ANNUAL REPORT OF UNDERGRADUATE RESEARCH FELLOWS

August, 2011 to May, 2012

COLLEGE OF BUSINESS

SCHOOL OF BUSINESS ADMINISTRATION

DEPARTMENT OF ACCOUNTING, ECONOMICS, AND FINANCE

Tran, Yen

Major:
Economics

Faculty Mentor:
James Masterson

Research/Project Title:
China's Rising Influence: Impacts on U.S. – China Relation and the Role of America in Asia

Project Abstract/Summary:
This project examines Sino-American relations and their influence on the relations between the United States and other Asian countries, such as Japan, the Koreas and South East Asian States. The goal is to illustrate how Sino-American economic interdependence (EI) affects political, military, and human rights issues between the states. The study uses an analysis of relevant news reports from major international sources and secondary sources found in the following books: U.S. – Chinese Relations; Perilous Past, Pragmatic Present; The United States in Asia; US – China Relations in the 21st Century. A comparison between the Bush administration's and the Obama administration's foreign policies reveals the advantages and disadvantages of the United States' current policy concerning China, and reveals constraints on U.S. policies towards China due to high level of EI.

Project Dissemination:

Oral Presentations:

Tran, Yen (2012). China's Rising Influence: Impacts on U.S. – China Relation and the Role of American in Asia. Southeastern Conference of the Association of Asian Studies, Greenville, SC.

Tran, Yen (2012). China's Rising Influence: Impacts on U.S. – China Relation and the Role of America in Asia. Kentucky Political Science Conference, Campbellsville, KY.

Tran, Yen (2012, April). China's Rising Influence: Impacts on U.S. – China Relation and the Role of America in Asia. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Poster Presentations:

Tran, Yen (2012). China's Rising Influence: Impacts on U.S. – China Relation and the Role of American in Asia. Midwest Political Science Association Conference, Chicago, IL.

Tran, Yen (2012, April). China's Rising Influence: Impacts on U.S. – China Relation and the Role of America in Asia. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Awards and/or Honors:
N/A

Post-Graduation Plans (Seniors only):
N/A

DEPARTMENT OF MANAGEMENT AND MARKETING

Nicholas Mason

Major:
Sports Management

Faculty Mentor:
Steve Chen

Research/Project Title:
1. A Feasibility Study of Dewey Lake Trail System: An Analysis of Projected Economic Benefits and Impact
2. An Examination of Behavioral Data as Indicators of Student-Athletes' Academic Success

Project Abstract/Summary:
Project 1. The Dewey Lake Study

The purpose of this project was to justify the rationales for constructing the Dewey Lake Trail System (DLTS) by utilizing public spending. In this study, the investigators surveyed 119 residents from the surrounding area of Floyd County at the 2011 Jenny Wiley Festival. The results indicated the majority (92%) of the respondents would favor the idea of building the trail system. The trail project will attract residents to frequently engage in fishing, walking/hiking, camping, and horseback riding, attending cultural festivals, July 4th fireworks, and other trail and outdoor competitions. The DLTS is projected to generate an annual economic impact of $1.7M to Floyd County. It is logical to assume that the building of the DLTS would be a feasible and profitable endeavor to pursue.

Project 2. The Behavioral Study on Student Athletes

This project examined daily behavioral data as an indicator of student-athletes' academic success. The primary objectives of the study were to (1) identify the most effective criterion for predicting prospective and current student-athletes' academic success, (2) formulate successful strategies to monitor student athletes' use of their time based on survey results, and (3) produce an educational documentary film that portrays the life and experience of an intercollegiate student-athlete. The results indicate time spent in study and leisure activities is a more relevant factor and indicator (than standard test scores alone) of a student-athletes' academic achievement. Understanding these findings will help athletic administrators and tutor coordinators to teach, monitor, and supervise student-athletes' time management behaviors.

Project Dissemination:

Project 1:

Poster Presentations:

Mason, N.D., Moore, C., Chen, S., Salazar, W., and Middleton, S. (2012, January). An Examination of Behavioral Data as Indicators of Student-athletes' Academic Success. Posters-at-the-Capitol, Frankfort, KY, January.

Mason, N.D., Austin, J., Moore, C., Noaks, C., and Chen, S. (2012, April). An Examination of Behavioral Data as Indicators of Student-athletes' academic success. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Project 2:

Oral Presentation:

Mason, N.D., Austin, J., Moore, C., Noaks, C., and Chen, S. (2012, April). A Feasibility Study of Dewey Lake Trail System: An Analysis of Projected Economic Benefits and Impact. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Awards and/or Honors:
Student will present the Dewey Lake study in May, 2012, at the Academic Business World International Conference in Nashville, TN.

Post-Graduation Plans (Seniors only):
N/A

Matthew Wells

Major:
Management

Faculty Mentor:
Janet Ratliff

Research/Project Title:
Examination of Social Media Adoption by Fortune and Inc. 500 Companies

Project Abstract/Summary:

This study examined the adoption rate of eight social media networking tools by Fortune 500 and Inc. 500 companies. The adoption of individual and multiple social media tools were compared between the two corporate groups, as well as for gender of corporate executives. Findings indicated the adoption of individual social media tools differs based upon the corporate group. The presence of more than one female chief executive influenced the adoption of multiple social media tools.

Project Dissemination:

Poster Presentation:

Wells, M., and Ratliff, J., (2012, April). Examination of Social Media Adoption by Fortune 500 and Inc. 500 Companies. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Awards and/or Honors:

N/A

Post-Graduation Plans (Seniors only):

To pursue a career in either logistics or human resources.

Laura Pfalzer

Major:

Government

Faculty Mentor:

Murray Bessette

Research/Project Title:

The Sense of Self with Regards to Wealth in Jane Austen's *Sense and Sensibility*

Project Abstract/Summary:

Wealth is an important part of life, influencing myraid societal conventions. The inflationary period of the eighteenth century produced many cultural shifts. One of particular significance was the rise of the female novelist, who wrote to illustrate the gravity of her domestic plight – constrained not only by traditional gender roles, but by the choke hold of economic inflation. Jane Austen's novel *Sense and Sensibility* depicts money's grasp on society and its influence over the individual. Moreover, it displays the uncanny ability of material matters to overshadow those of the heart. An examination of Austen's characters shows us the many ways in which the sense of self can interact with the importance of wealth.

Project Dissemination:

Poster Presentations:

L. Pfalzer (2012, April). The Sense of Self with Regards to Wealth in Jane Austen's *Sense and Sensibility*. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

L. Pfalzer (2012, May). The Sense of Self with Regards to Wealth in Jane Austen's *Sense and Sensibility*. Morehead State University, School of Public Affairs Poster Session, May.

Awards and/or Honors:

N/A

Post-Graduation Plans (Seniors only):

N/A

SCHOOL OF PUBLIC AFFAIRS

DEPARTMENT OF GOVERNMENT AND REGIONAL ANALYSIS

Autumn Baker

Major:

Government

Faculty Mentor:

Michael W. Hail

Research/Project Title:

Federalism: From the Articles to the Constitution

Project Abstract/Summary:

This study examines the changes to sovereignty for the States as the nation transitioned from the Articles of Confederation to the 1787 Constitution. The research utilized content analysis to examine archival documents to assess the balance of federalism through the transition from the Articles. Research activities included interviews with policy makers in Washington D.C. as well as archival research at the Library of Congress. Preliminary findings suggested limited influence on current issues but significant, if underappreciated, structural influence from the Articles and the associated transitional federalism.

Project Dissemination:

Poster Presentation:

Baker, Autumn, (2012, April). Federalism: From the Articles to the Constitution. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Awards and/or Honors:

The field research in Washington, DC, included a presentation of the major search questions to policy makers and work by the student as a research reader at the Library of Congress.

Post-Graduation Plans (Seniors only):

N/A

Kyle A. Barker

Major:

Government

Faculty Mentor:

Stephen Lange

Research/Project Title:

The Revolution in Modern Science: Modern Rationalism and Relativism

Project Abstract/Summary:

This project is a philosophical investigation into the roots of modern rationalism and relativism in the social and natural sciences. The goal is to understand the developments in epistemology that provide the theoretical foundations for scientific research as it is conducted today. This research involves tracing out the changing epistemology in several disciplines over the course of the last 150 years, seeking to identify common roots of these changes as well as the mutual influences of disciplines upon each other as their epistemological foundations have changed. This semester's research examined the political philosophy of Rousseau and sought to show that the preponderance of modern scholarship on Rousseau is misguided and erroneous, but nonetheless formative in shaping the social sciences. The product of this research is a 30 page research paper that argues that a review and readjustment of our understanding of Rousseau is necessary given particular elements of his thought which have been traditionally ignored or misunderstood.

Project Dissemination:

Oral Presentation:

Barker, Kyle A., (2012, April). Rousseau's Philosophy Examined. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Awards and/or Honors:

School of Public Affairs Outstanding Undergraduate Government Student Award 2012.

Post-Graduation Plans (Seniors only):

Mr. Barker has accepted an offer of full funding from Michigan State University to enroll in their Ph.D. program in Political Science, beginning August, 2012.

Jonathan Dye

Major:

Government

Faculty Mentor:

Jonathan Pidluzny

Research/Project Title:

The Causes and Consequences of Political Polarization in the United States

Project Abstract/Summary:

Public interest in politics and elections, as measured by voter turnout and the attention devoted to political issues by both the media and ordinary citizens, has increased dramatically over the course of the last decade. To explain this trend, scholars have identified the impact of consequential political events including the contested result of the 2000 presidential election, the terrorist attacks of 9/11, the transfer of the presidency from a Republican to a Democrat in 2008, and the 2009 recession. Increasingly, it appears most political controversies are driven not by the events themselves, but by intensifying political affiliations among high-attention voters. This research, generously supported by an Undergraduate Research Fellowship, examines the media's role in the increasing polarization of the American electorate.

Project Dissemination:

Poster Presentation:

Dye, Jonathan, (2012, April). The Causes and Consequences of Political Polarization in the United States. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Awards and/or Honors:

N/A

Post-Graduation Plans (Seniors only):

N/A

Kaci Foster

Major:

Government

Faculty Mentor:

Michael W. Hail

Research/Project Title:

The Impacts of Executive Policy Implementation on Intergovernmental Relations

Project Abstract/Summary:

This study examines the relationship of intergovernmental management to the constitutional structures of federalism. This study included theoretical as well as empircal data. The research utilized content analysis and database coding to examine archival documents and assess intergovernmental management of federalism through regulatory enactments. Research activities included interviews with policy makers in Washington, D.C., as well as archival research at the Library of Congress. One significant outcome from this research has been a Congressional Research report inspired by the federalism questions of this study. Preliminary findings suggested agency rulemaking holds a significant influence on federalism policy.

Project Dissemination:

Oral Presentations:

Foster, Kaci (2012, April). The Impacts of Executive Policy Implementation on Intergovernmental Relations. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Foster, Kaci (2012). The Impacts of Executive Policy Implementation on Intergovernmental Relations. 2012 Kentucky Political Science Association Meeting.

Awards and/or Honors:

The field research in Washington, DC, included a presentation of the major research questions and preliminary findings to Congressional staff who were impressed and ordered a Congressional Research Report based upon the work of Ms. Foster.

Ms. Foster's research paper was presented at the Kentucky Political Association and it was nominated for the Rafai Award for outstanding undergraduate political science research.

Post-Graduation Plans (Seniors only):

Ms. Foster has applied to and been accepted in the graduate program in Government at MSU for the 2012-13 academic year.

James Galbreath

Major:

Government

Faculty Mentor:

Jonathan Pidluzny

Research/Project Title:

Healthcare Reform and the States: The Beneficiaries and Unlikely Opponents of Obamacare

Project Abstract/Summary:

President Obama's 2010 Patient Protection and Affordable Care Act will reshape America's healthcare system. The law will help millions of uninsured Americans access health insurance by subsidizing the purchase of private policies, and by mandating a dramatic expansion of state-run Medicaid programs. This study investigates the cost and benefits of the law on a state-by-state basis. In addition to estimating the number of newly eligible Medicaid recipients in each state, this research predicts the budgetary impact of the mandated expansion for 2012 and 2020. This project, generously supported by an Undergraduate Research Fellowship, finds that Southern states, including Kentucky, stand to benefit disproportionately from the new law; the same states are, nonetheless, its most vociferous opponents.

Project Dissemination:

Oral Presentations:

Galbreath, James, (2012, March). Insuring America: The Impact of President Obama's Affordable Care Act on the States. Kentucky Political Science Association Meeting, Campbellsville, KY, March.

Galbreath, James, (2012, April). Healthcare Reform and the States: The Beneficiaries and Unlikely Opponents of Obamacare. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Awards and/or Honors:

N/A

Post-Graduation Plans (Seniors only):

N/A

Cody Murphy

Major:

Government

Faculty Mentor:

Murray Bessette

Research/Project Title:

The Effect of the Lincoln Douglas Debates on Early American Political Discourse

Project Abstract/Summary:

The 1858 campaign for Illinios's Senate seat, which pitted Abraham Lincoln against Senator Stephen A. Douglas, was an unprecedented event. The debates which compose the core of this campaign were a public discussion of the most pressing issues of the day: the fundamentals of liberty, the "peculiar institution" of slavery, federal-state relations, and what the ideals asserted in the Declaration of Independence truly meant. This paper traces the history of slavery in the United States, from the initial period of colonization, through the founding of the country, to the debates themselves. It then analyzes the respective positions of the two candidates, as well as the immediate effect the debates had in preparing the country for the Union's greatest crisis, the Civil War.

Project Dissemination:

Poster Presentations:

C. Murphy, (2012, April). The Effect of The Lincoln Douglas Debates on Early American Political Discourse. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

C. Murphy, (2012, May). The Effect of The Lincoln Douglas Debates on Early American Political Discourse. Morehead State University, School of Public Affairs Poster Session, Morehead, KY, May.

Awards and/or Honors:

N/A

Post-Graduation Plans (Seniors only):

N/A

Ashley Ruggiero

Major:

Government

Faculty Mentor:

Michael W. Hail

Research/Project Title:

Federalism and Administrative Law: Regulatory Power and the Constitution

Project Abstract/Summary:

This research examines the Administrative Procedures Act and the affects on state authority and regulatory federalism. A database of state administrative regulations will be developed and the results of administration policy analyzed. We will work toward a presentation at the Kentucky Political Science Association meeting in 2013. This study examines the changes to sovereignty for the States as the nation transitioned to a regulatory state from a period of decentralized dual federalism.

Project Dissemination:
N/A
Awards and/or Honors:
N/A
Post-Graduation Plans (Seniors only):
N/A

Biswas Sharma

Major:
Space Science
Faculty Mentor:
James Masterson
Research/Project Title:
Beware the Dragon? Is China's Military Really Modernizing?
Project Abstract/Summary:
This project explores recent technological military developments in China and assesses the robustness of these developments and their impact on China's power projection capabilities.
Project Dissemination:
Poster Presentation:
Sharma, Biswas, (2012, April). Beware the Dragon? Is China's Military Really Modernizing? Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.
Awards and/or Honors:
N/A
Post-Graduation Plans (Seniors only):
N/A

Clay Skaggs

Major:
Government
Faculty Mentor:
Jonathan Pidluzny
Research/Project Title:
Egypt's Runaway Revolution: How Liberal Elements of Egyptian Society Captured the Reigns of Government by Democratic Means
Project Abstract/Summary:
This study chronicles the political transformation that began to unfold in Egypt at the beginning of 2011 as a result of popular uprisings, and proceeds to investigate the likely ramifactions of what has come to be known as the "Arab Spring" from the perspective of the most important features of classical liberalism: the limitation of government power, the establishment of a private sphere within which the individual is free to pursue happiness as he or she defines it, the limitation of the influence of religion in politics, the rule of law, universal equality before the law, etc. While the revolution was initially led by young modernists intent to liberalize Egypt's government and economy, recent elections have been dominated by groups promising to use the power of the government (achieved by democratic means) to promulgate decidely illiberal policies. With so many important events on Egypt's horizon (including the drafting of a new Constitution), this project seeks to determine whether and how Egyptian reforms might succeed in wresting a positive (liberalizing) outcome from the Arab Spring.
Project Dissemination:
Due to delays, the project did not begin until the end of March, 2012. While Mr. Skaggs conducted an impressive literature review over the course of his first month as a URF, and while we were able to meet and discuss his progress frequently, it was not possible to create a poster with little more than a month. Next year, Mr. Skaggs plans to present a poster at Posters-at-the-Capitol, the Celebration of Student Scholarship, and the School of Public Affairs Poster Session. This research is timely and Mr. Skaggs is a very motivated student.
Awards and/or Honors:
N/A
Post-Graduation Plans (Seniors only):
N/A

Lauren VanHook

Major:
Government

Faculty Mentor:
James Masterson

Research/Project Title:
Southeast Asian Reformations – Why has the International Development of China and Vietnam Differed Significantly?

Project Abstract/Summary:
After World War II, China and Vietnam experienced radical governmental transformation, altering their standard operations. Both countries changed into communist states, renovating industrial policies and export focus. Despite these changes occurring during the Cold War, both states emerged relatively successfully. China is the second largest economy and Vietnam averages 7% annual GDP growth since 1990, however, both states exhibit different concentrations and developments. This paper performs a comparative analysis of how economic and governmental reforms resulted in different international development paths of the two similar states. The paper then examines the different characteristics of each country, addressing how they effect development outcomes.

Project Dissemination:

Poster Presentations:

VanHook, Lauren and Masterson, James R., (2012). Southeast Asian Reformations – Why has the International Development of China and Vietnam Differed Significantly? Annual meeting of the Southeastern Conference for the Association of Asian Studies, Greenville, SC.

VanHook, Lauren and Masterson, James R., (2012). Southeast Asian Reformations – Why has the International Development of China and Vietnam Differed Significantly? Annual meeting of the Kentucky Political Science Association, Campbellsville, KY.

VanHook, Lauren and Masterson, James R., (2012, April). Southeast Asian Reformations – Why has the International Development of China and Vietnam Differed Significantly? Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Awards and/or Honors:
N/A

Post-Graduation Plans (Seniors only):
Ms. VanHook has been accepted with a scholarship to the University of Cincinnati Law School and Chase Law School at Northern Kentucky University.

Evett Wilks

Major:
Government/IRAPP

Faculty Mentor:
Jonathan Pidluzny

Research/Project Title:
Abortion in America: Factors that Impact State Abortion Rates

Project Abstract/Summary:
Since Roe v. Wade was decided in 1973, abortion has been the most controversial political topic in America. The Supreme Court's discovery of a woman's constitutional right to an abortion eliminated states' authority to ban the procedure outright. Since, many states have worked hard to craft and implement laws that regulate the procedure, or restrict access to it, in the hope of reducing the number of abortions performed. The author's previous research found only a very weak correlation between the restrictivness of a state's regulatory regime and the number of abortions performed there. This project, generously supported by an MSU Undergraduate Research Fellowship, analyzes the impact of other factors including access to contraception, levels of educational attainment, and socio-economic status.

Project Dissemination:

Poster Presentation:

Wilks, Evett, (2012, April). Abortion in America: Factors that Impact State Abortion Rates. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Awards and/or Honors:
N/A

Post-Graduation Plans (Seniors only):
N/A

CAUDILL COLLEGE OF ARTS, HUMANITIES, AND SOCIAL SCIENCES

DEPARTMENT OF ART AND DESIGN

Susannah M. Klooster

Major:
Art
Faculty Mentor:
Joy Gritton
Research/Project Title:
Marketing Trombonium: The Art of Promotional Material
Project Abstract/Summary:
Graphic designers must be able to create an easily recognized brand for their clients. In addition, it is essential that skills in layout, illustration, and website design are demonstrated in a designer's portfolio. For this project I have created the layout, illustrations, and a website for a musical method book written by MSU Music Education student John Handshoe. I have researched the book's targeted audience, as well as appropriate software and a range of websites, in order to effectively apply my skills to working with an actual client and producing a real product. I had support from the Undergraduate Research Fellowship program.
Project Dissemination:
Oral Presentation:
Klooster, Susannah M. and Dr. Joy Gritton (2012, April). Marketing Trombonium: The Art of Promotional Material. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.
Awards and/or Honors:
N/A
Post-Graduation Plans (Seniors only):
N/A

Elizabeth Dunnavan

Major:
Art Education
Faculty Mentor:
Jeanne Petsch
Research/Project Title:
The Alternative: Bringing Art to Non-traditional Students
Project Abstract/Summary:
The goals of this project are to provide meaningful learning experiences in visual art to the middle and high school students at the Bluegrass Discovery Academy, while creating a written and photographic documentary of these experiences over a 10-week period during the Spring 2012 semester.This documentary will include case study research of individual student development and creative experience through observations, interviews, interactions, and reflection on effective lesson planning and relationship-building. I will create appropriate lesson plans that take into account the experiences of the BDA students. I will work side-by-side with students as a teacher and a participant – observer, conducting formal and informal interviews. I will also photograph and videotape the students as they work in this particular teaching and learning environment. This documentary will 1) provide insight into the lives and capabilities of alternative school students, 2) provide an example of how meaningful teaching in art can invite students to explore, discover and contribute their personal expression, and 3) illustrate the development of alternative school students' creativity and dispositions.
Project Dissemination:
Poster Presentation:
Dunnavan, Elizabeth and Petsch, Jeanne, (2012, April). The Alternative: Bringing Art to Non-traditional Students. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.
Awards and/or Honors:
N/A
Post-Graduation Plans (Seniors only):
Ms. Dunnavan is seeking employment as an art teacher in Kentucky P-12 schools. As a future teacher, she will be working with students who also struggle with difficulty both in and outside of school. This fellowship has helped the student be better prepared for her professional life and the students she will work with.

