

# ANNUAL REPORT OF UNDERGRADUATE RESEARCH FELLOWS

August, 2010 to May, 2011

## COLLEGE OF BUSINESS

### *SCHOOL OF BUSINESS ADMINISTRATION*

### *DEPARTMENT OF ACCOUNTING, ECONOMICS, AND FINANCE*

#### **MICHAEL FITZNER**

**Major:**

Accounting

**Faculty Mentor:**

Ali Ahmadi

**Research/Project Title:**

The Role of Educational Expenditures on the Level of Employment in Kentucky

**Project Abstract/Summary:**

No Report Submitted

**Project Dissemination:**

N/A

**Awards and/or Honors:**

N/A

**Post-Graduation Plans (Seniors only):**

N/A

#### **JENNIFER WELLS**

**Major:**

Accounting

**Faculty Mentor:**

Janet Ratliff

**Research/Project Title:**

The Impact of Student-led Philanthropy Courses on Student Learning Outcomes

**Project Abstract/Summary:**

The purpose of this research study was to explore the impact of student-led philanthropy courses on learning outcomes related to students' sense of civic engagement and philanthropic giving. Additionally, it looked at future trends in service and volunteerism, philanthropic giving, alumni participation, and community involvement as a result of participation in the Pay It Forward: Student-led Philanthropy Initiative.

The study employed quantitative research methods, specifically survey design (prepared in collaboration with the Sillerman Center for the Advancement of Philanthropy at Brandeis University and the National Campus Compact Office. Descriptive statistics, inferential statistics, and t-tests were the analyses used. This project is funded through a Learn and Serve Grant via Kentucky Campus Compact with additional funding provided by Morehead State University's Center for Regional Engagement.

Paired sample t-test for the pre and post test questions found five items in the two sets of class data that were statistically significant indicating attitudes toward philanthropic activities had changed over the course of the semester. Students indicated a greater likelihood toward volunteering after graduation ( $t=4.4.540$ ,  $df=45$ ,  $p=.000$ ), giving money to local nonprofits after graduation ( $t=2.607$ ,  $df=46$ ,  $p=.012$ ), talking with family about giving ( $t=3.458$ ,  $df=46$ ,  $p=.001$ ), planning to volunteer in philanthropic activities throughout life ( $t= -6.063$ ,  $df=46$ ,  $p=.000$ ), and believe they could make a difference in their community ( $t= -4.967$ ,  $df=46$ ,  $p=.000$ ). Across all of these surveyed items, the mean score increased on the post-test when compared to the pre-test, indicating students' attitudes toward these activities improved after the service project.

**Project Dissemination:****Poster Presentations:**

Ratliff, J., and Wells, J. (2011, April), The Impact of Student-led Philanthropy Courses on Student Learning Outcomes, Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Ratliff, J., and Wells, J. (2011, February), The Impact of Student-led Philanthropy Courses on Student Learning Outcomes, Posters-at-the-Capitol, Frankfort, KY, February.

**Awards and/or Honors:**

The House of Representatives of the Commonwealth of Kentucky Citation for having been selected to participate in Posters-at-the-Capitol 2011.

**Post-Graduation Plans (Seniors only):**

N/A

**DEPARTMENT OF MANAGEMENT AND MARKETING****AMY APPLEMAN****Major:**

Marketing

**Faculty Mentor:**

Ahmad Hassan

**Research/Project Titles:**

The Effects of Online Social Network Systems on Expatriate Adjustment

**Project Abstract/Summary:**

This study seeks to investigate the effects of online social network systems on expatriate adjustment. Specifically, this study will utilize existing social capital theories to explore the effects of OSNS on general and interaction expatriate adjustment. Our argument is that online social network systems act as facilitators for helping expatriates to gain the social capital needed to achieve cross-cultural adjustment. The social capital perspective, with its focus on relational and structural embeddedness, allows us to explicitly model how online social network systems influence expatriate adjustment. OSNS can allow people to maintain and develop their social capital regardless of location. Expatriates can use OSNS to utilize social capital to cope with adjustment.

**Project Dissemination:****Oral Presentation:**

Appleman, A., and Dr. Ahmad Hassan (2011, April), The Effects of Online Social Network Systems on Expatriate Adjustment, Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

**Awards and/or Honors:**

N/A

**Post-Graduation Plans (Seniors only):**

N/A

**SARA BRADLEY****Major:**

Management

**Faculty Mentor:**

Lindsey Godwin

**Research/Project Title:**

Do Good Apples Grow from Good Seeds? Exploring How Social Entrepreneurs Influence the Moral Imagination of their Ventures

**Project Abstract/Summary:**

Social entrepreneurs create ventures that provide mutually beneficial outcomes for both business and wider society by translating their moral imagination into action. Prior research, however, has mainly focused on the personal characteristics of social entrepreneurs; thus we know little regarding their influence on the strategic development of their ventures, or how they translate their values into an ethical approach in the business world. The current study sought to further the discussion on the strategies social entrepreneurs employ to achieve their mutually beneficial goals. We analyzed 155 organizations selected by the Schwab Foundation for their 2010 list of Social Entrepreneurs. Using inductive thematic coding, we categorized each of these ventures based on the moral motivation of their founder, the organizational mission, and organizational strategy. Our primary findings include eight creative imaginative strategies that define each social entrepreneur's approach.

**Project Dissemination:****Oral Presentations:**

Bradley, Sara E. and Godwin, Lindsey N., (2011, April), How Do Good Apples Grow from Good Seeds? Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Godwin, Lindsey, Stevens, Christopher and Bradley, Sara (2010), Do Good Apples Grow from Good Seeds? Exploring How Social Entrepreneurs Influence the Moral Imagination of their Ventures, 17<sup>th</sup> Annual International Vincentian Business Ethics Conference, Chicago, IL.

**Poster Presentation:**

Bradley, Sara E. and Godwin, Lindsey N., (2011, April), How Do Good Apples Grow from Good Seeds? Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

**Awards and/or Honors:**

N/A

**Post-Graduation Plans (Seniors only):**

N/A

**BRIAN MARTIN****Major:**

Business

**Faculty Mentor:**

Donna Kizzier

**Research/Project Title:**

- 1.) Case Studies in Business
- 2.) Decision Models for Global Meetings using Collaborative Technology

**Project Abstract/Summary:**

Case Studies in Business is a 2nd edition of a popular book published by Delta Pi Epsilon, a highly respected national business honorary. Dr. Kizzier's 1st edition became one of their most popular books and a spin-off in computer ethics, modeled after Dr. Kizzier's book was published last year (Kizzier's blind reviewed cases ended up being about 50% of the cases accepted in the book by Dr. Peter Meggison's blind-review editorial board; he used Dr. Kizzier's cases as a model for other authors to emulate). This book incorporates an extensive introduction by Kizzier giving research-based tips for using the case approach effectively in business classrooms from middle school to graduate classrooms and addresses all areas of business, with extensive instructional guides following each original business case. The approach encourages critical thinking, simulating decisions students will make in the real world. The UG Fellow will work with case authors and help manage the editorial board, which will blind review the submitted cases for the 2nd edition. The second project is more long-term. Over 1,000 data sets are collected and about 800 sets are analyzed and written up for dissemination in journals, proceedings, and in an international blog (facilitate.com/blog), in which Kizzier is a featured researcher. The student will learn to use SPSS to incorporate the new datasets and work with Kizzier to interpret the data, using the previous publications in this research stream as a model. Dozens of published works have been generated in this long-term empirical study. Over time, mixed methods will be analyzed and written up, as will mixed methods, using extensive data modeling strategies; if the fellow is interested, he may enjoy using new qualitative methods of inquiry.

**Summary of Results and Accomplishments:**

We are working together on project one (Case Studies in Business, 2<sup>nd</sup> edition). We are working with a national editorial board to edit the 2<sup>nd</sup> edition of the casebook in preparation for publication this summer. The national editorial board has been set up and committed to review cases and solutions and administrative documents have been designed to manage the project. The UG fellow is assisting in the design and administration of this editorial review process. In addition, the UG fellow is conducting an independent edit of all new and revised business cases from student perspective. We are using a Blackboard site to coordinate our work. Before the end of the Spring semester, all cases will be sent out for review, all cases will be edited for publication and the literature review will be updated to enable Dr. Kizzier to update the initial book chapters.

**Project Dissemination:**

No dissemination to report at this time. Book is accepted for publication. We hope to continue this work through the next academic year, when we will focus primarily on the second goal of the project.

**Awards and/or Honors:**

Non-Traditional GPA Scholarship (MSU)

**Post-Graduation Plans (Seniors only):**

N/A

## **STEPHANIE TEATER**

### **Major:**

Sport Management

### **Faculty Mentor:**

Steve Chen

### **Research/Project Title:**

Student Athletes' Perceptions and Concerns Regarding the Use of Social Networking Sites

### **Project Abstract/Summary:**

Recently, numerous controversies and discussions have centered on the inappropriate use of the social network media (SNM) by collegiate student athletes. Many cases highlighted how athletes received suspension or lost scholarships due to posting inappropriate contents on their personal web-pages. To identify more effective strategies for regulating the use of SNM, this study examined 146 student athletes' perception and concerns toward the issue. The respondents' perceptions were categorized into five factors: (1) regulations and policies for control; (2) use-pattern and behavior; (3) discussion on athletic-related information; (4) concerns toward posted contents; and (5) benefits and confidentiality. Overall, the respondents gave positive feedback regarding the function of SNM, but did not support the concept of monitoring the contents by the athletic staff.

### **Project Dissemination:**

#### **Poster Presentations:**

S. Teater and Dr. S. Chen (2011) Poster will be presented in the 2011 KAHPERD Annual Convention, Lexington, KY, November.

S. Teater, E. Worrell, A. Miller and Dr. S. Chen (2011, April), Student Athletes' Perceptions and Concerns Regarding the use of Social Network Media, Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

#### **Awards and/or Honors:**

N/A

#### **Post-Graduation Plans (Seniors only):**

Ms. Teater has applied for several law school programs. She is currently finishing her internship duties at the University of Cincinnati.

## **DOUGLAS VOLK**

### **Major:**

Business Administration

### **Faculty Mentor:**

Ali Ahmadi

### **Research/Project Title:**

Determinates of Heart Disease in Kentucky Counties

### **Project Abstract/Summary:**

The purpose of this study was to investigate some of the factors contributing to the prevalence of heart disease in the Commonwealth of Kentucky. The data for this study was acquired from [www.kentuckyhealthfacts.org](http://www.kentuckyhealthfacts.org) and also from [www.socialeplorer.com](http://www.socialeplorer.com). Using data for 55 Kentucky counties, this study utilized a multiple regression model in which prevalence of heart disease in these counties was modeled as a function of living in poverty, lack of health insurance, prevalence of obesity and prevalence of smoking in these counties. The results of the study indicated obesity, lack of medical insurance and living in poverty in these counties were significantly correlated with the prevalence of heart disease but, paradoxically, the study showed smoking in these counties did not significantly contribute to prevalence of heart disease.

### **Project Dissemination:**

#### **Oral Presentations:**

Volk, Douglas J., (2011, April) Determinates of Heart Disease in Kentucky Counties, Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Volk, Douglas J., (2011, April) Determinates of Heart Disease in Kentucky Counties, National Social Science Association, Las Vegas, NV, April.

#### **Awards and/or Honors:**

N/A

#### **Post-Graduation Plans (Seniors Only):**

Continue searching for a job. Study for the GMAT and improve GMAT score.

## **EVAN WORRELL**

### **Major:**

Sport Management

### **Faculty Mentor:**

Steve Chen

### **Research/Project Title:**

Collegiate Sports Fans' Perceptions and Expectations toward the Personal Seat License Program

### **Project Abstract/Summary:**

Many universities across the country have adopted a personal seat license as a means to increase revenues of their athletic departments. This study disclosed the responses of 239 collegiate basketball spectators' perceptions toward the implementation of personal seat license (PSL) programs. In addition, the benefits and concerns for implementing the programs were discussed. Results suggested that respondents' willingness to purchase a PSL package was best predicted by providing tangible and intangible benefits (i.e., ticket discount, food services, and social affiliation) and team identification. Overall, the respondents did not favor the idea of implementing PSL programs in a mid-size regional institution.

### **Project Dissemination:**

### **Poster Presentations:**

E. Worrell, A. Miller, and Dr. S. Chen, (2011), Student-athletes' Perceptions and Concerns Regarding the use of Social Network Media, Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

E. Worrell, A. Miller, and Dr. S. Chen, Student-athletes' Perceptions and Concerns Regarding the use of Social Network Media, Sports Marketing Association Annual Conference.

### **Awards and/or Honors:**

Dean's List Fall of 2010 and anticipated Dean's List Spring 2011.

### **Post-Graduation Plans (Seniors Only):**

Mr. Worrell will look for a career in sports marketing, with a company such as IMG. He will investigate the different graduate programs, possibly in either Sport Management or Business. Mr. Worrell hopes to get a good entry level job with a sports organization, and get settled and work his way to whatever doors open.

## ***SCHOOL OF PUBLIC AFFAIRS***

### ***DEPARTMENT OF GOVERNMENT AND REGIONAL ANALYSIS***

## **BLAKE BEDINGFIELD**

### **Major:**

Government/IRAPP

### **Faculty Mentor:**

Stephen Lange

### **Research/Project Title:**

Education in the American Republic According to the Founding Fathers and Progressive Reformers

### **Project Abstract/Summary:**

As American performance on standardized international educational assessments continues to decline, it is important to consider anew the aims of public education. This paper provides an overview of the American Founders' understandings of the purposes of public education – character formation, the dissemination of essential knowledge for effective civic and political participation, and the cultivation of statesmen who would “refine and enlarge the public view” – and, in this context, the Progressives' reforms to public education, in particular, their emphasis on curricula designed to support the individual's pursuit of “personal autonomy.” The relationship between the Progressives' new educational outlook and their vision for a centralized administrative state designed to achieve “new goals of politics” is also explored. The project concludes that there may be a tension between educational attainment and civic virtue on the one hand, and individualistic curricula designed to encourage students' unfettered unfolding on the other.

### **Project Dissemination:**

### **Oral Presentations:**

Blake Bedingfield and Jonathan Pidluzny, (2011, March), Education in the American Republic According to the Founding Fathers and Progressive Reformers, Kentucky Political Science Association Annual Meeting, Bowling Green, KY, March.

Blake Bedingfield and Jonathan Pidluzny, (2011, April), Education in the American Republic According to the Founding Fathers and Progressive Reformers, Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

**Awards and/or Honors:**

Outstanding Program of Distinction Student, College of Business and Public Affairs Awards Banquet, May.

**Post-Graduation Plans (Seniors Only):**

Mr. Bedingfield plans to pursue a Masters of Public Administration degree at Morehead State University next year. At the conclusion of his MPA, Mr. Bedingfield intends to pursue further graduate study, or to pursue a career in Healthcare Administration.

**KACI FOSTER**

**Major:**

Government

**Faculty Mentor:**

Michael 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 includes theoretical as well as empirical 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:**

**Poster Presentation:**

Kaci Foster and Dr. Michael W. Hail, (2011, April), The Impacts of Executive Policy Implementation on Intergovernmental Relations, Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

**Awards and/or Honors:**

The field research in Washington, D.C., 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.

**Post-Graduation Plans (Seniors Only):**

N/A

**JAMES GALBREATH**

**Major:**

Government

**Faculty Mentor:**

Jonathan Pidluzny

**Research/Project Title:**

Insuring America: The Impact of President Obama's Affordable Care Act on the States

**Project Abstract/Summary:**

President Obama's 2010 Patient Protection and Affordable Care Act (PPACA) promises to reshape America's healthcare system. The law will make it possible for millions of currently uninsured Americans to afford coverage by providing subsidies for the purchase of private insurance, and by mandating the expansion of state-run Medicaid and CHIP programs. An estimated \$358 billion will be paid out in subsidies by 2019, and an estimated \$434 billion will be provided to the states to expand Medicaid and CHIP. This study investigated the costs and benefits of the Affordable Care Act on the state-by-state basis, with a focus on the southern states, primarily Kentucky. In addition to determining the number of newly eligible Medicaid recipients in each state, Medicaid costs for every state were projected for 2014 and 2020 given the expansion mandated by the PPACA and controlling for Medicaid inflation. It also determined the proportion of the total state Medicaid budgets that will be paid for by the federal government. The project determined that states in the South, especially Kentucky, stand to benefit disproportionately – both in terms of the number of newly eligible recipients and the federal funds that will be made available to pay for the program expansion.

**Project Dissemination:****Poster Presentations:**

James Galbreath and Jonathan Pidluzny, (2011, April), Insuring America: The Impact of President Obama's Affordable Care Act on the States, Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

James Galbreath and Jonathan Pidluzny, (2011, May) Insuring America: The Impact of Preident Obama's Affordable Care Act on the States, School of Public Affairs Poster Session, Morehead State University, Morehead, KY, May.

