self-Evident: Contemporary American Self-Portraiture, the Undergraduate Fellow (Laura Haywood) oversaw the process of developing and managing an exhibition, from the submission and jurying process (and was a juror as well) to receiving and installing the artwork. 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.

9:45 – 10:00 a.m. **The development of the Drum Corps International percussion section and its influence on marching percussion**

Eagle Meeting

***Lydia M. Stamm, Prof. Brian S. Mason, Mentor,* Department of Music, Caudill College of Humanities**

Since 1972, Drum Corps International (DCI) has become known as "Marching Music's Major League." Annually, top corps compete for a world title and chance to set a new standard of marching and musical excellence. As the popularity of the activity has grown over the years, the performance techniques, instrumentation, and musical requirements of these organizations have greatly evolved, becoming more diverse and demanding. The demands of DCI influence the marching idiom at every level, as well as manufacturers' innovations in equipment and instruments. This research resulted in a detailed timeline of the evolution of marching percussion equipment since 1972, within the appropriate musical and marching context, as well as an evaluation of the influence that drum corps has had on all aspects of marching percussion.

10:00 – 10:15 a.m. **Modern vocal pedagogues and theories**

Eagle Meeting

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

There have been a variety of different approaches to vocal performance and pedagogy from the very beginning of singing. The different functions and stylistic demands of singing, from sacred, to classical concert repertoire, to "background noise," have challenged all singers as to how to best produce a sound. There are several leading pedagogues that serve as guides for today's modern singers of art literature. This research specifically looked into the work of pedagogies of Richard Miller, Clifton Ware, and others. The objective of this research was to determine how different pedagogues contribute to the variety of styles of singing apparent in today's leading opera houses and schools of singing.

10:15 – 10:30 a.m **Break**

10:30 – 10:45 a.m. **Relationship of substance abuse symptoms on the PDSQ and SASSI-3**

Eagle Meeting

*** *Jared Dillow, Dr. Sean Reilley, Mentor,* Department of Psychology, College of Science and Technology**

Substance abuse is a serious, highly prevalent problem, especially among college students. Self-report scales are used as part of national screening outreach to identify high risk students, and as part of psychotherapy to gage the severity and breadth of substance abuse symptoms. One particularly promising measure for a college population is the Psychiatric Diagnostic Screening Questionnaire (PDSQ). Data for this measure, however, are lacking for its substance abuse scales. In a sample of three hundred undergraduates, it was predicted and found that moderate to strong correlations emerged between the SASSI-3 and both the PDSQ Alcohol abuse subscale (r=.60) and the PDSQ Substance abuse subscale (r=.58). The potential use of the PDSQ for substance abuse screening is discussed. Research supported by a MSU Undergraduate Research Fellowship.

10:45 – 11:00 a.m. **Enacted and felt stigma among gays and lesbians in Appalachia**

Eagle Meeting

***Michelle Fiore, Dr. Bernadette Barton and Dr. Eric Swank, Mentors,* Department of Sociology, Social Work, and Criminology, Caudill College of Humanities**

A Quantitative study focuses on the extent, frequency and degree in which certain types of stigma happen to gay and lesbian persons in Appalachia. This study is the first to focus on the under -researched Appalachian area. Using results from an online survey, the presentation explores the levels of enacted stigma (obvious, preformed acts of hate based on sexual preference) and felt stigma (internalized ideas that society disliked and discriminates against homosexuals) that surveyed individuals (n=287) had reported. The survey's responses show the levels of sexual and physically violent crimes (enacted) and the perceptions and support from various institutions (felt). By concentrating on the United States "Bible belt" region the hardships of living in a conservative, religion-based environment can be observed.

11:00 – 11:15 a.m. **Parenting behavior and attachment: An examination across various methods of attachment**

Eagle Meeting

***Royce K. Vance, Amanda E. Schulze, Stacy L. Vetter, Dr. Shari L. Kidwell, Mentor,* Department of Psychology, College of Science and Technology**

Attachment is a key predictor of both adjustment and parenting sensitivity. The aim of this study was to examine the interconnections of these constructs for several divergent methods of assessing parenting. Fifty-five parents and their children participated when children averaged 4.5 years old. Parents' attachment type was determined via ratings of an interview. Ratings of parenting were made during the Strange Situation procedure and during teaching and play tasks, as well as via questionnaires. Insecure parents were found to display less warmth and sensitivity during the observational procedures and reported higher levels of depression, anxiety, and inconsistency in their discipline, relative to secure parents. These findings support previous research that suggests parental attachment has important implications for both parent and child well-being.

11:15 – 11:30 a.m. **High levels of test anxiety may bias scores on popular narrow band AD/HD rating scales**

Eagle Meeting

***Cassie Watkins, Jared Dillow, Dr. Sean Reilley, Mentor,* Department of Psychology, College of Science and Technology**

Attention rating scales are used in the diagnostic process for determining AD/HD. Few, however, have comparable clinical data to aid the clinician in discriminating between AD/HD and attention problems secondary to related psychiatric disorders. The present study documents the influence of test anxiety on scores on narrow band AD/HD rating scales. Three hundred students completed history gathering questionnaires, the Test Anxiety Inventory, and several narrow band AD/HD Rating Scales. As predicted, test anxious individuals scored significantly higher than non-anxious individuals on narrow band AD/HD rating scales. The level of reported test anxiety among test anxious individuals was sufficient to yield false positive scores on some narrow band AD/HD rating scales in the absence of any history of AD/HD. Research supported by MSU Undergraduate Research Fellowship.

Poster Session 12:00 - 1:30 p.m. Crager Room

P. 1. College students' knowledge of basic personal finance

Crager

***Erica Belmont, Janet Ratliff, Mentor,* Department of Accounting, Economics, and Finance, College of Business**

The financial issues that face adults in everyday life are extremely important to their overall success; therefore, preparing students with the appropriate financial knowledge is a core responsibility of a University personal finance class. This study will explore the personal finance knowledge of college students prior to and after completion of a personal finance course. Common demographic factors influencing knowledge will be examined and recorded to determine which of these factors most influence financial knowledge.

P. 2. Can you read this? 508 compliance among Kentucky schools

Crager

***Laura Ashley Reynolds, Dr. Lesia Lennex, Mentor,* Department of Curriculum and Instruction, College of Education**

What does Section 508 of the Workforce and Rehabilitation Act really mean for state agencies? Confusion abounded about how to follow guidelines. How are state agencies faring in their attempts to provide accessibility? Kentucky fully adopted Section 508 and provided a civil action path should a person find inaccessible state funded sites. All state-funded agencies were required to provide accessible Internet sites. This study analyzed all available Kentucky school district home pages (N=174), selected Kentucky public school teacher sites (N=65), and one regional state university (N=40) to determine (1) overall site accessibility as determined by an online tester, (2) actions of school district and university technology coordinators on the accessibility of district and faculty page(s), (3) and the needs of target populations for site information.