Aspen Grender

Major:
Undecided

Faculty Mentor:
Seth Green

Research/Project Title:
Ceramic Glaze Research

Project Abstract/Summary:
Mr. Grender conducted ceramic glaze research to help Mr. Green and his students learn the characteristics of new glaze formulas. He performed the following tasks to complete this glaze research project:

- Made both stoneware and porcelain clays
- Made white slip for dipping stoneware tiles in
- Extruded stoneware (dipped in white slip) and porcelain test tiles and bisque fired all tiles
- Mixed up test batches of glazes, diped the tiles in the glazes and loaded all tiles into the glaze kilns
- Assisted with kiln firing
- Unloaded kilns after firings occurred and recorded and documented test results

Project Dissemination:

Poster Presentation:
Grender, Aspen and Green, Seth, (2012, April). Ceramic Glaze Research. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Awards and/or Honors:
N/A

Post-Graduation Plans (Seniors only):
N/A

Travis Hall

Major:
Art

Faculty Mentor:
Joy Gritton

Research/Project Title:
Appalachian Art on the Airwaves: Promoting the Activities of the Eastern Kentucky Arts Project through Radio Media

Project Abstract/Summary:
The Eastern Kentucky Arts Project has collaborated with Morehead State Public Radio to produce radio features that highlight community growth through the arts in the region. These radio shorts include interviews with individuals who have used art as a means to address environmental, economic, and social issues, as well as coverage of related solutions in Appalachian communities.

Project Dissemination:

Oral Presentations:
Hall, Travis D. and Dr. Joy Gritton, (2012, February). Appalachian Art on the Airwaves. Appalachian Research Symposium and Arts Showcase, Lexington, KY, Febraury.
Hall, Travis D. and Dr. Joy Gritton, (2012, March). Appalachian Art on the Airwaves. Appalachian Studies Association Annual Conference, Indiana, PA, March.
Hall, Travis D. and Dr. Joy Gritton, (2012, April). Appalachian Art on the Airwaves. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Radio Airing(s):
WMKY at 90.3FM, Morehead, KY
WMMT at 88.7FM, Whitesburg, KY
Eastern Kentucky Arts Project Website: www.ekap.org

Awards and/or Honors:
Morehead State Public Radio's Community Advisory Board Outstanding Student Award, Morehead State University, April 2012.
Honorable Mention, "Trough to Crest: A Reflection," juried art exhibit, Morehead State University, April, 2012.
Chosen design, Inscape Cover Design Contest, Morehead State University, May, 2012.

Post-Graduation Plans (Seniors only):
Taking a year away from school to reflect on the experiences of undergraduate education, build a more cohesive art and design portfolio, and take an in-depth look at MFA program in design to best choose the next step in academia.

Julie Haymond

Major:
Communication Studies

Faculty Mentor:
Joy Gritton

Research/Project Title:
Eastern Kentucky Arts Project

Project Abstract/Summary:
Art teachers in the region's public schools often lack sufficient funding and support, and sometimes work in relative isolation. The Eastern Kentucky Arts Project (EKAP) is helping to build an on-line community for art teachers in Eastern Kentucky. Lesson plans, projects, resources, and a discussion board have been made available through the EKAP website. A new Facebook page helps teachers connect and support one another. EKAP is also featuring interviews with high school art teachers and posting photos of their artwork and their students' work to the website. The features include video, voice, and/or written article that highlights the art teachers and hopes to generate recognition for teachers in the EKAP service region.

Project Dissemination:

Oral Presentations:
Haymond, Julie and Dr. Joy Gritton, (2012, February). Helping Eastern Kentucky Art Teachers Build an On-line Community. Appalachian Research Symposium and Arts Showcase, Lexington, KY, February.

Haymond, Julie and Dr. Joy Gritton, (2012, March). Helping Eastern Kentucky Art Teachers Build an On-line Community. Appalachian Studies Association Conference, Indiana, PA, March.

Haymond, Julie and Dr. Joy Gritton, (2012, April). Helping Eastern Kentucky Art Teachers Build an On-line Community. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Awards and/or Honors:
N/A

Post-Graduation Plans (Seniors only):
N/A

Susannah Klooster

Major:
Art

Faculty Mentor:
Joy Gritton

Research/Project Title:
Marketing Trombonium: The Art of Promotional Material

Project Abstract/Summary:
Graphic designers must be able to create an easily recognized brand for their clients. In addition, it is essential that skills in layout, illustration, and website design are demonstrated in a designer's portfolio. For this project, I have created the layout, illustrations, and website for a musical method book written by MSU Music Education student John Handshoe. I have researched the book's targeted audience, as well as appropriate software and a range of websites, in order to effectively apply my skills to working with an actual client and producing a real product. I had support from the Undergraduate Fellowship Program.

Project Dissemination:

Oral Presentation:
Klooster, Susannah M. and Dr. Joy Gritton, (2012, April). Marketing Trombonium: The Art of Promotional Material. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Publications:
Handshoe, John and Susannah Klooster. Trombonium: The Art of Doubling on Trombone and Euphonium. Ist Ed. Morehead: JDH Music, 2012. Print.

Handshoe, John and Susannah Klooster. Trombonium: The Art of Doubling on Trombone and Euphonium. Web. 4 May, 2012. www.tromboniumtheartofdoubling.com

Awards and/or Honors:
N/A

Post-Graduation Plans (Seniors only):
N/A

Calie Morgan

Major:
Biology
Faculty Mentor:
Seth Green
Research/Project Title:
Ceramic Glaze Research
Project Abstract/Summary:
Ms. Morgan conducted ceramic glaze research to help Mr. Green and his students learn the characteristics of new glaze formulas. She performed the following tasks to complete this glaze research project:

- Made both stoneware and porcelain clays
- Made white slip for dipping stoneware tiles in
- Extruded stoneware (dipped in white slip) and porcelain test tiles and bisque fired all tiles
- Mixed up test batches of glazes, diped the tiles in the glazes and loaded all tiles into the glaze kilns
- Assisted with kiln firing
- Unloaded kilns after firings occurred and recorded and documented the test results

Project Dissemination:
Poster Presentation:
Morgan, Callie and Green, Seth, (2012, April). Ceramic Glaze Research. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.
Awards and/or Honors:
N/A
Post-Graduation Plans (Seniors only):
N/A

Annie Peterson

Major:
Art
Faculty Mentor:
Jennifer Reis
Research/Project Title:
Arts Programming Administration: Management, Logistics, Design, and Promotion
Project Abstract/Summary:
The project will involve all aspects of professional arts programming management; including exhibition logistics in the curatorial, registration, exhibition design and installation areas; special events and hospitality; art programming for educational and cultural purposes (artist lectures, workshops, forums, art sales); and marketing/public relations for all gallery programming. National and Regional Juried exhibitions for 2011/12 include three national juried group exhibitions; three student art exhibitions (high school, MSU sophomore, MSU senior); the annual faculty exhibition; and a regional summer exhibition specific to contemporary art from Kentucky (The Bluegrass Biennial), of which Ms. Peterson will assist in the organization of in regards to jurying. Ms. Peterson will be involved in visiting artist logistics and hospitality, including Gowri Savoor's participatory installation artwork planned for October, 2011, will participate in student-focused arts activities like the Annual Halloween Costume Contest and Rocky Horror Picture Show Screening, and will assist Michelle Dillon in the management and promotion of the second annual MSU-student Craft Bizarre. She will also present at the Celebration of Student Scholarship.
Project Dissemination:
ALL EXHIBITIONS/PROGRAMMING HELD IN THE CLAYPOOL-YOUNG ART GALLERY and/or CY 111

August 31 – September 21
Pattern Play: Works by Rachel Hellmann, Jonas Criscoe, Lorraine Glessner and Ian Hagarty
August 31, 5 - 7 p.m. (Wednesday), Opening Reception
Visiting Artist Lecture:
Ian Hagarty, painting, September 22 (Thursday), 10:20 – 11:20 a.m. & 12:40 – 1:40 p.m.

October 5 – 28
East Meets West: Works by Gowri Savoor, Eleen Lin, Yoon Cho, John Chang and Mayumi Amada
October 5, 5 - 7 p.m. (Wednesday), Opening Reception
Visiting Artist Lecture:
Mayumi Amada, installation, September 27 (Tuesday), 10:20 – 11:20 a.m. & 12:40 – 1:40 p.m.
Visiting Artist Lecture:

Gowri Savoor, drawing/installation, Oct. 11 (Tuesday), 10:20 – 11:20 a.m. & 12:40 – 1:40 p.m.
Participatory Rangoli Drawing in CY Art Gallery:
Gowri Savoor, artist, October 12 (Wednesday), 10:00 a.m. – 4:00 p.m.

October 20 – 21 – 22
MSU Theatre production of ART

October 26 (Wednesday), 6 – 9 p.m.
Annual Halloween Costume Contest & Rocky Horror Picture Show
Sponsored by ALLYance, Art & Design, CCHSS

November 9 – December 2
Anima/Animus: Works by Jillian Ludwig, Jean R. Wilkey, Lennon Michalski, Renee Harris and Ruth Stanford
November 9, 5 - 7 p.m. (Wednesday), Opening Reception
Visiting Artist Lecture:
Lennon Michalski, painter, November 10 (Thursday), 10:20 – 11:20 a.m. & 12:40 – 1:40 p.m.

January 25 – February 22
Annual MSU Art Faculty Exhibition
February 22, 5 - 7 p.m. (Wednesday), Closing Reception
February 21, 11:30 a.m.– 12:30 p.m. (Tuesday), Faculty Forum

March 7 – 14
Annual Burley-Coal Art Exhibition and Competition
Saturday, March 10, 10:00 a.m. – 4:00 p.m., HS Art Exhibition Special Hours
March 14 (Wednesday), High School Art Day

April 4 - April 11
Annual MSU Sophomore Art Exhibition
April 4, 5 - 7 p.m. (Wednesday), Opening Reception

April 25 – May 9
Annual MSU Senior Juried Art Exhibition
April 25, 5 - 7 p.m. (Wednesday), Opening Reception

Awards and/or Honors:
N/A

Post-Graduation Plans (Seniors only):
Ms. Peterson will seek an entry level position in arts administration in Lexington, Kentucky for a year prior to entering a studio art graduate program.

Susan Perry

Major:
Art

Faculty Mentor:
Seth Green

Research/Project Title:
Ceramics Facility Management and Kiln Maintenance/Firing

Project Abstract/Summary:
This research project explored various ceramics facility management skills that are required for successful studio artists and instructors.

Under the direction of Mr. Green, Mrs. Perry learned to perform the following tasks: mixing studio clays, slips, and glazes; complete raw material inventories and compile material orders; load and fire electric and gas kilns; replace kiln elements and thermocouples; and other related tasks.

Mrs. Perry was only able to complete the fellowship up to the end of the Fall semester 2011 due to scheduling and health reasons. Therefore, she was not able to present at the Celebration of Student Scholarship.

Project Dissemination:
N/A

Awards and/or Honors:
N/A
Post-Graduation Plans (Seniors only):
N/A

Kayla Sheppard

Major:
French
Faculty Mentor:
Joy Gritton
Research/Project Title:
Eastern Kentucky Arts Project (EKAP)
Project Abstract/Summary:
The Eastern Kentucky Arts Program (EKAP) has sought to nurture the visual arts of Kentucky's Appalachian counties by providing information on the region's arts-related resources. For the past year, EKAP has collaborated with the Kentucky Center for Traditional Music (KCTM) to include Appalachian music. Listings of area musicians, performance venues, special events, regional instructors, and places to repair or purchase instruments are being provided through the project's website. Transcriptions of select oral histories from the KCTM Traditional Music Archives are being completed and posted to the site so as to facilitate public access. The archives' digital audio and video files include many examples of traditional and modern bluegrass music, religious preaching, and interviews with performers and church members. EKAP student interns are also recording contemporary oral histories of significant Eastern Kentucky musicians for preservation and dissemination through the EKAP site and radio. This research was funded by a Morehead State University Undergraduate Research Fellowship.
Project Dissemination:
Published Abstract:
Sheppard, Kayla W. and Dr. Joy Gritton, (2012, March). Eastern Kentucky Music: Providing Accessibility through the Web. Thirty-fifth Annual Appalachian Studies Conference, 11.
Poster Presentations:
Sheppard, Kayla W. and Dr. Joy Gritton, (2012, April). Eastern Kentucky Music: Providing Accessibility through the Web. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.
Sheppard, Kayla W. and Dr. Joy Gritton, (2012, March). Eastern Kentucky Music: Providing Accessibility through the Web. Thirty-fifth Annual Appalachian Studies Conference, Indiana, PA, March.
Eastern Kentucky Arts Project website: www.ekap.org
Awards and/or Honors:
Outstanding Student in French Award, Morehead State University, April, 2012.
Post-Graduation Plans (Seniors only):
Accepted into the Masters Program in French at the University of Kentucky.

Department of Communication, Media, and Leadership Studies

Katlyn Comley

Major:
Public Relations
Faculty Mentor:
Janet Rice McCoy
Research/Project Title:
Engaging the Region in the Arts through Effective Public Relations Strategies
Project Abstract/Summary:
This project applied lessons learned in the classroom to the promotion of arts programs supported by the Caudill College of Arts, Humanities, and Social Sciences. This research focused on the public relations tactics used to promote university events and organizations including the Madrigal, ArXtra on Main, The Little Company, and the MSU Arts and Humanities Council.
The public relations products created for this engaged scholarship project include both traditional print items and new media targeted at publics' in MSU's service region. Items are created through effective research, writing, and design skills. Furthermore, goals were matched to create a comprehensive strategic communication plan. This research was supported by a MSU Undergraduate Research Fellowship and ideas for Boyer's Scholarship of Engagement.

Through this fellowship, I was able to combine my passion for the arts with my career goals in the public relations field to gain professional experience from my fellowship. I received first-hand experience by working with the unique arts programs offered by the Caudill College of Arts, Humanities, and Social Sciences.

Project Dissemination:

Poster Presentations:

Comley, K., J. Rice McCoy and M. Jerde, (2012, April). Engaging the Region in the Arts through Effective Public Relations Strategies. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Comley, K. and Janet Rice McCoy, (2011, November). Shooting for the Stars in Public Relations Writing. 2011 Kentucky Engagement Conference, Murray State University, Murray, KY, November.

Presentation:

Farhat, C., J. Rice McCoy, R. Manis, H. White, and K. Comley, (2011 November). Building and Sustaining Engagement in Departments and Programs. 2011 Kentucky Engagement Conference, Murray State University, Murray, KY, November.

Various promotional products were distributed throughout the region.

Awards and/or Honors:

N/A

Post-Graduation Plans (Seniors only):

N/A

Caitlin Farhat

Major:

Communications

Faculty Mentor:

Janet Rice McCoy

Research/Project Title:

Engaging the World through Service: Exploring International Service-Learning Opportunities

Project Abstract/Summary:

This project explores best practices in international service-learning programs. Bringle and Hatcher (2011), have identified the following components as being critical to International Service Learning; (a) structured academic experience leading to appreciation of the host country and the discipline; (b) learning includes cross-cultural dialogue; (c) reflection furthers global and intercultural understanding; and (d) enhancing the students sense of responsibility as a citizen, both locally and globally. Noted educator, John Dewey observed, "That this revolution should not affect education in other than formal and superficial fashion is inconceivable."

The foundation for this study is built upon a review of literature on the theories of service-learning. More detailed information will be collected through surveys, focus groups, and interviews with students who have participated in international service-learning. The purpose of this data collection is to identify successes and complications found within international service-learning experiences. The final report will include: (a) an overview of the benefits of service-learning; (b) an overview of the benefits of international education; and (c) a list of special challenges related to international service-learning.

Findings:

Of those surveyed, 85 percent of students determined that the international trip they participated in was a very positive experience and about 90 percent agreed that they would be willing to take part in another overseas experience. However, 30 percent of students had to fund their trip themselves and 15 percent needed to take out a loan in order to cover the cost of their experience. About 55 percent of students paid for their trip through scholarships and special fundraising.

Project Dissemination:

Poster Presentations:

Farhat, C., McCoy, J., Cooper, L., (2012, April). Engaging the World through Service: Exploring International Service-Learning Opportunities, Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Farhat, C., McCoy, J., Cooper, L., (2012, January). Engaging the World through Service: Exploring International Service-Learning Opportunities. Posters-at-the-Capitol, Frankfort, KY, January.

Presentation:

Farhat, C., McCoy, J., Manis, R., White, H., Comley, K., (2011, November). Building and Sustaining Engagement in Departments and Programs. 2011 Kentucky Engagement Conference, November.

Awards and/or Honors:

Women Leading Kentucky Scholarship ($1,500 – Awarded in Spring 2012 for Fall 2012)

Post-Graduation Plans (Seniors only):

N/A

Zhanna "Alia" McDole

Major:

Communication

Faculty Mentor:

Janet Rice McCoy

Research/Project Title:

Internalized Racism: JET Magazine "Beauties of the Week"

Project Abstract/Summary:

For generations internalized racism has existed between light-skinned and dark-skinned Black women. Scholars such as Hughes and Hertal (1990), Klonoff and Landrine (2000), have explored this form of racism and the role society, family, and especially media have contributed to the process.

This study examines how visual images in JET magazine contributed to internalized racism. JET magazine is a current weekly magazine for readers of African descent with the first issue published on November 1, 1951. The data set consists of photographs of "Beauties of the Week."

Internalized racism was explored by looking at the photographs to determine whether light-skinned or dark-skinned Black women were more prevalent. Text accompanying the photos was analyzed to determine if a stigma was attached to being dark-skinned. Ultimately, this study explored if racism can exist within the same racial group impacting magazine cover models, job opportunities, and even a mate.

Donna Bivens (1995) defines internalized racism as "the situation that occurs in a racist system when a racial group oppressed by racism supports the supremacy and dominance of the dominating group by maintaining or participating in the set of attitudes, behaviors, social structures and ideologies that undergird the dominating group's power."

Before the Civil War, free Blacks were more likely to be light-skinned than the enslaved Blacks. Even then, light-skinned Blacks in slavery often had more privileges such as working in the house instead of the fields. In the 1950's and 1960's a survey showed color distinctions persisted among Black Americans impacting the individual's socioeconomic status, the spouse's socioeconomic status, and Black consciousness (Hughes and Hertel).

Studies by Hill (2000), Hunter (1998), Keith and Herring (1991), Seltzer and Smith (1991), have documented lighter-skinned African-Americans today are more likely to have college degrees, jobs with higher professional status, and higher incomes than their darker-skinned counterparts. With the advantages associated with being light-skinned, and the disadvantages associated with being dark-skinned, there should be no wonder why there is tension and discrimination between two complexions within one group.

Research Questions and Findings:

Are light-skinned Black women are more prevalent in JET magazine?

Light-skinned Black women were in eight or 13% more issues than dark-skinned Black women.

How did representations of Black women change over time in JET magazine?

During the decades of the 1950s to the 1970s, JET's "Beauties of the Week" were mainly light-skinned. After the Civil Rights and Black Power movements, dark-skinned women seemed to be more accepted in society and the media. As the 21st century approached, dark-skinned Black women have appeared just as much as light-skinned Black women.

How are light-skinned and dark-skinned Black women portrayed in Jet magazine?

Light-skinned Black women were selected as "Beauties of the Week" 13% more often in the data set. More study is needed to determine if the selection of models increases tension between the two complexions and supports internalized racism.

Was there a stigma attached to being dark-skinned in JET magazine?

It does not appear there is a significant stigma for being dark-skinned. It appears the editor of "Beauties of the Week" informs readers of the women's interests and their professional lives with dignity and respect regardless of skin color.

Project Dissemination:

Poster Presentations:

McDole, Zhanna M. and Janet Rice McCoy (2012). Internalized Racism: JET Magazines Beauties of the Week. Posters-at-the-Capitol, Frankfort, KY, January.

McDole, Zhanna M. and Janet Rice McCoy (2012). Internalized Racism: JET Magazines Beauties of the Week. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Awards and/or Honors:

N/A

Post-Graduation Plans (Seniors only):

N/A

Kendyl Siebart

Major:
Theatre and Social Studies

Faculty Mentor:
Ritta Abell

Research/Project Title:
Stage Play Adaptation of Crystal Wilkinson's novel, Blackberries, Blackberries

Project Abstract/Summary:
The major goal of this project is to script and produce a stage play based on Crystal Wilkinson's novel *Blackberries, Blackberries*. The adaptation of the book into a stage play and production of the play will provide the creative director, student, writers, and others with a cultural, social, political and environmental concept of the Affrilachian experience. Theatrical productions are a viable part of the contemporary stage environment. Nationally transforming books/novels to stage adaptation has become one of the most popular forms of theatre. The undergraduate student will complete editorial tasks related to the script, which includes revisions in preparation of the final copy, performance including the securing of permission to quote text from the novel.

Project Dissemination:
Student did not complete fellowship.

Awards and/or Honors:
N/A

Post-Graduation Plans (Seniors only):
N/A

Hailley White

Major:
Public Relations

Faculty Mentor:
Janet McCoy

Research/Project Title:
Vegetarians Kill Christian Missionaries: A Frame Analysis of 19th Century Newspaper Coverage

Project Abstract/Summary:
This research examined the Kucheng Massacre as it was known in the United States, or the Wasang Massacre as it was known in Australia. This event happened in the Fujian Provance of Southern China on August 1, 1895. Nine British missionaries representing the Anglican Church Missionary Society were killed by members of a Chinease vegetarian sect, along with the five year old son and baby daughter of one of the couples. This was one of the largest massacres of foreigners prior to the Boxer Rebellion of 1900.

Fisher's narrative paradigm and Goffman's theory of framing were used to analyze the accounts of this incident printed in the New York Times. These texts include news summaries, news stories, and letters to the editors. Walter Fisher's narrative paradigm was used to label the primary players in the texts. The players fell into four categories – missionary, vegetarian sect member, British government official, and Chinese government official. In addition, the narrative paradigm is used to explore the interaction between these players.

Erving Goffman's theory of framing is based on the idea that humans constantly change and shift their perspective of events to make sense of what occurs. Despite being trained to be objective, journalists use frames to describe incidents and tell their stories. Using textual analysis, this study identified and analyzed the frames reporters used when writing their stories and readers used when responding with letters to the editor. Frames are identified for each of the four players in the narrative.

By using frame analysis, the London Times texts were more easily defined by the frames that the journalists were trying to convey. For example, within the letters to the editors, it was an even split on how the public portrayed the British missionaries. One half saw them as "Foolhardy Souls," whereas the other half saw them as "Dedicated Christians" or "Victims of Violence." Within news stories and summaries, most journalists primarily chose to place the Chinease vegeterian sect member as "Criminals to be Punished." There are opportunities for future research. It would be interesting to see if other nations interpreted this event, especially other European nations and even Asian countries.