**Awards and/or Honors:**

N/A

**Post-Graduation Plans (Seniors Only):**

N/A

**ALLISON MILLER****Major:**

Government

**Faculty Mentor:**

William Green

**Research/Project Title:**

State-based Climate Change Policy Initiatives: Common, Statutory, and Constitutional Issues

**Project Abstract/Summary:**

The United States is a leading emitter of greenhouse gasses, but it has not been the policy leader in designing statutory and regulatory solutions to global warming. This policy vacuum has been filled by the states. The research examines state legal initiatives which address climate change, the legal impediments which they have faced in suing automobile manufacturers in court, enacting greenhouse gas statutes, and challenging federal agency decisions, and the extent to which these policy initiatives can provide the legal foundation to address the consequences of climate change.

**Project Dissemination:****Oral Presentation:**

Allison Miller and Dr. William C. Green (2011, April), State-based Climate Change Policy Initiatives: Common, Statutory, and Constitutional Issues, Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

**Awards and/or Honors:**

Ms. Miller participated in the 2010 Summer Canadian Parliamentary Internship Program and came to know Canadian politics from the inside. See her intern picture on the Kentucky Canadian Studies Association web site:

<http://www2.moreheadstate.edu/kcsa/index.aspx?id=60603>. In the Summer 2010, she also interned in the Greenup County Commonwealth Attorney's office. She is the Vice-President of Societas Pro Legibus, MSU's pre-law society.

**Post-Graduation Plans (Seniors Only):**

In the Fall 2011, Ms. Miller will attend the University of Kentucky College of Law where she has received a \$2,000 UK College of Law Scholarship and a \$10,000 LEAP (Leveraging Educational Assistance Partnership) Scholarship.

**LAUREN VANHOOK****Major:**

Government

**Faculty Mentor:**

James Masterson

**Research/Project Title:**

China in the Balance: Can Economic Interdependence Bring Stability to South Asia

**Project Abstract/Summary:**

Throughout the Cold War, China has balanced against its rival India by allying with India's principal adversary, Pakistan. As relations between India and Pakistan remain tumultuous, China finds itself in a dilemma. Burgeoning Chinese and Indian economies have resulted in higher levels of economic interdependence (EI) between the two formal rivals while Pakistan's government and economy have continued to falter. This paper provides a comparative analysis of how economic interdependence has affected Sino-Indian and Sino-Pakistani political relations over the past several decades. The paper then addresses the implications of Sino-Indian cooperation based on EI for the future of Indo-Pakistani relations.

**Project Dissemination:****Oral Presentations:**

Vanhook, Lauren E. and Dr. James Masterson (2011), China in the Balance: Can Economic Interdependence Bring Stability to South Asia, The Kentucky Political Science Association, Bowling Green, KY, February.

Vanhook, Lauren E. and Dr. James Masterson, (2011), China in the Balance: Can Economic Interdependence Bring Stability to South Asia, Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

**Awards and/or Honors:**

Awarded \$500 from the Library Student Research Contest.

**Post-Graduation Plans (Seniors Only):**

N/A

**EVETT WILKS****Major:**

Government

**Faculty Mentor:**

Jonathan Pidluzny

**Research/Project Title:**

A Patchwork of Restrictions: Does Stricter State Regulation of Abortion Make a Difference?

**Project Abstract/Summary:**

Although The Supreme Court of the United States has ruled that states cannot prohibit abortion, states do retain the right to place a considerable array of restrictions on the practice. This has led to immense variation in the restrictions governing abortions among the states. This study catalogued the laws restricting abortion in every state and categorized states according to the restrictiveness of their regulatory regimes. State abortion rates, which vary from 0.7 – 50.0 abortions per thousand women (15-44 years of age) per year, were then interpreted in light of the states' abortion restrictions. The study determined that the correlation between a state's abortion rate and the permissiveness of its abortion laws is generally weak. The study identified a number of other factors that may affect state abortion rates. Future analysis is required to determine the relative importance of state restrictions in the context of those, mainly demographic, factors.

**Project Dissemination:****Poster Presentations:**

Evet Wilks and Jonathan Pidluzny, (2011, April), A Patchwork of Restrictions: Does Stricter State Regulation of Abortion Make a Difference? Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Evet Wilks and Jonathan Pidluzny, (2011, May), A Patchwork of Restrictions: Does Stricter State Regulation of Abortion Make a Difference? School of Public Affairs Poster Session, Morehead State University, May.

**Awards and/or Honors:**

N/A

**Post-Graduation Plans (Seniors Only):**

N/A

**ASHLEY ADKINS****Major:**

Government/IRAPP

**Faculty Mentor:**

Paul Steele

**Research/Project Title:**

Factors Influencing the Growth and Management of Prison Populations in Kentucky: Implications for Public Policy and Practice

**Project Abstract/Summary:**

No Report Submitted.

**Project Dissemination:**

N/A

**Awards and/or Honors:**

N/A

**Post-Graduation Plans (Seniors Only):**

N/A



## **AUTUMN BAKER**

**Major:**

Government

**Faculty Mentor:**

Michael 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:**

Autumn Baker and Dr. Michael W. Hail, (2011, 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, D.C., included a presentation of the major research questions to policy makers and approval of the student as a research reader at the Library of Congress.

**Post-Graduation Plans (Seniors Only):**

N/A

## **CAUDILL COLLEGE OF ARTS, HUMANITIES, AND SOCIAL SCIENCES**

### ***OFFICE OF THE DEAN***

## **LAUREN NEWELL**

**Major:**

Communications

**Faculty Mentor:**

Scott McBride

**Research/Project Title:**

Arts and Humanities Advertising and Public Relations Campaign

**Project Abstract/Summary:**

E-marketing, or electronic marketing, is the process of marketing a brand, service, or product using electronic media tools such as cell phones, email, and online advertisements to reach a particular audience. Many businesses, organizations, and universities alike are turning to e-marketing as the most efficient way to reach their target market. When this marketing strategy is used correctly, the Return of Investment (ROI) will statistically be more successful than traditional marketing, reaching a larger audience in a quicker time period.

The purpose of this study was to investigate the use of different media outlets for deciding the most efficient ways to contact MSU alumni, current on-campus students, commuters, and community members about upcoming arts, humanities, and social science events. The research for this study supported the Arts and Humanities Council at Morehead State University efforts to reach their intended audience using the most effective methods. The research, which began August 2010, ending Spring 2011, provided the basis for a successful e-marketing campaign at MSU. With this campaign, the research findings guided decisions for determining the most efficient marketing tools to be applied through weekly event notifications through e-marketing. A permanent weekly event notification layout was designed for contemporary e-marketing outlets.

**Project Dissemination:**

The research/creative work was disseminated via e-notices sent out weekly during the 2010 spring term. An annual newsletter template was created for publication in the 2011 fall semester.

**Poster Presentation:**

Lauren Newell and Dean M. Scott McBride, (2011), Arts and Humanities Advertising and Public Relations Campaign, Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

**Awards and/or Honors:**

N/A

**Post-Graduation Plans (Seniors Only):**

After graduation, Ms. Newell plans to work at an advertising firm, designing advertisements, templates, logos, and more. Eventually she would like to receive her Masters in Communications and work her way up within the company.

## ***DEPARTMENT OF ART AND DESIGN***

**MEGAN ARNOLD****Major:**

Art

**Faculty Mentor:**

Joy Gritton

**Research/Project Title:**

Eastern Kentucky Arts Project

**Project Abstract/Summary:**

This project is in its fifth year of identifying and documenting arts resources and needs in Kentucky's Appalachian counties. The Eastern Kentucky Arts Project (EKAP) seeks to nurture the visual arts of Kentucky's Appalachian counties by providing information on the region's arts-related resources. Information is gathered on practicing artists, arts-related groups, art instruction, exhibition, and sales venues, public art and architecture, and special arts initiatives available within each county. The EKAP website will serve educators, students, artists, community planners, and other interested individuals working to strengthen Eastern Kentucky communities through the arts. In addition, EKAP has recently developed an oral history initiative – collecting and transcribing oral histories, posting information on oral history collections relevant to Eastern Kentucky arts and culture on the EKAP website, and identifying oral histories housed in regional and national archives from Eastern Kentucky.

**Over the past year, EKAP has:**

Conducted 15 new oral histories of Eastern Kentucky artists (14 of those funded by grants from the Kentucky Oral History Commission and the Kentucky Foundation for Women) and have made the audio and video files available on the EKAP site, together with images of the artists' art work.

Completed transcriptions for four artists and musicians (Daryl Fulks, George Gibson, Buddy Thomas—all from the Center for Traditional Music and Jeff Chapman-Crane, representing approximately five hours of recordings that have been transcribed.

Researched the collections of the Kentucky Oral History Commission, the Archive of Folk Culture collection, the Berea College archives, the EKU and UK archives, and the Lindsey Wilson College for oral collections pertaining to Eastern Kentucky arts, culture, and history. Once identified, these collections (music recordings and oral histories) have been listed by county on the EKAP website and links to the actual digital files or info regarding how to access the collections have been provided. See for example, Floyd county (<http://www.ekap.org/EKAP/Floyd/floyd.html#OralHistories>) or Letcher county (<http://www.ekap.org/EKAP/Letcher/letcher.html#OralHistories>).

Completed research for five new counties: Green, Garrard, Knox, Madison, and Russell. Knox, Madison, and Russell are currently being loaded to the website.

Reviewed the entire site and updated contacts for public school teachers, as well as added historic architecture for all counties.

Added a scrolling sidebar that allows us to post announcements of community events and opportunities quickly.

Using the University of Louisville archives, identified historic photos related to Eastern Kentucky and have begun adding links to these photos for each Eastern Kentucky county. See, for example, Floyd county (<http://www.ekap.org/EKAP/Floyd/floyd.html#HistoricalPhotos>).

In 2010 the EKAP website had a total of 5,771 visits, with over 80% of those being new visits. Over 10% of the visits were from referring sites, and just over 14% were from direct traffic. In the first three months of 2011 the site had 2,506 visits from 40 countries and territories with 2,121 visitors.

**Project Dissemination:****Poster Presentation:**

Megan Arnold, Cecily Howell, Jessica Ratliff, Posters-at-the-Capitol, Frankfort, KY, February.

**Oral Presentations:**

Megan Arnold, Cecily Howell and Jessica Ratliff, (2011, March), Using Current Technologies to Enhance Access to Eastern KY Arts-Related Oral Histories and Recordings, Appalachian Studies Association Annual Conference, March.

Megan Arnold, Cecily Howell and Jessica Ratliff, (2011, April), Using Current Technologies to Enhance Access to Eastern KY Arts Oral Histories, Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

**On-going Public Dissemination:**

www.ekap.org

**Awards and/or Honors:**

N/A

**Post-Graduation Plans (Seniors Only):**

N/A

**ABIGALE BRADING**

**Major:**

Art

**Faculty Mentor:**

Seth Green

**Research/Project Title:**

Building a Soda Kiln and Researching Clays and Glazes for Soda Firing

**Project Abstract/Summary:**

The bulk of the work for the kiln-building project will occur the week we build the kiln. Ms. Brading will assist me and Ted Neal (kiln building master who is helping me with this project) prep the kiln site, lay the foundation, cut and set bricks, cut angle iron for the supports, make the arch form and set the arch and other related tasks.

Prior to building the kiln Ms. Brading will clear the kiln site; assist me in ordering materials, become familiar with the kiln blueprints, learn basic kiln building principles and assist me in starting a teaching packet for the future kiln building course. She will also help me work with our external partners that we have established specifically for this project. Our partners are John Ramey, Art Teacher at Fleming County High School and Jason Ratcliff, Art Teacher at Rowan County High School. We will be working with them and their students on projects that will be fired in our new Soda Kiln. They will make and bisque fire their projects at their schools and then come to MSU and help us load and fire the Soda Kiln. There are also other activities in the planning stage with details that still need to be worked out as far as our partnership goes with these two schools.

Kiln construction will commence June 20 and will end on June 25, 2011.

**Project Dissemination:**

**Poster Presentation:**

Brading, Abigail and Green, Seth, (2011), Building a Soda Kiln and Researching Clays and Glazes for Soda Firing, Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

**Awards and/or Honors:**

N/A

**Post-Graduation Plans (Seniors Only):**

Apply to Master of Fine Arts programs around the country.

Apply to the MA program here at MSU in Art

**AMY FANNIN**

**Major:**

Art

**Faculty Mentor:**

Seth Green

**Research/Project Title:**

Building a Soda Kiln and Researching Clays and Glazes for Soda Firing

**Project Abstract/Summary:**

The bulk of the work for the kiln-building will occur the week we build the kiln. Ms. Fannin will assist me and Ted Neal (kiln building master who is helping me with this project) prep the kiln site, lay the foundation, cut and set bricks, cut angle iron for the supports, make the arch form and set the arch and other related tasks.

During Spring 2011, Ms. Fannin will assist me in researching and making clay and glaze tests to be fired in the Soda Kiln upon completion. This will give her the opportunity to learn more about ceramic materials that make up clay and glazes and help her learn how to manipulate them to give her results that she desires in her own studio practice.

Accomplishments: Cleaned and prepared kiln site for construction, sorted bricks to use for building, made clay for test tiles, extruded test tiles, fired test tiles, mixed test glazes and dipped tiles in glaze, and made clay sample tiles.

**Project Dissemination:****Poster Presentation:**

Fannin, Amy N. and Green, Seth, (2011), Building a Soda Kiln and Researching Clays and Glazes for Soda Firing, Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

**Awards and/or Honors:**

N/A

**Post-Graduation Plans (Seniors Only):**

N/A

**CECILY HOWELL****Major:**

Art

**Faculty Mentor:**

Joy Gritton

**Research/Project Title:**

Eastern Kentucky Arts Project

**Project Abstract/Summary:**

This project is in its fifth year of identifying and documenting arts resources and needs in Kentucky's Appalachian counties. The Eastern Kentucky Arts Project (EKAP) seeks to nurture the visual arts of Kentucky's Appalachian counties by providing information on the region's arts-related resources. Information is gathered on practicing artists, arts-related groups, art instruction, exhibition, and sales venues, public art and architecture, and special arts initiatives available within each county. The EKAP website will serve educators, students, artists, community planners, and other interested individuals working to strengthen Eastern Kentucky communities through the arts. In addition, EKAP has recently developed an oral history initiative – collecting and transcribing oral histories, posting information on oral history collections relevant to Eastern Kentucky arts and culture on the EKAP website, and identifying oral histories housed in regional and national archives from Eastern Kentucky.

**Over the past year, EKAP has:**

Conducted 15 new oral histories of Eastern Kentucky artists (14 of those funded by grants from the Kentucky Oral History Commission and the Kentucky Foundation for Women) and have made the audio and video files available on the EKAP site, together with images of the artists' art work.

Completed transcriptions for four artists and musicians (Daryl Fulks, George Gibson, Buddy Thomas—all from the Center for Traditional Music and Jeff Chapman-Crane, representing approximately five hours of recordings that have been transcribed.

Researched the collections of the Kentucky Oral History Commission, the Archive of Folk Culture collection, the Berea College archives, the ECU and UK archives, and the Lindsey Wilson College for oral collections pertaining to Eastern Kentucky arts, culture, and history. Once identified, these collections (music recordings and oral histories) have been listed by county on the EKAP website and links to the actual digital files or info regarding how to access the collections have been provided. See for example, Floyd county (<http://www.ekap.org/EKAP/Floyd/floyd.html#OralHistories>) or Letcher county (<http://www.ekap.org/EKAP/Letcher/letcher.html#OralHistories>).

Completed research for five new counties: Green, Garrard, Knox, Madison, and Russell. Knox, Madison, and Russell are currently being loaded to the website.

Reviewed the entire site and updated contacts for public school teachers, as well as added historic architecture for all counties.

Added a scrolling sidebar that allows us to post announcements of community events and opportunities quickly.

Using the University of Louisville archives, identified historic photos related to Eastern Kentucky and have begun adding links to these photos for each Eastern Kentucky county. See, for example, Floyd county (<http://www.ekap.org/EKAP/Floyd/floyd.html#HistoricalPhotos>).

In 2010 the EKAP website had a total of 5,771 visits, with over 80% of those being new visits. Over 10% of the visits were from referring sites, and just over 14% were from direct traffic. In the first three months of 2011 the site had 2,506 visits from 40 countries and territories with 2,121 visitors.

**Project Dissemination:****Poster Presentation:**

Megan Arnold, Cecily Howell, Jessica Ratliff, Posters-at-the-Capitol, Frankfort, KY, February.

**Presentations:**

Megan Arnold, Cecily Howell and Jessica Ratliff, (2011, March), Using Current Technologies to Enhance Access to Eastern KY Arts-Related Oral Histories and Recordings, Appalachian Studies Association Annual Conference, March.