P. 3. Pedometer feasibility case study

Crager

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

The purpose of this case study is to conduct an eight week program with a designated client to increase her daily steps measured by a pedometer. Each week the client logged her daily and average steps into a tracking system to see the increase or decrease from week to week. Using a combination of health behavior theories, a different topic was covered in each of the eight weeks such as barriers to physical activity, healthy eating, and supporting relationships. At the end of the eight weeks, the overall goal was for the client to have increased her steps by 15% each week. This program is still in progress; however the data shows that the client's average number of steps has increased

P. 4. Everything in its right place: Radiohead in a jazz combo setting

Crager

***Kyle Samples, Glenn Ginn, Mentor,* Department of Music, Caudill College of Humanities**

Since its conception, jazz has been a fluid art form, always changing and adding outside musical influences. In 1961, John Coltrane recorded his version of "My Favorite Things". Prior to that recording it had only been known as a song in the Broadway Musical *The Sound of Music*. Real Books now contain music by The Beatles, George Gershwin, and songs from the Motown era. Radiohead, a contemporary progressive rock group, writes music that provides interesting melodies and odd time signatures. Their songs are also well suited vehicles for improvisation, which is the heart and soul of jazz music. This research project is an exploration of three Radiohead selections: Morning Bell, National Anthem, and Knives Out. These songs have been arranged for a jazz combo and the performance has been recorded.

P. 5. **Howard Gardner's theory of multiple intelligences and music majors**

Crager ***Mallory Draughn, Dr. June Grice, Mentor*, Department of Music, Caudill College of Humanities**

The cognitive framework of musicians' brains may use different intelligences as compared with the general population. We utilized Howard Gardner's research with the Theory of Multiple Intelligences to investigate whether data from subjects tested at MSU supported his thesis. In order to determine if musicians have a stronger aptitude for musical intelligence in comparison to non-musicians, the research used the Multiple Intelligence Research Consulting National Basic Research Package. The subjects were college age students at Morehead State University. This research was conducted between Nov. 2007 and Jan. 2008. The research provided data showing that music majors view themselves higher than others in almost all areas of intelligences. Conclusions will be shared with professional organizations and submitted to professional journals.

P. 6. **Buses go east, buses go west**

Crager ***Chris Leadingham and Teara Jessie, Dr. John Ernst, Mentor,* Department of Geography, Government and History, Caudill College of Humanities**

During the sixties, colleges changed. Enrollments grew and buildings shot up as states increased funding. Students became more politically and socially active on the campuses. The Vietnam War contributed to the transformations that were already underway. Power struggles emerged between administrators and liberal students. Morehead State University mirrored the rest of the nation. The school's president, Adron Doran, did not willingly accept the cultural shifts, and perceived them as threatening. Ironically, he embraced the educational changes and built new facilities and programs, but naively could not grasp that students also were ready for a change, and he regularly declared that if you are not happy with the way things are done at Morehead, there are "buses going East, and buses going West."

P. 7. **The portrayal of China in political cartoons in the United States and Germany**

Crager ***Allen Fitzpatrick, Kristin Hausstein, Dr. Robert Frank, Mentor,* Department of Communication and Theatre, Caudill College of Humanities**

This presentation analyzes the portrayal of China in U.S. and German political cartoons. In his book *Politics, Ink.* Edward Lordan gives three devices used by political cartoonists in creating their work:1). Picture of reality that the artist presents as the essence of truth; 2) A message as to what they recommend ought to be done; and 3)The creation of a mood telling us how to feel about what has happened. This paper will take these into consideration when analyzing the political cartoons that are present today in the United States and Germany

P. 8. **What they said about her: Images of womanhood in the 19th century press**

Crager ***Michelle Fiore, Janet Rice McCoy, Mentor,* Department of Communications and Theatre, Caudill College of Humanities**

Using the case study method, this project will explore images of women in the 19th century press. The focus of this study is Miss Martha Butman, scheduled to marry Dr. R. C. Rutherford in Milan, Ohio, on March 4, 1851. Instead of saying "I do", she left the groom standing at the altar in a pre-meditated plan. This incident was debated in the local and regional press for one month. We know about this incident today because of what other people wrote about her in the press and through a collection of letters written to Miss Butman by her fiancé, other suitors and family members. The challenge of this project is understanding the subject even though no records in her own words have survived.

P. 9. **Singing is acting: utilizing *objective* to increase expressiveness in performing**

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

Research conducted last year centered on implementing a variety of gestures to increase expressiveness in the choral rehearsal. However helpful these gestures were, the challenge remained in determining a practical method for transferring the expressiveness from a rehearsal to a performance before an audience. Therefore, I adjusted this year's research to focus on increasing expressiveness in performances of choral literature. Through my research, I discovered an interesting correlation between my previous study of gesture, my personal experience in musical theatre, and what Tom Carter terms *objective* in his book *Choral Charisma, Singing with Expression* that defines the link between the dramatic arts and choral education.

P. 10. **Cross-cultural and community involvement as an expanded student teaching experience**

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

This proposal presents a case study exploring student teaching experiences in diverse cultural settings and ways in which integrated cross-cultural experiential learning and school/community involvement provides opportunites for expanded teaching perspectives. This study utilizes qualitative methods that include observation, research, personal experiences, and student interviews.

P. 11. **The effect of The Little Company performance and workshops on CATS test scores in Kentucky**

Crager ****Kayla Meadows, Dr. Robert Willenbrink, Mentor,* Department of Communications and Theatre, Caudill College of Humanities**

The Last Fraction Hero, a play and workshops, were developed and presented to students in schools throughout the southeast region of Kentucky. In addition to performing in the show, I constructed pre-tests that will be given to elementary school students. Subsequently the students will view a performance and attend workshops designed to present basic aesthetic concepts, math concepts and instruction in theatre. Finally, the elementary school students will be given a post-test (composed by me) to determine the impact of the performance and workshops on student's retention of these arts and mathematical concepts. I addition to the results of the assessments, sample video clips of the performance of the *Last Fraction Hero* and samples of workshop activities will be presented to demonstrate the process.

P. 12. **The effect of the Kentucky beef cattle genetics improvement program on real-time ultrasound carcass traits, performance and pelvic measurement of heifers enrolled in the eastern Kentucky heifer development program.**

Crager ****Brad Galbreath, Drs. Troy J. Wistuba, J. Michael Phillips, Phillip E. Prater, Kimberly E. Peterson and Judith 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 differences for performance, pelvic area, 12^{th} rib fat depth, longissimus muscle area, intramuscular fat, and rump fat in February of 2002 - 2006. Heifers (n = 2072) were delivered to Hazard, KY for the Eastern Kentucky Heifer development program. Initial, mid test and end weights differed between years ($P < 0.09$) and by breed ($P < 0.01$). There were also differences in total gain and ADG between years ($P < 0.01$) and breeds ($P < 0.01$). However, there were differences for year ($P < 0.01$) and breed ($P < 0.01$) but not the interaction for the number of days bred. These results support the knowledge that earlier developing breeds of cattle have increased intramuscular fat and subcutaneous fat depots whereas the continental breeds are leaner and have greater longissimus muscle area.