Project Dissemination:

Oral Presentation:
Farhat, C., McCoy, J., Manis, R., White, H., and Comley, K., (2011, November). Building and Sustaining Engagement in Departments and Programs. Kentucky Engagement Conference, Murray State University, Murray, KY, November.

Poster Presentations:

White, H. and J. Rice McCoy (2012, January). Vegetarians Kill Christian Missionaries: A Frame Analysis of 19th Century Newspaper Coverage. Posters-at-the-Capitol, Frankfort, Ky, January.

White, H., and J. Rice McCoy (2012, April). Vegetarians Kill Christian Missionaries: A Frame Analysis of 19th Century Newspaper Coverage. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Awards and/or Honors:

N/A

Post-Graduation Plans (Seniors only):

N/A

DEPARTMENT OF ENGLISH

Caitlin Lacey

Major:

English Education

Faculty Mentor:

Kathryn Mincey

Research/Project Title:

Exploring Literature Curriculum Alignment and Instructional Support for Kentucky English Teachers

Project Abstract/Summary:

The recent curricular and accountability changes effected by Senate Bill 1, Unbridled Learning, will have a major impact on language arts teachers in Kentucky. Due to these changes, Professor Kathryn Mincey, Caitlin Lacey, and Christine Burton have conducted a survey to be taken throughout the state of Kentucky to determine texts commonly taught, pedagogical practices, and teacher dispositions concerning the new Common Core State Standards. The survey focuses on a statewide sample and holds some interesting implications for the field of English Education. This information will be used to inform professional development opportunities hosted by Morehead State University. The findings thus far indicate an inbalance in the reading for information and reading literature ratio. The new standards place more emphasis on reading for information. However, the data indicates that Kentucky teachers are not incorporating enough reading for information into curriculum. At the present, more data is being gathered to further validate the results.

Project Dissemination:

Oral Presentation:

Caitlin Lacey and Kathryn Mincey. (2012, February). How Kentucky High School English Teachers Teach Reading and Grammar: Implications for 9-16 Curriculum Alignment and Professional Development. 2012 Kentucky Council for Teachers of English State Conference, Lexington, KY, February, 2012.

Poster Presentation:

Caitlin Lacey and Kathryn Mincey. (2012, April). Exploring Literature Curriculum Alignment and Instructional Support for Kentucky English Teachers: Statewide Survey Results. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April, 2012.

Awards and/or Honors:

N/A

Post-Graduation Plans (Seniors only):

Caitlin Lacey student teaches this fall and plans on immediately pursuing a career as a secondary English/Language Arts teacher. She hopes to begin work on a Master's Degree in English within the next five years.

Megan Lewis

Major:

English

Faculty Mentor:

Deanna Mascle

Research/Project Title:

Bridging the Gap: Helping Students Transition from High School to College

Project Abstract/Summary:

The Morehead Writing Project provides professional development to local teachers. Looking in particular at the teachers who attended the three-week Summer Institute, the Morehead Writing Project analyzes the participants to measure their self-efficacy in their ability to write as well as their ability to teach. This intense four-week program surveys its participants prior to and following the conference to discover the current level of confidence each writer brings to the table. In previous years, participants in the Writing Project revealed a cyclical pattern for confidence in their ability to write and teach writing in their subject. For this particular year, the data is being collected to determine whether the pattern of cyclical confidence holds true and which portions of the year are most susceptible to low points.

The 2011 participants came in with an average confidence in their writing and teaching writing ability around 81.5 out of 100. After completing the Summer Institute, the participants left with an average confidence of 88 out of 100. In each individual category, there were significant improvements of as much as 13.9 points. However, the cyclical pattern appears to emerge in the September survey as the total confidence dropped 2 points and one category saw a loss of 9 points in confidence. The cycle remained low through November before jumping back to the post-Summer Institute numbers, if not greater. From the data collected, the cyclical pattern is holding true.

Project Dissemination:

Poster Presentation:

Lewis, Megan E. and Dr. Deanna Mascle. (2012, April). The Right Time for Confidence: Measuring Teachers' Writing Self-Efficacy. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Oral Presentation:

Lewis, Megan E. and Dr. Deanna Mascle. (2012, April). The Right Time for Confidence: Measuring Teachers' Writing Self-Efficac. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Awards and/or Honors:

N/A

Post-Graduation Plans (Seniors only):

Student plans to become a high school English teacher and complete his Masters in English within three years of being hired. He also plans to participate in one of the National Writing Project's Summer Institutes, to enable him to become a better teacher. After working the the classroom, and achieving his Rank I, he hopes to become a college professor in English and English Education.

Department of History, Philosophy, Religion, and Legal Studies

Bradford Miller

Major:

History

Faculty Mentor:

Adrian Mandzy

Research/Project Title:

Investigating Battlefields of Ukraine; Zboriv, Poltava, and Drohobycz

Project Abstract/Summary:

This project consisted of two phases. Over 10,000 official US documents were analyzed for any information relating to American WWII operations in Ukraine. A trip to the National Archives in College Park, Maryland resulted in finding original photographs of Poltava and Drohobycz, in addition to war department reports and correspondence. During the second phase of the project, geospatial data gathered from previous archaeological surveys conducted by Dr. Mandzy was analyzed using GIS techniques. Visual interpretations of 17th century and WWI battles fought in the town of Zboriv were prepared using ArcGIS software. Further analysis of the data will allow Dr. Mandzy to further develop his theory of 17th century munitions.

Project Dissemination:

Oral Presentation:

Miller, Bradford (2011, June). Beyond the Cold War; Joint Ukranian-American Operations in WWII. International Student Conference of Historical Preservation, L'viv, Ukraine, June, 2011.

Poster Presentations:

Miller, Bradford (2011, June). Beyond the Cold War; Joint Ukranian-American Operations in WWII. Posters-at-the-Capitol, Frankfort, KY, January, 2012.

Miller, Bradford (2011, June). Beyond the Cold War, Joint Ukranian-American Operations in WWII. Celebration of Student Scholarship, Morehead, KY, April, 2011.

Awards and/or Honors:
Most Outstanding Undergraduate, Department of History, Philosophy, Religion and Legal Studies.
Post-Graduation Plans (Seniors only):
Begin writing a historical account of events in Iraq from March 2003 until August 2003.

Department of International and Interdisciplinary Studies

Faith Brown
Major:
Secondary Spanish Education
Faculty Mentor:
Philip Krummrich
Research/Project Title:
The Procne and Philomela Myth in Western Literature
Project Abstract/Summary:
Ovid's lurid version of the myth of Procne and Philomela in the Metamorphoses, featuring rape, mutilation, cannibalism, and the transformation of the major characters into birds, has become the canonical version of the tale for most readers. The many authors who have retold the story, however, have exercised their freedom to change some of the details, even to the extent of omitting or replacing the gruesome ending found in Ovid's text. In this project, we first read and examined Ovid's tale then compared it to various Spanish works including "Progne y Filomena" by Francisco de Rojas Zorrilla and others.
Project Dissemination:
Oral Presentations:
Brown, Faith E. and Krummrich, Philip E. (2012, April). The Procne and Philomela Myth in Western Literature. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.
Brown, Faith E. and Philip Krummrich (2012, March). Where Does this Story End?: The Myth of Philomela in Western Literature. Kentucky Philological Association, March.
Awards and/or Honors:
N/A
Post-Graduation Plans (Seniors only):
N/A

Kayla Burton
Major:
English
Faculty Mentor:
Philip Krummrich
Research/Project Title:
The Nightingale as Theme, Image and Real Bird in the Western Tradition
Project Abstract/Summary:
We propose to investigate the frequent and widespread uses of the nightingale as theme and image in the literature of Western Europe. So far, we have done a good deal of background work, and Ms. Burton has found an unexpected modern use of the theme, which was the subject of her two oral presentations and an article she plans to submit for publication this summer.
Project Dissemination:
Oral Presentations:
Burton, Kayla (2012, March). The Nightingale as Theme, Image and Real Bird in the Western Tradition. Mideast Honors Association Conference, Columbus, OH, March.
Burton, Kayla (2012, April). The Nightingale as Theme, Image and Real Bird in the Western Tradition. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.
Awards and/or Honors:
N/A
Post-Graduation Plans (Seniors only):
N/A

DEPARTMENT OF MUSIC, THEATRE, AND DANCE

Amanda Brown

Major:
Music Education
Faculty Mentor:
Lori Baruth
Research/Project Title:
La Clarinette Universale: A Comparison of Selected French and American Twentieth-Century Works for Clarinet
Project Abstract/Summary:
French and American composers treated the attributes of the clarinet differently in the twentieth-century. Through a comparison of works for clarinet by composers Claude Debussy, Yvonne Desportes, Leonard Bernestin, and Robert Muczynski, one can take a cross-section of French and American compositions from the early, mid, and late twentieth century to examine how the clarinet was employed by these well-known composers. Research shows cultural similarities in both the American literature, as well as the French literature. There is a high level of motivic use presented in the works of Debussy, Mucyznski, and Bernstein. Desportes employs many extended techniques, with is not often used in the early part of the era.
Project Dissemination:
Oral Presentation:
Brown, Amanda C. and Dr. Lori Baruth (2012, April). La Clarinette Universale: A Comparison of Selected French and American Twentieth-Century Works for Clarinet. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.
Performance:
Brown, Amanda C. (2012, April). Leonard Bernstein, *Sonata for Clarinet and Piano.* Joint Recital, Morehead State University, April.
Awards and/or Honors:
N/A
Post-Graduation Plans (Seniors only):
N/A

John Handshoe

Major:
Music Education
Faculty Mentor:
William Mann/Stacy Baker
Research/Project Title:
Trombonium: The Art of Doubling on Trombone and Euphonium
Project Abstract/Summary:
For euphonium and trombone players, the ability to double and play both instruments is a valuable skill used in both teaching and performance. The purpose of this two-year undertaking has been to prepare a resource book for use by beginning doublers to provide a good foundation to begin their work on their secondary instruments. During the past year, peer-input has been sought during the editing process and doublers have observed changes in their own doubling abilities as a result of working through the exercises in the book. MSU Graphic Design student Susannah Klooster has created an easily readable layout, illustrations throughout the book, and a website to market the finished project. This project is funded by a MSU Undergraduate Fellowship.
Project Dissemination:
Oral Presentation:
Handshoe, John (2012, April). Trombonium: The Art of Doubling on Trombone and Euphonium. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.
Publications:
Handshoe, John, and Susannah Klooster. Trombonium: The Art of Doubling on Trombone and Euphonium. 1st Ed. Morehead: JDH Music, 2012. Print.
Handhsoe, John, and Susannah Klooster. Trombonium: The Art of Doubling on Trombone and Euphonium. JDH Music, n.d. Web. 4 May 12. www.tromboniumtheartofdoubling.com
Awards and/or Honors:
N/A
Post-Graduation Plans (Seniors only):
N/A

Ranko Shimizu

Major:
Music

Faculty Mentor:
Deborah Eastwood

Research/Project Title:
Marketing Strategies for Recruiting Japanese Music Majors to Universities in the United States

Project Abstract/Summary:
Japan has a population of approximately one-third that of the United States – smaller than the state of California – with one-tenth the number of music schools. This limits the opportunities available to students studying music at the college-level. Japanese music students would benefit from accessing the more extensive music opportunities available in the United States. A population decline, a challenging economic environment, and difficulties in the application/scholarship process may have contributed to a decrease in the last decade from 47,000 to 24,800 in the number of Japanese students currently studying in the US. This study aims to develop marketing strategies for recruiting Japanese music majors to universities in the United States. This research was supported by a MSU Undergraduate Research Fellowship.

Project Dissemination:

Oral Presentation:
Schimizu, Ranko (2012, April). Exploring the Elements of Melodic Design through Composition. Celebration of Student Scholarship, Morehead, KY, April.

Awards and/or Honors:
N/A

Post-Graduation Plans (Seniors only):
N/A

Department of Sociology, Social Work, and Criminology

Alex Davis

Major:
Criminology

Faculty Mentor:
Elizabeth Biebel

Research/Project Title:
A Survey of Psychological Services Available for Law Enforcement Officers

Project Abstract/Summary:
This survey gathered data from a broad range of police departments of various ranks and sizes to determine the scope of psychological services available for law enforcement officers, their families, and civilian workers. The largest state, county and city departments were surveyed. The most utilized counseling services and concerns were calculated. Most agencies used outside mental health providers to service their employees. The most utilized services were critical incident debriefings, and counseling for job stress and personal problems. Most cited concerns when obtaining counseling were: loss of peer respect, confidentiality, job loss, and loss of firearm privileges. While over half of departments surveyed used specific policies to ensure confidentiality, substantial percentages of respondents restricted access to counseling records, while few felt they had firm peer support team expectations of privacy. A journal manuscript is in progress.

Project Dissemination:

Poster Presentation:
Davis, Alex and Biebel, Elizabeth P. (2012, April). Psychological Services Available for Law Enforcement Officers. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Awards and/or Honors:
N/A

Post-Graduation Plans (Seniors only):
N/A

Sonja Pennington

Major:
Criminology
Faculty Mentor:
Elizabeth Biebel
Research/Project Title:
The Juvenile Epidemic: Human Trafficking and the Drug Trade
Project Abstract/Summary:
To explore the possibility of having a correlation between Juvenile Human Trafficking and the drug trade, we compared a map that shows high intensity drug trafficking areas across the United States to the National Human Trafficking Resource Center's map of calls from each state for human trafficking incidents, including crisis calls and tips. The NHTRC's map was selected due to lack of exact location of Human Trafficking.
Project Dissemination:
Poster Presentation:
Pennington, Sonja and Biebel, Elizabeth P., (2012, April). The Juvenile Epidemic: Human Trafficking and the Drug Trade. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.
Awards and/or Honors:
N/A
Post-Graduation Plans (Seniors only):
N/A

Danielle M. Story

Major:
Sociology
Faculty Mentor:
Bernadette Barton/Constance Hardesty
Research/Project Title:
The Role of a Gender Equality Group on a Contemporary College Campus
Project Abstract/Summary:
Gender affects our lives from the day we are born. It determines what behaviors are acceptable, what clothes we wear, our self-image, family relationships, and sexuality. Gender impacts our education, the workplace and our careers. At the same time, gender inequality persists in daily life, and many problems arise from these inequalities. In Fall 2011 the investigator started a new student group, the Student Association for Gender Equality (SAGE) on the campus of Morehead State University. Drawing on ethnographic observations made while forming SAGE and on in-depth interviews with group members, this study explores how contemporary college students understand and experience gender inequality. In particular, this study examines the most pressing gender issues faced by young people today, the motivations of participants to join a support organization, and what members envision the group's role on campus. As a result of the fellowship we discovered that students felt that SAGE would be able to be a resource and a tool to combat basic gender inequality issues, encourage more female students to take leadership positions, to educate students on how to look at media critically, and to encourage women in supporting other women. This research was supported by a MSU Undergraduate Research Fellowship.
Project Dissemination:
Poster Presentation:
Story, Danielle M., Bernadette Barton and Constance Hardesty (2011, January). The Role of a Gender Equality Group on a Contemporary College Campus. Posters-at-the-Capitol, Frankfort, KY, January.
Oral Presentation:
Story, Danielle M., Bernadette Barton and Constance Hardesty (2011, April). The Role of a Gender Equality Group on a Contemporary College Campus. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.
Awards and/or Honors:
N/A
Post-Graduation Plans (Seniors only):
N/A

Hannah Willis

Major:

Criminology/Government

Faculty Mentor:

Rebecca Katz

Research/Project Title:

Humanistic Criminology: Exploring Gendered and Race Identity: Empathy and Helpful and Hurtful Behavior

Project Abstract/Summary:

Identity is gendered and anchored in one's ethnic or racial consciousness as well as one's class membership. Moreover, gender is related to the capacity to demonstrate empathy and to involvement in helping behavior or pro-social behavior and harmful or criminal behavior (Cohen and Harvey, 2006, Messerschmidt, 2004). The nature of this gendered relationship between empathy and hurtful and helpful behavior remains understudied in criminology (Cohen and Harvey, 2006). Psychological research reflects that early parent-child attachment to the primary caregiver facilitates the capacity for empathy. This empirical work reveals that the early attachment process is also gendered which facilitates the development of a gendered identity, variations in empathy and differences between males' and females' involvement in helpful behaviors as well as harmful behaviors. Therefore, this theoretical and methodological model outlines how the development of a gendered identity characterized by high and low levels of empathy may lead to involvement in both helpful behavior and hurtful or harmful behavior. These gendered identies are the result of family of origin dynamics and interpersonal interactions, eduational, religious, and other institutional experiences in embodied social interactions (Messerschmidt, 2004; Dalley-Trim, 2007' Kivel and Johnson, 2009; Cohen and Harvey, 2006.

Project Dissemination:

Ms. Willis and Dr. Katz jointly presented at the Annual Society of Criminology Meeting in November in Washington, D.C., in 2011. In the Fall of 2011 our research protocol was approved by the Institutional Review Board for Human Research at Morehead State University. Subsequently, the protocol was approved by the Kentucky Department of Corrections at two separate men's institutions. We begin interviewing the first week in April of 2012 at the two correctional centers. Ms. Willis presented her poster at the Annual Undergraduate Research Fellowship program at MSU in 2011 and is scheduled to present our complete theoretical and methodological model in April, 2012. Hannah and I are also both scheduled to present separately at the annual Society of Criminology meeting in November, 2012. We plan to submit the theoretical portion of our work for publication this summer.

Awards and/or Honors:

Ms. Willis successfully received funding support for her presentation at the American Society of Criminology in Washington, D.C. Ms. Willis continues to achieve a 4 point grade average and is now a double major in both Criminology and Government.

Post-Graduation Plans (Seniors only):

N/A

COLLEGE OF EDUCATION

21ST CENTURY EDUCATION ENTERPRISE

Megan Brewington

Major:
Elementary Education
Faculty Mentor:
Jodi Blackburn
Research/Project Title:
Relationship between Proximity to Regional Campuses and ACT Scores
Project Abstract/Summary:
This quantitative research study examines the relationship between proximity to a regional university and district ACT scores. Linear regression was used to analyze the data to identify the relationship among variables. The results of the bivariate correlation study show that there is no significant correlation between regional universities and district ACT scores.
Project Dissemination:
Poster Presentation:
Brewington, Megan (2012, April). Relationship between Proximity to Regional Campuses and ACT Scores. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.
Awards and/or Honors:
N/A
Post-Graduation Plans (Seniors only):
N/A

Brooklyn Kendall

Major:
P-5 and LBD Education
Faculty Mentor:
Jodi Blackburn
Research/Project Title:
Frequency of iPads in Instructional Practices of Special Needs Classrooms
Project Abstract/Summary:
This quantitative research focuses on teachers of students with special needs who integrated iPads into their instruction. Teachers were surveyed to identify frequency of implementation of iPads. Data was analyzed for content and non-content related subject areas. Morehead State University College of Education sponsored this research through the Undergraduate Research Fellowship program.
Project Dissemination:
Poster Presentation:
Kendall, Brooke. (2012, April). Frequency of iPads in Instructional Practices of Special Needs Classrooms. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.
Awards and/or Honors:
N/A
Post-Graduation Plans (Seniors only):
N/A

Terri A. Rose

Major:
Education
Faculty Mentor:
Rebecca Roach
Research/Project Title:
The Space Movie Project: Digital Movie Making for Innovative, Real World Thinking

Project Abstract/Summary:

The 21st Century Education Enterprise collaborated with the faculty of the College of Science and Technology, MSU Space Science Center, MSU Center for Regional Engagement and Kentucky Dataseam to provide workshops, an online learning community, and ongoing in-school support for 74 students (50% females) from counties in Eastern Kentucky. These students then created digital documentaries on advanced topics in Space Science which they later presented at a film festival hosted at MSU's Digital Star Theatre. This mixed-method study analyzed movie rubric scores to measure impact on student learning. Surveys collected data on student career and college aspirations. Interviews with students and teachers were conducted to explain the project's impact. The results of this study are significant to their applications toward project-based learning in the classroom.

Project Dissemination:

Poster Presentations:

Rose, Terri A. and Roach, Rebecca (2012, January). The Space Movie Project: Digital Movie Making for Innovative, Real World Thinking. Posters-at-the-Capitol, Frankfort, KY, January.

Rose, Terri A. and Roach, Rebecca (2012, April). The Space Movie Project: Digital Movie Making for Innovative, Real World Thinking. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Awards and/or Honors:

N/A

Post-Graduation Plans (Seniors only):

N/A

Department of Early Childhood, Elementary, and Special Education

Katerina Chalk

Major:

Elementary Education P-5

Faculty Mentor:

Kim Nettleton/Mee-Ryoung Shon

Research/Project Title:

Searching for the Play: Change of Play Patterns in the Past 30 Years

Project Abstract/Summary:

With the growing epidemic of childhood obesity in the US, the researcher started her initial investigation on 'how seriously parents and professionals have been paying their attention on childhood obesity' through the analysis of Young Children and Dimensions for the last 30 years. As the continuum of this study, the focus has been expanded on the analysis of outdoor physical activities. The focus of the current study is to collect physical activities predominated among diverse age groups, to analyze trends of childhood play types, and to present the values of physical activity for the prevention of childhood obesity. Interviews were conducted to collect the data, and KY IECE Standards as well as KY Core Academic Standards are adapted to address the value of physical activities for the development of 'Whole Child.'

Project Dissemination:

Poster Presentation:

Chalk, Katarina (2012, April). The Trend of Physical Activity in Children's Play in the Past 30 Years. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Awards and/or Honors:

N/A

Post-Graduation Plans (Seniors only):

N/A

Suzannah Chapman

Major:

Special Education/P-5

Faculty Mentor:

Sarah Hawkins

Research/Project Title:

Embedding Pre-Kindergarten Math Standards within Inclusive Preschool Classrooms

Project Abstract/Summary:

This project shares the results of a single subject study that assessed the effects of embedding systematic instruction when working towards math pre-kindergarten standards. Teachers in an inclusive public preschool classroom implemented authentic assessment strategies, selected individualized pre-math objectives, embedded the math objectives in the classroom activities, and monitored children's progress, in which all had significant disabilities. The results show that: a) teachers can reliably teach children with significant disabilities within inclusive classroom activities and b) the children can acquire pre-math skills with high levels of accuracy. This research was supported by a MSU undergraduate Research Fellowship, and the Office of Regional Engagement.