Megan Arnold, Cecily Howell and Jessica Ratliff, (2011, April), Using Current Technologies to Enhance Access to Eastern KY Arts Oral Histories, Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

**On-going Public Dissemination:**

www.ekap.org

**Awards and/or Honors:**

N/A

**Post-Graduation Plans (Seniors Only):**

N/A

**CALEB POTTER**

**Major:**

History

**Faculty Mentor:**

Joy Gritton

**Research/Project Title:**

Model Appalachian Studies Programs: Intersections with Diverse Communities, Disciplines, and Students

**Project Abstract/Summary:**

This project will examine the diverse array of interdisciplinary Appalachian Studies programs, at both public and private institutions, with an eye toward identifying structures and practices that have yielded positive results in terms of (1) contributions to the well being of the region, (2) ability to successfully mentor the region's next generation of leaders, and (3) health of the programs themselves. The study will investigate outreach to community (including service learning); relationship with programs/centers similar to MSU's Center for Regional Engagement, Center for Traditional Music and/or Kentucky Folk Art Center; curriculum; position within institutional structure, and recruitment of faculty and students. The data and understanding derived from this research will provide an essential resource for a self-study of MSU's Appalachian Studies program, now poised to grow in its capacity for service to the region.

**Project Dissemination:**

Mr. Potter's proposals were accepted by both the Appalachian Studies Association annual conference for 2011 and the Posters-at-the-Capitol event for 2011. Due to severe illness he was not able to complete the fellowship, the work, or to present in either venue.

**Awards and/or Honors:**

N/A

**Post-Graduation Plans (Seniors Only):**

N/A

**ALAINA RHINESMITH**

**Major:**

Art

**Faculty Mentor:**

Jennifer Reis

**Research/Project Title:**

Arts Programming Administration: Management, Logistics, Design, and Promotion

**Project Abstract/Summary:**

The Undergraduate Fellowship in Art Events Management focuses on the conception, logistical planning, marketing, and management of arts programming. Working within the arts programming hosted by the Claypool-Young Art Gallery in the Department of Art & Design, UR Fellow Alaina Rhinesmith was heavily vested in events during the 2010-11 academic year, including the first annual Craft Bizarre (of her own conception), nine exhibitions, and visiting artist programming. Her work on these projects included PR/marketing, hosting special evening and weekend events, co-curating future shows, exhibition design and installation, and event planning and troubleshooting. Through the programming at MSU as well as the Craft Bizarre and research on the business of art, Ms. Rhinesmith has become familiar with both for-profit and non-profit art sectors. This fellowship is designed to prepare a student to begin a career in arts administration or to pursue a degree in arts administration, museum studies, or an MFA in studio art. This project is supported by the Undergraduate Fellowship Program, the Department of Art & Design, and the Caudill College of Arts, Humanities, and Social Sciences.

**Project Dissemination:**

All events presented in the Claypool-Young Art Gallery/Building

September 15 – October 8

Human Conditions: Works by Chapman, Hamme, DiDonato & Caldemeyer

September 15, 6 - 8 p.m. (Wednesday), Opening Reception

Visiting Artist Lecture:

Gary Chapman, September 3 (Friday), 10:20 – 11:20 a.m. & 12:40 – 1:40 p.m.

Visiting Artist Lecture:

Patrick Earl Hammie, October 1 (Friday), 10:20 – 11:20 a.m. & 12:40 – 1:40 p.m.

October 20 – December 3

MSU Alumni Art Exhibition

October 20, 6 - 8 p.m. (Wednesday), Opening Reception

October 30, 11:00 a.m. – 1:00 p.m. (Saturday), Alumni Reception

October 27 (Wednesday), 6 – 9 p.m.

Annual Halloween Costume Contest & Rocky Horror Picture Show

Sponsored by Allyance, Art & Design, CCHSS

January 26 – February 24

2011 Annual MSU Art Faculty Exhibition

January 12, 9 a.m. – 4 p.m. (Wednesday): Faculty Art Drop-Off

February 23, 6 - 8 p.m. (Wednesday), Closing Reception

February 22, 11:30 a.m.– 12:30 p.m. (Tuesday), Faculty Forum

March 3

Steve Prescott: Visiting Fantasy Illustrator

March 3 @ 10:20 – 11:20 a.m.: Artist Lecture

March 3 @ 12:40: Painting Demo

February 21 – March 3: Strider Art Gallery Exhibition

March 9 – 16

Annual Burley-Coal Art Exhibition and Competition

Saturday, March 12, 10:00 a.m. – 4:00 p.m., HS Art Exhibition Special Hours

March 16 (Wednesday), High School Art Day

April 4 - April 13

Annual MSU Sophomore Art Exhibition

April 6, 6 - 8 p.m. (Wednesday), Opening Reception

April 14 @ 7 p.m.: Visiting artist NICK CAVE

April 27 – May 11

Annual MSU Senior Juried Art Exhibition

April 27, 6 - 8 p.m. (Wednesday), Opening Reception

June 4 – July 29

Kentucky Surface Design Association Juried Exhibition & Mini-Conference

June 4 (Saturday), all day

**Awards and/or Honors:**

N/A

**Post-Graduation Plans (Seniors Only):**

Ms. Rhinesmith will seek an entry level position in arts administration in Lexington, Kentucky for a year prior to entering a studio art graduate program.

## ***DEPARTMENT OF COMMUNICATION, MEDIA, AND LEADERSHIP STUDIES***

### **JOSHUA MABRY**

**Major:**

Communications

**Faculty Mentor:**

Ann Andaloro

**Research/Project Title:**

Coming Out in Appalachia

**Project Abstract/Summary:**

This research project explores the experience of gay and lesbian students in Eastern Kentucky. This project also interviews two ministers, one of them being a lesbian. Other interviews include gay/lesbian faculty members of Morehead State University, with some being active members of the church. The interviews were videotaped and are being edited for a program proposed to KET. This project is important because it presents the life experiences of a diverse population, while also bringing important social issues to the forefront. The project also explores the hopes and dreams of these students for the future. This research was supported by MSU Undergraduate Research Fellowship.

**Project Dissemination:**

Ann Andaloro and Josh Mabry (April 2011), A Celebration of Gay Life, GLBTQ Studies Conference, Asheville, NC. (Regional Refereed)

Ann Andaloro and Josh Mabry (March 2011), Get Out of Here: Coming Out in Appalachia, Appalachian Studies Conference, Richmond, KY. (Regional Refereed)

**Awards and/or Honors:**

N/A

**Post-Graduation Plans (Seniors Only):**

Pursuing a career in the Creative Services industry.

**DEPARTMENT OF ENGLISH****JOSHUA BLEVINS****Major:**

English

**Faculty Mentor:**

Kathryn Mincey

**Research/Project Title:**

Exploring Literature Curriculum Alignment and Instructional Support for Kentucky English Teachers.

**Project Abstract/Summary:**

The project has included five goals:

1. Continued to interpret and update data collected from the survey of Kentucky high school English teachers.
2. Provide research-based professional development opportunities for area English teachers.
3. Inventoried materials in the English Education Center (402 Combs Building) to determine gaps in instructional support materials (based on the survey).
4. Shaped the research and related projects toward the new Common Core State Standards.
5. Explored grant opportunities to acquire instructional support materials for texts commonly taught in Kentucky High Schools.
6. Continued to develop a web page presenting the results of the project at <http://www.morehead-st.edu/eec/index.aspx?id=27486>

**Project Dissemination:****Oral Presentation:**

Joshua Blevins and Kathryn Mincey (April, 2011), Pre-service Curriculum Alignment and Instructional Support for Kentucky English Teachers, Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

**Awards and/or Honors:**

Dean's List Fall 2008-Fall 2010 (5 consecutive semesters).

Inducted into Phi Eta Sigma National Honors Society at MSU, September, 2009.

Kappa Sigma Fraternity Outstanding Scholar Award.

Inducted into the Order of Omega Greek Honor Society at MSU, April, 2011.

(Soon to be) Inducted into Phi Kappa Phi Honor Society, May, 2011.

**Post-Graduation Plans (Seniors Only):**

N/A

**SEAN CORBIN****Major:**

Creative Writing

**Faculty Mentor:**

Chris Holbrook

**Research/Project Title:**

Building Momentum: Laying the Foundation for a Successful Writing Program (An Arts Administration Project)

**Project Abstract/Summary:**

Building on a two-year development plan, this project utilized event planning, physical and Web-based promotional tactics, and student-faculty coordination to further strengthen and expand extracurricular opportunities for MSU creative writing students. Through various guest speakers, panel discussions, and conference and publishing opportunities through Inscape, MSU's art and literary magazine, methods of developing hands-on practical experience for the career-oriented writing student were explored. The results of this project were shown in the amount of creative writing events held at MSU through the 2010-2011 year, the attendance figures of each event, and event evaluations from creative writing students for each event, as well as the development of practical and useful working experience for the student participant. This project was funded by an Undergraduate Fellowship.

**Project Dissemination:****Oral Presentations:**

Sean Corbin, Chris Holbrook and Crystal Wilkinson (2011), Building Momentum: Laying the Foundation for a Successful Writing Program, Celebration of Student Scholarship, Morehead State University, Morehead, KY, April. Inscape Showcase, Claypool-Young Art Gallery, Morehead State University, Morehead, KY, April.

**Awards and/or Honors:**

N/A

**Post-Graduation Plans (Seniors Only):**

Accepted into the Masters of Art in English program at Morehead State University. Plans for seeking internship or employment with community art councils in Central Kentucky.

**BRANDON MASSENGILL****Major:**

Creative Writing

**Faculty Mentor:**

Crystal Wilkinson

**Research/Project Title:**

An Experiential Study of Publishing and Editing with Mythium Literary Journal

**Project Abstract/Summary:**

Mr. Massengill assisted in all components of the editing process for the fiction section of Mythium Literary Journal, including making preliminary decisions on the final selections for issue #3. His responsibilities included aiding in the correspondence to the writers, promotion of the journal, handling author contact, copy editing and other duties. The goal for the fellowship was to fully prepare Mr. Massengill to enter the publishing field having worked on the staff of an international journal and to also prepare him to receive a publishing assistantship in seeking an MFA program. Brandon aided in the completion of the issue and analyzed the process from his own experiences as both a writer and an editor. He was introduced to a variety of experiences that he hopes will move him forward in his pursuit of a MFA in Creative Writing.

**Project Dissemination:**

Issue #3 of Mythium which lists Mr. Massengill as “editorial assistant” is now available

**Awards and/or Honors:**

N/A

**Post-Graduation Plans (Seniors Only):**

Mr. Massengill plans on pursuing his terminal degree in creative writing though he will be spending the summer and fall working on polishing up his connected collection of short stories.

**LAURA MAYNARD****Major:**

English Education

**Faculty Mentor:**

Deana Mascle

**Research/Project Title:**

Writing Self Efficacy in First Year Writing

**Project Abstract/Summary:**

We know little about the transfer of writing-related skills from first-year composition (FYC) to other courses and contexts. In fact, we know little about what students actually take away from their FYC experience. The purpose of this study was to look at the impact of FYC on writing self-efficacy. Self-efficacy beliefs are a person’s beliefs in their capability to produce the desired effect. Self-efficacy beliefs influence an individual’s chosen course of action, perseverance, resiliency, sense of optimism or pessimism, and reaction to stress and depression. In turn, each of these influences impact the overall level of accomplishment at the particular task. Research has shown that self-efficacy is a more consistent predictor of behavioral outcomes than other self beliefs and found positive associations between self-efficacy for writing and writing outcomes. Research suggests that beliefs about writing processes and competence are instrumental to the writer’s ultimate success as a writer.

We have found that students do leave Writing I and Writing II with decreased levels of writing apprehension and increased writing self-efficacy thanks not only to the sources of writing self-efficacy (especially writing experience). However, more research is necessary to look more specifically at the sources of writing self-efficacy to better understand the contributing factors to this improvement.



**Project Dissemination:**

Unfortunately due to health reasons Ms. Maynard was unable to complete her full fellowship year. The proposal for the Posters-at-the-Capitol was accepted, but Ms. Maynard had already resigned. Deanna Mascle had plans for Ms. Maynard to present not only at the MSU Celebration of Student Scholarship, but also at KCTE.

**Awards and/or Honors:**

N/A

**Post-Graduation Plans (Seniors Only):**

N/A

**KEVIN MURPHY****Major:**

English/Philosophy

**Faculty Mentor:**

Glenn Colburn

**Research/Project Title:**

Anarchy and Hysteria in Medieval Britain

**Project Abstract/Summary:**

Mr. Murphy completed preliminary research on anarchy in medieval Britain during the 2009-2010 academic year, and he presented a summary of his findings at MSU's Undergraduate Research Showcase in April, 2010. He began research for the second part of the project, hysteria in medieval Britain, in the Fall of 2010. Our plan was to connect these two features of the culture in order to suggest a new perspective on the emergence of early modernity in Britain during the 16<sup>th</sup> century; we had discussed presentation of a paper at a regional scholarly conference and ultimately submission of a manuscript for publication. Unfortunately, Mr. Murphy ceased work on the project after the Fall semester.

**Project Dissemination:**

N/A

**Awards and/or Honors:**

N/A

**Post-Graduation Plans (Seniors Only):**

N/A

**ADAM WHEELER****Major:**

Art

**Faculty Mentor:**

Crystal Wilkinson

**Research/Project Title:**

Reverse Ekphrasis: The Intersection of Visual Art, Music, Dance and Creative Writing

**Project Abstract/Summary:**

This project focused on the intersection of a variety of art forms with creative writing. Mr. Wheeler spent the year researching ways in which the university's creative art programs could continue to collaborate. The research will also explore ways in which other artforms such as music and dance can intersect with writing. Mr. Wheeler coordinated the Reverse Ekphrasis, a program in its third year, which incorporates visual art and creative writing and culminates with a reading and art exhibit. It was the goal to increase participation and to enhance collaboration with other art forms.

**Project Dissemination:**

The project culminated with an exhibit, readings and performances by students and faculty in the various disciplines. The event was the most successful experience with this project thus far.

**Awards and/or Honors:**

N/A

**Post-Graduation Plans (Seniors Only):**

N/A

## **MITCHELL WILSON**

**Major:**

English

**Faculty Mentor:**

Kathryn Mincey

**Research/Project Title:**

Exploring Literature Curriculum Alignment and Instructional Support for Kentucky English Teachers

**Project Abstract/Summary:**

The project has included five goals:

- Continuing to interpret data collected from the survey of Kentucky high school English teachers;
- Providing research-based professional development opportunities for area English teachers;
- Inventorying materials in the English Education Center (402 Combs Building) to determine gaps in research and instructional support materials (based on the survey);
- Exploring grant opportunities and submitting grant applications to acquire instructional support materials for texts commonly taught in Kentucky High Schools'
- Developing a web page presenting the results of the project at <http://www.morehead-st.edu/eec/index.aspx?id=27486>.

**Project Dissemination:**

This ongoing project has continued to generate professional development workshops for regional teachers and to disseminate research to Kentucky teachers. The web site currently under development by Ms. Mincey and Mr. Wilson, <http://www.moreheadmorehead-st.edu/eec/index.aspx?id=27486>, not only displays the results of the research but also applies the research for collaboration with 8-12 English teachers in an effort to align 8-16 curriculum. Mr. Wilson's responsibilities as the research fellow have been to continue research efforts to gather and disseminate data through the web site. The interpretation of the data gathered will lead to further development of curriculum alignment analysis based on the compiled list of commonly-taught texts at the website <http://www.morehead-st.edu/eec/index.aspx?id=27486> and to the continuation of professional development offerings for area English teachers. He has also inventoried and organized research and instructional materials housed in the MSU English Education Center for easier access for professional development.

**Awards and/or Honors:**

The project has consistently proved itself through presentations at conferences. The original fellow, Maggie Gulley (2006-2008) co-presented the preliminary results of the 2006-2007 study with Mrs. Mincey at the Kentucky Council of Teachers of English/Language Arts in February of 2007, and presented it by herself at the posters-at-the-Capitol in March and MSU's Celebration of Student Scholarship in April, 2007. The Theresa Lang continued these activities and expanded on them during her three semesters as the URF, developing the web site that represents the accumulative accomplishments of this ongoing project. That work can be viewed at <http://www.morehead-st.edu/eec/index.aspx?id=27496>. Ms. Lange co-presented with Ms. Gulley and Professor Mincey at the 2008 Kentucky Council of Teachers of English, she presented at both the 2008 and 2009 Celebration of Student Scholarship at Morehead State University, and she co-presented with Professor Mincey at the 2009 Kentucky Council of Teachers of English annual conference. Mitchel Wilson, the current fellow with the project has continued to develop the research materials in the English Education Center, Combs 402, and has co-presented with Professor Mincey at the 2010 KCTE conference in Louisville, KY, in February. In April, of 2010, he also presented at the MSU Celebration of Student Scholarship.