P. 13. **Weed management strategies to increase forage productivity of permanent grass pastures**

Crager

***David R. Appelman, Drs. J.D. Green and J.M. Phillips, Mentors,* Plant and Soil Science Department, UK College of Agriculture, Chairman of the Department of Agricultural and Human Science, MSU College of Science and Technology**

Weed management strategies that would decrease weed biomass and increase the productivity of a permanent grass pasture were evaluated in a field study in Northern KY. Herbicide control options implemented in 2006 along with combinations of cultural practices were evaluated for their effectiveness the following season. The experimental layout consisted of a 3-factor split-plot design which was replicated three times. Along with the herbicide treatments, a combination of sub plot factors included untreated checks, treatments with fertility and treatments with additional forages. Visual control, stem count reduction and harvested test weights were used to determine herbicide effectiveness and yield differences. Fertility treatments showed significantly higher yields while additional forages showed no additional yield. Weed dry matter yields were not reduced by fertility or seeding treatments.

P. 14. **Evaluation of preliminary results on DNA damage originating from raloxifene interaction**

Crager

***Logan W. Murphy, Dr. David Saxon, Mentor,* Department of Biological and Environmental Sciences, College of Science and Technology**

Evidence linking estrogens and reactive oxygen species (ROS) damage to DNA is mixed. 17 β-estradiol can protect DNA from oxidative damage while 2-hydroxyestradiol may contribute to DNA damage. Raloxifene is a selective estrogen receptor modulator used to treat osteoporosis and breast cancer. An ROS generating system of H_2O_2 and Cu(II) was used to investigate the effect of raloxifene on DNA damage. Damage was determined by evaluation of electrophorograms. DNA was damaged by the ROS system. Neither Cu(II) nor H_2O_2 alone damaged the DNA. Raloxifene did not protect DNA from damage. Pre-incubation of DNA with raloxifene, before incubation in the ROS system contributed to DNA damage. Since copper is a component of chromosomes, a raloxifene-copper dependent redox role in damage to DNA is being studied.

P. 15. **Developing RNA linking libraries for resolving chemical combinatorial libraries**

Crager

*** Kendra McQuerry, Ashley Loan, Dr. Craig Tuerk, Mentor,* Department of Biological and Environmental Sciences, College of Science and Technology**

The RNA library is produced as usual having a random region of 40n flanked by fixed sequence regions allowing rounds of selection and RT-PCR. The reactiviy of the members of the RNA linking library is provided by extension of RNA members with Klenow fragment using a short oligodeoxynucleotide template allowing the incorporation of 5-aminoallyl-uridine. We will present to such modified RNA libraries either biotin or digoxygenin modified with N-hydroxysulfosuccinimide (NHS) which can react with the aminoallyl modifications. The RNAs that have specifically recognized and reacted with NHS-biotin or NHS-digoxygenin will be partitioned by avidin-agarose or antidigoxygenin-IgG-agarose. Rounds of reaction and replication will enrich the libraries for these functional molecules which can be sequenced and tested for their utility in purifying their ligand from complex mixtures.

P. 16. **Assay observing SOS mutagenesis triggered by umuDC genes**

Crager

***Tyler Elam, Dr. Janelle Hare, Mentor,* Department of Biological and Environmental Sciences, College of Science and Technology**

DNA is the blueprint for life, thus damage response systems are vital to all life. To replicate through damaged DNA, various bacteria such as *Escherichia coli* carry out the SOS mutagenesis response. This requires the *umuDC* genes and

leads to the production of an error-prone DNA polymerase. We are testing whether an unusual *umuD* gene found in *Acinetobacter baylyi* can complement the *umuD* deficiency of an *E. coli umuD* mutant strain. We developed an SOS mutagenesis assay that shows SOS mutagenesis occurring in wild type *E. coli* cells: 100-fold greater frequency of antibiotic resistance mutations were observed after DNA damage than in unexposed cells. We will next insert the *Acinetobacter umuD* into an *E. coli umuD* mutant, and see if SOS mutagenesis occurs.

P. 17. **The genetic control of pigmentation in ornamental koi, *Cyprinus carpio***

Crager

**** Megan L. Minch, Dr. David K. Peyton, Mentor,* Department of Biological and Environmental Sciences, College of Science and Technology**

This research project will determine if the highly variable pigmentation patterns observed in Japanese ornamental koi (*Cyprinus carpio*) can be linked to genetic variation in the Melanocortin 1 Receptor (MC1R) gene. The MC1R gene is responsible for certain pigmentation traits in all vertebrates studied to date, including brown /red hair color in humans and yellow/black fur color in dogs. Extensive artificial selection and breeding over the last century have given rise to a spectrum of colors in koi that is broader than in any of these other organisms. In this study we will characterize the DNA sequence of the MC1R gene in koi, define differences that exist in specimens possessing different colors, and elucidate the causal relationship between genetic variation and color.

P. 18. **Background color pattern preferences in dragonfly larvae**

Crager

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

Larval dragonflies are prey to a variety of visual predators. One way to avoid detection by visual predators is to have preferences for resting on backgrounds that provide concealment. Dragonfly larvae possess color patterns that include body regions of homogeneous pigmentation as well regions with banding patterns (typically on the abdomen and legs). We were interested in determining whether larvae collected from the field and tested in the laboratory chose to spend significantly more time on a homogeneously colored background vs. one that was striped. Behavioral assays were conducted and photographs were taken of each larva on each background to determine which background offered the best camouflage for each individual. Our results indicate that background preferences in larval dragonflies may enhance their camouflage.

P. 19. **Habitat complexity and substrate preferences in dragonfly larvae**

Crager

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

Habitat complexity can impact the ability of a prey species to avoid predation. Prey that are subject to visual predation might be expected to choose habitats and substrates within that habitat that provide better concealment. Dragonfly larvae are prey that are widely distributed in aquatic habitats that vary greatly in their complexity and in resting substrates. We tested dragonfly larvae in the laboratory to determine whether they chose habitats that were more complex and whether they had a specific substrate choice (leaf vs. reed) within the habitat. Our results indicate that dragonfly larvae may choose habitats and substrates that provide better camouflage.

P. 20. **DNA Fingerprinting of *Escherichia coli* as a Tool to Track Host Sources of Watershed Fecal Contamination**

Crager

****Kristen Mitchell, Dr. Geoffrey W. Gearner, Mentor,* Department of Biological and Environmental Sciences, College of Science and Technology**

E. coli is a normal inhabitant of the gastrointestinal tract of warm-blooded vertebrates, and thus serves as an indicator of fecal contamination when found in watersheds. Strain variation of *E. coli* is associated with a given host species and with DNA fingerprint patterns. In this study, we used the BOX A1R primer in a repetitive sequence polymerase chain reaction (repPCR) of *E. coli* DNA isolated from a variety of known host sources. The repPCR products were assessed

by agarose gel electrophoresis, producing a pattern of bands in the gel referred to as a DNA fingerprint. Gel images were analyzed by Nonlinear software, and stored in a database. The analysis software was then used to construct phylogenetic trees of *E. coli* isolates from the known host sources. These results constitute a "library of knowns" which can be used in future comparative analyses of DNA fingerprints of *E. coli* collected from watersheds to identify probable host sources.