Project Dissemination:

Poster Presentations:

Chapman, Suzannah M., and Hawkins, Sarah R., (2012, April). Embedding Pre-kindergarten Math Standards within Inclusive Preschool Classrooms. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Chapman, Suzannah M., and Hawkins, Sarah R., (2012, April). Embedding Pre-kindergarten Math Standards within Inclusive Preschool Classrooms. Posters-at-the-Capitol, Frankfort, KY, January.

Awards and/or Honors:

N/A

Post-Graduation Plans (Seniors only):

Student will job search following graduation in the Ashland, Kentucky area. She will begin graduate work at the University of the Cumberlands in the fall of 2012.

Amy Clausen

Major:

Special Education/P-5

Faculty Mentor:

Sarah Hawkins

Research/Project Title:

Success and Challenges of Conducting a Transition Fair in a Rural Community

Project Abstract/Summary:

Over the past three years, students from EDSP 372, Transition to Adult Life and the Student Council for Exceptional Children have partnered to host a Transition Fair for individuals with disabilities from surrounding counties. The Transition Fair included three breakout sessions for students and also a chance for students to meet representatives from colleges, state agencies, and organizations. The purpose of this study is to synthesize survey data from participating teachers and agencies across the past three years. Another major component of this research is to take comments from the teachers and agencies along with research regarding transition to adult life to make suggestions and changes for future Transition Fairs. This research was made possible by the Honors Program and the Kentucky Council for Exceptional Children.

Project Dissemination:

Poster Presentation:

Clausen, Amy M. and Hawkins, Sarah R., (2012, April). Successes and Challenges of Conducting a Transition Fair in a Rural Community. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Awards and/or Honors:

N/A

Post-Graduation Plans (Seniors only):

N/A

Stephanie Gebka

Major:

Education

Faculty Mentor:

Kim Nettleton

Research/Project Title:

Escuela Rayo de Luna

Project Abstract/Summary:

The student made significant progress in mastering the material involved. Unfortunately, the student really needs another semester to complete the project.

Project Dissemination:

Poster Presentation:

Gebka, Stephanie and Lennex, Lesia (2012, April). Escuela Rayo de Luna. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Awards and/or Honors:

N/A

Post-Graduation Plans (Seniors only):

N/A

Laura J. Geiman

Major:

LBD/Primary

Faculty Mentor:

Martha M. Decker

Research/Project Title:

A Review of the Literature in Best Practices in Literacy and Learning for Students with Special Needs.

Project Abstract/Summary:

Literature Review/Research Readings include "Genius at Work by Glenda Bissex (Harvard Press), Coping with Chaos, Brain Cambourn (Peta), Wally's Stories, Vivian Paley (Harvard Press), Grand Conversations, Peterson (Scholastic), Authors of Pictures, Draughtsmen of Words, Hubbard (Heinemann); Podcasts: "Investigating Healthy Minds" Richard Davidson (onbeing.org), "Training the Brain" Davidson and Goleman: Project Happiness, video (George Lukas), "Highlight My Strengths" Leanna Traill, (Rigby) Emotional Intelligence Daniel Goleman (Phantom), Lessons from a Child, Lucy Calkins (Heinemann). A weekly journal of notes and reflections has been kept and read by Dr. Decker.

Project Dissemination:

It is this work which has led Ms. Gieman to her current interest to be continued in next year's fellowship: "A Comparative Study of Practices Worldwide for Students with Special Needs: What's Working?" This will lead to poster presentations, presentations at Honors Roundtable, as well as possible presentations with the Council for Exceptional Children.

Awards and/or Honors:

Laura Geiman was invited and attended this year's College of Education Honors Awards Ceremony.

Post-Graduation Plans (Seniors only):

N/A

Alicia Rigdon

Major:

Elementary Education

Faculty Mentor:

Jane Arrington

Research/Project Title:

Kentucky Libraries Literature Review

Project Abstract/Summary:

Public libraries in the United States are uniquely positioned to influence the literacy development of children across the country. Public libraries offer a wide variety of literacy experiences to patrons of all ages, but the study this review of literature will eventually support will ask what programs in the state of Kentucky are offered for children from birth to grade 12, and what books are read and recommended to them during the implementation of these programs in the state's approximately 207 public libraries. A literature review was implemented in order to determine the types of research being conducted about public libraries in the United States of America. The research was compiled into separate categories including: librarians, summer reading programs, technology usage and effects, reading habits and attitudes, library usage by residents, other studies and reports, and miscellaneous. Information within each category represents the studies and reports that have been conducted in the last five years.

Project Dissemination:

Poster Presentation:

Rigdon, Alicia and Arrington, Jane (2012, April). Kentucky Libraries Literature Review. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Awards and/or Honors:

N/A

Post-Graduation Plans (Seniors only):

Ms. Rigdon plans to begin teaching elementary school and pursue her Master's degree.

DEPARTMENT OF MIDDLE GRADES AND SECONDARY EDUCATION

Emily Bodenlos

Major:
Education

Faculty Mentor:
Lesia Lennex

Research/Project Title:
3D in P-12 Schools

Project Abstract/Summary:
Student made significant progress in researching aspects of 3D instruction for schools. She has learned many valuable skills and has applied those not only to the project but also to her courses in education.

Project Dissemination:

Presentation:

Poster Presentation:
Emily Bodenlos and Lesia Lennex (2012, April). 3d Technology: Changing the Way Students Learn. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Awards and/or Honors:
N/A

Post-Graduation Plans (Seniors only):
N/A

COLLEGE OF SCIENCE AND TECHNOLOGY

DEPARTMENT OF APPLIED ENGINEERING AND TECHNOLOGY

Amariah Belcher-Fultz

Major:
Manufacturing Technology

Faculty Mentor:
Nilesh Joshi

Research/Project Title:
A Manufacturing Facility Design Study Using Intelligent Objects-based Simulation Modeling

Project Abstract/Summary:
Use of intelligent objects-based simulation modeling is relatively new in manufacturing facility planning and design. In this type of modeling, the intelligent objects built by modelers can be used repetitively for multiple modeling projects. SIMIO is one such 3D modeling environment which lets the modelers create 3D models using intelligent objects. In this project, the goal was to explore the benefits and capabilities of intelligent objects-based simulation for design studies of manufacturing facilities. A simulation model was developed using SIMIO to study the design of a prototype facility to manufacture and assemble an adjustable wrench. Alternative scenarios were developed by changing the buffer capabilities for individual workstations to determine the most efficient layout. This project was supported by a grant from the SIMIO LLC and a MSU Undergraduate Research Fellowship.

Project Dissemination:

Oral Presentation:
Belcher A., Joshi N.N. (2012, April). A Manufacturing Facility Design Study Using Intelligent Objects-based Simulation Modeling. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Awards and/or Honors:
Outstanding Design and Manufacturing Engineering Technology Student, 2012.

Post-Graduation Plans (Seniors only):
After graduation, student plans to work with one of the manufacturing organizations in the Eastern Kentucky area.

DEPARTMENT OF AGRICULTURAL SCIENCES

Kyle Bush

Major:
Agricultural Sciences

Faculty Mentor:
Tyler Mark

Research/Project Title:
East Kentucky Bioenergy Capacity Assessment Project

Project Abstract/Summary:
This research project will investigate several different aspects of biofuel production in Kentucky. The different areas to be examined are: 1) Volume of wood residues in Eastern Kentucky, 2) Amount of idle land available in Eastern Kentucky for biomass production, 3) potential sources of demand for these fuels, and 4) storage and transportation issues for these renewable energy sources.

Project Dissemination:

Presentation:
N/A

Awards and/or Honors:
N/A

Post-Graduation Plans (Seniors only):
N/A

Keith Centers

Major:
Agricultural Sciences
Faculty Mentor:
Tyler Mark
Research/Project Title:
East Kentucky Bioenergy Capacity Assessment Project
Project Abstract/Summary:
This research project will investigate several different aspects of biofuel production in Kentucky. The different areas to be examined are: 1) volume of wood residues in Eastern Kentucky, 2) amount of idle land available in Eastern Kentucky for biomass production, 3) potential sources of demand for these fuels, and 4) storage and transportation issues for these renewable energy sources.
Project Dissemination:
Presentation:
N/A
Awards and/or Honors:
N/A
Post-Graduation Plans (Seniors only):
N/A

Kelsey Culp

Major:
Agricultural Sciences
Faculty Mentor:
Tyler Mark
Research/Project Title:
East Kentucky Bioenergy Capacity Assessment Project
Project Abstract/Summary:
This research project will investigate several different aspects of biofuel production in Kentucky. The different areas to be examined are: 1) volume of wood residues in Eastern Kentucky, 2) amount of idle land available in Eastern Kentucky for biomass production, 3) potential sources of demand for these fuels, and 4) storage and transportation issues for these renewable energy sources.
Project Dissemination:
Presentation:
N/A
Awards and/or Honors:
N/A
Post-Graduation Plans (Seniors only):
N/A

Kayla Kelly

Major:
Agricultural Sciences
Faculty Mentor:
Taylor Mark
Research/Project Title:
East Kentucky Bioenergy Capacity Assessment Project
Project Abstract/Summary:
This research project will investigate several different aspects of biofuel production in Kentucky. The different areas to be examined are: 1) volume of wood residues in Eastern Kentucky, 2) amount of idle land available in Eastern Kentucky for biomass production, 3) potential sources of demand for these fuels, and 4) storage and transportation issues for these renewable energy sources.
Project Dissemination:
Poster Presentation:
Isaac Singer, Kayla Kelly, Carter Mobley and Tyler Mark (2012, April). East Kentucky Bioenergy Capacity Assessment Project. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.
Awards and/or Honors:
N/A

Post-Graduation Plans (Seniors only):
Employed by Farm Credit Services of Mid-America

Carter Mobley

Major:
Agricultural Sciences
Faculty Mentor:
Tyler Mark
Research/Project Title:
East Kentucky Bioenergy Capacity Assessment Project
Project Abstract/Summary:
This research project will investigate several aspects of biofuel production in Kentucky. The different areas to be examined are: 1) volume of wood residues in Eastern Kentucky, 2) amount of idle land available in Eastern Kentucky for biomass production, 3) potential sources of demand for these fuels, and 4) storage and transportation issues for these renewable energy sources.
Project Dissemination:
Presentation:
Carter Mobley, T. Mark, and B. Williamson (February, 2012). Real Time Ultrasound Body Measurement Impact on Replacement Heifer Price: The Kentucky Case. Southern Agricultural Economics Association/Southern Section, Birmingham, AL, February.
Poster Presentation:
Isaac Singer, Kayla Kelly, Carter Mobley, and Tyler Mark (2012, April). East Kentucky Bioenergy Capacity Assessment Project. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.
Awards and/or Honors:
N/A
Post-Graduation Plans (Seniors only):
N/A

Blake Sims

Major:
Agricultural Sciences
Faculty Mentor:
Tyler Mark
Research/Project Title:
East Kentucky Bioenergy Capacity Assessment Project
Project Abstract/Summary:
This research project will investigate several different aspects of biofuel production in Kentucky. The different areas to be examined are: 1) volume of wood residues in Eastern Kentucky, 2) amount of idle land available in Eastern Kentucky for biomass production, 3) potential sources of demand for these fuels, and 4) storage and transporation for these renewable energy sources.
Project Dissemination:
Presentation:
N/A
Awards and/or Honors:
N/A
Post-Graduation Plans (Seniors only):
N/A

Isaac Singer

Major:
Agricultural Sciences
Faculty Mentor:
Taylor Mark
Research/Project Title:
East Kentucky Bioenergy Capacity Assessment Project

Project Abstract/Summary:

This research project will investigate several different aspects of biofuel production in Kentucky. The different areas to be examined are: 1) volume of wood residues in Eastern Kentucky, 2) amount of idle land available in Eastern Kentucky for biomass production, 3) potential sources of demand for these fuels, and 4) storage and transportation issues for these renewable energy sources.

Project Dissemination:

Poster Presentation:

Isaac Singer, Kayla Kelly, Carter Mobley, and Tyler Mark (2012, April). East Kentucky Bioenergy Capacity Assessment Project. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Awards and/or Honors:

N/A

Post-Graduation Plans (Seniors only):

Employed by Farm Credit Services of Mid-America

DEPARTMENT OF BIOLOGY AND CHEMISTRY

Julie Arnold

Major:

Biology

Faculty Mentor:

Geoffrey Gearner

Research/Project Title:

Molecular Methods of Microbial Source Tracking in Kentucky Watersheds

Project Abstract/Summary:

Julie participated in a project that utilized polymerase chain reaction to assess for the presence of host-specific bacterial molecular markers from a variety of sampling sites in the Hancock Creek Watershed, Clark County, Kentucky. The results of this project were recently presented as a poster at the Celebration of Student Scholarship (see abstract below). Data produced was used in a report submitted to the Kentucky Division of Water. A poster abstract of the project's results will also be submitted to the Kentucky Academy of Sciences 2012 Annual Meeting in Richmond, Kentucky. Additionally, Julie participated in conducting some preliminary work utilizing PCR to detect antibiotic resistance genes in DNA collected from several sampling sites in the Hancock Creek and Triplett Creek (Rowan County) watersheds.

The objective of this study was to determine if fecal contamination in eight selected sampling sites of the Hancock Creek Watershed was of human and/or cattle origin. Polymerase chain reaction was used to detect DNA sequences unique to cattle- and human-specific gastrointestinal bacteria. Eight sites in the Hancock Creek Watershed were sampled in September (wet weather event) and October (dry weather event) 2011. Escherichia coli analyses showed that 7/8 sampling sites assessed in September exhibited E. coli counts that exceeded the Kentucky Division of Water primary contract reaction limit of 240 CFU/100 ml; whereas all eight samples collected in October were well below the limit. Genetic markers for cattle-associated bacteria were present in 7/8 samples collected in September; while human-associated bacterial genetic markers were found at 2/8 sampling sites. Cattle-associated bacterial genetic markers were present in 6/8 samples collected in October; while human-associated bacterial markers were present in one sample.

Project Dissemination:

Poster Presentation:

Arnold, J., M. Kamelgarn, and G.W. Gearner (2012, April). Microbial Source Tracking in the Hancock Creek Watershed, Clark County, Kentucky. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Awards and/or Honors:

N/A

Post-Graduation Plans (Seniors only):

Ms. Arnold has been accepted to, and will be attending the University of Mount Union's Physician Assistant Program.

Kate Bomar

Major:
Environmental Science

Faculty Mentor:
Allen Risk

Research/Project Title:
The Age of the Forest at Spaws Creek Gorge

Project Abstract/Summary:
The age of the forest at Spaws Creek Gorge was determined by evaluating core samples from eastern hemlock trees that began growth prior to 1900 and by examining inner ring dates for all trees cored in Spaws Creek Gorge. Marker years were used to cross-date samples, the annual rings were measured with the VELMEX system and COFECHA was used to insure accuracy, with any flagged cores being re-evaluated. A major synchronized release event in 1908 or 1909 suggests that the forest was cut in 1907 or 1908. Furthermore, the inner ring dates of all species form an establishment pulse right around these same years. The current composition of the forest was described using importance values. Liriodendron tulipifera, Tsuga canadensis and Betula lenta are the most important species in the canopy of Tsuga canadensis, Rhododendron maximum, and Tilia americana dominating the understory layer.

Project Dissemination:

Oral Presentation:
Bomar, Kate L. and Risk, Allen C., (2012, April). The Age of the Forest at Spaws Creek Gorge. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Awards and/or Honors:
N/A

Post-Graduation Plans (Seniors only):
N/A

James Bradley

Major:
Chemistry/Biology

Faculty Mentor:
Janelle Hare

Research/Project Title:
Transcriptome Analysis of Acinetobacter Baylyi ADP1 nResponse to DNA Damage

Project Abstract/Summary:
The SOS response to DNA damage that induces up to 10% of the prokaryotic genome requires the relief of LexA repression and RecA action. In Acinetobacter baylyi, which unexpectedly encodes no LexA protein, the error-prone polymerase accessory UmuD is required for ddrR gene induction after DNA damage. These unusual features prompted us to analyze the whole transcriptome of this model organism's response to DNA damage with next-generation RNA sequencing. Total cellular RNA was purified from duplicate cultures of wild type, recA- and umuD- cells grown in inducing (2 ug/mL mitomycin C) or non-inducing conditions for two hours. This RNA sample was enriched for rRNA-free transcriptome RNA, reverse-transcribed to cDNA, and sequenced on an Illumina platform. One hundred-seventy four (5.2%) genes were induced and 528 (16%) genes were repressed (3307 total genomic ORFs) after DNA damage. Thirteen percent of the induced genes were regulated by umuD, 20% were regulated by recA, 26% required both genes, and 33% required neither umuD nor recA. Of the ~33 genes that comprise the canonical SOS response to DNA damage, only sixteen were differentially regulated. These results suggest a DNA damage response involving both recA-dependent and recA-independent regulons, and demonstrates that umuD regulates multiple genes. Whether UmuDAb represents a LexA homolog in this genus is under investigation.

Project Dissemination:

Publications:
J.M. Hare, J.A. Bradley, T.J. Elam, and Ching-li Lin (2012). Diverse DNA Damage Responses in Acinetobacter Include the Capacity for DNA Damage-induced Mutagenesis in the Opportunistic Pathogens Acinetobacter Baumannii and Acinetobacter Ursingii. Microbiology 158: 601-611.

Oral Presentations:
James Bradley and Janelle Hare (2011). The Genus Acinetobacter Possesses a Unique Error-prone DNA Damage Response System: The Story of UmuD. The Kentucky Academy of Sciences General Meeting, Murray, KY.

James Bradley and Janelle Hare (2011). Forms of the DNA Damage Response Gene umuD Present in Acinetobacter and Their Potential for UmuD Self-cleavage. Southeast Regional IDeA Meeting 2011, New Orleans, LA.

Poster Presentation:
J.A. Bradley and J.M. Hare (2012, April). Transcriptome Analysis of Acinetobacter Baylyi ADP1 in Response to DNA Damage. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Awards and/or Honors:

3rd Place Oral Presentation, Kentucky Academy of Science Meeting, Murray, KY, November.

Post-Graduation Plans (Seniors only):

To attend the University of Louisville Medical School, MD Program, and seek entry into the PhD program at the University of Louisville.

Alexia Callihan

Major:

Biology

Faculty Mentor:

Allen Risk

Research/Project Title:

Woody Plant and Fern Inventory and Species Richness Patterns at Greenbo Lake State Resort Park, Greenup County, KY

Project Abstract/Summary:

Greenbo Lake State Park is a large and floristically unexplored state park of approximately 3,000 acres located in northeastern Kentucky. An inventory of woody plant and fern species was conducted throughout the park with a result of 103 woody species, 9.7% being non-native and 22 ferns, as well as an examination of spatial analysis using species richness of these plant groups (modeled after the Carolina Vegetation Survey) in order to determine the predictability of species richness with increasing area. Thus far, five plots of 1000m2, three south-facing and two north-facing of ranging elevation from low (700ft), middle (780ft), and high (860ft) on each aspect, have been set up and analyzed within Pruitt Fork. Evaluation of species richness at different spatial scales, involved assessment at 12,000.000m2 (3,000 acres), 1000m2, 10m2, 1m2, 0.1m2, and 0.01m2. The spatial analysis of ferns showed no significance because of low diversity within plots. That of woody plants resulted in a high rate of increase in species richness from 0.01m2 to 10m2, the rate decreasing up to 44.6(±6.4) species as the area approached 1000m2 and further decreasing, reaching 103 species upon approaching 12,000,000m2. When comparing the north and south-facing slopes the same trend occurred though the north-facing slope displayed slightly higher species richness at smaller scales. Both the north- and south-facing slopes had nearly the same species richness of 44.6(±4.2) and 44.3 (±8.6) species at 1000m2 respectively.

Project Dissemination:

Oral Presentation:

Callihan, Alexia and Allen C. Risk (2011). Woody Plant and Fern Inventory and Species Richness Patterns at Greenbo Lake State Resort Park, Greenup County, KY. Kentucky Academy of Science Meeting, Murray, KY.

Awards and/or Honors:

Alexia received second place in the Botany Section Undergraduate Paper Competition at the 2011 Kentucky Academy of Science Meeting in Murray, KY.

Post-Graduation Plans (Seniors only):

Alexia plans to attend graduate school or to pursue a career as a high school teacher.

Michael Cantrell

Major:

Biology

Faculty Mentor:

Nathan Coker

Research/Project Title:

Trends in Elemental Leaching from Coal Combustion By-Products from Two Stoker Boilers Before and After Modernization of the Ash Handling System

Project Abstract/Summary:

The student worked on looking at leachable maganese from coal ash. The student made some progress on the project learning how to make solutions and operating the equipment. Student withdrew from the Undergraduate Research Fellowship Program before completing the semester.