**Post-Graduation Plans (Seniors Only):**

Mr. Wilson will student teach in the Spring 2011 semester and then will either apply for a position teaching English or for a masters degree program.

## ***DEPARTMENT OF HISTORY, PHILOSOPHY, RELIGION, AND LEGAL STUDIES***

### **JONATHAN FANNIN**

**Major:**

Philosophy

**Faculty Mentor:**

Wendell O'Brien

**Research/Project Title:**

Philosophy and the Media

**Project Abstract/Summary:**

Study into how philosophical assumptions affect the media. Also read and edited Dr. O'Brien's book.

**Project Dissemination:****Oral Presentation:**

Jonathan Fannin and Wendell O'Brien, (2011, April), Philosophy in the Media: How Philosophical Issues Affect American Media, Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

**Awards and/or Honors:**

N/A

**Post-Graduation Plans (Seniors Only):**

Mr. Fannin is enrolled to be an intern to a member of Parliament in Canada for five weeks, beginning the day after graduation into the middle of June. After he returns from Canada, he will begin classes in August at the UK College.

**LUKE GRIMES****Major:**

English/Philosophy

**Faculty Mentor:**

Pamela Ryan

**Research/Project Title:**

Deep, Dark and Scary: A History of Thought

**Project Abstract/Summary:**

We did research into the fears that have kept humanity wondering at the deepest levels for millenia: loneliness, death, loss of control and meaninglessness. Mr. Grimes assisted Dr. Ryan in the preparation of a manuscript by the same title.

**Project Dissemination:****Oral Presentations:**

Grimes, Luke, (2011, April), Deep, Dark and Scary, Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Mr. Grimes has been asked to present at the Regional Honors Conference and has applied to present at the National Collegiate Honors Conference. Dr. Ryan is preparing the manuscript for dissemination.

**Awards and/or Honors:**

N/A

**Post-Graduation Plans (Seniors Only):**

N/A

**JAMES HAGER****Major:**

History and Philosophy

**Faculty Mentor:**

Kristina DuRocher

**Research/Project Title:**

Legitimation through Narrative: The Creation of Ideologies in the Spanish Civil War and It's Bigger than Hip-Hop: The Effectiveness of rap/hip-hop as a discourse for social and political change.

**Project Abstract/Summary:**

This undergraduate research fellowship focused in the of 2010 on finalizing the book "Raising Racists" (title change from "Lessons in Black and White") for press. Mr. Hager helped with the indexing of the book. In the spring of 2011, Mr. Hager conducted research on white women in the Jim Crow South that will be used in a paper presented by Dr. DuRocher in June 2011, at the Berkshire Conference for Women.

Mr. Hager created a poster examining race and gender in hip hop using historical theories for Posters-at-the-Capitol. This project, "It's Bigger than Hip-Hop: The Effectiveness of Rap/Hip-hop as a Discourse for Social and Political Change," examined racial and gender narratives in modern hip-hop songs and singers. He also expanded his research on dissenting narratives and political ideologies in the Spanish Civil War of the early 20<sup>th</sup> century. Mr. Hager examined the creation of political narratives in the Spanish Civil War and the "winning" narrative became a legitimized political entity. Essentially, his research focuses on the political narratives that were not able to gain a foothold in this competition for legitimation, including those that were later deemed irrelevant or censored entirely.

**Project Dissemination:****Poster Presentation:**

Hager, J., (2011, February) Legitimacy through Narrative: The Creation of Political Ideologies in the Spanish Civil War, Posters-at-the-Capitol, Frankfort, KY, February.

**Oral Presentations:**

Hager, J., (2011, April) Legitimacy through Narrative: The Creation of Political Ideologies in the Spanish Civil War, Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Hager, J., (2011, April) Legitimacy through Narrative: The Creation of Political Ideologies in the Spanish Civil War, Phi Alpha Theta History Honors Society Conference, Murray State University, April.

**Awards and/or Honors:**

Kyle was voted as the Outstanding Student for the department of History, Philosophy, Religion and Legal Studies in May, 2011.

**Post-Graduation Plans (Seniors Only):**

Mr. Hager is planning on spending the 2011-2012 academic year as a "Cultural Ambassadors: Language and Culture Assistants in Spain," after which he plans to apply to graduate school.

**R. JACOB KINCAID****Major:**

Philosophy/English

**Faculty Mentor:**

Wendell O'Brien

**Research/Project Title:**

SpongeBob Squarepants and Philosophy

**Project Abstract/Summary:**

The Ego and the Squid, a chapter discussing Freudian theories of the mind and SpongeBob Squarepants. In addition to this, Mr. Kincaid is in the process of writing a comic book concerning philosophical issues like ethics, epistemology and ethics.

**Project Dissemination:**

N/A

**Awards and/or Honors:**

N/A

**Post-Graduation Plans (Seniors Only):**

N/A

**BRYAN MAYNARD****Major:**

History

**Faculty Mentor:**

Alana Scott

**Research/Project Title:**

Because Mr. Maynard wanted to do some work on European history to prepare for graduate school and have a nice writing sample, we chose to have him research the European witch hunt focusing on the witch-hunt in England because those primary sources would be in English. He intended to analyze the trial of some witches in Lancaster, England in 1612. Those trial transcripts are available in the Camden-Carroll Library and other materials on the Lancaster situation are available via Interlibrary Loan.

**Project Abstract/Summary:**

Mr. Maynard completed very preliminary research including a book synopsis and a research proposal. I also received a very rough draft of a paper on the witch-hunt in general late in the semester. However, I was not able to meet with Mr. Maynard after September, so whatever work he completed after that point is unclear. Fellowship was terminated in December.

**Project Dissemination:**

N/A

**Awards and/or Honors:**

N/A

**Post-Graduation Plans (Seniors Only):**

N/A

## LYDIA SHROUT

**Major:**

Philosophy

**Faculty Mentor:**

Pamela Ryan

**Research/Project Title:**

The Moral Standing of the State

**Project Abstract/Summary:**

Ms. ShROUT helped with research and organized literature review regarding the state as a moral person.

**Project Dissemination:**

Because the assignment was cut short, Ms. ShROUT did not get to finish the project. Because of other concerns, the project has not yet been presented though it has been submitted to the Kentucky Philosophical Association.

**Awards and/or Honors:**

N/A

**Post-Graduation Plans (Seniors Only):**

Ms. ShROUT plans on either law school or graduate school.

## HANNAH TERRY

**Major:**

History

**Faculty Mentor:**

Thomas Kiffmeyer

**Research/Project Title:**

The Search for a Secular Mission: The Council of the Southern Mountains and Reform in Appalachia, 1950-1970.

**Project Abstract/Summary:**

When he assumed leadership of the Council of the Southern Mountains in the early 1950's, Perley Ayer inherited an organization low on funds but high in terms of missionary zeal and church influence. Many members of the CSM belonged to either the Congregational or Presbyterian churches. Faced with dire financial straits, however, Ayer issued what many scholars label as his "Call to Partnership." Actually a stance that began in the earliest years of the CSM when it was almost exclusively a church-dominated organization, this philosophy, criticized by many as naïve because it essentially allowed outside interests to dominate Appalachian issues to their own benefit, represented Ayer's attempt to create an inclusive Appalachian reform program – one that allowed anyone, or any organization, a role in the reform efforts of the Council. According to his assistant, Loyal Jones, Ayer's "Call to Partnership," far from naïve, was an attempt to foster a "democratic" response to the problems of the region.

Using primarily the records of the CSM and their journal, *Mountain Life and Work*, this project will examine the influence of religion on Ayer, Jones and their Council. How influential were "missionary" churches on the CSM in the late twentieth century? Was this influence altered when Ayer sought the inclusion of corporate interests? Could – and did – Ayer use religion, a sense of "mission," to further his goals? Was Ayer's version of the "Call to Partnership" the same as the early 20<sup>th</sup> century version? How important was a religious sense of mission to the Council during the War on Poverty years. Last, how did the political, social, and economic issues of the 1970s and 1980s affect the Council? Was it still, at that time, a church-based organization?

**Project Dissemination:**

I have utilized Ms. Terry's work in a number of conferences, including my role as a commentator at the Annual Meeting of the Organization of American Historians, held in Houston, TX, this past March. Also, her role as a research fellow was instrumental in two presentations at the Appalachian Studies Association meeting, also held last March. The first was "Further Thoughts on the AVs" and "a Long View of the War on Poverty in Appalachia." Last, Ms. Terry was critical in my in-progress book proposal and in a book chapter, scheduled for publication by the University of Georgia Press in late 2011 entitled "Looking Back to the City in the Hills: The Council of the Southern Mountains and a Longer View of the War on Poverty in the Appalachian South, 1913-1070," in *The War on Poverty: A New Grassroots History*, Annelise Orleck and Lisa Gayle Hazirjian, eds.

**Awards and/or Honors:**

Based on her entire academic record while at MSU, Ms. Terry earned a semester in Korea.

**Post-Graduation Plans (Seniors Only):**

N/A

## **DEPARTMENT OF INTERNATIONAL AND INTERDISCIPLINARY STUDIES**

### **KAYLA BURTON**

**Major:**

English

**Faculty Mentor:**

Philip Krummrich

**Research/Project Title:**

Overcoming Language Barriers to Overseas Study by Honors Students

**Project Abstract/Summary:**

Although the vast majority of all college students with Honors students being no exception, acknowledge the importance and desirability of studying abroad, relatively few actually participate in overseas study programs. We conducted surveys to determine the attitudes of Honors students towards overseas study, and their perceptions of the obstacles that would discourage them, with special emphasis on language barriers. We discovered a number of common misconceptions. By surveying faculty members who have directed successful programs in non-English speaking countries, we identified a number of strategies designed to clear up misconceptions about study abroad, and to help Honors students to cope with the few genuine difficulties presented by the language barrier.

**Project Dissemination:**

**Poster Presentation:**

K. Burton and Dr. Philip Krummrich, (2011), Obstacles to Study Abroad, Celebration of Student Scholarship, Morehead State University, Morehead, KY, May.

**Awards and/or Honors:**

N/A

**Post-Graduation Plans (Seniors Only):**

N/A

### **LAUREN DECKER**

**Major:**

Art

**Faculty Mentor:**

John Secor

**Research/Project Title:**

- 1.) Personal Poetry in French
- 2.) TAPIF: English Assistantship in Dijon, France

Note: No activity in Spring 2011 because Ms. Decker was student teaching in Art

**Project Abstract/Summary:**

- 1.) Since 2007, Dr. Secor has been writing poetry in French, including some 35 pieces in July 2010. In Fall 2010, Ms. Decker participated in revisions to those poems in the original French, and also helped with translations into English.
- 2.) In Fall 2010, Ms. Decker prepared the application to be a teaching assistant in English in Burgundy, France, which included writing a 3-page personal essay in French.

**Project Dissemination:**

Ms. Decker submitted her completed application for TAPIF in late December 2010 to the French Embassy, Washington.

**Awards and/or Honors:**

Ms. Decker was successful in receiving a teaching assistantship in English through the French Government for the academic year 2011-2012.

**Post-Graduation Plans (Seniors Only):**

In addition to the award (above), Ms. Decker will graduate in May 2011 with teaching certification in P-12 Art, and will be looking for employment upon her return from France.

### **STEPHANIE EVANS**

**Major:**

Government

**Faculty Mentor:**

Ric Caric

**Research/Project Title:**

Occupied by Blackness: Blackface Minstrelsy in Philadelphia

**Project Abstract/Summary:**

Ms. Evans microfilmed research during the Fall semester, but was unable to continue and withdrew from the UGR program for Spring 2011.

**Project Dissemination:**

N/A

**Awards and/or Honors:**

N/A

**Post-Graduation Plans (Seniors Only):**

N/A

**DANIEL MATTOX****Major:**

Philosophy

**Faculty Mentor:**

Ric Caric

**Research/Project Title:**

Olaudah Equiano as Citizen and Moral Agent

**Project Abstract/Summary:**

The project involved research into Kantian moral theory and the narrative of Olaudah Equiano, a man who was kidnapped into slavery as a boy in Africa, eventually purchases his freedom, and underwent a lengthy religious conversion. Mr. Mattox concluded that Equiano went through a process of moral development that eventually met Kantian standards concerning a good will, the categorical imperative and peace. His 25 page paper was both excellent and highly innovative. I believe that the paper will be publishable with further work.

**Project Dissemination:****Oral Presentations:**

Mattox, Daniel, Olaudah Equiano as Citizen and Moral Agent, Southwestern Regional Honors Conference.

Mattox, Daniel, Olaudah Equiano as Citizen and Moral Agent, Kentucky Policital Sciences Association.

Mattox, Daniel and Caric, Ric, (2011, April) The Development of Moral Agency and Movement Towards Perpetual Peace in the Narrative of Equiano, Morehead State University Celebration of Student Scholarship, Morehead, KY, April

**Awards and/or Honors:**

Outstanding Philosophy Major

**Post-Graduation Plans (Seniors Only):**

Graduate school in philosophy or interdisciplinary social science

**SOSHA PINSON****Major:**

Creative Writing

**Faculty Mentor:**

Philip Krummrich

**Research/Project Title:**

George Keats and John James Audubon: Creative and Scholarly Approaches

**Project Abstract/Summary:**

We studied the background and context of a curious incident in the early history of Kentucky, a failed business deal involving George Keats, brother of the great Romantic poet John Keats, and John James Audubon, the famous naturalist and painter. In our scholarly work, we studied the effect of this incident on the careers of both the Keats brothers and Audubon; on the creative side. Ms. Pinson wrote a number of poems inspired by the story, and Dr. Krummrich is considering writing a play on the subject.

**Project Dissemination:****Poster Presentation:**

S. Pinson and Dr. P. Krummrich, (2011), A Brief Clash of Influence: The Keats and Audubon Investment, Celebration of Student Scholarship, Morehead State University, Morehead, KY, May.

**Oral Presentations:**

S. Pinson, A Brief Clash of Influence: The Keats and Audubon Investment, Annual Meeting of the Kentucky Philological Association, March.

S. Pinson, A Brief Clash of Influence: The Keats and Audubon Investment, Southern Regional Honors Conference, Little Rock, AK, April.

**Awards and/or Honors:**

N/A

**Post-Graduation Plans (Seniors Only):**

Ms. Pinson will graduate in December and is considering MFA programs in Creative Writing.

**KILEY ROMENESKO****Major:**

Government

**Faculty Mentor:**

Ric Caric

**Research/Project Title:**

The Representation of Black Women in Blackface Minstrelsy

**Project Abstract/Summary:**

Ms. Romenesko became a Undergraduate Research Fellow in March, 2011, and devoted her time to research on the representation of black women in blackfact minstrelsy. Her main accomplishment was writing a short paper on the topic for delivery at the Celebration of Student Scholarship.

**Project Dissemination:****Oral Presentation:**

Images of Women in Blackface Minstrelsy, 1830-1950, Celebration of Student Scholarship, Morehead State University, April, 2011.

**Awards and/or Honors:**

N/A

**Post-Graduation Plans (Seniors Only):**

N/A

***DEPARTMENT OF MUSIC, THEATRE, AND DANCE*****KEVIN CALLIHAN****Major:**

Music Education

**Faculty Mentor:**

Stacy Baker

**Research/Project Title:**

New Concert Transcriptions and Compositions for Wind Band

**Project Abstract/Summary:**

This project will focus on creating effective new concert transcriptions of works chosen from public domain as well as new original compositions to be premiered in concert by the Morehead State University Symphony Band directed by Dr. Richard Miles. Since the works will be either public domain or original compositions, there will be no need to obtain copyright. The challenge in writing for wind instruments, without a string section, is the difficulty in texture changes, technical abilities, and the pitch ranges of the string instruments are much larger than the ranges we possess in the wind band. Building a broader concert repertoire for wind band through the creation of new transcriptions and original compositions will foster great interest in the wind band as it rises as a more viable performance medium.

**Project Dissemination:****Oral Presentation:**

Kevin Callihan and Stacy Baker (2011), New Concert Transcriptions and Compositions for Wind Band, Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

**Performance:**

Kevin Callihan and Stacy Baker (2010), New Concert Transcriptions and Compositions for Wind Band, Symphony Band Concert, Morehead State University, Morehead, KY, November.

**Awards and/or Honors:**

Chosen to perform the major work for the fellowship project on the Morehead State University Symphony Band Winter Concert. Mr. Callihan conducted the premiere of this original composition on the concert and rehearsed the group in preparation for the concert.

**Post-Graduation Plans (Seniors Only):**

Mr. Callihan plans to attend Northwestern University for the M.M. (Master of Music in Performance) program in Euphonium Performance.