P. 21. **Characterization of osteoblastic properties of 7F2 cultures after acclimation to reduced levels of fetal bovine serum.**

Crager **Gregory Howard, Levi Castle, Laura Ashley, Sourik Ganguly, Drs. David Peyton, Michael Fultz, and 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. In an attempt to decipher the mechanism through which estrogen elicits its action on osteoblasts, experimentation necessitated the development of a culturing environment reduced in estrogenic compounds. This protocol reduced the concentration of FBS supplementation to 0% through successive, 24-hour incubations with diminishing amounts of total FBS (1%, 0.1%, and 0%). The protocol does not appear to alter the viability, cell morphology or osteoblast-like phenotype of 7F2 cell lines when compared to control cells grown in various concentrations of FBS. Although the rate of mitotic divisions declined, the 7F2 cultures continued to express osteoblast specific markers and exhibited estrogen responsiveness.

P. 22. **The effect of diltiazem on osteoblast viability in a cell culture environment devoid of etal bovine serum.**

Crager **Courtney Forbis, Drs. Michael Fultz and Darrin DeMoss, Mentors,* **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. Our laboratory has developed a culturing protocol that sustains osteoblast cells with minimal exposure to estrogen by decreasing fetal bovine serum supplementation. Estrogen plays an important role in skeletal physiology by maintaining a remodeling balance between the activity of osteoblasts and osteoclasts. This study was designed to observe the effects of diltiazem on the viability of two osteoblast-like cell lines (7F2 and UMR-106) cultured in a minimal estrogen environment.

P. 23 **Characterization of osteoblastic properties of UMR-106 cultures after acclimation to reduced levels of fetal bovine serum.**

Crager **Levi Castle, Gregory Howard, Laura Ashley, Sourik Ganguly, Drs. David Peyton, Michael Fultz, and 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. In an attempt to decipher the mechanism through which estrogen elicits its action on osteoblasts, experimentation necessitated the development of a culturing environment reduced in estrogenic compounds. This protocol reduced the concentration of FBS supplementation to 0% through successive, 24-hour incubations with diminishing amounts of total FBS (1%, 0.1%, and 0%). The protocol does not appear to alter the viability, cell morphology or osteoblast-like phenotype of UMR-106 cell lines when compared to control cells grown in various concentrations of FBS. Although the rate of mitotic divisions declined, the UMR-106 cultures continued to express osteoblast specific markers and exhibited estrogen responsiveness.

P. 24. **The effect of nifedipine on osteoblast viability in a cell culture environment devoid of fetal bovine serum.**

Crager

***Savannah Slone, Drs. Michael Fultz and Darrin DeMoss, Mentors,* 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. Our laboratory has developed a culturing protocol that sustains osteoblast cells with minimal exposure to estrogen by decreasing fetal bovine serum supplementation. Estrogen plays an important role in skeletal physiology by maintaining a remodeling balance between the activity of osteoblasts and osteoclasts. This study was designed to observe the effects of nifedipine on the viability of two osteoblast-like cell lines (7F2 and UMR-106) cultured in a minimal estrogen environment.

P. 25. **Effect of Rho kinase inhibition on alpha-actin remodeling in the contracting A7r5 smooth muscle cell.**

Crager

***Suzette M. Pike, Rebecca Green, Dr. Michael Fultz, Mentor,* Department of Biological and Environmental Sciences, College of Science and Technology**

It has become increasingly clear that there are additional mechanisms to the sliding filament theory that contribute to the contractile properties of smooth muscle. We have proposed that remodelling of the cytoskeleton may explain the unique contractile properties exhibited by smooth muscle. We have previously provided evidence of differential remodeling of the alpha- and beta-actin as well as smooth muscle myosin II cytoskeletal structures. However, the mechanism(s) regulating this differential remodeling is not understood. Inhibition of Rho kinase has been shown to decrease force development in contracting aortic smooth muscle tissue. Our results indicate that the inhibition of Rho kinase prevents remodeling of the alpha-actin cytoskeleton and may play a significant role in smooth muscle force generation.

P. 26. **Chessboard problems with obstructions**

Crager

**** Casey Hufford, *Brian Salyer, B. Nicholas Wahle, Drs. Robin Blankenship, R. Douglas Chatham, and R. Duane Skaggs, Mentors*, Department of Mathematics and Computer Science, College of Science and Technology**

A famous problem in mathematics and computer science involves placing as many queens as possible on a regular 8-by-8 chessboard so that no two queens attack each other. It is well-known that no more than *n* queens can be placed on an *n*-by-*n* board. We consider a recent variant of this problem in which more than *n* queens are placed on the board through careful placement of pawns to block certain queen attacks. We present new results and some conjectures regarding the structure of the resulting separated chessboards. This research was supported in part by an MSU Undergraduate Research Fellowship and NSF KY-EPSCoR Research Enhancement Grant UKRF 3046884400-07-419.

P. 27. **Assessing external factors that influence college students' food choices**

Crager

***Megan E. Huellemeier* , NURB 361 Nursing Research , *Donna J. Corley, Stephanie Johnson, Mentors,* Department of Nursing, College of Science and Technology**

The effects of diet on health status are well documented. College students represent a population vulnerable to poor eating habits. Adjustment to college life introduces difficult food choices. Economic strains, convenience, and individual preferences influence students' meal decisions. This study will assess external factors that influence college students' food choices. Forty-eight junior and senior BSN students will complete a computer based food frequency questionnaire (FFQ) and survey specific to food choice. This sample is assumed to have a basic level of nutritional knowledge based on the required curriculum courses and content completed by each student. Data from this study will be used to guide preventative health interventions targeted towards this population

P. 28. **Investigating alternatives during the childbirth experience and the positive impact of water birth.**

Crager **** Melinda Humen*, Laurie Lacroix*, Jessica Wright*, Chelsey Sturgill-Fyffe*, Amber Greene**** **NURB 361 Nursing Research*, Stephanie Johnson, Mentor,* Department of Nursing, College of Science and Technology**

Numerous alternatives to the tradition of delivery room birthing experience exist. The most common of these alternatives is the water birth experience. Water birth has historically provoked a positive birthing experience in which the patient reported a decrease in the intensity of pain and the healthcare providers reported a decrease in complications; consequently resulting in a decrease in the need for pharmacological interventions. Unfortunately, the majority of alternative options must endure the rigors of skepticism and reluctance to participate. That consequence may lessen as patients and their families become more informed and empowered to choose their healthcare delivery methods. Educating expectant mothers on alternative birthing experiences allows their plan of care to be more personalized to their specific wants and needs throughout the course of their labor process.

P. 29. **Investigating the effectiveness of pet therapy on terminally ill pediatric patients.**

Crager **** Tara Russell*, Tabitha Stone*, Patricia Meador*, Jenni Hurst*, Crystal Steele*, Kirby Buerkley**** **NURB 361 Nursing Research, *Stephanie Johnson, Mentor,* Department of Nursing, College of Science and Technology**

The practice of pet therapy began over half a century ago with the idea that caring for animals was therapeutic to a persons' health and promoted the healing process. The inclusion of pet therapy in a patients' plan of care has significantly increased since the movement towards patient and family centered care. The animals routinely utilized in pet therapy include dogs, cats, rabbits, hamsters and guinea pigs. Pet therapy utilizes behavioral trained animals in both acute care and rehabilitative settings to promote health, therapeutic touch and laughter. The benefits to pet therapy include increased relaxation, decreased pain perception and an increased sense of hope. Pet therapy is often directed through Volunteer Services at the healthcare organization or through the Child-Life Specialists.