Project Dissemination:

N/A

Awards and/or Honors:

N/A

Post-Graduation Plans (Seniors only):

N/A

Jackie Carder

Major:
Biology
Faculty Mentor:
Sean O'Keefe
Research/Project Title:
Preliminary Assessment of Trapping Methods for Beetles for Conservation Evaluation
Project Abstract/Summary:
Biodiversity assessment is the foundation for conservation evaluation. Beetles are an ideal group to use for biodiversity assessments because they are extremely diverse, very abundant, fill numerous ecological roles, and can be assessed quantitatively and qualitatively by many means. This preliminary survey is to determine which trapping methods are most informative for beetle diversity studies. This preliminary study consisted of three standardized trapping methods (pitfall, Lindgren, and yellow pan traps) over a 16 day period (10 Aug – 26 Aug, 2011). Several species were found only in one type of trap, and others were found in all types of traps. Yellow pan traps provided the greatest number of individuals as well as the greatest diversity of species, but Lindgren traps provided more unique individuals than did pitfall traps. This research was supported in part by MSU Undergraduate Research Fellowship.
Project Dissemination:
Oral Presentation:
J. Carder and S. O'Keefe (2012, April). Preliminary Assessment of Trapping Methods for Beetles for Conservation Evaluation. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.
Awards and/or Honors:
N/A
Post-Graduation Plans (Seniors only):
N/A

Allie Caudill

Major:
Biology/Pre-Med
Faculty Mentor:
Allen Risk
Research/Project Title:
Effect of Aspect on Quercus Alba Tree Ring Growth at Eagle Lake, Rowan County, Kentucky
Project Abstract/Summary:
Aspect and canopy position are two factors that can have an impact on the annual ring growth of trees. For this research project the effect of canopy vs. understory positions and east-facing vs. south-facing aspects on ring width in Quercus alba were evaluated. In the fall of 2011 the General Botany class cored 50 Quercus alba (white oak) trees at Eagle Lake. In order to assess the growth of these trees the cores were processed by mounting, sanding and then dotting. The annual tree rings were then measured to the nearest 0.001 mm using a Velmex measuring system and then checked for accuracy by COFECHA. Trees that grew on the east-facing aspect had an average growth of 1.96 mm per year while trees on the south-facing aspect had an average of 1.31 mm of growth per year. This difference can be attributed to the varied amount of sunlight the aspects receive during the day. This study also indicated that canopy position has an effect on tree growth. Co-dominant and dominant trees (1.75 mm) grow more annually than intermediate and overtopped specimens (1.55 mm). This data can be used by forestry personel to create tree management schedules. Canopy trees or east-facing trees can be cut more frequently than south-facing or intermediate trees.
Project Dissemination:
Oral Presentation:
Caudill, Allie R. and Risk, Allen C., (2012, April). Effect of Aspect on Quercus Alba Tree Ring Growth, Eagle Lake, Rowan County. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.
Awards and/or Honors:
N/A
Post-Graduation Plans (Seniors only):
N/A

Erica Eldridge

Major:
Biology

Faculty Mentor:
Allen Risk

Research/Project Title:
Woody Plant Floristic Inventory of Carter Caves State Resort Park, Carter County, Kentucky

Project Abstract/Summary:
Carter Caves State Resort Park is a 2,200 acre state park exhibiting discrete geologic formations and varying topographical habitats conducive to a diverse array of woody flora. An inventory of all woody plant species for the park was initiated by three methods. The first method involved a visual exploration of and specimen collections from many of the different habitats in the park. The second was through species indentification in plot work related to a concurrent study by this lab investigating fine-scale species richness patterns as a predictor for broad-scale richness. The third method involved an examination of the herbarium of Morehead State University for woody plant specimens collected from previous studies. To date, 115 species were documented for Carter Caves State Resort Park, of which 6.2% were found to be exotic invaders, and 3.4% were considered rare species by the Kentucky State Nature Preserves Comission. Also, fifteen new woody plant species were documented in this study for Carter County when compared to Clark and Weckman's Annotated Catalog and Atlas of Kentucky Woody Plants, 2008. This work was funded by a grant from the Special Research Fund, Department of Biology and Chemistry and Undergraduate Research Fellowship Program, Morehead State University.

Project Dissemination:

Oral Presentation:
Eldridge, Erica R. and Risk, Allen C., (2012, April). Woody Plant Floristic Inventory of Carter Caves State Resort Park, Carter County, Kentucky. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Awards and/or Honors:
N/A

Post-Graduation Plans (Seniors only):
Awaiting acceptance to Imaging Science Program, Morehead State University, Fall 2012.

Taylor Gasser

Major:
Pre-Veterinary

Faculty Mentor:
Herbert Hedgecock

Research/Project Title:
Syntheses of Organic Complexes with Metal Ions

Project Abstract/Summary:
There are many important metal complexes such as Vitamin B-12, hemoglobin, and chiral catalyst. We are researching and synthesizing compounds to be used to make organic complexes. Some of these will potentially be chiral and we will use this property in our research. Schiff bases are synthesized, characterized, and further reacted to form compounds for our studies. These compounds will be complexed with transition metal ions for further studies.

Project Dissemination:

Poster Presentation:
Gasser, Taylor L. and Hedgecock, Herbert (2012, April). Synthesis of Organic Complexes with Metal Ions. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Awards and/or Honors:
N/A

Post-Graduation Plans (Seniors only):
N/A

Marisa Kamelgarn

Major:
Biology

Faculty Mentor:
Geoffrey Gearner

Research/Project Title:
Molecular Methods of Microbial Source Tracking in Kentucky Watersheds

Project Abstract/Summary:

Marisa participated in a project that utilized polymerase chain reaction to assess for the presence of host-specific bacterial molecular markers from a variety of sampling sites in the Hancock Creek Watershed, Clark County, Kentucky. The results of this project were recently presented as a poster at the Celebration of Student Scholarship (see abstract below). Data produced was used in a report submitted to the Kentucky Division of Water. A poster abstract of the project's results will also be submitted to the Kentucky Academy of Sciences 2012 Annual Meeting in Richmond, Kentucky. Additionally, Marisa participated in conducting some preliminary work utilizing PCR to detect antibiotic resistance genes in DNA collected from several sampling sites in the Hancock Creek and Triplett Creek (Rowan County) watersheds.

The objective of this study was to determine if fecal contamination in eight selected sampling sites of the Hancock Creek Watershed was of human and/or cattle origin. Polymerase chain reaction was used to detect DNA sequences unique to cattle- and human-specific gastrointestinal bacteria. Eight sites in the Hancock Creek Watershed were sampled in September (wet weather event) and October (dry weather event) 2011. Escherichia coli analyses showed that 7/8 sampling sites assessed in September exhibited E. coli counts that exceeded the Kentucky Division of Water primary contact recreation limit of 240 CFU/100 ML; whereas all eight samples collected in October were well below the limit. Genetic markers for cattle-associated bacteria were present in 7/8 samples collected in September; while human-associated bacterial genetic markers were found at 2/8 sampling sites. Cattle-associated bacterial genetic markers were present in 6/8 samples collected in October; while human-associated bacterial markers were present in one sample.

Project Dissemination:

Poster Presentation:

Arnold, J., M. Kamelgarn, and G.W. Gearner (2012, April). Microbial Source Tracking in the Hancock Creek Watershed, Clark County, Kentucky. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Awards and/or Honors:

Marisa was the recipient of the 2011 Arthur Ashe, Jr. Sports Scholar Award, which recognizes minority student athletes who excell in the classroom and are involved in community service. The research projects that Marisa participates in involve community engagement and service, and were cited in this national award.

Post-Graduation Plans (Seniors only):

N/A

Marina Kirtland

Major:

Biomedical

Faculty Mentor:

David Peyton

Research/Project Title:

Differential Gene Expression as a Biomarker of Contaminant Exposure

Project Abstract/Summary:

Biomarkers are effective monitoring tools, allowing researchers to detect and understand the biological significance of contamination. We examined the expression of pollutant sensitive genes in hepatic tissue from zebrafish (Danio rerio) caged in either a reference area or in effluent or effluent receiving stream water emerging from the Paducah Gaseous Diffusion Plant (Paducah, KY). In addition, resident longear sunfish (Lepomis megalotis) and green sunfish (Lepomis cyanellus) were collected from both reference and effluent receiving sites for evaluation of hepatic gene expression. None of the genes examined in zebrafish had been previously identified for native sunfish species so in this project we have begun to develop a library of biomarkers for these native fish to be analyzed by real-time PCR.

Project Dissemination:

Poster Presentation:

Marina Kirtland and David Peyton (2012, April). Differential Gene Expression as a Biomarker of Contaminant Exposure. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Awards and/or Honors:

N/A

Post-Graduation Plans (Seniors only):

N/A

Jessica Lemley

Major:
Biology/Environmental Science

Faculty Mentor:
David Smith

Research/Project Title:
The Effect of Bisphenol A on Freshwater Crustacean Development and Molting

Project Abstract/Summary:
During the Spring 2012 semester Daphnia magna cultures were studied through reference testing and observing the life cycle in a controlled laboratory setting. Once sufficient life cycle data were obtained, the D. magna were to be used in testing the effect of Bisphenol A on development and molting. The D. magna laboratory cultures were too variable (reproduction number and timing as well as molting) to be used in this experiment with Bisphenol A to obtain reliable results. We revised the experimental design focusing on surface water toxicity screening using a more predictable and reliable test species. In April, Ceriodaphnia dubia were used for the first round of chronic toxicity tests in which five surface water samples were collected from locations within the Triplett Creek watershed. The samples were screened for potential substances that would impair survival or reproduction of the test organisms. There was not any impairment of survival or reproduction in any of the water samples suggesting no toxic substances in any of the samples collected within the Triplett Creek watershed. Continuing next year, this long term project can lead to more extensive toxicity testing in other locations that will provide an indication of the ecological health of our watershed.

During this project many accomplishments have been achieved. Laboratory and culturing skills were developed through everyday tasks and duties. Culturing algea as a food source for both D. magna and C. dubia called for the use of larger lab equipment in which is useful to know and understand. The skills gained during this research not only will help in the near future to better understand upper level classes but also for future career.

Project Dissemination:
No presentations were made due to the need for revising the experiment and changing the approach.

Awards and/or Honors:
N/A

Post-Graduation Plans (Seniors only):
N/A

Sarah McClanahan

Major:
Pre-Med

Faculty Mentor:
Michael Fultz

Research/Project Title:
Effect of Rho Kinase Inhibition on the Alpha-Actin and Beta-Actin Cytoskeleton in the A7r5 Smooth Muscle Cell

Project Abstract/Summary:
It has been suggested that differential remodeling of the alpha- and beta- actin cytoskeleton may explain the unique contractile properties exhibited by smooth muscle. However, the molecular mechanism(s) regulating this remodeling are not understood. The goal of this project was to test the hypothesis that inhibition of Rho kinase would alter remodeling of the alpha- and beta- actin cytoskeleton in A7r5 smooth mucle cells. Preliminary studies indicate that cells treated with the specific rho kinase inhibitor Y-27632 before and after stimulation with PDBu demonstrate the inability to undergo alpha-actin remodeling. In addition, resting A7r5 cells exposed to Y-27632 demonstrated a drastic disruption of the alpha-actin cytoskeleton. Interestingly, beta-actin appears to be less succeptable to disruption by rho kinase inhibition. This implicates a critical role of Rho kinase in alpha-actin dynamics in smooth muscle and supports the model of differential actin isoform techniques. Next semester she will begin the titrations of Rho Kinase inhibitor.

Project Dissemination:
Student started her research this semester learning to perform eukaryotic cell culture techniques.

Awards and/or Honors:
N/A

Post-Graduation Plans (Seniors only):
N/A

Russell Miller

Major:
Pre-Veterinary Science

Faculty Mentor:
Allen Risk

Research/Project Title:
Evaluating Sensitivity to Climatic Variations of Two Woody Plant Species in Spaws Creek Gorge

Project Abstract/Summary:
Do woody plant species act as indicators of past temperature and precipitation patterns? Two tree cores were obtained from canopy Tsuga canadensis and Liriodendron tulipifera occuring in 200 m2 plots on north-facing slopes in Spaws Creek Gorge, Menifee County, in order to analyze the relationship between climate and tree growth. Sample tree cores were cross-dated by focusing on marker rings. COFECHA was then used as an additional check on dating accuracy. ARSTAN was used to convert raw ring measurements to ring width indices for each series that takes into account tree size related growth changes. These ring width indices were compared with historical precipitation and Palmer drought severity index (PDSI) values. Results showed a high correlation between Liriodendron tulipifera's standardized growth indices and the PDSI, with an R value of 0.49. Cross-referencing Tsuga canadensis with the same variables did not reveal any significant correlations. Liriodendron tulipfera is a shade intolerant species, typically located in the upper region of the canopy, while Tsuga canadensis, a shade tolerant species, is often found beneath other trees. The high R value can then be used to demonstrate Liriodendron tulipifera's ability to indicate past climatic patterns as it is receiving a direct effect from the environment due to its position in the upper canopy.

Project Dissemination:
Russell Miller and Dr. Allen C. Risk (2012, April). Evaluating Sensitivity to Climatic Variations of Two Woody Plant Species in Spaws Creek Gorge. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Awards and/or Honors:
N/A

Post-Graduation Plans (Seniors only):
N/A

Ryan Miller

Major:
Biology/Environmental Science

Faculty Mentor:
David Smith

Research/Project Title:
The Effect of Bisphenol A on Freshwater Crustacean Development and Molting

Project Abstract/Summary:
The original goal of the project was to investigate the effects of Bisphenol A (BPA) on juvenile growth/development and molting (ecdysis) of freshwater crustaceans such as water fleas (Daphnia magna, Ceriodaphnia dubia) and crayfish (species to be determined). BPA is a commonly used ingredient in plastics and is suspeted to be hormonally active, either preventing or triggering responses potentially altering the timing of specific events in growth and development of organisms.

Progress was made during the Fall 2011 semester by establishing cultures of Ceriodaphnia dubia and Daphnia magna. Mr. Miller developed laboratory skills such as care and handling of the test organisms, culture water prep, unicellular alga culturing, and use of various tools and equipment found in the laboratory. Unfortunately, Mr. Miller did not return to school for the Spring semester.

Project Dissemination:
N/A

Awards and/or Honors:
N/A

Post-Graduation Plans (Seniors only):
N/A

Lacee Pyles

Major:
Biology

Faculty Mentor:
Allen Risk

Research/Project Title:
Woody Plant Species Richness in Relationship to Area in Carter Caves State Resort Park, Kentucky

Project Abstract/Summary:
Historically, two main approaches have been used to estimate the plant-species richness of an area, first by Gleason using a semi-log approach and the second by Arrhenius using a log-log approach. Three separate methods were used to estimate the woody plant species richness of Carter Caves State Resort Park (CCSRP). The first method used was Gleason ratios which gave estimates ranging from 11 woody plants to 110 woody plants, with a mean of 66 woody plants. The second method used was an Arrhenius log-log approach. The number of woody plants, in four plot complexes with six nested spatial scales ranging from 0.01 – 100 m2, were inventoried at CCSRP. These data were used to make an Arrhenius log-log-graph with a trendline. The equation of the trend line in y=mx+b format was used to estimate the number of woody plant species in the park. Two separate approaches to this method were used. The first, using all six spatial scales and a linear trend line, gave a highly overestimated value of 9,560. The second approach only used three spatial scales ranging from 10-1000m2 and a logarithmic trend line which gave a more reasonable estimate of 110 woody plants. In the third method the areas and woody plant species richness of known floras in the eastern United States were compared to the area of CCSRP. A graph was compiled with a linear trendline. Using the trendline an estimate of 128 woody plant species was obtained. This work was funded by the Department of Biology and Chemistry and the Undergraduate Research Fellowship Program, Morehead State University.

Project Dissemination:

Oral Presentation:
Pyles, Lacee and Risk, Allen C., (2012, April). Woody Plant Species Richness in Relationship to Area in Carter Caves State Resort Park, Kentucky. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Awards and/or Honors:
N/A

Post-Graduation Plans (Seniors only):
N/A

Kasey Reed

Major:
Chemistry

Faculty Mentor:
Geoffrey Gearner

Research/Project Title:
Molecular Methods of Microbial Source Tracking in Kentucky Watersheds

Project Abstract/Summary:
The student works as part of a team of students on a couple of projects that are underway in the lab. The first project utilized polymerase chain reaction to assess for the presence of host-specific bacterial molecular markers from a variety of sampling sites in the Hancock Creek Watershed, Clark County, Kentucky. Data produced was used in a report submitted to the Kentucky Division of Water. A poster abstract of the project's results will also be submitted to the Kentucky Academy of Science 2012 Annual Meeting in Richmond, Kentucky. Additionally, the student participated in conducting some preliminary work utilizing PCR to detect antibiotic resistance genes in DNA collected from several sampling sites in the Hancock Creek and Triplett Creek (Rowan County) watersheds. The student will continue with this work in the Fall 2012 semester. We anticipate the students participation will result in poster presentations at the Kentucky Academy of Science meeting to be held in October, 2012, and the Celebration of Student Scholarship event in April, 2013.

Project Dissemination:
N/A

Awards and/or Honors:
N/A

Post-Graduation Plans (Seniors only):
N/A

Kathryn Renyer

Major:
Chemistry

Faculty Mentor:
Ann Macintosh

Research/Project Title:
Trends in Cobalt Leaching from Coal Combustion By-products from Two Stoker Boilers, Present at Morehead State University Heating and Water Treatment Facility, After Modernization of the Ash Handling System

Project Abstract/Summary:
The purpose of the project was to assess how Cobalt leaches from coal combusion by-products (CCBs) produced by stoker boilers and begin to quantify the possible risks from CCB use or disposal. CCBs and feed coal were sampled from two stoker boilers, present at the Morehead State University Heating and Water Treatment Facility, after the ash handling system was modernized. Both boilers operate below their efficiency window and utilize the same feed coal. Prior to retrofit, emission controls on the systems consisted of multicyclone dust collectors, as well as a single baghouse. Following modernization, the boilers are operating somewhat closer to peak efficiency and have additional pollution controls, namely three diatomaceous-earth lined baghouses that together remove virtually all particulate matter from the combustion gas stream. CCB's were sampled from multiple points within the systems, including bottom ash, sidestream ash, multicyclone ash, and where present, baghouse ash. Samples of each ash were shaken for 12 hours in 2% nitric acid to find total leachability. This method was chosen over other methodologies due to the acidity of the local groundwater and lack of results in pilot studies using batch leaching and groundwater leaching technqiues. Analysis of five samples, taken from various locations within the system, showed Cobalt concentrations that were either below or right at detection limits.

Project Dissemination:

Poster Presentation:
Amanda Sullivan, Kathryn Renyer, Dr. Zexia Barnes, Dr. Nathan Coker, Dr. Ann Macintosh, and Dr. Jennifer O'Keefe (2012, April). Trends in Nickel and Cobalt Leaching from Coal Combustion By-products from Stoker Boilers, Present at Morehead State University Heating and Water Treating Facility, After Modernization of the Ash Handling System. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Awards and/or Honors:
N/A

Post-Graduation Plans (Seniors only):
N/A

Rebecca Roberts

Major:
Biology

Faculty Mentor:
Sean O'Keefe

Research/Project Title:
Preliminary Assessment of Biodiversity Indices using Beetles for Conservation Evaluation

Project Abstract/Summary:
Biodiversity assessment is the foundation for conservation evaluation. Beetles are an ideal group to use for biodiversity assessments because they are extremely diverse, very abundant, fill numerous ecological roles, and can be assessed quantitatively and qualitatively by many means. The purpose of this preliminary study is to determine which biodiversity indices are the most informative for beetles. Three standardized trapping methods were employed over a 16 day period (10 Aug – 26 Aug, 2011) at three sites in the Daniel Boone National Forest. An initial examination of the richness obtained reveals 22 families, 76 genera, and 96 species. Biodiversity analyses included the standard Shannon and Simpson indices, as well as Log series *a*, SHE analysis, and Brillouin index; taxonomic richness and functional diversity are explored. This research was supported in part by MSU Undergraduate Research Fellowship.

Project Dissemination:

Poster Presentation:
R. Roberts and S. O'Keefe (2012, April). Preliminary Assessment of Biodiversity Indices using Beetles for Conservation Evaluation. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Awards and/or Honors:
N/A

Post-Graduation Plans (Seniors only):
N/A

Brooke Washburn

Major:
Biology
Faculty Mentor:
Brian Reeder
Research/Project Title:
Effect of Fish Density on Water Quality in Small Earthen Hatchery Ponds
Project Abstract/Summary:
Minor Clark Fish Hatchery recently constructed a number of ponds approximately 1/10 the scale of their regular (1 acre ponds). They have stocked fish at three different densities to determine the optimal density for fish production in these ponds. We are collecting water samples twice each week and measuring field conditions at dawn and dusk (DO, pH, temperature, specific conductance) and sampling for nutrients and plankton. Lab samples are analyzed for available nutrients, including carbon (alkalinity), phosphate, nitrate, ammonium, iron, and sulfur. Plankton samples are analyzed to identify and enumerate zooplankton and phytoplankton.
Project Dissemination:
This research just started Spring 2012, and we are still sampling ponds.
Awards and/or Honors:
N/A
Post-Graduation Plans (Seniors only):
N/A

Whitley Whitehead

Major:
Chemistry
Faculty Mentor:
Herbert Hedgecock
Research/Project Title:
Syntheses of Organic Complexes with Metal Ions
Project Abstract/Summary:
There are many important metal complexes such as Vitamin B-12, hemoglobin, and chiral catalyst. We are researching and synthesizing compounds to be used to make organic complexes. Some of these will potentially be chiral and we will use this property in our research. Schiff bases are synthesized, characterized, and further reacted to form compounds for our study. These compounds will be complexed with transition metal ions for further studies.
Project Dissemination:
Poster Presentation:
Whitehead, Whitley J. and Hedgecock, Herbert (2012, April). Syntheses of Organic Complexes with Metal Ions. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.
Awards and/or Honors:
N/A
Post-Graduation Plans (Seniors only):
N/A

Natasha Whitt

Major:
Biology
Faculty Mentor:
Geoffrey Gearner
Research/Project Title:
Molecular Methods of Microbial Source Tracking in Kentucky Watersheds
Project Abstract/Summary:
Student works as part of a team of students on a couple of projects we have underway in the lab. The first project utilized polymerase chain reaction to assess for the presence of host-specific bacterial molecular markers from a variety of sampling sites in the Hancock Creek Watershed, Clark County, Kentucky. Data produced was used in a report submitted to the Kentucky Division of Water. A poster abstract of the project's results will also be submitted to the Kentucky Academy of Sciences 2012 Annual Meeting in Richmond, Kentucky. Additionally, the student participated in conducting some preliminary work utilizing PCR to detect antibiotic resistance genes in DNA collected from several sampling sites in the Hancock Creek and Triplett Creek (Rowan County) watersheds. She will continue with this work in the Fall 2012 semester. Her participation will result in poster presentations at the

Kentucky Academy of Science meeting to be held in October 2012, and the Celebration of Student Scholarship event in April, 2013

Project Dissemination:

N/A

Awards and/or Honors:

N/A

Post-Graduation Plans (Seniors only):

N/A

Travis Witkowski

Major:

Biology/Pre-Med

Faculty Mentor:

Janelle Hare

Research/Project Title:

Determining Which Polymerase Causes Mutations in the rpoB Gene of Acinetobacter Baumannii and Acinetobacter Ursingii Strains that Lead to Rifampin Resistance as a Possible Indication of SOS Mutagenesis

Project Abstract/Summary:

The exposure of bacteria in the Acinetobacter genus to UV light results in mutants resistant to rifampin. Studying the types of mutations in the Rif region of these mutants' rpoB gene (the region of the gene in which mutations can cause rifampin resistance), can determine whether DNA Polymerase IV or V led to these mutations, as each polymerase displays a characteristic mutation pattern. If a mutation pattern seen in the Rifampin mutants matched polymerase V's mutation signature, it would suggest that the cells had conducted SOS mutagenesis, which required the error prone polymerase V encoded by the umuDC gene. Through the course of this experiment we analysed a total of 68 mutated strains and found a total of 74 independent mutation. In addition, we identified 25 different alleles. An allele defines the amino acid location and specific nucleotide mutation observed. This experiment indicated the use of Polymerase V ((UmuD'2) UmuC polymerase) based on the observance of half the mutations seen in the experiment matched the Polymerase V "C to T" transition pattern.