## JUSTIN CROUSHORE

**Major:**

Music Education

**Faculty Mentor:**

William Mann

**Research/Project Title:**

An Annotated Guide to Warm-Ups and Exercises of Fundamentals Development for the Trombone

**Project Abstract/Summary:**

The purpose of this research was to collect and catalog various warm-ups and methods of past and current trombone pedagogues that are currently in publication in order to facilitate the ease of accessing warm-ups or exercises useful in the development of specific fundamentals as needed. With a great amount of publications available to the trombone player today, there is a need for a resource to aid the trombonist in accessing the materials appropriate for their needs.

This research will help the trombonist discover:

- What published works for trombone playing are available
- Where they can find specific types of exercises
- What a published method book has to offer
- What another practitioner likes about the methods specifically

The end product of this research is a booklet of paragraphs detailing what warm-ups, fundamentals, and methods are available to the modern trombone player from various sources, as well as an accompanying chart, which gives the trombonist a quick reference for finding specific warm-up, fundamentals, and methods found in each of the books covered in the study.

**Project Dissemination:**

**Poster Presentation:**

Croushore, Justin, (2011, April) An Annotated Guide to Warm-ups and Exercises of Fundamentals Development for the Trombone, Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

**Awards and/or Honors:**

2011 KMEA Intercollegiate Orchestra – Principal Trombone

Performed the 2011 KMEA Intercollegiate Composition Winning Composition, "In Spite of Thought and Reason, We Dream," by Tyler Kline, 2011 KMEA Conference, Louisville, KY

Finalist for the Synergy Brass Quintet Trombone Position

**Post-Graduation Plans (Seniors Only):**

N/A

## CARA HALL

**Major:**

Theatre

**Faculty Mentor:**

Denise Watkins

**Research/Project Title:**

Production Designer for Senora Tortuga (The Little Company tour)

**Project Abstract/Summary:**

Ms. Hall was responsible for researching, designing, building, and maintenance of costumes, scenery, and properties for the touring production of Senora Tortuga. She was the first official designer we have had for this production.

Her research led her to investigate Mexican and Hispanic costumes, art forms, dress, legends, masks, and puppetry.

In her designs, Ms. Hall effectively applied all of this research to her own creative interpretations for an effective – and beautiful – production. A touring production requires more in depth planning than most theatre productions because the scenic and costume elements have to be more durable, yet lighter. The designer also has to ensure that every set and costume piece fits into a van along with all of the actors. Additionally, the setting must fit into a wide variety of space types (gyms, cafeterias, classrooms, various stage sizes, outdoors, etc.). Ms. Hall handled these demands with aplomb.

**Project Dissemination:**

The show went on tour through the months of January-May. There were up to two performances every Tuesday, Thursday and Friday 2.

**Oral Presentation:**

Cara Hall, (2011, April), Senora Tortuga: Costumes, Props, and Set Design, Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

**Awards and/or Honors:**

Outstanding Theatre Student

**Post-Graduation Plans (Seniors Only):**

Ms. Hall has moved to Chicago to begin auditioning. Within one month she landed a role in a touring theatre company, in the cast of "Tom Sawyer."

**JOHN HANDSHOE****Major:**

Music Education

**Faculty Mentor:**

Stacy Baker/William Mann

**Research/Project Title:**

Trombonium: The Art of Doubling on Trombone and Euphonium

**Project Abstract/Summary:**

In this project, research was conducted through applied study, survey, and interview of renowned euphonium and trombone doubling artists. This research resulted in exercises and etudes currently being compiled into a book, titled "Trombonium: The Art of Doubling on Trombone and Euphonium," to be used for preparing musicians to double on euphonium and trombone, while maintaining the distinct sound and playing characteristics unique to each instrument. Original artwork and design layout for trombonium were created by MSU Art and Design major Susannah Klooster.

**Project Dissemination:****Oral Presentations:**

Handshoe, John D. (2011, April), Trombonium: The Art of Doubling on Trombone and Euphonium, Student Recital, Morehead State University, Morehead, KY, April.

Handshoe, John D. (2011, April), Trombonium: The Art of Doubling on Trombone and Euphonium, Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

**Awards and/or Honors:**

Principal Euphonium in the 2011 KMEA Intercollegiate Band

**Post-Graduation Plans (Seniors Only):**

N/A

**BLAKE HUFFAKER****Major:**

Music Education

**Faculty Mentor:**

June Grice

**Research/Project Title:**

New Applications of Kodaly, Dalcroze, and Orff for the Music Classroom

**Project Abstract/Summary:**

Mr. Huffaker researched the three music methodologies of Kodaly, Dalcroze, and Orff and the history of these music methodologies used in public schools. He created new materials, compositions, and activities to bring the principles and concepts of these teaching methods to incorporate in the classroom. He composed songs and activities using his guitar and showcased these in the state celebration of research day at the capitol as well as Morehead State University Celebration day for research. His songs will be published.

**Project Dissemination:****Poster Presentations:**

Blake Huffaker and June Grice, (2011, February), New Applications of Kodaly, Dalcroze, and Orff for the Music Classroom, Posters-at-the-Capitol, Frankfort, KY, February.

Blake Huffaker and June Grice, (2011, April), New Applications of Kodaly, Dalcroze, and Orff for the Music Classroom, Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

**Awards and/or Honors:**

Mr. Huffaker was nominated for the Patricia Fulbright Music Ed Citation based on his excellent research; he was then selected and the award was presented.

**Post-Graduation Plans (Seniors Only):**

Mr. Huffaker plans on teaching in the school system or going to graduate school.

## **GREGORY TYLER KLINE**

**Major:**

Music

**Faculty Mentor:**

Deborah Eastwood

**Research/Project Title:**

Exploring the Creative Process in Musical Composition through "The Artist's Way"

**Project Abstract/Summary:**

The creative impulse to compose music can at times be elusive. Commissioned composers are required to create original music under the pressure of firm deadlines. As with literary writers, this type of pressure may lead to decreased creativity and even creative blocks. The Artist's Way, by Julia Cameron is a 12-week program that she describes as "a spiritual path to higher creativity." This project will utilize daily creative writing and compositional exercises designed to stimulate increased compositional productivity. Deadlines will also be enforced to emulate the "artist under pressure." In addition to the compositional outcomes of the project, a blog will be kept tracking progress and ideas. Compositions will also be rehearsed and performed, yielding composer-performer interaction. A selected number of original compositions will be performed at the MSU Celebration of Student Scholarship and the MSU Department of Music, Theatre, and Dance Student Recital.

**Project Dissemination:**

**Performances:**

Croushore, Justin and Dr. Eunbyol Ko., (December, 2010), In Spite of Thought and Reason, We Dream, by Tyler Kline, Duncan Recital Hall, Baird Music Hall, Morehead State University, Morehead, KY.

Croushore, Justin and Dr. Eunbyol Ko., (February, 2011), In Spite of Thought and Reason, We Dream, by Tyler Kline, Whitney Hall, Kentucky Center for the Performing Arts, Louisville, KY.

**Poster Presentation:**

Gregory Tyler Cline and Dr. Deborah Eastwood, (2011, February), Exploring the Creative Process of Musical Composition through the Artist's Way, Posters-at-the-Capitol, Frankfort, KY, February.

**Oral Presentation:**

Kline, Tyler, (2011, April), Exploring the Creative Process of Musical Composition through the Artist's Way, Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

**Other:**

"Tyler Kline's Blog." <<http://gtkline.blogspot.com/>>

**Awards and/or Honors:**

2011 Kentucky Music Educators Association Collegiate Composition Contest Winner for "In Spite of Thought and Reason, We Dream."

2010-2011 Outstanding Undergraduate Student in Music

2011 Morehead State Public Radio Community Advisory Board Student Leadership Award

2011 Kentucky Intercollegiate Band Participant

**Post-Graduation Plans (Seniors Only):**

N/A

## **STEPHANIE MORA**

**Major:**

Music Education

**Faculty Mentor:**

Lori Baruth

**Research/Project Title:**

Jazzing It Up: Evolution of the Clarinet's Role within Early Jazz to Modern Jazz-inspired Classical Works

**Project Abstract/Summary:**

Very few people realize how important the role of the clarinet played in the early stages of jazz music. The blending of European instruments and African rhythmic syncopation and tonal style laid the foundation for Ragtime and Dixieland in the Southern American States. The clarinet was at the forefront of these early jazz styles, embellishing harmonies, connecting the sounds of the trumpet and trombone, and producing melodic lines in early Dixieland bands. The function and role of the clarinet in the jazz idiom has changed drastically through the past hundred years. It evolved from being commonly used by early jazz genres (Ragtime, Dixieland, Blues, and later Big Band Swing) to taking a secondary role to the saxophone as primary melody carrier. It was not until 20<sup>th</sup> century composers George Gershwin, Artie Shaw, and Aaron Copland began recreating a jazz sound in their works that the clarinet re-emerged into the jazz scene once again. When Gershwin wrote his opening to "Rhapsody in Blue," not only did it create a virtuosic solo for clarinet repertoire, but it featured the clarinet in a setting that had not been done

before—jazz clarinet in the orchestra. This ground breaking technique spurred other composers during the era to follow suite and create their own jazz-inspired classical works with clarinet highlight.

**Project Dissemination:**

**Oral Presentation:**

Stephanie Mora, (2011, April) Jazzing It Up: Evolution of the Clarinet's Role within Early Jazz to Modern Jazz Inspired Classical Works, Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

**Awards and/or Honors:**

Project was selected for Frankfort's Posters-at-the-Capitol event in February, 2011.

**Post-Graduation Plans (Seniors Only):**

Career plans include teaching elementary and middle school early music programs.

## ***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 will gather 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. The findings of this study will be used to organize, manage, and advertise available psychological services.

**Project Dissemination:**

**Poster Presentation:**

Davis, Alex and Biebel, Elizabeth P. (2011, April), A Survey of 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

### **HANNAH WILLIS**

**Major:**

Criminology

**Faculty Mentor:**

Rebecca Katz

**Research/Project Title:**

Understanding Gender Differences in Offending: A Life History of Men and Women Offenders in Prisons

**Project Abstract/Summary:**

Theoretical work in criminology continues to fail to adequately compare and contrast on a qualitative or quantitative level the initiation of offending among men and women offenders in order to lead to robust theories that can explain both male and female offending throughout the life course. While masculinity theory is a growing field that attempts to understand men's lives, little work in criminology focuses on the unique role of masculinity in producing crime (Messerschmidt, 2004, Kimmel, 2010). Similarly, little work has focused on how women's crime is produced in the context of women's lives that are often characterized by inequality and victimization (Katz, 2000; George; 2010; Miller; 2008; Jones, 2010). This work attempts to reconcile these gender differences while also exploring similarities in the causal pathways leading men and women to do crime. This work will conduct both a qualitative and quantitative analysis in order to develop a grounded gendered theory of offending that can be tested quantitatively and qualitatively. We are developing a theory of gendered identity illuminating both pathways towards

normative and deviant identity structures. Ms. Willis and I are completing our research protocol which includes qualitative and quantitative questions and we will submit these during the Summer of 2011 or early Fall of 2011 to the Institutional Review Board on Human Subjects for approval. Ms. Willis has read a variety of empirical work for our project which has given her a greater understanding of theoretical explanations of criminal behavior. Simultaneously, we are developing an integrated theoretical model to explain male criminal behavior. We have submitted an abstract to the Annual American Society of Criminology meetings scheduled in November 2011 in Washington D.C. and we will present our paper and preliminary findings there.

**Project Dissemination:**

Ms. Willis and I are presenting the paper "Explaining the Gendered Nature of Crime: Empathy and Hegemonic Masculinity" at the 2011 American Society of Criminology Meetings in Washington, D.C., this coming November at the American Society of Criminology Meetings. We also plan to develop a paper for presentation at the annual Masculinities Studies Conference.

**Poster Presentation:**

Hannah Willis and Rebecca S. Katz, (2011, April), The Pressures of Masculinity and Doing Crime, 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 EDUCATION**

### **21<sup>ST</sup> CENTURY EDUCATION ENTERPRISE**

#### **AMANDA FAUST**

**Major:**

Special Education (MSD) and Elementary Education

**Faculty Mentor:**

Rebecca Roach

**Research/Project Title:**

iPads in the Classroom/Cooperative Learning Among Teachers and Administrators

**Project Abstract/Summary:**

The 21<sup>st</sup> Century Education Enterprise received a grant to pair 8 iPads with 8 teachers and administrators in Martin County. My job was to survey all of these participants once a month and compile the information. This survey asked them what they used the iPads for both in their personal lives and in the classroom. What applications did they buy? After all the data was collected the idea was to determine whether or not iPads would be appropriate in the classroom. The 21<sup>st</sup> Century Education Enterprise received a grant to start a pilot program in Menifee County. A group of teachers and administrators applied to participate. Only the most qualified and involved were accepted. Their job was to develop a comprehensive Technology Improvement plan for their district. Our job was to monitor and make sure all decisions are made based on facts.

**Project Dissemination:**

N/A. Research has not been completed

**Awards and/or Honors:**

N/A

**Post-Graduation Plans (Seniors Only):**

Ms. Faust has applied to several graduate programs around the country. She has also put in applications to several states for teaching positions.

## **BROOKLYN KENDALL**

**Major:**

P-5 and LBD

**Faculty Mentor:**

Rebecca Roach

**Research/Project Title:**

The Fantastic Four: The Efficacy of Open Response Preparation in Elementary Schools

**Project Abstract/Summary:**

The Fantastic Four is a systemic approach to guiding students through the multi-stepped task of writing concise and accurate open responses as presented on the CATS test. In order to determine the effectiveness of the Fantastic Four approach to answering open response questions, data was collected from four schools located in two different districts. There was a positive relationship between students who answered open response questions using the Fantastic Four method and improved CATS scores.

**Project Dissemination:**

**Poster Presentation:**

Brooklyn Kendall and Rebecca Roach, (2011, April) The Fantastic Four: The Efficacy of Open Response Preparation in Elementary Schools, Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

**Awards and/or Honors:**

N/A

**Post-Graduation Plans (Seniors Only):**

N/A

## **TERRI ROSE**

**Major:**

P5 and LBD

**Faculty Mentor:**

Rebecca Roach

**Research/Project Title:**

The Space Movie Project: Measuring Student Learning through imovie Rubrics

**Project Abstract/Summary:**

The Morehead State University (MSU) College of Education collaborated with the faculty of the College of Science and Technology, MSU Space Science Center, and the Kentucky DataSeam Initiative to facilitate a two-day workshop, online learning community and ongoing in-school support for 74 students (50% females) from counties in Eastern Kentucky. Through the use of cutting edge technology, in both desktop movie making and state-of-the-art space research tools, high school science and technology teachers and students from rural, impoverished schools were given an opportunity to work with Science Education professors, Space Science engineers and educational technology specialists to teach their students to research and record digital documentaries that they later showed on the "larger than life" ceiling of The Digital Star Theatre, a 100 seat multi-function state-of-the-art digital classroom. The data for this study was available through the Space Movie Project. All scores were collected at the Space Movie Film Festival, which was the culminating showcase of student movies. The scientific scores were judged by faculty members of the Space Science Center and the Science Department at Morehead State University and the technical and ethical scores were judged by technology faculty and staff of MSU.

**Project Dissemination:**

**Poster Presentation:**

Terri Rose and Rebecca Roach, (2011, April) The Space Movie Project: Measuring Student Learning through imovie Rubrics, 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**

### **KATARINA CHALK**

**Major:**

P-5

**Faculty Mentors:**

Kim Nettleton/Mee-Ryoung Shon

**Research/Project Title:**

- 1.) The Trend of Professional Focus on Child Nutrition on Physical Fitness: Analysis on Young Children in the Past 30 Years.
- 2.) Super Summer: Camps for Gifted Children
- 3.) Blackboard: A Radical Technology?

**Project Abstract/Summary:**

The trend of professional focus on child nutrition on physical fitness: Analysis on young children in the past 30 years. In the 1980's children's nutrition was a big factor to professionals in child development. In the 1990's nutrition lost its place and physical activity replaced it. This study examines the integration of nutrition and physical fitness into preschools and its effect on childhood obesity.

Super Summer: The needs of gifted children are often ignored as schools attempt to meet the needs of academically challenged students. Enrichment programs are one way parents and schools help gifted children thrive. This study looks at the effectiveness of such programs. The data for this study has been collected but further work on this study will not continue until after the preschool study is completed. This is an ongoing study.

Blackboards: A Radical Technology? This project examines how teachers and students have interacted with blackboards, whiteboards, and electronic boards since the 1830's. Both instructional strategies and assumptions about teaching and learning are examined. This study was begun in the fall, but was shelved until the preschool project was completed.