P. 30. **Investigating the prevalence of ovarian cancer in society today and the contributing influences.**

Crager ****Rachel Isaac, Leah Bach*, Kara Givens*, Rachel Sheffield*, Brandi Feltner*, Carrie Conley*,*** **NURB 361 Nursing Research, *Stephanie Johnson, Mentor,* Department of Nursing, College of Science and Technology**

The occurrence of ovarian cancer remains regrettably high in various areas of our healthcare service region. Contributing factors to ovarian cancer include limited access to care, uncontrolled risk factors and minimal screening participation. Mortality rates could be dramatically affected and reduced by the inclusion of C – 125 serum testing, trans-vaginal ultrasound and bimanual pelvic examinations. However, due to influences, both external and internal, women are often reluctant to pursue health and wellness screenings. Hesitation and denial are both significant risk factors that contribute to the incidence of ovarian cancer as well as obesity, familial history, infertility, use of oral contraceptives and risky sexual behaviors. The impact that health and wellness teaching has on this phenomena is remarkable and certainly an invaluable component of our healthcare provision.

P. 31. **Assessing the impact of co-bedding and kangaroo care.**

**** Meg Thompson*, Johnna Lowe*, Jessica Owen*, Kate Pribonic*, Evan Seagraves**** **NURB 361 Nursing Research, *Stephanie Johnson, Mentor,* Department of Nursing, College of Science and Technology**

Co-bedding, or the practice of placing twins or multiples together in a bed, simulates life in the womb; as they have become accustomed to. Kangaroo care encompasses the practice of strategically placing the infant in direct contact with the mother's skin immediately following birth. Historically, both of these healthcare practices have provoked an improvement in patient status; both the newborn and the mother. Patient improvement can be measured through the

assessment of vital signs; such as blood pressure, heart rate and respirations returning within normal limits as well as through the visible bonding that is occurring between the mother and the child. The impact of co-bedding and kangaroo care contribute to holistic balance, physiological and psychological health and maternal/infant bonding.

P. 32. **Relational Aggression: The construction of an instrument**

Crager **** Caitlin Linepensel, Heather Salyers, Danielle Hobson, Dr. Lynn Haller, Mentor***, **Department of Psychology, College of Science and Technology.**

Relational Aggression is a relatively limited area of research that typically has only been examined in children. It pertains to more subtle forms of aggression such as lying. The current project will describe the early stages of a research project pertaining to relational aggression. The research team has been researching the area and constructing a questionnaire. The objective of the interview is to obtain information on the perceived normalcy of the phenomenon. Most adult research has focused on clinical samples. The interview involves scenarios of relational aggression and altruistic behaviors. Interview questions pertain to prevalence, appropriateness of behavior and frequency of the behavior. A Q-sort technique was used to determine the most appropriate scenarios for each category. The eventual questionnaire will have distracter measures in order deceive the subjects of the true purposes of the project. All subjects will debriefed as to the true purposes of the project at the conclusion of the study. This research was supported by MSU Undergraduate Research Fellowship

P. 33. **The emotion metaphor interview**

Crager **** Christina Miller, Rachel Messer, Kelley Walker, Dr. Lynn Haller, Mentor,*** **Department of Psychology, College of Science and Technology**

The study of the use of metaphor to express emotion is a limited research area. The presentation will detail an exciting new project that all the members of the team are participating from the start of the research project. The research team has developed both the metaphor interview and the literal interview over the last two semesters. A protocol of the project will be submitted to the MSU IRB. Students have all obtained CITI certification. Research on metaphor production and the complexities of the interview will be described.

P. 34. **Predictors of children's mental representations about attachment relationships**

Crager ****Palmer, Tiffany A., Osborne, Tracy L., Hinkle, Lisa D., Sexton, Paula J., Dr. Shari L. Kidwell, Mentor,*** **Department of Psychology, College of Science and Technology**

Attachment to parents is an important predictor of children's adjustment, thought to have its impact via mental representations about others' availability in times of need. The goal of this study was to explore the connections between children's attachment and their mental representations of these relationships. Thirty-five children and their parents first participated when the children were four years old, completing the Strange Situation procedure to assess attachment. Mental representations were assessed two years later via the Attachment Story Completion Task. Analyses showed that securely attached children tended to tell stories that were coherent and detailed and in which adults were seen as nurturing. Additional analyses will explore the degree to which insecure representations are predicted by stresses within the family.

P. 35. **Attachment as a predictor of young children's academic skills and mastery motivation**

Crager ****Messer, Rachel H., Ratliff, Ashley D., Gash, Hanna E., Vetter, Stacy L., Dr. Shari L. Kidwell, Mentor,*** **Department of Psychology, College of Science and Technology**

Attachment to parents is an important influence on children's adjustment and, more recently, has been associated with cognitive constructs. The goal of this study was to examine the relationship between children's attachment and their academic skills. Forty-three children and their parents participated when the children were four years old, completing the Strange Situation procedure to assess attachment. Academic skills were assessed via a teacher questionnaire, as well as an individually-administered achievement test. Analyses showed that securely attached children tended to have higher

academic skills, relative to insecure children. Subsequent analyses will explore whether secure children also had a more adaptive response to a challenging block tower building task in the laboratory, suggesting enhanced motivation to master their environment.

P. 36. Children's behavior on a problem-solving task predicts their cognitive and academic skills

Crager **Patterson, Christa N., Bryant, Lisa A., Ray, Emily N., Thomas, Mary K., Sexton, Paula J., Dr. Shari L. Kidwell, Mentor,* **Department of Psychology, College of Science and Technology**

Psychosocial factors may be among the most important influences on children's school readiness. This study examines how parent and children's responses to a challenging task are associated with children's academic skills. Thirty-five families participated when their children averaged 5.5 years old. Children completed two Lego puzzles, but were told they could ask their parent for help. Academic skills were assessed via a teacher questionnaire, as well as an individually-administered achievement test. Analyses showed that children who responded with negative affect and increased help-seeking on the Lego task tended to have lower reading scores. Children with more positive affect during the task had, in contrast, higher vocabulary scores. Future analyses will also examine how parenting behaviors during the task are associated with children's academic skills

P. 37. Betrayal consequences: What's love got to do with it?

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

Previous research has indicated that not all victims of romantic betrayal react in the same ways (e.g., Everly & Lating, 2004). It was supposed that such differences might be explained by victims' styles of loving. To test this idea, surveys concerning their worst experience with romantic betrayal were administered to 94 males and 114 females in the psychology subject pool. Results of correlational analyses indicated that having an obsessive (manic) love style was associated with the worst post-betrayal outcomes, including experiencing the betrayal as a trauma, showing signs of depression, anxiety, and physical health problems, embarrassment, and low levels of forgiveness. The practical approach to love (pragma) also was linked to some of these negative outcomes. Interestingly, those with a game-playing (ludus) style reported faring much better after betrayal.