Project Dissemination:

Poster Presentation:

Travis Witkowski, Alison Grice, and Janelle Hare (2012, April). Determining Which Polymerase Causes Rifampin Resistance in the Rif Region of Acinetobacter Strains. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Awards and/or Honors:

N/A

Post-Graduation Plans (Seniors only):

N/A

Department of Earth and Space Sciences

Kien Dang

Major:

Space Science

Faculty Mentor:

Kevin Brown

Research/Project Title:

Programming Serial-to-Serial Earth Station Software in WxWidgets

Project Abstract/Summary:

Since 1992, WxWidgets has been a powerful toolkit to create cross-platform Graphic User Interface (GUI) software systems. With the contribution of the open-source society, WxWidgets now supports most popular Operating Systems, is available in many programming languages, works with various compilers, and is freely distributed according to the L-GPL (Library General Public License). These are the reasons WxWidgets was selected for the development of a serial-to-serial ground station software system, using C++ and Microsoft Visual Studio 2008. The purpose of this project is to create a software system that can run stably in Windows 7 – 64 bit and have functions for testing satellite equipment and processing data as needed. This research is supported by MSU Undergraduate Research Fellowship.

Project Dissemination:

Oral Presentation:

K. Dang, J. Helea, and R. Twiggs (2012, April). Programming Serial-to-Seriel Earth Station Software in WxWidgets. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Awards and/or Honors:

N/A

Post-Graduation Plans (Seniors only):

N/A

Cara DeMoss

Major:

Biology

Faculty Mentor:

Benjamin Malphrus

Research/Project Title:

GlioLab: Development of a CubeLab Platform for International Space Station Based Biomedical Research

Project Abstract/Summary:

GlioLab is a joint project between Morehead State University, GAUSS-Group of Astrodynamics of the University of Roma, Kentucky Space and the NASA Ames Research Center that involves the development of a 2U CubeLab (GlioLab). The primary objectives of the project are to develop a CubeLab platform for performing biomedical research on the International Space Station (ISS), and to perform preliminary ground-based and flight experimentation (STS-134 and STS-135) that will help drive the development of GlioLab. The platform will incorporate a liquid mixing apparatus that will allow 2-3 liquids to be mixed and require the development of various additional subsystems to support biological specimens for varying lengths of time while aboard ISS. An automated system will control the injection/mixing of liquids in user-specified ratios and at user-specified times. The platform will utilize small fluid amounts (≤10 ml), which will be exposed to microgravity for a specified length of time and then returned to Earth for analysis. A set of mission profiles have been designed based on available ascent and decent vehicles along with the current mechanisms and logistics related to access to the ISS NanoRacks System. These mission profiles will be used to direct the accompanying ground based research utilizing the Glioblastoma cancer line as its experimental model. The potential for biomedical research utilizing Gliolab onboard the ISS or space flights in general will pave the way for future affordable biomedical research in microgravity and hopefully yield new terrestrial biomedical applications and treatments.

STS-134

RNA quantitation by colleagues at the University of Rome revealed too little RNA (10ng) for gene expression analysis.

STS-135

DNA agarose gel analysis by colleagues at the University of Rome revealed complete DNA fragmentation of the specimen exposed to microgravity while gravitational controls were normal. Due to the nucleic acid degradation gene expression analysis was once again impossible. The LMA containing the live culture of glioblastoma was tested for viability upon down-mass return, subcultured and transported back to Morehead State University. Trypan blue exclusion revealed a 75% decrease in cell viability following two weeks exposure to microgravity. Though some cells exclude trypan blue, suggesting that they were viable, their morphology was crenated. These cells were monitored daily for attachment and cell division, however none of these cells survived. It is our opinion that the cells characterized as living following re-entry were in the early stages of apoptosis. Due to the nature of the DMEM-F12 media used, as cells metabolize the nutrients in the media the pH is altered and is visualized by a natural color change from dark pink to light pink. This observation indicates that the cells were metabolizing and most probably undergoing mitosis while initially in microgravity. At some point the cells apparently started dying due to the exposure to microgravity or ionizing radiation. We do not believe this to have been to the media, CO2 concentration or temperature based on ground experimentation as illustrated below.

Project Dissemination:

Poster Presentations:

DeMoss, Cara E. and Grey, William L., (2012, January). GlioLab: Development of a CubeLab Platform for International Space Station Based Biomedical Research. Posters-at-the-Capitol, Frankfort, KY, January.

DeMoss, Cara and Grey, William L. (2012, April). GlioLab: Development of a CubeLab Platform for International Space Station Based Biomedical Research. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Awards and/or Honors:

N/A

Post-Graduation Plans (Seniors only):

N/A

William Grey

Major:

Biology

Faculty Mentor:

Benjamin Malphrus

Research/Project Title:

GlioLab: Development of a CubeLab Platform for International Space Station Based Biomedical Research

Project Abstract/Summary:

GlioLab is a joint project between Morehead State University, GAUSS-Group of Astrodynamics of the University of Roma, Kentucky Space and the NASA Ames Research Center that involves the development of a 2U CubeLab (GlioLab). The primary objectives of the project are to develop a CubeLab platform for performing biomedical research on the International Space Station (ISS), and to perform preliminary ground-based and flight experimentation (STS-134 and STS-135) that will help drive the development of GlioLab. The platform will incorporate a liquid mixing apparatus that will allow 2-3 liquids to be mixed and require the development of various additional subsystems to support biological specimens for varying lengths of time while aboard ISS. An automated system will control the injection/mixing of liquids in user-specified ratios and at user-specified times. The platform will utilize small fluid amounts (≤10 ml), which will be exposed to microgravity for a specified length of time and then returned to Earth for analysis. A set of mission profiles have been designed based on available ascent and decent vehicles along with the current mechanisms and logistics related to access to the ISS NanoRacks System. These mission profiles will be used to direct the accompanying ground based research utilizing the Glioblastoma cancer line as its experimental model. The potential for biomedical research utilizing Gliolab onboard the ISS or space flights in general will pave the way for future affordable biomedical research in microgravity and hopefully yield new terrestrial biomedical applications and treatments.

STS-135

DNA agarose gel analysis by colleagues at the University of Rome revealed complete DNA fragmentation of the specimen exposed to microgravity while gravitational controls were normal. Due to the nucleic acid degradation gene expression analysis was once again impossible. The LMA containing the live culture of glioblastoma was tested for viability upon down-mass return, subcultured and transported back to Morehead State University. Trypan blue exclusion revealed at 75% decrease in cell viability following two weeks exposure to microgravity. Though some cells excluded trypan blue, suggesting that they were viable, their morphology was crenated. These cells were monitored daily for attachment and cell division, however none of these cells survived. It is our opinion that the cells characterized as living following re-entry were in the early stages of apoptosis. Due to the nature of the DMEM-F12 media used, as cells metabolize the nutrients in the media the pH is altered and is visualized by a nature color change (dark pink to pink to orange to yellow). The LMA containing the live culture of glioblastoma exhibited a change from dark pink to light pink. This observation indicates that the cells were metabolizing and most probably undergoing mitosis while initially in microgravity. At some point the cells apparently started dying due to the exposure to microgravity or ionizing radiation. We do not believe this to have been to the media, CO2 concentration or temperature based on ground experimentation as illustrated below.

Project Dissemination:

Poster Presentations:

DeMoss, Cara E.and Grey, William L. (2012, January). GlioLab: Development of a CubeLab Platform for International Space Station Based Biomedical Research. Posters-at-the-Capitol, Frankfort, KY, January.

DeMoss, Cara E. and Grey, William L. (2012, April). GlioLab: Development of a CubeLab Platform for International Space Station Based Biomedical Research. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Awards and/or Honors:

N/A

Post-Graduation Plans (Seniors only):

N/A

Jordan Healea

Major:

Space Science

Faculty Mentor:

Robert Twiggs

Research/Project Title:

PocketQube: The Smallest Satellite Ever to be Flown in Space

Project Abstract/Summary:

As technology advances all the devices that surround us become smaller; yet more capable. In the space industry this holds true as well. Due to the innovative designs of emerging technology, what once took the space of a car can now be compacted into something the size of its horn, and the PocketQube will do just that. The PocketCube was invented by Professor Bob Twiggs in 2010 as a follow-on to the CubeSat, pushing the envelope of small satellites. PocketQubes are 5 cm x 5 cm x 12.5 and have a mass under 0.25 kg. A team of students and faculty at the Morehead State University Space Science Center are developing one of the first PocketQubes – Eagle-1. The approach taken on designing the payload for the PocketQube is to integrate a circuit with Picaxe processor. The circuitry will contain components that will measure values such as: battery current, battery voltage, on board temperature, and external temperature. Once these values have been obtained by the PocketQube it will then transmit the values to a ground station using Morse code. Eagle-1 is scheduled for launch on a Dneper Rocket from Russia in 2012.

Project Dissemination:

Poster Presentation:

J. Healea and R. Twiggs (2012, April). PocketQube: The Smallest Satellite Ever to be Flown in Space. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Oral Presentation:

Schwab, L., Barnett, Z., Layne, A.R., Howard, M.B., and O'Keefe, J.M.K. (2012). Distribution of Fungal Forms in a Middle Eocene Coal from Tennessee. 3rd Annual Meeting of the Ohio Valley Organic Petrographers, Lexington, KY, March.

Awards and/or Honors:

N/A

Post-Graduation Plans (Seniors only):

N/A

Michaela B. Howard

Major:

Geology

Faculty Mentor:

Jen O'Keefe

Research/Project Title:

Palynology of a Middle Eocene Lignite, Tennessee

Project Abstract/Summary:

The palynology of a low-rank, clay-rich lignite from Weakly Co., TN, is being examined. It is thought that this lignite is part of the Clabornian-stage lignite outcrop belt. Samples were processed using the O'Keefe technique (O'Keefe and Eble, 2012 in press), which is designed to optimize recovery from clay-rich lignite samples with a minimum of hazardous chemicals. Overall, the deposit is palynologically similar to known Claibornian-state lignites in Kentucky, especially that studied by O'Keefe (2008). Notably, the spectrum recovered is different from assemblages recovered from clay pits in Tennessee. This is likely due to differences in processing and also the more restricted flora present in peat-producing wetlands. Preliminary results indicate that the deposit is dominated by a Castanea-Cupuliferoidaepollenites assemblage, with other tree pollen being common. Ferns are also present, as is an assemblage of fungal spores.

This project progressed more slowly than expected due to the time it took to prepare and process samples. The entire first semester and a half was spent on sample preparation and processing. Sample examination has only been on-going for the last month and a half. Painstaking progress resulted in very excellent preparations that contain abundant palynomorphs. Approximately 95% of the processing was completed, and 10% of the sample examination. Significant work on this project remains.

Project Dissemination:

Poster Presentations:

Howard, M.B., O'Keefe, J.M.K. (2012, April). Palynology of a Middle Eocene Lignite, Tennessee. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Schwab, L., Barnett, Z., Layne, A.R., Howard, M.B., and O'Keefe, J.M.K. (2012, April). Distribution of Fungal Forms in a Middle Eocene Coal from Tennessee. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Howard, M.B., and O'Keefe, J.M.K. (2012, April). Palynology of a Middle Eocene Lignite, Tennessee. Program with Abstracts, North-Central Geological Society of America, Dayton, OH. http://gsa.confex.com/2012NC/finalprogram/abstract_202997.htm

Oral Presentation:

Schwab, L., Barnett, Z., Layne, A.R., Howard, M.B., and O'Keefe, J.M.K. (2012, March). Distribution of Fungal Forms in a Middle Eocene Coal from Tennessee. Third Annual Meeting of the Ohio Valley Organic Petrographers, Lexington, KY, March.

Awards and/or Honors:

N/A

Post-Graduation Plans (Seniors only):

Find a job in the energy industry or in geology and work toward becoming a scientific photographer.

Adam R. Layne

Major:

Geology

Faculty Mentor:

Jen O'Keefe

Research/Project Title:

Organic Petrography of a Middle Eocene Lignite, Tennessee

Project Abstract/Summary:

The organic petrography of a low-rank, clay-rich lignite from Weakly Co., TN, is being examined using particulate pellets. It is thought that this lignite is part of the Clabornian-stage lignite outcrop belt. Petrographically, this deposit is similar in many aspects to known Claibornian-stage lignite deposits in Kentucky, in that it is composed primarily of clay and attrinite-rich horizons that are well-rooted, contain abundant liptinite, especially sporinite, and display evidence for extensive decay of original organic material prior to incorporation into the mire (funginite and damage attributed to fungi). Overall, petrography points toward organic deposition in a variably wet setting. Attrinite-rich horizons likely represent exposure and increased levels of aerobic decomposition while clay-rich horizons likely represent flooding surfaces. The high sporinite content in the clay horizons may indicate a spring flooding regime. Like similar deposits in Kentucky, portions of the lignite contain blebs of anisotrophic coke that are not associated with increased inertinite content in the coal. These particles likely represent remnants of crown fires in trees surrounding the mire.

Sample preparation is complete, and analyses are about 35% complete for the entire deposit. Analyses of samples spaced at 5cm intervals in the first two columns of the deposit are 90% complete. This is significantly further than we expected to get in one year. Results to date were presented at three meetings.

Project Dissemination:

Poster Presentations:

Schwab, L., Barnett, Z., Layne, A.R., Howard, M.B., and O'Keefe, J.M.K., (2012, April). Distribution of Fungal Forms in a Middle Eocene Coal from Tennessee, Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Layne, A.R., and O'Keefe, J.M.K., (2012, March). Organic Petrography of a Western Tennessee Lignite: Preliminary Results. Third Meeting of the Ohio Valley Organic Petrographers, Lexington, KY, March.

Oral Presentations:

Layne, A.R., and O'Keefe, J.M.K., (2012, April). Organic Petrography of a Middle Eocene Lignite, Tennessee. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Layne, A.R., and O'Keefe, J.M.K., (2012, March). Organic Petrography of a Western Tennessee Lignite: Preliminary Results. Third Annual Meeting of the Ohio Valley Organic Petrographers, Lexington, KY, March.

Schwab, L., Barnett, Z., Layne, A.R., Howard, M.B., and O'Keefe, J.M.K., (2012, March). Distribution of Fungal Forms in a Middle Eocene Coal from Tennessee. Third Annual Meeting of the Ohio Valley Organic Petrographers, Lexington, KY, March.

Awards and/or Honors:

Outstanding Geology Student, 2011-2012

Post-Graduation Plans (Seniors only):

Student is waiting to hear from UK regarding admittance into the MS program in Geology. He has a project lined up with a professor at the Kentucky Geological Survey. If this does not fall into place, he will enter the workforce and is presently looking for a job.

Hannah Mabry

Major:
Space Science

Faculty Mentor:
Thomas Pannuti

Research/Project Title:
The Unusual HII Region SP-44 in the Nearby Spiral Galaxy NGC 2403 - A Radio-Luminous Superbubble?

Project Abstract/Summary:
Hannah conducted an analysis of the statistical properties (such as electron density and swept-up mass) of a sample of nearly 20 superbubbles in nearby galaxies. This was part of the mentor's research on supernova remnants in nearby galaxies, including a peculiar radio and X-ray luminous supernova remnant in a nearby galaxy which the mentor suspects is a prominent superbubble. Hannah also conducted calculations regarding the gross properties (such as characteristic age, density, rotational kinetic energy and rate of loss of kinetic energy) of the millisecond pulsar that she discovered in 2011.

Project Dissemination:

Poster Presentation:
Mabry, Hannah and Pannuti, Thomas, (2012, April). The Unusual HII Region SP-44 in the Nearby Spiral Galaxy NGC 2403 – A Radio-Luminous Superbubble? Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Awards and/or Honors:
N/A

Post-Graduation Plans (Seniors only):
N/A

Larry Tackett

Major:
Geology

Faculty Mentor:
Charles Mason

Research/Project Title:
The Depositional Environment and Faunal Diversity of the Three Lick Bed of the Ohio Shale (Late Devonian), East-Central Kentucky

Project Abstract/Summary:
This study examined the fauna contained in the type section of the Three Lick Bed of the Ohio Shale (Late Devonian), which is located in Rowan County, Kentucky, along I-64. The Three Lick Bed (a well known marker bed, especially for subsurface correlations) separates the underlying Huron Member from the overlying Celveland Member of the Ohio Shale. The unit is 3.42 meters thick and is composed of three greenish-gray beds separated by two intervening black shale beds. The three greenish-gray shale units are hypothesized to have been deposited under dysaerobic conditions. The focus of this study was to examine the depositional environment and faunal diversity of the Three Lick Bed.

To date 300 kilograms of sample have been processed for macrofossils and 90 kilograms for microfossils. The samples were broken down using the kerosene technique and washed through a nested set of U.S. standard sieves, a #20 for macrofossils and a #100 for microfossils. The residue caught on the #100 sieve underwent heavy liquid separation and both the heavy and the light fractions were examined for microfossils. All picking, sorting, and identification of fossils were conducted under a binocular microscope.

The results of this study support the hypothesis that the greenish-gray shale units of the Three Lick Bed were deposited in a dysaerobic environment. Evidence supporting this conclusion included the following: 1) a low diversity macro invertebrate fauna of 18 species, 2) of the 737 specimens identified all (except Lingula) were juveniles, 3) the fauna was dominated by mollusks, 13 out of the 18 species, and 4) all macro invertebrates except Lingula were preserved as pyretic internal molds. Overall, benthic foraminifera dominate the microfossil fauna in both diversity and abundance, followed by ostracodes in terms of abundance. The macrofossil fauna is dominated by cephalopods being the most diverse (with 7 species) and a low-spired gastropod being the most abundant (269/737).

Project Dissemination:

Oral Presentations:
Tackett, L.P. II, Wells, K., and Mason, C.E. (2011, November). The Micro- and Macro- Faunal Diversity of a Devonian Dysaerobic Environment. 97th Annual Meeting of the Kentucky Academy of Science, Murray, KY, November.

Tackett, L.P. II., Wells, K., and Mason, C.E. (2012, April). The Depositional Environment and Faunal Diversity of the Three Lick Bed of the Ohio Shale (Late Devonian), East Central Kentucky. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Published Abstract:

Wells, K., Tackett, L.P. II, and Mason, C.E. (2012). The Depositional Environment and Faunal Diversity of the Three Lick Bed of the Ohio Shale (Late Devonian), East Central Kentucky. GSA Abstracts with Programs, Vol. 44, No. 5, p. 7.

Awards and/or Honors:

N/A

Post-Graduation Plans (Seniors only):

Summer intern position at the Wyoming Dinosaur Center in Thermopolis, Wyoming. This Fall, student will begin graduate studies in Paleontology at Utah State University in Vernal, Utah.

Department of Health, Wellness, and Human Performance

Jaimie L. Howard

Major:

Exercise Science

Faculty Mentor:

Gina Blunt

Research/Project Title:

Personality Profile in Extreme Sports: Rock Climbing

Project Abstract/Summary:

Rock climbing is an emerging sport that continues to grow in popularity. By some estimates there may be as many as 500,000 active, regular climbers in America. Understanding the psychological profile of an athlete allows for a better understanding of what motivates the athlete, helps to fine tune training programs, and ultimately improves adherence and performance in the sport. While several studies have assessed personality, state and trait attributes, motivation, and self-efficacy in risk-taking sports, little is known about the psychological profile of rock climbers in particular. This literature review revealed eight common traits amoung climbers. These were high self efficacy, competitevness, perfectionism, sensation seeking, sociable personality, boredom susceptibility, thrill seeking, and impulsiveness.

Project Dissemination:

Poster Presentations:

Howard, Jaimie, Blunt, Gina, and Dearden, Jennifer. (2012, April). Personaility Profile in Extreme Sports: Rock Climbing. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Awards and/or Honors:

N/A

Post-Graduation Plans (Seniors only):

Work in the health field for two years before returning to school for a masters degree.

Department of Mathematics, Computer Science, and Physics

Amir Ahmadi

Major:

Mathematics

Faculty Mentor:

Michael Dobranski

Research/Project Title:

Model Development for Lignocelluosic Biofuels

Project Abstract/Summary:

Second generation biofuels from various types of biomass hold a prominent role in current clean energy research. This project studies the economic and physical feasibility of bio-oil prodution by means of a fluidized bed reactor given a wood input's physical and cost characteristics. Amir found that Kentucky's yellow poplar has the potential of becoming economically sound for future biofuel production.

Project Dissemination:

Presentations:

Ahmadi, Amir (2011, November). Model Energy Potential of Various Wood Species. Kentucky Academy of Science Meeting, Murray, KY, November.

Ahmadi, Amir (2012, January). Model Energy Potential of Various Wood Species. Agricultural Economics Association, Nashville, TN, January.

Ahmadi, Amir, (2012, March). Kentucky's Potential for Wood Biofuel Production: An Economic Feasibility Analysis. Kentucky Section of the Mathematical Association of America, Louisville, KY, March.

Oral Presentation:

Ahmadi, Amir, (2012, April). Kentucky's Potential for Wood Biofuel Production. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Awards and/or Honors:

Second Place Presentation Award in Mathematics Research at the Kentucky Academy of Science Conference in Murray, KY, November, 2011.