**Project Dissemination:**

**Poster Presentation:**

Chalk, K. and Shon, M.R. (2011, April) The Trend of Professional Focus on Child Nutrition on Physical Fitness: Analysis on Young Children 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:**

Elementary Special Education for Moderate to Severe Disabilities

**Faculty Mentor:**

Mattie Decker

**Research/Project Title:**

Unexpected Lessons: The Study of Theories, Materials, and Interventions in Elementary Reading Instruction

**Project Abstract/Summary:**

**Publication:**

Unexpected Lessons: Interventions that Work with Struggling Readers, submitted for publication, Council for Exceptional Children, May, 2011.

**Awards and/or Honors:**

Kappa Delta Pi Honors Fraternity, Member  
Psy Chi Honors Fraternity, Member  
MSU College of Education Undergraduate Research Fellow  
Dean's List, Morehead State University

**Post-Graduation Plans (Seniors Only):**

Teach in an elementary school near Ashland, KY; Attend graduate school to study special education and earn certification to be a special education director.

## **TIFFANY SMITH**

### **Major:**

LBD/MSD

### **Faculty Mentor:**

Sarah Hawkins

### **Research/Project Title:**

Embedding Triple III Instruction of RtI when Teaching Statewide Pre-kindergarten Learning Standards to Children with Significant Disabilities within Inclusive Preschool Classrooms

### **Project Abstract/Summary:**

The purpose of this research project is to share results of a series of single subject studies that assessed the attainment of Pre-kindergarten standards for Children with significant disabilities. Teachers in inclusive, public, preschool classrooms implemented assessment strategies, formulated individualized objectives and intervention plans, embedded those objectives in daily classroom activities, and monitored children's progress. It was our hypothesis that with appropriate individualized instruction and intervention, children with significant disabilities could make progress in an inclusive preschool classroom, much like their peers without disabilities. The results obtained from the study, thus far, shows several different things: (a) Teachers can successfully teach students with significant disabilities within inclusive classroom settings and (b) Children with significant disabilities can attain Pre-kindergarten standards when: authentic assessment strategies are employed, individualized plans are developed, embedding consistently occurs, and instruction is monitored.

Over the last two years, Dr. Sarah Hawkins and Ms. Smith have been working with the Rowan County Preschool Center. Ms. Smith has assisted preschool teachers in inclusive preschool classrooms, implemented authentic assessment strategies, selected individualized objectives, embedded objectives in classroom activities, and monitored student progress. Ms. Smith continues to work with the preschool teachers and children, as she is student-teaching, as the research study is still in progress. Ms. Smith and her mentor are also in the process of developing a manual that could be published and distributed to school districts across the Commonwealth. This manual would highlight the research and provide a guideline for those who want to implement similar interventions in their own school districts/classrooms. This year, there are a total of three students in the research study. Thus far, one of the students have met criterion (100%) and have maintained their particular skill for two weeks. All other students included in the study have made significant progress above baseline and are continuing to make further progress as the school year comes to a close.

### **Project Dissemination:**

#### **Poster Presentations:**

Smith, T., and Hawkins, S. (November, 2010) Embedding Triple III Instruction of RtI when Teaching Statewide Pre-kindergarten Learning Standards to Children with Significant Disabilities within Inclusive Preschool Classrooms, Kentucky Council for Exceptional Children Conference, Louisville, KY, November.

Smith, T., and Hawkins, S. (April, 2010) Embedding Triple III Instruction of RtI when Teaching Statewide Pre-kindergarten Learning Standards to Children with Significant Disabilities within Inclusive Preschool Classrooms, Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

#### **Awards and/or Honors:**

Recognition of Student Scholarship, Kentucky Senate, January, 2010

Recognition of Student Scholarship, Kentucky House of Representatives, January, 2010

Kentucky Committee for Math Achievement, Presentation Recognition, March, 2010

Emerging Leaders Symposium Graduate, April, 2010

Undergraduate Fellowship Award, Morehead State University, May, 2010

Honors Banquet Recognition, Morehead State University, May, 2010

Educational Testing Service, Recognition of Excellence, July, 2010

#### **Post-Graduation Plans (Seniors Only):**

In the Fall of 2011, Ms. Smith will be attending the University of Kentucky to begin Graduate School. She has been accepted to the Department of Special Education and Rehabilitation Counseling, Interdisciplinary Early Childhood Education graduate program. Ms. Smith has applied and was accepted for the IECE Initial Certification program and the Master's Degree Program. The opportunities that have been provided to Ms. Smith throughout her Undergraduate Research Fellowship have definitely encouraged her to further her education immediately after graduation so she can continue to fulfill her passion for educational research. In addition to admission into the College of Education, Ms. Smith has also been accepted as a Teachers Assistant in the Early Childhood Laboratory at the University of Kentucky.



## **DEPARTMENT OF MIDDLE GRADES AND SECONDARY EDUCATION**

### **BRITTANY CAMPBELL**

**Major:**

Special and P-5 Education

**Faculty Mentor:**

Sara Lindsey/Jody Fernandez

**Research/Project Title:**

New Zealand Research Team: Comparing Literacy in New Zealand to Literacy in Eastern Kentucky. Finding the Commonalities and Differences in Hopes of Bringing Teaching Methods Back to the United States

**Project Abstract/Summary:**

In New Zealand they have school all year round with two week breaks after the terms. They mostly do group work that focuses on the student's academic level. There is not standardized testing in New Zealand, but each school has their own curriculum that is guided by a National statement. They do a lot of inquiry learning where the teachers select a topic and the students ask questions that they would like to know about that topic. This is still a work in progress.

**Project Dissemination:**

**Poster Presentation:**

Brittany Campbell, Kelli Hollenkamp, Jody Fernandez and Sara Lindsey, (2011, April) Expanding Reading Horizons: Reading Interventions from the Land of the Long White Cloud to the Mountains of Eastern Kentucky, Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

**Awards and/or Honors:**

Undergraduate Fellowship Award

**Post-Graduation Plans (Seniors Only):**

N/A

### **KELLI HOLLENKAMP**

**Major:**

Education/Middle Grades

**Faculty Mentor:**

Sara Lindsey/Jody Fernandez

**Research/Project Title:**

From the Mountains of Appalachia to the Mountains of the Waitakeres: Exploring Commonalities and Differences in Literacy Instruction

**Project Abstract/Summary:**

Drs. Jody Fernandez and Sara Lindsey, with the aid of Kelli Hollenkamp and another undergraduate research assistant, spent 2010-2011 preparing for and then traveling to New Zealand to investigate (1) developing a MSU overseas teaching experience and (2) investigating NZ literacy standards and pedagogy. Data has been collected and is currently being organized for dissemination at the National Middle School Association 2011 Annual Conference, the Hawaii International Education 2012 Conference and the International Reading Association 2012 Conference, in addition to several state and regional venues.

**Project Dissemination:**

**Poster Presentations:**

Kelli Hollenkamp and Jody Fernandez, (2011, February) A Comparison of Literacy Interventions Utilized in New Zealand and Eastern Kentucky, Posters-at-the-Capitol, Frankfort, KY, February.

Kelli Hollenkamp and Jody Fernandez, (2011, April) A Comparison of Literacy Interventions Utilized in New Zealand and Eastern Kentucky, Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

**Awards and/or Honors:**

N/A

**Post-Graduation Plans (Seniors Only):**

N/A

## **SHERI MACNUTT**

**Major:**

Education/Middle Grades 5-9

**Faculty Mentor:**

Jody Fernandez

**Research/Project Title:**

Perceptions of Racist among MSU College of Education Teacher Candidates

**Project Abstract/Summary:**

No Report Submitted

**Project Dissemination:**

N/A

**Awards and/or Honors:**

N/A

**Post-Graduation Plans (Seniors Only):**

N/A

## **NIKITA MURPHY**

**Major:**

Education

**Faculty Mentor:**

Lesia Lennex

**Research/Project Title:**

- 1.) Women in Higher Education
- 2.) Preschool Children and Mobile Technologies
- 3.) TPCCK and Continuum of Teacher Education

**Project Abstract/Summary:**

"Women in Higher Education" is original research in which female associate and professor level faculty were interviewed about institutional support of scholarship and promotion. The interviews have been transcribed and evaluated using ethnographic techniques. Along with literature reviews, this research has given a broader picture of women's perceptions of scholarly activity and promotion processes. This research has shown that women at Morehead State University, and the institution itself, are in line with national trends for women in higher education. Not only are women in fewer numbers at the professor level (only 2% at MSU) but they perceive some lack of support for their continued scholarly activity. Female professors are very willing to support mentorship in their discipline areas.

"Preschool Children and Mobile Technologies" is original research analyzing the group dynamics of mobile technologies, specifically laptop computers, among groups of preschool children. The research is based in part on previous research by Lennex and Nettleton (2010) in which K-12 students were seen to develop independent groupings and leadership. The initial research has been conducted for this study. Videotapes and written anecdotal notes from field participants is being analyzed for patterns in group interaction with mobile technologies.

**Project Dissemination:**

**Poster Presentation:**

Women in Higher Education: Challenges, Triumphs, and Steel Ceilings, Mid-West Educational Research Association (MWERA) Regional Conference, Columbus, OH, October. (Ms. Murphy applied for financial assistance from COE Dean's Office and was awarded funding toward travel and registration. She solely gave this poster session due to Dr. Lennex's commitment to E-LEARN in Orlando, FL.).

**Oral Presentation:**

Preschoolers and Technology: As Easy as 1-2-3, Society for Information Technology and Teacher Education (SITE) International Conference, Nashville, TN, March. (Ms. Murphy was unable to present this session due to her presentation to the simultaneous PDS conference presentation in New Orleans, LA.).

**Publication:**

Preschoolers and Technology: As Easy as 1-2-3, a Chapter in Cases on Inquiry through Instructional Technology in Math and Science: Systemic Approaches, in pres with a projected publication date of December, 2011.

**Awards and/or Honors:**

N/A

**Post-Graduation Plans (Seniors Only):**

Ms. Murphy graduated May, 2011, with her elementary teaching degree. She plans to pursue a teaching position for P-5.

## **KARLA SPENCER**

### **Major:**

Art/Graphic Design

### **Faculty Mentor:**

Lesia Lennex

### **Research/Project Title:**

Part 1: Analysis of Classroom Instruction P-12 toward Activity Theory and the iLRN Model. This will be a continuation of work from Fall 2010.

Part 2: Meta-analysis of 3-D Projections and Their Use in Inquiry Science. It is hoped that production of 3-D Modules for Secondary Science and Freshman Level Biology may also be produced during Spring 2011.

### **Project Abstract/Summary:**

Part 1: This research is a continuation of classroom practices in the use and application of instructional technology.

Ms. Spencer will engage in field research with Preschool through twelfth grade students in examination of their practices with instructional technology. Further analysis of the behaviors and speech patterns among the students will provide the basis for publications and presentations.

Part 2: The technology to bring 3-D teaching and P-12 classrooms is here. Knowing how to use it is prime for research. Ms. Spencer will conduct a meta-analysis of articles and materials available for use in the 3-D classroom. We hope to be able to also produce inquiry science materials for secondary classrooms and freshman level biology.

### **Project Dissemination:**

#### **Poster Presentations:**

Spencer, Karla and Lennex, Lesia (2011, April) 3D Technology in Education, Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

For both parts, research will be applied to presentation proposals for Society for Information Technology and Teacher Education (SITE) 2012 and National Science Teachers Association (NSTA) 2012. The resulting research has been formed into a chapter proposal on 3D Teaching in the Schools. This chapter proposal will be part of a book proposal being submitted summer 2011 to either International Society for Technology Education (ISTE) or Sage Press. Also, Ms. Spencer and Dr. Lennex applied for a Cornell Birding mini-grant to fund a 3D art show and birding unit for Girl Scout Troop #1345 and the Rowan County Elementary schools. The funding (\$480) was not awarded.

#### **Awards and/or Honors:**

N/A

#### **Post-Graduation Plans (Seniors Only):**

Ms. Spencer is applying for graphic design positions. She is planning to do mission work but has no definite timeline.

## **AMIE WECKENBROCK**

### **Major:**

Middle Grades Education

### **Faculty Mentor:**

Kimberlee Sharp

### **Research/Project Title:**

Personnel Policies Regarding the Teaching of Controversial Issues: A Central Appalachian Perspective

### **Project Abstract/Summary:**

#### **Abstract:**

This study examined a sample of Central Appalachian school district's personnel policies regarding controversial issues, instruction and the protocols teachers must follow when teaching them. Specifically, the study examined the language used in the policies in order to ascertain: a) school districts' expectations of teachers as controversial issues arise during instruction; b) the degree to which school districts may limit, restrict, prohibit, or give free reign to teachers to discuss them; and c) the kinds and/or nature of controversial issues that school districts may limit, restrict, and/or prohibit. Implications of these policies on classroom practice and Central Appalachian students' access to this dimension of citizenship education was also addressed.

#### **Summary:**

- The counties in Central Appalachia were found using the Central Appalachia Network.
- The items being analyzed were the personnel policies for Certified Employees that were found on the individual school district's websites.
- The coding of the policies relied mostly on literature based criteria such as Maurice Hunt and Lawrence Metcalf's "The Seven Problematic Areas of Culture" (1968). These are: power and law, economics, nationalism/patriotism /foreign affairs, social class, religion/morality, sex/courtship/marriage and race/minority relations.
- American Fact Finder, from the U.S. Census Bureau website, was used to determine specific demographics for the counties in Central Appalachia.

- Other duly noted diction consisted of: relevant to age and maturity of students, potentially or substantially disruptive, objective or impartial and discussion of opposing points of view.

**Conclusions:**

After examining 115 Controversial Issue Policies, I have made these conclusions:

- Many of the individual policies are based off of a state-wide policy dating back to the 1980's.
- The policies appear to give freedom to teachers to discuss controversial issues; however, prior research found that most teachers are still reluctant to teach these issues.
- Policies from every county state that when discussing controversial events, there must be free access to all relevant information and mutual respect for all points of view. Also stating that all sides of the topic must be given equal consideration and time.

**Project Dissemination:**

**Poster Presentations:**

Weckenbrock, A.M., Sharp, K.A. (2011), Personnel Policies Regarding the Teaching of Controversial Issues: A Central Appalachian Perspective, 10<sup>th</sup> Annual Posters-at-the-Capitol Conference, Frankfort, KY, February.

Weckenbrock, A.M. (2011), Teaching Controversial Issues in Central Appalachia Schools: An Examination of Personnel Policies, Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

**Oral Presentations:**

Weckenbrock, A.M., Sharp, K.A. (2010), School Policies Regarding Controversial Issues: A Central Appalachian Perspective, 90<sup>th</sup> Annual Conference of the National Council for the Social Studies (NCSS), Denver, CO, November.

Weckenbrock, A.M., (2011), Teaching Controversial Issues in Central Appalachia Schools: An Examination of Personnel Policies, accepted for presentation at the Kentucky Council for the Social Studies (KCSS), Bowling Green, KY, September

**Awards and/or Honors:**

Ms. Weckenbrock received a \$200 scholarship (November, 2010) from the Kentucky Council for the Social Studies (KCSS) to support her travel to the National Council for the Social Studies (NCSS) National Conference, Denver, CO.

Ms. Weckenbrock is the College of Education recipient of the "Ruth Boggs Shannon and E.L. Shannon, Jr. Endowment Scholarship," for Fall 2011. Sum of scholarship: \$2,000.

Ms. Weckenbrock was inducted into Kappa Delta Pi, the International Honor Society for Education, in Fall 2009.

**Post-Graduation Plans (Seniors Only):**

Ms. Weckenbrock will be student teaching in Campbell County, Kentucky, Fall 2011. Following graduation in December, 2011, she hopes to secure full-time employment as a middle grades social studies and/or science teacher.

**COLLEGE OF SCIENCE AND TECHNOLOGY**

***DEPARTMENT OF APPLIED ENGINEERING AND TECHNOLOGY***

**AMARIAH BELCHER**

**Major:**

Manufacturing Technology

**Faculty Mentor:**

Nilesh Joshi

**Research/Project Title:**

Plastic Bottles vs. Aluminum Cans: A Case Study in Sustainable Design

**Project Abstract/Summary:**

Environmentally sustainable design is a philosophy that focuses on minimizing negative impacts of products on the environment during their design stage. In this project, we explored this philosophy and its application to an interesting day-to-day problem. The use of plastic bottles and aluminum cans as beverage containers is prevalent in our society. The CAD models of these two products were created using SolidWorks 3D modeling software and a sustainable design study was performed on the CAD models using a tool known as SustainabilityXpress. The negative environmental impacts of both products were quantified and compared. The following five impact factors were considered: carbon footprint, energy consumption, air acidification, water eutrophication, and water footprint.

**Project Dissemination:****Oral Presentations:**

Belcher, A., Joshi, N.N. (2011), Plastic Bottles vs. Aluminum Cans: A Case Study in Sustainable Design, Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Belcher, A., May, J., and Joshi, N.N. (2010), Engineering Design Optimization using SolidWorks Simulation, 2010 Kentucky Academy of Science Annual Meeting, Bowling Green, KY, November.