P. 38. Preliminary leaching and petrographic studies of coal combustion by-products produced by Morehead State University

Crager **Ryne Carroll*[1], **Miranda Noel*[1], **Lauren Gray*[2], **Elizabeth Lyon*[3], *Dr. Nathan Coker*[4], *Dr. Ann Macintosh*[4], *Dr. Jen O'Keefe*[5], *Mentors,* **Department of Physical Sciences, College of Science and Technology**

Sampling and analyses of coal and coal-combustion by-products (CCB's) produced by Morehead State University completed in 2006 indicate that they are enriched in several environmentally-sensitive elements, and contain trace amounts of neurotoxins and/or carcinogens. Leachibility studies were not performed on these samples, so the likelihood of these elements entering the environment is unknown. This study presents data from preliminary leaching, SEM-EDS, and petrographic analyses. Optically, these samples are primarily glass and coke with some unburned and partially combusted coal. Batch leaching studies of Lead and Arsenic have shown that very little of these elements can be leached into the environment, which implies that they are incorporated in the glass and not present as free radicals in the carbon-based fraction. SEM-EDS analyses are exploring this relationship.

[1]Chemistry Senior Thesis Student, [2] Chemistry Research Student, [3] Geology Undergraduate Research Fellow
[4]Chemistry Faculty Supervisor, [5] Geology Faculty Supervisor

P. 39. **Establishment of an undergraduate research program for the NASA Haughton-Mars Project.**

Crager

**** Megan E. Ennis*[1,2], Charles E. Mason[1](Mentor), James W. Atwood[2], Wesley Smith[1,] [1-] Department of Physical Sciences, [2-]Space Science Center, College of Science and Technology***

The NASA Haughton-Mars Project (HMP) base camp is located on the rim of the Haughton impact crater on Devon Island in the Canadian High Arctic. Dr. Pascal Lee established HMP as a Mars analog site in 1997. The focus of this project is to develop a funded, nationally competitive HMP undergraduate research program, which will allow undergraduates to participate in this exciting, fieldwork-based geology, and planetary science research program. During the 2006 HMP field season the PI and one MSU undergraduate (Wesley Smith) worked on a collaborative project on biomarkers with Dr. John Parnell and his research group from Aberdeen University in Scotland. Here we utilized the conodont color alteration index or CIA to check results of chemical biomarkers taken from melt breccia clasts by Dr. Parnell's research group. Our study, using CIA of conodonts, gave the same temperatures reached by the melt breccia clasts as the chemical biomarkers thus collaborating the results of their study. Also, in this study besides such things as the discovery of new conodont species, an insulation effect was noted between the inner and outer parts of the large melt breccia clasts. During the 2007 HMP field season two MSU undergraduate students, Megan Ennis and James Atwood accompanied the PI. Megan's primary project was to collect large melt breccia clasts from around the crater to examine the insulation effect noted in the 2006 study. James' primary project was to work with Dr. Lee in the development of a plan for a SETI antenna site at HMP.

P. 40. ***Chandra* x-ray observations of the nearby Starburst Galaxy NGC 253**

Crager

**** Daniel C. Graves, Dr. Thomas G. Pannuti, Mentor,* Space Science Center, College of Science and Technology**

I present an analysis of multiple X-ray observations made with the *Chandra* X-ray Observatory of the nearby starburst galaxy NGC 253. The high star formation rate of this galaxy is reflected in the large number of discrete X-ray sources, namely X-ray binaries and supernova remnants (SNRs), as well as a prominent active galactic nucleus. The superior angular resolution of *Chandra* (~1 arcsecond) is essential for probing confused regions and making clear positional associations between X-ray sources and detected SNRs at optical and radio wavelengths. Rewrite last sentence as "Reduction of the datasets has been performed with the *Chandra* Interactive Analysis of Observations (CIAO) software package (Version 4.0.1): preliminary results will be presented and discussed.

P. 41. **X-ray Counterparts to Supernova Remnants in NGC 2403**

Crager

****Arielle Short, Dr. Thomas G. Pannuti, Mentor,* Space Science Center, College of Science and Technology**

NGC 2403, a spiral galaxy located at a distance of 3.2 Megaparsecs, features a supernova remnant (SNR) population that has been well-studied at multiple wavelengths. To date, optical and radio surveys have identified approximately 40 SNRs in this galaxy. Schlegel & Pannuti (2003) used a high angular resolution (~1 arcsecond) archival observation of NGC 2403 made with the Chandra X-ray Observatory to identify X-ray counterparts for one optically-identified SNR and one candidate radio SNR, but the sensitivity of the observation was poor due to the rather short exposure time (~36 kiloseconds). We present a new search for X-ray counterparts to SNRs in this galaxy using four additional archived Chandra observations with a total exposure time of ~200 kiloseconds. Initial results will be presented and discussed.

P. 42. **A Study of the Galactic Supernova Remnant G347.3-0.5 with the *Chandra* X-ray Observatory**

Crager

****Rashika Agrawal, Dr. Thomas G. Pannuti, Mentor,* Space Science Center, College of Science and Technology**

We present an analysis of two pointed observations made of the Galactic supernova remnant (SNR) G347.3-0.5 with the *Chandra* X-ray Observatory. The X-ray- luminous rims of this SNR feature spectra which are featureless, extend to at least 10 keV and are best fit with simple power-law models (with slopes ranging from Γ~2.5-2.6).
Such emission is termed "non-thermal" and – in the case of G347.3-0.5 – is believed to be synchrotron radiation. This SNR therefore belongs to a small but growing class of Galactic SNRs where the observed X-ray emission from bright leading rims has a synchrotron origin. We also present a spectral analysis of small scale structure of this supernova remnant as revealed by the observations.

P. 43. **Spatially resolving thermal and non-thermal X-ray emission from the Kepler supernova remnant**

Crager ******Jason M. Smathers, Dr. Thomas G. Pannuti, Mentor*, **Space Science Center, College of Science and Technology**

We present an X-ray analysis of a 50 kilosecond observation made with the *Chandra* X-ray Observatory of SN 1604 (also known as Kepler's supernova remnant -- SNR). SN 1604 is thought to result from a Type Ia supernova: however, evidence exists that this SNR is also interacting with a circumstellar medium (CSM), which is more typical of SNRs associated with Type Ib/Ic/II supernovae. In addition, the integrated X-ray emission from Kepler features both thermal and non-thermal spectra: the analysis of non-thermal spectra is vital for understanding how SNRs accelerate cosmic rays. The superior angular resolution of *Chandra* (1 arcsecond) is essential for determining where the emission mechanism from particular regions of this SNR are predominantly thermal or non-thermal. Initial results will be presented and discussed.