Post-Graduation Plans (Seniors only):

Amir Ahmadi will continue graduate work in Agricultural Economics at Purdue University. He was awarded a research assistantship.

Joseph Blanton

Major:

Computer Science

Faculty Mentor:

Sherif Rashad

Research/Project Title:

Intrusion Detection in Wireless Mobile Networks using Data Mining Techniques

Project Abstract/Summary:

As wireless networks become more prominent in our society, security for these networks is a growing issue. Due to the lack of a physical infrastructure, these networks are much easier to infiltrate and many old security solutions no longer work. The problem of intrusion detection becomes more difficult in integrated mobile networks, where different structures of mobile networks are integrated to provide better quality of service every time and everywhere. The goal of our research is to design and implement new intrusion detection techniques for mobile networks using data mining technology. We will focus on the anomaly detection side of intrusion detection. Our goal is to find the most time efficient algorithm for developing normal profiles of mobile users and responding to intrusions. We will design and implement new algorithms to improve the speed and memory efficiency of the intrusion detection process in mobile networks. The techniques that will be used in this project will be based on ubiquitous data stream mining and classification techniques. The student started this semester to study different data mining techniques. He started to use a data mining tool called WEKA to learn how to classify datasets and to compare between different data mining technqiues such as NaÏve Bayesian classifier and the C4.5 algorithm.

Project Dissemination:

Poster Presentation:

Joseph Blanton and Sherif Rashad (2012, April). Intrusion Detection in Wireless Mobile Networks using Data Mining Techniques. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Awards and/or Honors:

N/A

Post-Graduation Plans (Seniors only):

N/A

Joshua Bradley

Major:

Computer Science/Math

Faculty Mentor:

Sherif Rashad

Research/Project Title:

Mobile Data Mining Algorithms for 4G Mobile Networks

Project Abstract/Summary:

The 4G mobile networks will support more multimedia communications and provide mobile services every time and everywhere. Also, mobile handsets will be able to understand the behavior of mobile users to provide better quality of services and to support new services. The mobile handsets will make suggestions for different activities during the day according to the profiles of the mobile users. Also, the mobile handset will be able to understand the

patterns of the other mobile users and make smart suggestions to communicate effectively with these mobile users. There is a need to a new generation of mobile data mining algorithms that can be used in the mobile environment to support these new services and to enhance the current services with the new integrated structure in the 4G mobile networks. The design and implementation of the novel base station ranking technique was completed. Performance evaluation and enhancement of the new base station ranking technique was performed. The technique involves the application of Hodge theory to fixed nodes (considered to represent a base station in the mobile network) in the mobile network in order to obtain a global ranking of base stations based upon the traffice flow between the base stations. Hodge theory provides a way to obtain this global ranking of edge flows from sparse graphs by decomposing pairwise rankings into two orthogonal components, a gradient flow and a divergence free flow, which acts as a measure of "confidence" on the global ranking of the edge flow. It also relates information as to why a global ranking of an edge might be unobtainable. A detailed evaluation of the new base station ranking technique can be used to support the network management of the new generation of mobile networks in an effort to enhance the mobility experience for each mobile user.

Project Dissemination:

Publication:

The following work was included in the Council on Undergraduate Research (CUR) Quarterly Undergraduate Research Highlights, Fall 2011, Volume 32, Number 1.

Sherif Rashad and Joshua Bradley. SmartMobiMine: Smart Mobile Data Mining Techniques to Support 4G Mobile Networks. Proceedings of the 8th IEEE Consumer Communications and Networking Conference (CCNC, 2011), pp. 703-704, Las Vegas, NV, 2011, January.

Poster Presentations:

Joshua Bradley and Sherif Rashad (2012, April). Discovering Significant Mobile Patterns from Cell Towers. 2012 Council on Undergraduate Research Posters-on-the-Hill, Washington, DC, April.

Joshua Bradley and Sherif Rashad (2012, April). Discovering Significant Mobile Patterns from Cell Towers. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Awards and/or Honors:

Student has been offered an assistantship to pursue a Ph.D. in Computer Science at the University of Maryland.

Student has been offered an assistantship to pursue a Ph.D. in Computer Science at Purdue University.

Student was selected for an Internship with the National Security Agency.

Student is the recipient of the Outstanding Computer Science Student Award, Department of Mathematics, Computer Science, and Physics, Morehead State University, May, 2012.

Post-Graduation Plans (Seniors only):

Mr. Bradley has accepted the offer from the University of Maryland to pursue a Ph.D. in Computer Science. He will start his graduate study this Fall.

Benjamin D. Caldwell

Major:

Computer Science

Faculty Mentor:

Sherif Rashad

Research/Project Title:

Novel Load Balancing and Vertical Handoff Management Techniques for Wireless Heterogeneous Networks.

Project Abstract/Summary:

The structure of wireless heterogeneous networks represents the main structure in the fourth generation (4G) of mobile networks. It integrates different types of radio access networks (RANs) such as cellular networks, wireless local area networks (WLANs), and mobile Ad hoc networks (MANET). This configuration will enable wireless networks to provide better services with high rates and to accommodate more users with better QoS. Vertical handoff techniques will enable the 4G mobile networks to switch between different types of RANs to complete the current communication session in a seamless way. For example, the connection can be handed off vertically from WLAN to cellular networks. The goal of this research project is to design and implement novel predictive techniques that can be used to solve the problems of vertical handoff management and load balancing in wireless heterogeneous networks. The student made good progress to understand the problem of load balancing. He focused on designing one of the clustering algorithms that can be used to solve this problem. He learned also how to use a data mining tool called, WEKA to test different clustering algorithms.

Project Dissemination:

Poster Presentations:

Ben Caldwell and Sherif Rashad (2011, November). Novel Load Balancing Techniques for Wireless Heterogeneous Networks. Kentucky Academy of Science (KAS) Annual Meeting, Murray, KY, November.

Ben Caldwell and Sherif Rashad (2012, April). Novel Load Balancing Techniques for Wireless Heterogeneous Networks. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Awards and/or Honors:

N/A

Post-Graduation Plans (Seniors only):

N/A

Jorge Chang

Major:

Computer Science/Math

Faculty Mentor:

Doug Chatham

Research/Project Title:

Kentucky Rook: How to Win

Project Abstract/Summary:

Rook is a card game in which two teams of two players aim to reach a certain amount of points by taking specific cards in a series of tricks. The tricks consist on each player playing a card; the player who played the card with the highest value takes the trick. This project aims to uncover the nature of the game and develop an algorithm to increase the chances of winning the game. The approach taken was to program an artificial intelligence for the game capable of following an algorithm to win the game every time chances allow it and relying as little as possible on luck. The current program is able to play the game according to the rules in intermediate level.

Project Dissemination:

Oral Presentations:

Chang, Jorge and Chatham, Doug (2012, March). Kentucky Rook: How to Win. 2012 Annual Meeting of the Kentucky Section of the Mathematical Association of America, Bellarmine University, March.

Chang, Jorge and Chatham, Doug (2012, April). Kentucky Rook: How to Win. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Awards and/or Honors:

N/A

Post-Graduation Plans (Seniors only):

N/A

Bryan Allen Conn

Major:

Physics

Faculty Mentor:

Jennifer Birriel

Research/Project Title:

Infrared and Ultraviolet Studies with a Commercial Digital Camera: An Exploration of Research and Classroom Uses

Project Abstract/Summary:

Most commercial digital cameras contain electronic detectors which are capable of detecting near infrared radiation which is invisible to the human eye. Older commercial digital cameras that are no longer desired because of their small chip size (i.e. in terms of number of megapixels) can be easily converted into devices that can detect both infrared and ultraviolet light. The student will modify an old 4-megapixel Kodak digital camera so that it can be used to detect both UV and infrared light. The camera will then be used to explore emissions from a variety of objects in semi-qualitative manner. He will explore possible uses of such a device as a research instrument for capstone projects and classroom projects.

Project Dissemination:

Poster Presentation:

Conn, Bryan A., and Birriel, Jennifer, (2012, April). Converting an Old Digital Camera to Detect Infrared Radiation:Preliminary Results and Future Projects. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Awards and/or Honors:

N/A

Post-Graduation Plans (Seniors only):

N/A

Christopher R. Estes

Major:
Computer Science

Faculty Mentor:
Sherif Rashad

Research/Project Title:
Developing Novel Data Mining Algorithms to Support Location-Based Services in Mobile Networks

Project Abstract/Summary:
Location-based service is one of the emerging fields in mobile networks. Recent mobile applications can use the current locations of mobile users to provide different services. There is still a need to develop new techniques that can analyze the history of visited locations and generate the behavior patterns of mobile users to provide new smart and predictive services. The goal of this research project is to develop novel data mining algorithms that can be used to mine the history of mobile users to support location-based services. It is required to develop fast and dynamic algorithms that can work effectively in mobile environments to generate the association rules and the behavior patterns of mobile users. The generated patterns and association rules can be used to make smart suggestions for mobile users based on behavior analysis and location information. Utilizing incremental data mining techniques, GPS services, and Google Maps, we started to develop an application with a goal to create a pattern based on commonly visited locations and to suggest possible destinations near the user. The use of incremental data mining techniques is important when dealing with mobile devices due to limited storage for large data bases. This applications will simlify everyday decisions for the end user.

Project Dissemination:

Poster Presentation:
Estes, Chris and Rashad, Sherif, (2012, April). Location Based Services for Android Platforms, Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Awards and/or Honors:
N/A

Post-Graduation Plans (Seniors only):
N/A

Logan Higginbotham

Major:
Mathematics

Faculty Mentor:
Timothy O'Brien

Research/Project Title:
Optimization of Bus Routes in Rowan County

Project Abstract/Summary:
Optimization of school bus routes in Rowan County has the potential to lower school district costs, and minimize the amount of time students spend riding to school. In this project, the road system in Rowan County was modeled as a capacitated arc routing problem (CARP) which is also known as the Generalized Chinese Postman Problem. Using a transformation developed by Baldacci and Maniezzo, this model was converted to a capacitated vehicle routing problem (CVRP) for which many optimization algorithms are available. One such algorithm, k-means clustering, was modified to solve the Rowan County bus route problem and was then compared to a solution developed by Jesse Seip in his Capstone project.

Project Dissemination:

Oral Presentations:
Higinbotham, Logan (2012, March). Efficient Bus Routes. 2012 Annual Meeting of the Kentucky Section of the Mathematics Association of America, Louisville, KY, March.

Higinbotham, Logan (2012, April). Of Fish and Bus Routes. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Awards and/or Honors:
N/A

Post-Graduation Plans (Seniors only):
N/A

Erich Hohenstein

Major:
Computer Science/Physics

Faculty Mentor:
Sherif Rashad

Research/Project Title:
Design and Implementation of Parallel and Distributed Data Mining Algorithms

Project Abstract/Summary:
Data mining extracts implicit, previously unknown, and potentially useful information from datasets. The goal of this research project is to design and implement parallel and distributed data mining algorithms that can be used for a wide range of data mining applications to mine large databases. These parallel and distributed data mining algorithms include classification, clustering, and mining association rules algorithms. Classification is the process of finding a machine and learning techniques that can be used to automatically classify a data record into one of possible classes. Clustering is a data mining process that can be used to identify a finite set of clusters to describe the data records. Association rules mining is the process of discovering previously unknown rules that can lead to new and important information about the data. The student in this project started to learn the basics of data mining and how to design, implement, and evaluate data mining algorithms. He started to implement the K-Nearest Neighbor (KNN) algorithm.

Project Dissemination:
N/A

Awards and/or Honors:
N/A

Post-Graduation Plans (Seniors only):
N/A

William Michael Holbrook II

Major:
Mathematics/Computer Science

Faculty Mentor:
Robin Blankenship, Doug Chatham, R. Duane Skaggs

Research/Project Title:
Approaching the n+k Queens Separation Problem through Composition of Solutions

Project Abstract/Summary:
The n + k Queens Problem asks for placing n+k Queens and k Pawns on an n x n chessboard so that no two Queens attach each other. It has been proven that the problem has a solution when n > max (87+k,25k). In an attempt to obtain nice patterns and lower this bound on n, we have looked at composing solutions and partial solutions for smaller values of n to obtain solutions for larger values of n.

The process begins with an n Queens Solution. The solution is then copied and the copy is rotated 180 degrees. The two boards are then overlapped in one square (bottom right square for the original solution, top left square for the copy) and a pawn is placed in that square. The new, composed, board is then checked for any two Queens in the same diagonal. If there are two Queens in the same diagonal, the way the board is build determines where the Queens must be moved such that no two Queens are in the same diagonal.

The goal is to prove that this method works to compose all board sizes n >= 9. Four of the six patterns that the proof requires have been found. The remaining two are being sought after.

Project Dissemination:

Poster Presentation:
Holbrook II, William M., Blankenship, Robin, Chatham, Doug, and Skaggs, R. Duane (2012, April). Approaching the n+k Queens Separation Problem through Composition of Solutions. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Oral Presentation:
Holbrook II, William M., Blankenship, Robin, Chatham, Doug, and Skaggs, R. Duane (2012, March). Approaching the n+k Queens Separation Problem through Composition of Solutions. The Kentucky Section of the Mathematical Association of America, Louisville, KY, March.

Awards and/or Honors:
N/A

Post-Graduation Plans (Seniors only):
N/A

Ronnie Howard

Major:
Mathematics
Faculty Mentor:
Russell May
Research/Project Title:
Enumeration of Knot Mosaics
Project Abstract/Summary:
We studied Onsager's exact solution for the Ising model of two-dimensional crystals with nearest-neighbor interaction, following the computation of the eigenvalues of the row-to-row transfer matrix. Application of this method to enumeration of knot mosaics still remains a goal, but since the lattices for knot mosaics have interactions that are more complicated than the models with only nearest-neighbor interaction, this will require more work.
Project Dissemination:
Oral Presentation:
Howard, Ronnie and May, Russell, (2012, March). Statistical Mechanics and Knot Mosaics. Kentucky section meeting of Mathematical Association of America, Bellarmine University, March.
Poster Presentation:
Howard, Ronnie and May, Russell (2012, April). Statistical Mechancics and Knot Mosaics. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.
Awards and/or Honors:
N/A
Post-Graduation Plans (Seniors only):
N/A

Julie Lang

Major:
Mathematics
Faculty Mentor:
Dora Ahmadi
Research/Project Title:
Analyzing a College Readiness Mathematics Program
Project Abstract/Summary:
This project analyzed results from a program aiming at preparing high school seniors for college level mathematics. The program used the Hawkes Learning System to increase the interest and active participation of high school students during a three year project that has shown its sustainability. A follow-up study of the 2008 cohort of high school students who attended Morehead State Univeristy was conducted. Results from the project support the idea of using technology to deliver remedial classes at the high school. Students who remained at MSU continue to make progress toward graduation with a lot of success.
Project Dissemination:
Oral Presentations:
Lang, Julie and Ahmadi, Dora (2012, March). Mathematics Readiness Program. Annual Meeting of the Kentucky Section of the Mathematical Association of America, Louisville, KY, March.
Lange, Julie and Ahmadi, Dora (2012, April). College Mathematics Program. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.
Awards and/or Honors:
Julie received the 2012 Outstanding Award for the Department of Mathematics, Computer Science, and Physics.
Post-Graduation Plans (Seniors only):
Julie was accepted to Ph.D. programs in mathematics at Clemson University, Western Michigan University, University of Memphis, Kansas State University and the University of Tennessee at Knoxville. Julie will continue her studies at Kansas State University with an assistantship, free tuition, and two additional scholarships.

James T. Little

Major:
Physics
Faculty Mentor:
Jennifer Birriel
Research/Project Title:
Measuring Night-Sky Brightness and Light Pollution Emission in Eastern Kentucky using Sky Quality Meters

Project Abstract/Summary:

Light pollution is a vervasive form of environmental pollution that plagues our modern world. Light pollution is quite simply the alteration of natrual light levels in the night sky due to man-made lighting sources. It reduces our view of the heavens, making many celestial objects difficult, or impossible to see. More importantly, light pollution has a well-documented negative impact on nearly every aspect of nocturnal wildlife: this includes disruption of feeding, mating, and migration patterns of bats, frogs, salanders, birds, etc. In addition, light pollution represents a colossal waste of energy. This project will use commercially available SKY QUALITY METERS to rapidly measure night sky brightness and emissions in the Daniel Boone National Forest and surrounding areas. The student will also use data collected nightly from a ethernet-enabled Sky Quality Meter on the roof of Lappin Hall to study how night sky brightness is affected by atmospheric conditions such as "seeing" and transparency. Documenting and monitoring light pollution is a first step towards combating the problem of light pollution.

Project Dissemination:

Poster Presentations:

James Little and Jennifer Birriel (2011, November). Reflectance Properties of Ground Surfaces and Implications for Night-time Light Pollution. Meeting of the Kentucky Academy of Science , November

James Little and Jennifer Birriel (2011, April). Reflectance Properties of Ground Surfaces and Implications for Night-time Light Pollution. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Oral Presentations:

James Little and Jennifer Birriel (2012, March). Long-term Monitoring of Night Sky Brightness in Morehead, KY. Kentucky Section of the Mathematical Society of America, March.

James Little and Jennifer Birriel (2012, April). Long-term Monitoring of Night Sky Brightness in Morehead, KY. Senior Capstone Presentation, Morehead State University, Morehead, KY, April.

Awards and/or Honors:

Poster presented at the KY Academy of Science Meeting placed second out of seven entries in the Physics and Astronomy Undergraduate Poster Competition.

Post-Graduation Plans (Seniors only):

A one year position at an engineering firm while fiance finishes her degree at Morehead State University and then a graduate program in Engineering with the goal of obtaining a M.S. in Engineering.

Jason M. McGinnis

Major:

Physics

Faculty Mentor:

Jennifer Birriel

Research/Project Title:

Astrophysical Data Reduction and Analysis using a Ubuntu Linux Netbook: A Supernova Case Study.

Project Abstract/Summary:

The student and faculty mentor will conduct spectroscopic analysis of a sample of elected optically-identified supernova remnants (SNRs) located in the nearby face-on spiral galaxy M101. Our sample of selected SNRs includes seven which are known to possess an X-ray counterpart as detected by the Chandra x-ray observatory and 13 which lack such a counterpart. A clear understanding of why certain SNRs possess X-ray counterparts and others do not remains lacking: one hypothesis suggests that SNRs located in regions of enhanced ISM density are more likely to possess X-ray counterparts. Our proposed long-slit, spectroscopic observations will allow us to measure such crucial line ratios in the spectra of these SNRs as well as complementary H II regions. Based on our measured values for these line ratios, we will test the hypothesis that ambient density plays a dominant role in determining the spectral bands (X-ray, optical and radio) at which an SNR produces a considerable amount of emission. The data for this project were obtained in June 2008 at Kitt Peak National Observatory. This project is a collaboration with Dr. Tom Pannuti, an Assistant Professor of Space Science at MSU.

Project Dissemination:

Poster Presentation:

McGinnis, Jason and Birriel, Jennifer (2012, April). Development of a LINUX-based Astrophysical Data Analysis System. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Awards and/or Honors:

N/A

Post-Graduation Plans (Seniors only):

N/A

M. Blake Nickell

Major:
Mathematics

Faculty Mentor:
R. Duane Skaggs, Doug Chatham, Robin Blankenship

Research/Project Title:
Approaching the n + k Queens Separation Problem through Composition of Solutions

Project Abstract/Summary:
The n+k Queens Problem asks for placing n+k Queens and k Pawns on an n x n chessboard so that no two Queens attack each other. It has been proven that the problem has a solution when n > max (87+k, 25K). In an attempt to obtain nice patterns and lower this bound on n, we have looked at composing solutions and partial solutions for smaller values of n to obtain solutions for larger values of n.

The process begins with an n Queens Solution. The solution is then copied and the copy is rotated 180 degrees. The two boards are then overlapped in one square (bottom right square for the original solution, top left square for the copy) and a pawn is placed in that square. The new, composed board is then checked for any two Queens in the same diagonal. If there are two Queens in the same diagonal, the way the board is built determines where the Queens must be moved such that no two Queens are in the same diagonal.

The goal is to prove that this method works to compose all board sizes n > + 9. Four of the six patterns that the proof requires have been found. The remaining two are being sought after.

Project Dissemination:
Mr. Nickell graduated in December and was not in town at the time of the Celebration of Student Scholarship.

Awards and/or Honors:
N/A

Post-Graduation Plans (Seniors only):
Blake Nickell graduated in December and is currently looking for a position. He is considering graduate school after some practical experience.

William Parker

Major:
Mathematics

Faculty Mentor:
Russell May

Research/Project Title:
Enumeration of Euler Circuits in Complete Graphs

Project Abstract/Summary:
Euler circuits form some of the oldest problems in graph theory, spanning several centuries of research. Even though their existence in various types of graphs is straightforward, enumerating them – even in well-understood graphs – has remained insidiously difficult. The intent of this project is to simplify or expand the theoretic and computational methods of enumerating Euler circuits in complete graphs, which are described in a 1998 paper by McKay and Robinson. Theoretic tools for exploration include topics in graph theory, complex analysis and linear algebra. Programming ability is also necessary for implementation of computational methods.

Results: The student read introductory material on graph theory.

Project Dissemination:
Poster Presentation:
Student got started on this project late in the spring and was not ready to present.

Awards and/or Honors:
N/A

Post-Graduation Plans (Seniors only):
N/A

Trenton Matthew Peterman

Major:
Engineering Physics

Faculty Mentor:
Kent Price

Research/Project Title:
Open-circuit Photovoltage Decay in CdTe Solar Cell Devices

Project Abstract/Summary:

The need for reliable, efficient, and inexpensive solar cells has become apparent as the energy crisis continues to escalate. One solution to these problems is the use of thin-film PV modules, which are playing an increasingly important role in alternative energy production, and are more cost-effective than the traditional silicon based solar cells. However, relatively little is understood about the electrical properties of these cells, and the performance of these devices can still be improved. One method of characterizing the electrical properties of solar cells is Open-Circuit Voltage Decay. This initiative focuses on the Open-Circuit Voltage Decay of Cadmium Telluride (CdTe) PV cells, which are currently leading the market in thin-film PV cell production.We studied the Open-Circuit Voltage Decay as a function of time across the CdTe solar cell, which is modeled by an exponential decay function with two time constants. We also observed the relationship between the voltage decay of the solar cell and the solar cell performance. As a result of this research, we have discovered a correlation between the internal resistance of the solar cell and the observed photovoltage decay of the cell. We also have discovered a relationship between the photovoltage decay and the thickness of the cell's semiconductor layers. Further analysis needs to be done to better understand these relationships and their implications.