**Awards and/or Honors:**

N/A

**Post-Graduation Plans (Seniors Only):**

N/A

**BRANDON WHITE****Major:**

Engineering Management

**Faculty Mentor:**

Hans Chapman

**Research/Project Title:**

Enhancing the Solar Resource Database in Eastern Kentucky

**Project Abstract/Summary:**

As awareness and demand for solar/photovoltaic technologies increase, the need for more accessible and reliable region-and site-specific solar irradiance information also heighten. There are a number of solar radiation resources for the United States. However, there is only a limited amount of solar resource data for the Eastern Kentucky region to assist designers and manufacturers of technologies involving thermal, electrical, construction, and other processes.

This research seeks to evaluate existing solar resource data and to characterize solar radiation measurements for data quality assessment in the Eastern Kentucky Region, using Morehead State University as a test site. The methods to be used will be solar radiance and solar insolation. Using a designed experiment approach, data will be acquired using a pyranometer (measuring global radiation) and a data logger will be used for storing the measurements prior to analysis. These instruments will be deployed at the Lloyd Cassity and Reed Hall Buildings (Department of Applied Engineering and Technology at Morehead State University). The data to be collected will then be analyzed and compared with those based on calculations. Active literature review of solar energy resource databases in the U.S. and particularly, Eastern Kentucky, is underway. On acquiring the equipment proposed for the research, equipment testing, preliminary and detailed experimentation will be done. The development of more location-specific solar resources has the potential to increase the level of interest and investments in renewable energy technologies in the region. The proposed research presents a valuable intellectual merit since the study and its outcomes can be incorporated as practical laboratory modules for some of the existing courses offered by the AET Department.

**Project Dissemination:****Oral Presentation:**

White, B. and Chapman, H. (2011, April), Solar Energy Research in Eastern Kentucky, Celebration of Student Scholarship, Morehead State University, Morehead, KY, April

**Awards and/or Honors:**

N/A

**Post-Graduation Plans (Seniors Only):**

Mr. White is planning to pursue a masters program in Engineering Management at the Department of Applied Engineering and Technology at Morehead State University.

**DEPARTMENT OF AGRICULTURAL SCIENCES****DANIEL FOSTER****Major:**

Agriculture

**Faculty Mentor:**

J. Michael Phillips

**Research/Project Title:**

East Kentucky Bioenergy Assessment Project (DOE Project DE-EE003130)

**Project Abstract/Summary:**

Sweet sorghum (*Sorghum bicolor*) is an adapted warm season crop with high potential as a bioenergy crop in the United States. A field study was conducted in the 2010 growing season to assess yield potential of nine commercially available varieties. The highest yielding varieties were M81-E and Kellar at 38 and 43 tons/acre, respectively ( $P < 0.05$ ). In the field study, erratic stands (plant populations) were assessed. Plant populations ranged from about 22,000 to 121,000 plants/acre where a population of 174,000 is most ideal. Germination was conducted for each of the seedlots and germination exceeded 90% in all cases. Further investigation was conducted to assess seed size and its relationship with plant population and yield. Results indicate that TOP 76-6 and Theis had significantly larger diameters than other varieties. Plant yield and seed size is positively correlated at 0.76.

**Project Dissemination:****Poster Presentations:**

Foster, J.D., C.E. Timberlake, J.M. Phillips, and R.E. Miculinich, (2011, April), Yield and Plant Population of Whole Sweet Sorghum in Eastern Kentucky, Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Foster, J.D., C.E. Timberlake, and J.M. Phillips, (2011, February), Yield and Plant Population of Whole Sweet Sorghum in Eastern Kentucky, Southern Association of Agricultural Scientists (Agronomy section), Corpus Christi, TX, February.

**Awards and/or Honors:**

N/A

**Post-Graduation Plans (Seniors Only):**

Mr. Foster plans on completing his undergraduate degree in agricultural education and pursue the M.S. degree in Career and Technical Education (agriculture emphasis) at Morehead State University.

**MORIAH PENICK****Major:**

Animal Science

**Faculty Mentor:**

Rebecca Miculinich

**Research/Project Title:**

Identification of Genetic Markers for Improvement of Natural, Fresh Pork Quality.

**Project Abstract/Summary:**

Consumers and many segments of the pork industry continue to demand improvements in the quality of fresh pork products. The objective of this study is to determine the effect of two promising candidate genes, adipocyte determination and differentiation factor-1 (ADD1) and pyruvate dehydrogenase E1-alpha subunit (PDHA1), on pork quality traits. ADD1 is a transcription factor believed to play a role in lipid biosynthesis in humans and has been found to be involved in the over-expression of certain genes in obese mice. PDHA1 has been found to catalyze the conversion of pyruvate into acetyl-CoA. A deficiency of the enzyme pyruvate dehydrogenase is one of the most commonly defined genetic defects of mitochondrial energy metabolism resulting in lactic acidosis. 200 Berkshire and Landrace sired pigs were genotyped using PCR-RFLP procedures. ADD1 allele-2 was found at a higher frequency (.8) in the Berkshire population as compared to the Landrace population (.5). ADD1 genotype-22 pigs were significantly ( $P > .05$ ) fatter, had greater intramuscular fat% ( $P < .01$ ) and marbling scores ( $P < .01$ ) when compared to ADD1 genotype-11 pigs. ADD1 genotype-11 and 12 pigs had significantly larger loin muscle area ( $P < .01$ ) compared to the 22-genotypes. ADD1 genotype groups do not differ significantly ( $P > .05$ ) for ultimate pH, Minolta reflectance, Warner-Bratzler shear force, purge loss, color score, firmness and cooking loss. PDHA1 marker was informative in both the Berkshire and Landrace populations. PDHA1 allele-2 was found at a higher frequency (.70) in the Berkshire population as compared to the Landrace population (.47). PDHA1 genotype-22 pigs had a higher pH ( $P < .05$ ) when compared to both PDHA1 genotype-11 and 12 pigs. PDHA1 genotype-11 and 12 pigs had significantly larger loin muscle area ( $P < .05$ ) compared to the 22-genotypes. ADD1 genotype groups did not differ significantly ( $P > .05$ ) for Minolta reflectance, Warner-Bratzler shear force, purge loss, color score, firmness and cooking loss percentage, although there was a numerical trend that indicated 22-genotypes had better purge and cooking loss, as well as, were firmer, darker in color and more tender when compared to 11-genotypes. Results indicate that ADD1 and PDHA1 may have potential for use in marker assisted selection for the improvement of quality attributes associated with marbling and pH in fresh pork. Further characterization of the effects of these markers in a larger population and other livestock species is ongoing. Funding for this project was provided by the MSU Undergraduate Research Fellowship, the MSU Center for Regional Engagement Grant and the Ohio State University Department of Animal Sciences.

**Project Dissemination:**

M.L. Penick, T.J. Wistuba, S.J. Moeller, R.S. Emmett-Miculinich, (2011) The Effect of Adipocyte Determination and Differentiation Factor-1 (ADD1) on Fresh Pork Quality, American Society of Animal Science, Southern Section Annual Meeting, Corpus Christi, TX, 2011.

Moriah L. Penick, Rebecca Emmett Miculinich and Troy J. Wistuba (2011) The Effect of Adipocyte Determination and Differentiation Factor-1 on Fresh Pork Quality, Celebration of Student Scholarship, Morehead State University, Morehead, KY, 2011.

**Oral Presentation:**

Ashton L. Wurzel, Moriah L. Penick, Rebecca Emmett Miculinich and Troy J. Wistuba, (2011, April) The Effect of Pyruvate Dehydrogenase E1-alpha Subunit on Fresh Pork Quality, Celebration of Student Scholarship, Morehead State University, Morehead, KY, 2011.

**Awards and/or Honors:**

3<sup>rd</sup> Place – Undergraduate Research Presentation Competition, American Society of Animal Science, Southern Section 2011 Annual Meeting, Corpus Christi, TX.

**Post-Graduation Plans (Seniors Only):**

N/A

**CAITLIN TIMBERLAKE****Major:**

Agriculture

**Faculty Mentor:**

J. Michael Phillips

**Research/Project Title:**

East Kentucky Bioenergy Assessment Project (DOE Project DE-EE0003130)

**Project Abstract/Summary:**

Sweet sorghum (*Sorghum bicolor*) is an adapted warm season crop with high potential as a bioenergy crop in the United States. A field study was conducted in the 2010 growing season to assess yield potential of nine commercially available varieties. The highest yielding varieties were M81-E and Kellar at 38 and 43 tons/acre, respectively ([p@0.05](#)). Yields ranged from about 9.9 to 43 tons/acre. In the field study, erratic stands (plant populations) were assessed. Plant populations ranged from about 22,000 (Umbrella) to 121,000 (Kellar) plants/acre where a population of 174,000 is most ideal. In relation to potential ethanol production in Kentucky, M81-E and Kellar were the highest producing varieties in this study.

**Project Dissemination:****Poster Presentations:**

Foster, J.D., C.E. Timberlake, J.M. Phillips, and R.E. Miculinich, (2011, April), Yield and Plant Population of Whole Sweet Sorghum in Eastern Kentucky, Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Foster, J.D., C.E. Timberlake, and J.M. Phillips, (2011, February), Yield and Plant Population of Whole Sweet Sorghum in Eastern Kentucky, Southern Association of Agricultural Scientists (Agronomy Section), Corpus Christi, TX, February.

**Awards and/or Honors:**

N/A

**Post-Graduation Plans (Seniors Only):**

N/A

**ASHTON WURZEL****Major:**

Agriculture

**Faculty Mentor:**

Rebecca Miculinich

**Research/Project Title:**

The Effect of Adipocyte Determination and Differentiation Factor-1 (ADD1) and Pyruvate Dehydrogenase E-1 Alpha Subunit (PDHA1) on Fresh Pork Quality Traits.

**Project Abstract/Summary:**

No Report Submitted.

**Project Dissemination:**

N/A

**Awards and/or Honors:**

N/A

**Post-Graduation Plans (Seniors Only):**

N/A

**DEPARTMENT OF BIOLOGY AND CHEMISTRY****JULIE ARNOLD****Major:**

Biology/Pre-Med

**Faculty Mentor:**

Geoffrey Gearner

**Research/Project Title:**

Antibiotic Resistance Genes in Escherichia Coli Isolated from Local Watersheds

**Project Abstract/Summary:**

Student participated in a project that utilized polymerase chain reaction to assess for the presence of antibiotic resistance genes in isolates of Escherichia coli collected from a variety of sampling sites in the Triplett Creek Watershed, Rowan County, Kentucky. The results of this project were recently presented as a poster at the Celebration of Student Scholarship (see abstract below). A poster abstract of the project's results will also be submitted to the Kentucky Academy of Science 2011 Annual Meeting in Murray, Kentucky.

Of 82 isolates of the bacterium Escherichia coli collected from selected sampling sites in the Triplett Creek Watershed assessed for antibiotic sensitivity using the Kirby-Bauer method, 100% were resistant to clindamycin, 92.7% were resistant to erythromycin, 41.5% were resistant to streptomycin, none were resistant to sulfamethoxazole+trimethoprim, and 18.3% were resistant to tetracycline. Isolates that exhibited resistance to tetracycline were assessed for the antibiotic resistance genes (ARGs) TetO and TetW utilizing polymerase chain reaction. Three of 15 isolates tested were positive for the TetO gene, while two tested positive for the TetW gene. Isolates that exhibited resistance to erythromycin were assessed for the ARGs ereA and mrsA/B. Twenty of 76 isolates tested were positive for the ereA gene, while four were positive for the mrsA/B gene. The presence of ARGs in the local watershed will allow us to utilize ARG's as potential genetic markers of bacterial contamination.

**Project Dissemination:****Poster Presentation:**

Kamelgarn, M., J. Arnold, and G.W. Gearner, (2011, April), Antibiotic Resistance Genes in the Triplett Creek Watershed, Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

**Awards and/or Honors:**

N/A

**Post-Graduation Plans (Seniors Only):**

N/A

**SOFEIA ASLAM****Major:**

Biology

**Faculty Mentor:**

Doug Dennis

**Research/Project Title:**

Analyses of Polyhydroxyalkanoate Inclusion Biogenesis

**Project Abstract/Summary:**

The lab, including Ms. Aslam, have made good progress on elucidating the structure of PHA biogenesis. We have made an apparently novel discovery of structure in which MreB, an internal cytoskeletal structure, can be imaged and a manuscript is being prepared on this. We are also working on another possible new structure that we have termed a curvilinear structure.

**Project Dissemination:****Oral Presentation:**

Aslam, Sofeia, Stacy, Tiffany, Mattingly, Mallory, Khouja, Slim, and Dennis, Doug, (2011, April), Optimization of Scanning Electron Microscopy Preparation Procedures for Bacterial Sub-cellular Imaging, 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:**

Biology and Chemistry

**Faculty Mentor:**

Janelle Hare

**Research/Project Title:**

Mutational Studies of UmuD Self-cleavage and a Bioinformatics Analysis of the Different Forms of UmuD Present in Different Strains of Acinetobacter

**Project Abstract/Summary:**

Organisms have developed different response systems to survive DNA damage such as the SOS response which results in the expression of the proteins UmuD and UmuC. After DNA damage, UmuD undergoes self-cleavage and binds with UmuC to form polymerase V which performs translesion synthesis. Our lab's previous lack of observed cleavage of UmuD in ADP1 may be due to a single amino acid mutation in UmuDAb that, in E. coli result in a non-cleavable UmuD. A G92D mutation results in noncleavable UmuD in E. coli and since most species of Acinetobacter contain asparagine at this position, we believe asparagine and aspartic acid are chemically similar enough that this particular amino acid may be inhibiting the ability of UmuD to undergo self-cleavage. We are mutating umuDAb to mimic the E. coli umuD to see if this restores the ability of UmuDAb to self-cleave. We are also currently planning experiments by which to examine the expression of UmuC in Acinetobacter. An additional project was conducted to compare the umuDC operon regions present across the dozen Acinetobacter species whose genomes have been sequenced. To our surprise, multiple umuDC operons are often present: some containing the extra-long umuD copy found in A. baylyi in addition to a complete E. coli-like umuDC operon. This work was funded by grant 1R15GM085722-01.

**Project Dissemination:****Poster Presentations:**

James Bradley, Jodi Wilder, and Janelle Hare, (2011, April), Regulation of Expression and Mutational Studies of UmuD Self-Cleavage, Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Sara Wheeler, Kasandra Lambert, James Bradley, and Janelle Hare, (2010, November), Comparisons of UmuD, a DNA Damage-Related Protein Required for SOS Mutagenesis, in Various Species of Acinetobacter, Kentucky Academy of Science.

**Awards and/or Honors:**

N/A

**Post-Graduation Plans (Seniors Only):**

N/A

**ALEXIA CALLIHAN****Major:**

Biology

**Faculty Mentor:**

Allen Risk

**Research/Project Title:**

Biodiversity Surrogacy: Employing Vascular Plants as Indicators for Bryophyte Richness at Different Spatial Scales in Spaws Creek Gorge, Menifee County, Kentucky

**Project Abstract/Summary:**

Bryophyte biodiversity is a rarely assessed topic in conservation biology because bryophyte species identification is time consuming and difficult. It may be helpful, therefore, to use other groups of plants to represent the diversity of bryophytes through known trends, a process called biodiversity surrogacy. Biodiversity trends may also be examined at different spatial scales in order to facilitate the biodiversity assessment process. The questions being asked in this study are: (1) How does bryophyte species richness compare at different spatial scales? (2) Can vascular plant species richness be employed as a surrogate to estimate that of the target group, bryophytes? And (3) Does the effectiveness of surrogacy vary at different spatial scales? Thirty 10x20m permanent plots were established in Spaws Creek Gorge in Daniel Boone National Forest in Menifee County, KY. Fifteen of the plots were allocated to the north-facing slope, fifteen to the south-facing slope. Of the 15 on each different aspect, there were 5 cliff-base plots, 5 mid-slope plots, and 5 creek-side plots. For the evaluation of bryophyte diversity at different spatial scales, the plots were assessed at 1 and 10 square meter in the NW and SE corners, and 200 square

meters. Specimens were collected from the plots, stored and identified in the herbarium at Morehead State University. The mean bryophyte richness for the 18 plots evaluated thus far, at 200, 10, and 1 m<sup>2</sup> scales, were 47.8, 19.4, and 6.8, respectively. Bryophyte biodiversity was greater for the north-facing slope (49.4) than the south-facing slope (47.1). Linear regression indicated a significant positive correlation between bryophyte and all vascular plant richness ( $r+0.58$ ;  $p+0.01$ ) at 200 square meters and showed positive correlations between bryophyte and pteridophyte richness at all scales (200m<sup>2</sup>:  $r+0.66$ ;  $p+0.002$ , 10m<sup>2</sup>;  $r+0.57$ ;  $p+0.01$ , 1m<sup>2</sup>;  $r+0.53$ ;  $p+0.02$ ).