P. 44. **A search for x-ray counterparts to supernova remnants in the galaxies IC342 and NGC4258l**

Crager **** Wayne D Staggs, Dr. Thomas G. Pannuti, Mentor,*** **Space Science Center, College of Science and Technology**

IC 342 and NGC 4258 are nearby spiral galaxies located at distances of 3.3 Mpc and 7.2 Mpc, respectively. Archival datasets from observations made with the *Chandra* X-ray Observatory of these galaxies have become publicly available: the exposure times of these observations are 59 kiloseconds and 21 kiloseconds for IC 342 and NGC 4258, respectively. We are analyzing these datasets with the goal of identifying X-ray counterparts to supernova remnants (SNRs) detected in these galaxies by prior optical and radio searches. The excellent angular resolution capabilities of *Chandra* (~1 arcsecond) are essential for addressing source confusion in these galaxies. Detection rates of SNRs between the two galaxies are compared, as well as the resident SNR populations in light of measured star formation rates for both IC 342 and NGC 4258.

P. 45. **Evaluating the success of the NewCities Institute**

Crager ****IRAPP 300 Class: Michael Anteau, Susan Brown, Aaron Dourson, Cody Hawkins, *Josh Hicks, Seth Jenkins, Ainsley Lambert, Joe Means, *Tara Nanny, Channing Richardson, Nick Rose, Thomas Stevens, Chris Westendorf, Grant York, Dr. Stephen Lange, Mentor,*** **Institute for Regional Analysis and Public Policy**

The effectiveness of the NewCities Institute in fostering civic engagement and community development was examined in theory and practice. First, a comparison of the Institute's principles and procedures to the social science literature suggests that the Institute's work is in harmony with the findings of current research on the promotion of community development, organization, and engagement. Second, the effectiveness of the Institute's work in Morehead was evaluated using the IRAPP Progress Report. Both qualitative and quantitative data were collected on local government, community organizations, civic participation, education, youth programs, health, and cultural events. While this data set constitutes a baseline for comparison in future research, preliminary results suggest levels of community engagement and development that create a strong likelihood of the success of NewCity Morehead.

P. 46. **Spatial analysis of the influence of climactic factors on incidence of disease in Kentucky**

Crager ***Danielle Ahadi-Akhlaghi, *Britney Huron, *Nick Rose, Dr. Timothy Hare, Dr. Christine McMichael, Mentors,*** **Institute for Regional Analysis and Public Policy**

The incidence of many diseases has not previously been examined spatially in Kentucky. Our research investigated long-term relationships between statewide patterns of disease incidence and key climactic factors which may substantially influence these patterns. Specific climate factors included long-term precipitation and maximum and minimum temperatures. While we primarily analyzed linkages between incidence of disease and climate, we also explored the potential influence of other factors. The results of our analysis aid in understanding the influence of precipitation and temperature regimes on disease incidence in Kentucky, and are expected to improve attempts to predict the impact of climatic conditions on disease incidence.

P. 47. **Launching KAPRA: an informative advertising and public relations campaign**

Crager **** Allison Stanley, Tricia M. Farwell, Mentor,*** **Department of Communications and Theatre, Caudill College of Humanities**

One of the fundamental functions of a successful professional and educational association is building of relationships with its publics. In order to construct meaningful relationships, organizations turn to informative advertising and public relations campaigns. These campaigns function not only to convey vital information, but also to convey a lasting impression regarding the organization. The "Launching KAPRA" project, an advertising and public relations campaign for the Kentucky Advertising and Public Relations Association, has the goal of raising awareness and communicating the value of what the organization can offer its target audience. In doing this, we hope to inform students, practitioners and educators of the newly founded KAPRA and its offerings.

P. 48. **Campus television as a canvas for multicultural awareness and creativity at Morehead State University**

Crager **** Brittany Behn, Drs. Ritta Abel and Ann Andoloro, Mentors,*** **Department of Communications and Theatre, Caudill College of Humanities**

Using MSU's channel 77, multicultural issues concerning the campus, region, and country we addressed. Topics from cultural awareness to political tension were raised to provide students with a better feeling of connectivity to the cultures represented throughout the university. Students, faculty, and staff were called upon to present their knowledge on topics discussed in the form of interviews, showcase talents developed, and present opinions on the topics covered. By presenting Morehead Sate University with information in a creative medium, it is hoped that they will use their cultural knowledge to improve cultural relations on campus, in organizations, in their future jobs, and encourage students to explore other ways of thinking.

P. 49. "***MSU Weekly*" and MSU Promotional Announcements**

Crager **** Savannah Varble, Tim Creekmore, Mentor,*** **Department of Communications and Theatre, Caudill College of Humanities**

Under the direction of Tim Creekmore, I served as producer of MSU Weekly and produced multiple MSU promotional announcements. Samples of this work will be provided via video monitor.

P. 50. **"*Kaleidoscope*" and "*Hear Me Roar*"**

Crager **** Amanda Dixon, Tim Creekmore, Mentor,*** **Department of Communications and Theatre, Caudill College of Humanities**

Under the direction of Tim Creekmore, I served as director of two MSU television productions: *Kaleidoscope"* and "*Hear Me Roar*. Samples of this work will be provided via video monitor.

P. 51. ***The Language of Kenny Burrell: A Transcription Comparison and Analysis***

Crager ****Michael Tyler S. Harris, Glenn Ginn, Mentor,*** **Department of Music, Caudill College of Humanities**

Kenny Burrell is one of the living legends of jazz guitar. His prolific and influential career has spanned over five decades. He has produced hundreds of recordings, either as a sideman for such notable jazz musicians as Dizzy Gillespie, Duke Ellington, John Coltrane, Charlie Parker, and Miles Davis to name a few, or as a solo artist. Burrell's cool, laid back approach to the guitar, combined with his lush and deep tone has personified his career, making him "America's guitar laureate", according to the Detroit Free Press. He has been a powerful inspiration for generations of young guitarists, and will likely be for many more. In order to fully grasp, understand, and codify Burrell's distinctive style, it is necessary to examine and analyze his playing. Through a brief biographic study, and the analysis/comparison of three transcribed solos, Burrell's improvisations will be decoded and translated through harmonic, melodic, rhythmic, and motivic considerations in order to identify Burrell's musical language to offer a better understanding of his contribution to jazz guitar history.

Lecture/Performances 1:35 - 2:30 p.m. Crager Room

1:35 – 2:00 p.m. A study in contrast of styles through the repertoire of trombone quartets

****Nick Breiner, Justin Croushore, Heather Gibson, Ryan Miller, Dr. Jeanie Lee, Mentor (MUSM 368 Brasswind Ensemble)*** **Department of Music, Caudill College of Humanities**

The students in Brasswind Ensemble are music majors with a specialty in trombone performance and education. This semester they are engaged in exploring trombone quartet repertoire, and studying the various playing techniques that are necessary to successfully execute the contrasting styles involved in the literature. The contrast in styles is derived from 20th century composers with different compositional styles (Ewazen: Neo-Classicism; Hidas: Avante Garde; Jobim: Jazz influence) as well as composers of earlier periods (Mendelssohn: Romantic Era of 19th century; Haydn: Classical Era of 18th century). For their presentation, the students would like to perform a live trombone quartet recital which demonstrates this contrast in styles.