Project Dissemination:

Oral Presentation:

Trenton Peterman and Kent Price (2012, April). Open-circuit Voltage Decay of CdTe Solar Cells. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Awards and/or Honors:

N/A

Post-Graduation Plans (Seniors only):

N/A

Biswas Sharma

Major:

Mathematics

Faculty Mentor:

R. Duane Skaggs, Doug Chatham, Robin Blankenship

Research/Project Title:

Approaching the n + k Queens Separation Problem through Composition of Solutions

Project Abstract/Summary:

The n + k Queens Problem asks for placing n + k Queens and k Pawns on an n x n chessboard so that no two Queens attack each other. It has been proven that the problem has a solution when n > max (87+k, 25k). In an attempt to obtain nice patterns and lower this bound on n, we have looked at composing solutions and partial solutions for smaller values of n to obtain solutions for larger values of n.

The process begins with an n Queens Solution. The solution is then copied and the copy is rotated 180 degrees. The two boards are then overlapped in one square (bottom right square for the original solution, top left square for the copy) and a pawn is placed in that square. The new, composed, board is then checked for any two Queens in the same diagonal. If there are two Queens in the same diagonal, the way the board is build determines where the Queens must be moved such that no two Queens are in the same diagonal.

The goal is to prove that this method works to compose all board sizes n > = 0. Four of the six patterns that the proof requires have been found. The remaining two are being sought after.

Project Dissemination:

Poster Presentation:

Holbrook II, William M., Blankenship, Robin, Chatham, Doug, and Skaggs, R. Duane (2012, April). Approaching the n+k Queens Separation Problem through Composition of Solutions. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Presentation:

Holbrook II, William, Blankenship, Robin, Chatham, Doug, and Skaggs, R. Duane (2012, March). Approaching the n+k Queens Separation Problem through Composition of Solutions. Kentucky Section of the Mathematical Association of America, Louisville, KY, March.

Awards and/or Honors:

N/A

Post-Graduation Plans (Seniors only):

N/A

Krystal Williams

Major:
Physics/Math

Faculty Mentor:
R. Duane Skaggs, Doug Chatham, and Robin Blankenship

Research/Project Title:
Approaching the n+k Queens Separation Problem through Composition of Solutions

Project Abstract/Summary:
The n+k Queens Problem asks for placing n+k Queens and k Pawns on an n x n chessboard so that no two Queens attack each other. It has been proven that the problem has a solution when n > max (87+k, 25K). In an attempt to obtain nice patterns and lower this bound on n, we have looked at composing solutions and partial solutions for smaller values of n to obtain solutions for larger values of n.

The process begins with an n Queens Solution. The solution is then copied and the copy is rotated 180 degrees. The two boards are then overlapped in one square (bottom right squarefor the original solution, top left square for the copy) and a pawn is places in the squire. The new, composed, board is then checked for any two Queens in the same diagonal. If there are two Queens in the same diagonal, the way the board is built determines where the Queens must be moved such that no two Queens are in the same digaonal.

The goal is to prove that this method works to compose all board sizes n>=9. Four of the six patterns that the proof requires have been found. The remaining two are being sought after.

Project Dissemination:
N/A

Awards and/or Honors:
N/A

Post-Graduation Plans (Seniors only):
N/A

DEPARTMENT OF PSYCHOLOGY

Aaron C. Ellis

Major:
Psychology

Faculty Mentor:
J.T. Blackledge

Research/Project Title:
Relationships Between Psychological Flexibility, Physical Health, and Psychological Distress

Project Abstract/Summary:
The Psychology, mental health and physical health are not only highly correlated, but may exert influences upon one another. The present research is focused on determining the nature of the relationship between psychological flexibility and physical health. Psychological flexibility is a construct of Acceptance and Commitment Therapy (ACT) that is often a positive indicator of mental health. Another objective of this research is to describe the relationship between measures of psychological distress and psychological flexibility. The data of 240 MSU students provided a validated framework on which research can be conducted to provide insight into the influences of psychological flexibility exerts on physical health and in the end hopefully contribute to health based interventions. Using five self report measures taken during a computerized test battery we measured distress, psychological flexibility, and 28 dimensions of physical health. We expected to find, and did find, that psychological flexibility was negatively related to measures of distress; this result replicated previous work in the lab. We also replicated general findings that distress is negatively related to positive health dimensions. The newly hypothesized relationship between psychological flexibility and physical health was found to exist. Our results indicate significant favorable relationships exist between the constructs in 24 of the total 28 health dimensions. These results provide a logical foothold for future research relating to health and acceptance and commitment therapy.

Project Dissemination:

Oral Presentations:

Ellis, Aaron C. and J.T. Blackledge (2011, November). Relationships Between Psychological Flexibility, Physical Health, and Psychological Distress. Kentucky Academy of Science 97th Annual Meeting, Murray State University, Murray, KY, November.

Ellis, Aaron C. and J.T. Blackledge (2012, April). Relationships Between Psychological Flexibility, Physical Health, and Psychological Distress. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Awards and/or Honors:
Outstanding Undergraduate Psychology Student Award
Post-Graduation Plans (Seniors only):
Student intends to pursue his Masters Degree in Clinical Psychology here at Morehead State University before going to a PhD program.

Jordan Chapman

Major:
Nursing
Faculty Mentor:
Ilsun White
Research/Project Title:
Effects of Morphine on Simple Learning
Project Abstract/Summary:
Jordan has been involved in the project that examined opiate-dopamine interaction in locomotor activity and in fixed-ratio responding in rats during acute and acute withdrawal. After co-administrations of morphine+saline, morphine+D1 antagonist, or morphine+D2 antagonist, rats were tested in the open field or on a fixed ration 5 (FR%). Acute morpine produced hyperlocomotion, which was blocked by D1 and D2 antagonists. Acute morphine failed to affect performance on FR5, but D1 antagonists selectively increased response latency, whereas D2 antagonist decreased the number of lever-presses (pellets earned) and increased the runtime. During withdrawal, morphine produced hypoactivity, which was blocked by D1 and D2 antagonists. However, during withdrawal, FR5 performance was not affected. Our data suggest that influence of morphine on locomotor activity pattern depends on activation of D1 and D2 receptors, but the way in which D1 and D2 receptors modulate FR5 responding may differ.
Project Dissemination:
Chapman J., White IM. Morphine Withdrawal Disrupts Motivation: Opiate-Dopamine Interaction. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.
Chapman J, White CN, White W., White IM. D1 and D2 Receptors Differentially Modulate Effects of Morphine on Behavior in Rats. Poster Presentation, KY Society for Neuroscience, University of Louisville, April.
Awards and/or Honors:
N/A
Post-Graduation Plans (Seniors only):
N/A

Justin Hargett

Major:
Psychology
Faculty Mentor:
David Butz
Research/Project Title:
Memories for Interracial Interactions: Implications for Emotion and Behavior
Project Abstract/Summary:
In the current study we examined the role of memories in same-race and interracial interactions. Ninety five participants were randomly assigned to recall memories for same-race or interracial interactions and were then led to anticipate a same-race or interracial interaction in the laboratory. Prior to the anticipated interaction, participants reported their emotions, expectations, and intentions regarding the upcoming interaction. Analysis of the pleasantness of memories revealed no differences between memories for same-race and interracial interactions. However, when recalling memories for interracial interactions, participants exhibited more positive responses (i.e., less avoidance, more positive expectations) when anticipating a Black compared to White partner. In contrast, when recalling same-race memories, responses to the interaction did not vary as a function of the partner's race. These findings are consistent with the idea that prompting participants to recall memories for Interracial Interactions led to greater accessibility of positive memories for interracial interactions. In turn, such responses may have led participants to be more at ease with interracial interactions. Together, the findings from the current study have implications for understanding the role of cognitive factors in responses to interracial interactions.
Project Dissemination:
Poster Presentations:
Hargett, J.M., and Butz, D.A., (2012, March). Memory Recollection and Anticipated Interactions. The Annual Meeting of the Kentucky Psychological Association, Lexington, KY, March.

Poster Presentations:

House, S.D., Schoo, K.L., Qu, J., Ward, T., and Kidwell, S.L., (2012, April). Emotion-regulation Skills Among Children with Low-and High-risk Attachment Patterns. Celebration of Student Scholarship, Morehead State University, Morehead, KY.

Slone, A., Finch, A., Qu, J., House, S.D., Burress, J.W., and Kidwell, S.L., (2012, April). Parent and Children's Emotions as Predictors of Children's Adjustment. Celebration of Student Scholarship, Morehead State University, Morehed, KY, April.

Awards and/or Honors:

Shelby was voted Junior Psychology Student of the year in recognition of her academic and research accomplishments.

Post-Graduation Plans (Seniors only):

N/A

Chassidy Ison

Major:

Psychology

Faculty Mentor:

David Butz

Research/Project Title:

Racial Discussion and Selective Attention to Minority Group Members

Project Abstract/Summary:

The present work examined whether individuals who speak about racial diversity show signs of selective attention to faces of other races. Seventy-six White/Caucasian participants were randomly assigned to either deliver a scripted speech on the topic of increased technology in the classroom or increased diversity in the classroom. Participants then performed a dot probe detection task modified to assess the extent to which their attention is drawn toward Black over White faces. Following completion of the dot probe detection task, participants performed their speech on camera and completed an internet questionnaire to assess prejudical attitudes and participants' degree of internal and external motivation to respond without prejudice. Finally, independent raters viewed each videotaped speech and coded the speeches for behavioral indicators of anxiety. Inconsistent with predictions, results indicated that the topic of the speech did not influence the degree of attentional bias toward Black over White faces, anxiety exhibited in the speech, the quality of the speech, or speaking time. However, consistent with prior findings indicating that individuals who are higher in external motivation to respond without prejudice exhibit more anxiety in interracial contexts than their less externally motivated counterparts, highly externally motivated individuals exhibited more avoidant behaviors when speaking about diversity in the classroom, but not technology in the classroom. These findings have implications for understanding the factors that contribute to avoidant behavioral responses when speaking about sensitive topics such as diversity.

Project Dissemination:

Poster Presentations:

Ison, C.N., Klik, K.A., and Butz, D.A., (2011, April). Where is Your Mind? Selective Attention during Diversity-related Discussions. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Awards and/or Honors:

Psychology Department Combined Academic and Research Excellence Award, 2011.

Post-Graduation Plans (Seniors only):

Student will be entering the Master's program in Clinical Psychology at Morehead State University in Fall 2012.

Gianni Maione

Major:

Psychology

Faculty Mentor:

Ilsun White

Research/Project Title:

Alcohol Effects on Learning in Rats

Poster Presentations:

House, S.D., Schoo, K.L., Qu, J., Ward, T., and Kidwell, S.L., (2012, April). Emotion-regulation Skills Among Children with Low-and High-risk Attachment Patterns. Celebration of Student Scholarship, Morehead State University, Morehead, KY.

Slone, A., Finch, A., Qu, J., House, S.D., Burress, J.W., and Kidwell, S.L., (2012, April). Parent and Children's Emotions as Predictors of Children's Adjustment. Celebration of Student Scholarship, Morehead State University, Morehed, KY, April.

Awards and/or Honors:

Shelby was voted Junior Psychology Student of the year in recognition of her academic and research accomplishments.

Post-Graduation Plans (Seniors only):

N/A

Chassidy Ison

Major:

Psychology

Faculty Mentor:

David Butz

Research/Project Title:

Racial Discussion and Selective Attention to Minority Group Members

Project Abstract/Summary:

The present work examined whether individuals who speak about racial diversity show signs of selective attention to faces of other races. Seventy-six White/Caucasian participants were randomly assigned to either deliver a scripted speech on the topic of increased technology in the classroom or increased diversity in the classroom. Participants then performed a dot probe detection task modified to assess the extent to which their attention is drawn toward Black over White faces. Following completion of the dot probe detection task, participants performed their speech on camera and completed an internet questionnaire to assess prejudical attitudes and participants' degree of internal and external motivation to respond without prejudice. Finally, independent raters viewed each videotaped speech and coded the speeches for behavioral indicators of anxiety. Inconsistent with predictions, results indicated that the topic of the speech did not influence the degree of attentional bias toward Black over White faces, anxiety exhibited in the speech, the quality of the speech, or speaking time. However, consistent with prior findings indicating that individuals who are higher in external motivation to respond without prejudice exhibit more anxiety in interracial contexts than their less externally motivated counterparts, highly externally motivated individuals exhibited more avoidant behaviors when speaking about diversity in the classroom, but not technology in the classroom. These findings have implications for understanding the factors that contribute to avoidant behavioral responses when speaking about sensitive topics such as diversity.

Project Dissemination:

Poster Presentations:

Ison, C.N., Klik, K.A., and Butz, D.A., (2011, April). Where is Your Mind? Selective Attention during Diversity-related Discussions. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Awards and/or Honors:

Psychology Department Combined Academic and Research Excellence Award, 2011.

Post-Graduation Plans (Seniors only):

Student will be entering the Master's program in Clinical Psychology at Morehead State University in Fall 2012.

Gianni Maione

Major:

Psychology

Faculty Mentor:

Ilsun White

Research/Project Title:

Alcohol Effects on Learning in Rats

Project Abstract/Summary:

Alcohol influences a range of behaviors, via modulation of NMDA and GABA receptors in the brain. Previously, we reported that subchronic exposure to alcohol during adolescence produces enduring learning deficits on complete learning in adulthood. This project examined the acute effects of alcohol on simple learning in adult rats, using a fixed ratio 5 (FR5), which required five lever-presses for each food pellet. Alcohol dose-dependently increased response latency as well as the average time to complete five lever-presses in each trial, without affecting the number of lever-presses or food consumption. Given that complex learning tasks depend on functioning of the prefrontal cortex, deficits in simple learning produced by alcohol may reflect a decrease in motivation.

Project Dissemination:

Poster Presentaiton:

Maione, G.P. and White, I.M., (2012, April). Acute Alcohol Effects on Simple Learning. Kentucky Chapter Society for Neuroscience, University of Louisville, Louisville, KY, April.

Maione, G.P. and White, I.M., (2012, April). Acute Alcohol Effects on Simple Learning in Rats. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Oral Presentation:

Maione, G.P., Patrick, T. and White, I.M., (2011, November). Subchronic Exposure to Alcohol during Adolescence Distrupts Learning in Adulthood: Involvement of NMDA Receptors. The 97th Annual Kentucky Academy of Science Meeting, Murray, KY. 2nd Place Psychology Undergraduate Research Competition.

Awards and/or Honors:

Accepted to the NSF-funded Summer Internship, School of Medicine, University of Louisville, Summer 2012.

Third Place, Undergraduate Research Competition, Kentucky Society for Neuroscience, University of Louisville, April, 2012.

Second Place, paper presentation, Psychology Undergraduate Research Competition. Kentucky Academy of Science, November, 2011.

Post-Graduation Plans (Seniors only):

Gianni's professional goal is to become a psychiatrist. Gianni will be applying to Medical Schools in the fall of 2012.

Shawna K. McPherson

Major:

Psychology

Faculty Mentor:

Sean Reilley

Research/Project Title:

Impact of Malingering on the Conners Scales for AD/HD-3

Project Abstract/Summary:

For her fellowship project, Ms. McPherson was responsible for all aspects of the laboratory-based research study. Specifically, her involvement included project development, pilot work, data collection, data entry, data analysis, and presentation of results at two professional conferences. The project advanced clinical assessment by demonstrating malingering could impact the validity of the scores for the Conners Scales for AD/HD-3. The Conners Scales are well standardized and a well-used clinical measure used to evaluate parent and teacher reported attention problems common to AD/HD. Ms. McPherson's project was the first study to examine the impact of malingered AD/HD on this measure using a laboratory malingering protocol. Its preliminary findings are consistent with other work in this area that shows self or collateral reports of AD/HD are suceptible to malingering. An advantage of the Conners-3 is that it includes validity scales to assess for response distortion. Future analysis of Ms. McPherson's data will show the impact of considering these validity scales on identifying malingering vs. true responders in our dataset, our novel protocol. Thus, the proposed research experience continues to have potential to be an important scientific addition to the field. Appropriate with her level of training, Ms. McPherson learned how to design and implement an experimentally based study and to administer common psychological measures under the supervision of Dr. Reilley, a Licensed Psychologist in the State of Kentucky. These components enhanced Ms. McPherson's familiarity with basic research skills and some of those common to clinical work. In addition, Ms. McPherson learned the clinical process by which raw test scores are converted to standardized indicants and how corrections for age and gender are made to this instrument. Ms. McPherson learned computerized data entry and analysis skills involving SPSS, a major research data entry and analysis program used in graduate school. Finally, as the advanced undergraduate in the Cognitive Psychopathology Lab, Ms. McPherson coordinated data collection, data entry, and research presentation with another undergraduate collaborator which allowed her to build management and leadership skills.

Project Dissemination:

Poster Presentations:

McPherson, S.K., Messer, J.L. and Reilley, S.P., (2012, March). The Impact of Malingering on the Conners-3 Attention Deficit/Hyperactivity Disorder Scales. Annual meeting of the Kentucky Psychological Association, Lexington, KY, March.

McPherson, S.K., Messer, J.L. and Reilley, S.P., (2012, April). The Impact of Malingering on the Conners-3 Attention Deficit/Hyperactivity Disoreder Scales. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Reilley, S.P. and McPherson, S.K., (2011, November). Brief Instruments to Assess Knowledge of Attention Deficit/Hyperactivity Disorder. Annual Meeting of the Kentucky Academy of Science, Murray, KY, November.

Awards and/or Honors:

N/A

Post-Graduation Plans (Seniors only):

Ms. McPherson's research experiences will enhance her ability to carry out a senior research thesis and her competitiveness for graduate study in clinical/counseling psychology. She plans to apply for graduate study for 2012-13.

Josh Stephens

Major:

Psychology

Faculty Mentor:

Ilsun White

Research/Project Title:

Alcohol Effects on Emotion Recognition

Project Abstract/Summary:

This project examined the effects of alcohol on the ability of college students to discriminate different emotions. The accuracy of discrimination was measured by the DANVA2 task, which consisted of 4 subsets of faces and voices with different emotions. A breathalyzer measured blood alcohol concentration (BAC). During the acute state, students made more errors in discriminating emotions of adults than those of children. Alcohol subjects made more errors in happy and sad expressions than in angry or fearful expressions. Our data suggest that under the influence of alcohol, the ability to recognize emotion accurately depends on the type of emotional expression, thereby influencing behavior in social situations.

Project Dissemination:

Stephens J. and White, I.M., (April, 2012). Acute Alcohol Impairs Discrimination of Specific Types of Emotions in College Students. Kentucky Chapter Society for Neuroscience, University of Louisville, Louisville, KY.

Poster Presentation:

Stephens, J., Schoenhagen, S., and White, I.M., (2011, November). Dissociable Alcohol Effects on Emotion Recognition in College Students. The 97th Annual Kentucky Academy of Science Meeting, Murray, KY, April.

Awards and/or Honors:

Third Place Psychology Undergraduate Poster Competition. The 97th Annual Kentucky Academy of Science Meting, Murray, KY.

Outstanding Psychology Research Award, November, 2011.

Post-Graduation Plans (Seniors only):

Student has been accepted to the Experimental Master's Program at Morehead State University.

Student's professional goal is to become a substance abuse counselor. He plans to continue research, focusing on alcohol and drug effects on behavior.

Nolan Williams

Major:

Psychology

Faculty Mentor:

Sean Reilley

Research/Project Title:

Impact of Malingered AD/HD on Standardized Reports of Executive Dysfunction

Project Abstract/Summary:

For his honors research fellowship project, Mr. Williams was responsible to assist with collection of data, data entry, data analysis, and presentation of results at a professional conference as part of a larger laboratory-based study. Ms. Williams' project provided new work in this area of clinical assessment by evaluating the impact of malingering when current AD/HD symptoms are evaluated by standardized measures of executive dysfunction, including the

Behavior Rating Inventory of Executive Functioning – Adult (BRIEF-A). Using a mixed experimental approach, involving a malingering protocol, research participants were pre-tested/including completing the BRIEF-A, and then were randomly assigned to malinger AD/HD or respond honestly on a BRIEF-A after having received information about AD/HD or no information. The data from this malingering protocol showed that individuals malingering AD/HD yielded significantly lower BRIEF-A scores relative to established norms from AD/HD clients. As such, this research, better informs of understanding of the BRIEF-A and our confidence in the use of the measure in AD/HD assessment. Mr. Williams presented his findings at two research conferences, and appropriate with his level of training, he participated in an experimentally based study and learned how to score a commonly used psychological measures under the supervision of Dr. Reilley, a Licensed Psychologist in the State of Kentucky. These experiences enhanced Mr. Williams' familiarity with basic research skills and some of those common to clinical work. In addition, Ms. Williams learned computerized data entry and analysis skills involving SPSS, a major research data entry and analysis program used in graduate school as well as presentation skills.

Project Dissemination:

Poster Presentations:

Williams, N., Williams, A., and Reilley, S.P., (2012, March). Use of a BRIEF-A to Determine Honest and Feigned Attention Deficit/Hyperactivity Disorder. Annual Meeting of the Kentucky Psychological Association, Lexington, KY, March.

Williams, N., Williams, A., and Reilley, S.P., (2012, April). Use of a BRIEF-A to Determine Honest and Feigned Attention Deficit/Hyperactivity Disorder. Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Reilley, S.P., Williams A., and Williams, N., (2012, May). Use of the BRIEF-A to Determine Honest and Feigned AD/HD. Annual Meeting of the Association of Psychological Science, Chicago, IL, May.

Awards and/or Honors:

Outstanding Sophomore Award in the Department of Psychology

Post-Graduation Plans (Seniors only):

N/A