Franz Joseph Haydn	Achieved is the Glorious Work
Eric Ewazen	Myths and Legends
Felix Mendelssohn	Die Nachtigall
Frigyes Hidas	Scherzo e Corale
Antonio Carlos Jobim	No More Blues

2:05 – 2:30 pm The rhythm of language and music: The saxophone music of Jacob ter Veldhuis

The Orpheus Saxophone Quartet: Sara Sipes, soprano saxophone *David Houston, alto saxophone *Collin Stegeman, tenor saxophone * Will Fergason, baritone saxophone * Dr. Nathan Nabb, Mentor, **Department of Music, Caudill College of Humanities**

The Dutch composer Jacob ter Veldhuis has written several works for saxophone, including many pieces for "saxophone and boombox." Ter Veldhuis, in his "boombox" compositions, incorporates pre-recorded soundbites from American popular culture and manipulates them to address mainstream issues, including: gang violence, substance abuse and body image. The compositional grammar of these works makes use of the rhythmics in speech patterns and applies them to music, which creates an exciting interdisciplinary medium.
The Orpheus quartet has selected to perform *Pitch Black* and Sara Sipes and Collin Stegeman will also perform *Tatatata-Duo for tenor and baritone saxophone and boombox*. In *Pitch Black*, ter Veldhuis utilizes soundbites from an interview with Chet Baker, a trumpeter from the "Cool Jazz" school, shortly before his death in 1988.

2007-2008
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)
Leslie Todd Watts	Sr.	CUR. INST.	Edna Schack
Laura Ashley Reynolds	Sr.	CUR. INST.	Lesia Lennex
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

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		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

INSTITUTE FOR REGIONAL ANALYSIS AND PUBLIC POLICY

Student URF	**Class**	**Department**	**Mentor (s)**
Susan Brown	Jr.	IRAPP	Brian Reeder
Danielle Akhaghi		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 2-12, 2008
Claypool-Young Art Gallery

The Claypool-Young Art Gallery on the campus of Morehead State University held the '2008 MSU Sophomore Art Exhibition' April 1 – 12, 2008. Sophomore art students participate in the exhibition allowing them an opportunity to exhibit their work in the professional realm. The '2008 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.

2008 Sophomore Art Exhibitions

Jennifer Adams, Prestonsburg
Kerry Adkins, Ashland
Amanda Fannin, Olive Hill
Ashleigh Mullins, West Liberty
Evan Sanders, Louisville
William Smith, Morehead
Josh Spencer, Mt. Sterling
Jessica Adams, Prestonsburg
Meranda Campbell, Crittenden
Frances Mayo, Shelbyville
Patricia Murphy, Frankfort
Karri Smith, McAndrews
Anna Snider, Franklin, Ohio

INSCAPE 2008
Student Artist Works Published

INSCAPE, is the poetry/prose/visual arts magazine that is published each April. The work of the 19 students listed below were selected from over 70 that were submitted.

INSCAPE Cover Design: David V Moore
INSCAPE Interior Art:

Heather Utterback	Caleb Spencer	Kerry Adkins	Ryan Newberry
Joelle Schultz	Taral Thompson	Steven Rodgers	Shatosha Maddix
Casey McCown	David Moore	Derek Holston	Colin Daugherty
Laura Haywood	Deborah Slone		
Ceramics Group:	Andrea Mullins	Jessica Reyes	Colby Nunemaker
	Jennifer Sheehan	Lydia Womack	

REFLECTIONS, A Dance Concert
April 10 – 13, 2008
Little Theatre

MSU Theatre and Dance
Student Choreographers, Dancers, and Designers:

Adams, Stephanie
Brewer, Jolene
Buckingham, Lindsey
Carter, Amanda
Chang, Andrew
Esposito, Shawna
Fryman, Lee Ann
Griffin, Anna Claire
Hudson, Sarah
Kucera, Terrill
March, Zach
McDanald, Kristen
Mooney, Katie
Murphy, Patricia
Robinette, Sarah Beth
Varble, Savannah
Whitley, Lacey
Bothmen, Jessica
Brown, Jordan
Cain, Allie
Caudill, Dustin
Daugherty, Kyrsten
Figlestahler, Karen
Gayle, Lakeisha
Harris, Cal
Jeans, Christina
Linehan, Mary
Maynard, Molly
Meadows, Kayla
Moulis, Jessica
Orr, Kasi
Sandfoss, Tyler
Wallerer, Kayla

Department of Music
April 10, 2008, 3:00 PM, Duncan Recital Hall

The 21st annual **A. Frank and Bethel C. Gallaher Memorial Music Performance Competition** is scheduled on April 10, 2008 and represents the creative achievements of undergraduate students in music during the annual MSU *Celebration of Student Scholarship* week. Established in 1987, the competition honors the memory of the parents of Department of Music Chairperson Emeritus, Dr. Christopher S. Gallaher, who were strong advocates for education, particularly in the arts. The competition proposes to challenge music students to excel in performance artistry.

Participants, recommended by their private applied teacher, must be full-time (minimum of 12 semester hours) students who major in music, are a member of the junior class, initially matriculated at MSU, and have a GPA of 2.5 or higher. Three judges who are not affiliated with the university adjudicate the competition. The winner of the competition receives a $1000 cash prize and is featured in performance at the annual Academic Awards Convocation.

The following undergraduate students performed in the A. Frank and Bethel C. Gallaher Memorial Music Performance Competition Semi-Final auditions on March 11. The finalists competing on Thursday, April 10 are noted with an asterisk.

Timothy Bailey, clarinet (from the studio of Professor Lori Baruth)
Nicholas Breiner, bass trombone* (from the studio of Dr. Jeanie Lee)
Kristen Brown, soprano* (from the studio of Dr. Roma Prindle)
Chelsea Carpenter, soprano* (from the studio of Dr. Ricky Little)
Allyson Martin, flute (from the studio of Dr. Jacob Roseman)
Ryan Miller, trombone* (from the studio of Dr. Jeanie Lee)
Patrick Mosser, alto saxophone* (from the studio of Dr. Nathan Nabb)
William Murphy, organ* (from the studio of Professor Larry Keenan)
Dustin Stevens, tenor (from the studio of Dr. Roma Prindle)
Jacob Wise, piano (from the studio of Dr. Paul Taylor)
*finalist

President's Reception for Showcase Mentors
April 10, 2008 6 – 7:30 p.m.
ADUC, Heritage Room

The President's Reception 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 6-7:30 p.m. on Thursday, April 10, 2008.

Phi Kappa Phi Banquet
April 12, 2008
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. 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, Brack Marquette, Director of Government Affairs at Columbia Gas of Kentucky. The title of his talk is "*Where are your 'Acres of Diamonds'.*

Notes

Celebration of Student Scholarship
Sponsored by:

Office of the President
Office of the Provost
Office of Research and Sponsored Programs
Student Government Association

Members of the Celebration of Student Scholarship Committee

Ali Ahmadi
Laurie Couch
Robert J. Franzini
Brian Gay
Timothy Hare
Bruce Mattingly, Chair
Scott McBride
April Miller
Paul Steele

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