**Project Dissemination:**

**Oral Presentations:**

Alexia Callihan and Dr. Allen C. Risk, (2011, April), Biodiversity Surrogacy and Bryophyte Species Richness at Different Spatial Scales in Spaws Creek Gorge, Kentucky, Celebration of Student Scholarship, Morehead State University, Morehead, KY.

Ms. Callihan has also given an oral presentation on the research that she has conducted with Dr. Allen C. Risk at the Association of Southeastern Biologists in 2011.

**Awards and/or Honors:**

Alexia was awarded first place in botany at the 2010 Undergraduate Paper Presentation Competition, Kentucky Academy of Science. She has also received a \$250 grant from the Kentucky Native Plant Society which will be used for a research project during the summer of 2011 involving spatial analysis of woody plants and ferns. She has already received permission from the Kentucky State Park System to collect specimens and conduct research within the park. This research will be presented as an oral presentation at the Kentucky Academy of Sciences this fall and at a meeting of the Kentucky Native Plant Society.

**Post-Graduation Plans (Seniors Only):**

Ms. Callihan plans on attending graduate school (location undecided) for her masters and doctoral degrees beginning January of 2012. She plans on a career in botanical research and plans to focus her study area to the bryophyte biodiversity of the Central Appalachian mountains.

**HEIDI CICCARELLI**

**Major:**

Vet-Tech

**Faculty Mentor:**

Allen Risk

**Research/Project Title:**

Canopy Formation after Large Scale Disturbance in Spaws Creek Gorge, Menifee County, KY

**Project Abstract/Summary:**

Patterns of canopy composition are complex and very dynamic. The composition of the canopy, paired with analysis of significant growth releases, can be indicative of a forest's history. Determination of certain species capabilities to respond to release opportunities, coupled with examination of understory composition can predict future canopy composition. Increment cores were taken from *Tsuga canadensis*, *Quercus rubra*, and *Liriodendron tulipifera* in Spaws Creek Gorge, KY, that had attained canopy status. After cores were dried and sanded to expose annual growth rings clearly, they were dated and cross verified. Annual growth rings were measured to the nearest micrometer with a Velmex-J2X system. A master chronology was then developed using COFECHA to test individual cores to determine if calendar years were accurately assigned to each annual ring in each core. This allowed verification for assigned years. Measurements of annual tree growth along with tree canopy position (dominant, co-dominant, intermediate or overtopped) were analyzed to determine the amount of longevity of release events and suppression events experience by each species. The longevity of release and suppression events was percentage difference based. Results indicate *Tsuga candensis* tolerates the longest and most frequent suppressions responds quickly to release opportunities. *Liriodendron tulipifera* and *Quercus rubra* do not tolerate suppressions as well. *Liriodendron tulipifera* had the fastest rate of regeneration after forest cutting. By using this information along with the composition of the understory, it is possible to more accurately predict future canopy composition.

**Oral Presentation:**

Ciccarelli, Heidi and Risk, Allen C. (2011, April), Canopy Formation after Large Scale Disturbance in Spaws Creek Gorge, Menifee County, Kentucky, Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

**Awards and/or Honors:**

N/A

**Post-Graduation Plans (Seniors Only):**

N/A

## ROSS HEALY

**Major:**

Biology

**Faculty Mentor:**

Allen Risk

**Research/Project Title:**

Tree Growth within Spaws Creek Gorge: Effects of Climate

**Project Abstract/Summary:**

The science of dendrochronology uses tree ring analysis to study the chronological sequence of annual growth in trees. The samples taken from the trees, referred to as "cores," allow researchers to study the history of the individual tree or, collectively, the forest. The purpose of this study was to analyze *Quercus* spp. (oaks) to determine what correlations could be found between annual growth ring thickness and environmental variables such as precipitation and temperature. Trees were sampled with increment bores based on diameter at breast height in a series of 10 x 20m plots at creek, mid-slope, and cliff elevations on both the north- and south-facing slopes. Cores were sanded and processed, and rings assigned calendar years according to standard dendrochronological techniques. The program COFECHA was used to check the assignment of calendar years to annual rings. All flagged cores were re-examined to ensure that annual ring dating was correct. No significant correlations between tree growth and temperature or precipitation were observed. However, the low precipitation years of 1930 and 1936 were also years of low growth by oaks. The overall growth patterns exhibited suggested that tree to tree interactions within the forest were the primary determinants of tree growth.

**Project Dissemination:**

**Oral Presentation:**

Healy, Ross T., Risk, Allen C., (2011, April), Tree Growth within Spaws Creek Gorge: Effects of Climate, Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

**Awards and/or Honors:**

N/A

**Post-Graduation Plans (Seniors Only):**

N/A

## HANNAH JACOBS

**Major:**

Biology

**Faculty Mentor:**

Allen Risk

**Research/Project Title:**

Comparison of the Woody Plant Community within Spaws Creek Gorge in Menifee County, Kentucky, using Importance Values

**Project Abstract/Summary:**

Woody plant community composition was studied within Spaws Creek Gorge in Menifee County, Kentucky. Woody plants with a trunk diameter of 5cm or greater were examined in twenty four 200m<sup>2</sup> plots divided evenly among north and south-facing slopes and elevation categories (creek, middle and cliff). Importance values (relative density+relative frequency+relative size) were used to compare the effect of aspect, elevation and canopy class on the woody plant community. Our results showed that eastern hemlock had the overall highest importance value. Eastern hemlock was also number one on both north- and south-facing aspects. When comparing by elevation, eastern hemlock had the highest importance value in the middle and creek plots, but rhododendron was number one in the cliff plots. When comparing by canopy class, tulip poplar was the most important species in the canopy whereas hemlock was number one in the understory. In the future we plan to finish the last 6 plots and do a complete analysis.

**Project Dissemination:**

**Oral Presentation:**

Jacobs, Hannah K. and Risk, Allen, (2011, April), Comparison of the Woody Plant Community within Spaws Creek Gorge in Menifee County, Kentucky, using Importance Values, 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:**

Antibiotic Resistance Genes in Escherichia Coli Isolated from Local Watersheds

**Project Abstract/Summary:**

Ms. Kamelgarn has participated in a variety of projects involving feces-associated bacteria in the Triplett Creek Watershed in Rowan County, Kentucky. Her principle project has been utilizing polymerase chain reaction to assess for the presence of specific antibiotic resistance genes in the bacterium Escherichia coli collected from a variety of sampling sites in the Triplett Creek Watershed. The results of this project were presented at the recent Celebration of Student Scholarship (see abstract below), and a poster abstract of the results will be submitted to the Fall 2011 Kentucky Academy of Science Annual Meeting in Murray, Kentucky. Ms. Kamelgarn has been a student author on five (local and state) poster presentations, serving as presenting author on two.

Of 82 isolates of the bacterium Escherichia coli collected from selected sampling sites in the Triplett Creek Watershed assessed for antibiotic sensitivity using the Kirby-Bauer method, 100% were resistant to clindamycin, 92.7% were resistant to erythromycin, 41.5% were resistant to streptomycin, none were resistant to sulfamethoxazole+trimethoprim, and 18.3% were resistant to tetracycline. Isolates that exhibited resistance to tetracycline were assessed for the antibiotic resistance genes (ARGs) TetO and TetW utilizing polymerase chain reaction. Three of 15 isolates tested were positive for the TetO gene, while two tested positive for the TetW gene. Isolates that exhibited resistance to erythromycin were assessed for the ARGs, ereA, and mrsA/B. Twenty of 76 isolates tested were positive for the ereA gene, while four were positive for the mrsA/B gene. The presence of ARGs in the local watershed will allow us to utilize ARGs as potential genetic markers of bacterial contamination.

**Project Dissemination:**

Gearner, G.W., M. Kamelgarn, B. Moore, K. Platt, N. Shields, and A. Haight, (2011, March), Escherichia Coli Contamination of the Triplett Creek Watershed, Rowan County, Kentucky, Water Resources Annual Symposium, Lexington, KY, March.

**Poster Presentations:**

Kamelgarn, M., J. Arnold, and G.W. Gearner, (2011, April), Antibiotic Resistance Genes in the Triplett Creek Watershed, Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Kamelgarn, M., B. Moore, K. Platt, N. Shields, A. Haight, and G.W. Gearner, (2011, November), Escherichia Coli Contamination of the Triplett Creek Watershed, Rowan County, Kentucky, 96<sup>th</sup> Annual Meeting of the Kentucky Academy of Science, Bowling Green, KY, November.

**Awards and/or Honors:**

N/A

**Post-Graduation Plans (Seniors Only):**

N/A

## **KASANDRA LAMBERT**

**Major:**

Chemistry

**Faculty Mentor:**

Janelle Hare

**Research/Project Title:**

Regulation of UmuD, an Unexpected Regulator of a DNA Damage Inducible Gene

**Project Abstract/Summary:**

DNA is vulnerable to mutation through many elements, such as chemicals (mitomycin C) and ultraviolet radiation, so to protect genomes, organisms produce proteins such as UmuD and UmuC to replicate damaged DNA. Using the technique of Western blotting, UmuD expression from native and constitutive promoters can be qualitatively and quantitatively determined. Our anti-UmuD peptide antibodies show UmuD expression in E. coli cells and from both promoters, and the cleavage of UmuD occurs after both mitomycin C and UV exposure. It is important to observe that not just one form of DNA damage, but two independent methods were both shown to cause cleavage of UmuD protein, suggesting that although it possesses an additional N-terminal domain, it also conserves some of the expected function of UmuD: cleavage after DNA damage. The smaller product of cleavage was seen most prominently after UV exposure as opposed to mitomycin C exposure.

**Project Dissemination:****Poster Presentations:**

K. Lambert, S. Wheeler, G. Howington, S. Adhikari, and Dr. J. Hare, (2010), UmuD Expression in DNA Damaged and Undamaged Acinetobacter and Escherichia Coli Cells, Kentucky Academy of Science.

K. Lambert, S. Wheeler, G. Howington, S. Adhikari, and Dr. J. Hare, (2011, April), UmuD Expression in DNA Damaged and Undamaged Acinetobacter and Escherichia Coli Cells, Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

**Awards and/or Honors:**

N/A

**Post-Graduation Plans (Seniors Only):**

N/A

**JOSIE MAIONE****Major:**

Biology

**Faculty Mentor:**

Michael Fultz

**Research/Project Title:**

Rho Kinase Regulation of Cytoskeletal Remodeling in the A7r5 Smooth Muscle Cell.

**Project Abstract/Summary:**

A7r5 cells demonstrate specific differences regarding cytoskeletal remodeling of alpha-actin and beta-actin. However, the mechanism(s) regulating this differential remodeling is not understood. The actin cytoskeleton was examined before and after inhibition of Rho-kinase, and results suggest that Rho-kinase may selectively regulate alpha-actin remodeling with drastic changes to alpha-actin and a minimal effect on beta-actin. Rho-kinase activity also appears necessary for the maintenance of alpha-actin filaments in the resting cell, as our results suggest that the inhibition of Rho-kinase promotes dissolution of alpha-actin filaments. Therefore, Rho-kinase may regulate smooth muscle contractility by selectively regulating remodeling of the alpha-actin cytoskeleton. This project was supported by MSU Undergraduate Research Fellowship and NIH-INBRE grant #5P20RR16481-09.

**Project Dissemination:****Poster Presentation:**

Maione, Josie M. and Fultz, Michael (2011, April), Rho Kinase Regulation of Cytoskeletal Remodeling in the A7r5 Smooth Muscle Cell, Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

**Oral Presentation:**

Maione, Josie M. and Fultz, Michael (2010, November), Rho Kinase Regulation of Cytoskeletal Remodeling in the A7r5 Smooth Muscle Cell, The Kentucky Academy of Science 96<sup>th</sup> Annual Meeting, Bowling Green, KY, November.

**Awards and/or Honors:**

First place, Undergraduate Research Poster Competition, Physiology and Biochemistry section, Kentucky Academy of Science, November, 2008.

**Post-Graduation Plans (Seniors Only):**

Ms. Maione has been accepted into medical school at the University of Cincinnati.

**BRITTANY MOORE****Major:**

Biology

**Faculty Mentor:**

Geoffrey Gearner

**Research/Project Title:**

Escherichia Coli in the Triplett Creek Watershed

**Project Abstract/Summary:**

Ms. Moore participated in a project funded by a 319h grant from the Kentucky Division of Water that assessed the occurrence and density of Escherichia coli in 34 sampling sites throughout the Triplett Creek Watershed, Rowan County, Kentucky (see abstract of a recently presented poster below). In addition, she participated in microbial source tracking studies. Brittany was a student author on five (local and state) poster presentations, serving as the presenting author on two. The data generated as a result of Ms. Moore's participation will be used in a watershed-based plan that is currently in development and will be submitted to the Kentucky Division of Water.

Sections of the Triplett Creek Watershed have been identified as impaired for their designated use by the Kentucky Division of Water. Excessive levels of Escherichia coli bacteria contribute to this impairment. The purpose of this study is to assess the occurrence and density of E. coli in 34 sampling sites throughout the watershed over a 12-month period. Monthly sampling of the watershed was initiated in July 2009 and continued through June 2010. Additionally, three seasonal sampling events were conducted in which five samples were collected in 30 days during summer and fall 2009, and spring 2010. EPA Method 1640, which utilizes mTEC medium, was employed to detect and enumerate E. coli in the collected water samples. Numerous sites throughout the watershed and the study period exhibited E. coli densities that exceeded the KDOW standard of 130 E. coli CFU/100 ml (a geometric mean of five samples collected within 30 days) and/or continue to exhibit impairment due to pathogen contamination. These data will be used to develop a watershed based plan that will address the impairments through the selection and implementation of appropriate best management practices. This study is supported by the Environmental Protection Agency (under §319(h) of the Clean Water Act) through the Kentucky Division of Water (Grant # C9994861-08), and the MSU Undergraduate Research Fellowship program.

**Project Dissemination:**

Gearner, G. W., M. Kamelgarn, B. Moore, K. Platt, N. Shields, and A. Haight, (2011, March), Escherichia Coli Contamination of the Triplett Creek Watershed, Rowan County, Kentucky, Kentucky Water Resources Annual Symposium, Lexington, KY, March.  
Moore, B., K. Platt, A. Potter, N. Shields, A. Haight, and G.W. Gearner, (2010, November), Escherichia Coli Host Source Tracking in the Dry Creek Watershed, Rowan County, Kentucky, the 96<sup>th</sup> Annual Meeting of the Kentucky Academy of Science, Bowling Green, KY, November.  
Kamelgarn, M., B. Moore, K. Platt, N. Shields, A. Haight, and G.W. Gearner, (2010, November), Escherichia Coli Contamination of the Triplett Creek Watershed, Rowan County, Kentucky, the 96<sup>th</sup> Annual Meeting of the Kentucky Academy of Science, Bowling Green, KY, November

**Awards and/or Honors:**

N/A

**Post-Graduation Plans (Seniors Only):**

Ms. Moore has been accepted to the School of Osteopathic Medicine at Pikeville College (now the University of Pikeville), and will begin in Fall 2011.

**TIFFANY STACY**

**Major:**

Biology

**Faculty Mentor:**

Doug Dennis

**Research/Project Title:**

Analyses of Polyhydroxyalkanoate Inclusion Biogenesis

**Project Abstract/Summary:**

The lab, including Ms. Stacy, has made good progress on elucidating the structure of PHA biogenesis. We have made an apparently novel discovery in which MreB, an internal cytoskeletal structure, can be imaged and a manuscript is being prepared on this. We are also working on another possible new structure that we have termed a curvilinear structure.

**Project Dissemination:**

**Oral Presentation:**

Stacy, Tiffany, Aslam, Sofeia, Mattingly, Mallory, Khouja, Slim, and Dennis, Doug, (2011, April), Optimization of Scanning Electron Microscopy Preparation Procedures for Bacterial Subcellular Imaging, Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

**Awards and/or Honors:**

N/A

**Post-Graduation Plans (Seniors Only):**

N/A

**Tiffany Webb**

**Major:**

Biology

**Faculty Mentor:**

Stephanie Welter

**Research/Project Title:**

Diversity and Habitat Preference in Larval Dragonflies Inhabiting Restored Wetlands in Eastern Kentucky

**Project Abstract/Summary:**

The health of restored wetlands can be assessed using dragonflies as indicator species because they may be dependent on specific microhabitats for survival. In the lab, we tested whether dragonfly larvae had microhabitat (bare sand, horizontal stick, vertical stick, or leaf) preferences over a 48 hour period, and whether species identity and larval stadium size influenced their choices. Some individuals exhibited microhabitat preferences, while others did not. Species identity might influence those microhabitat choices, but larval stadium does not seem to be a factor. More data is needed to further clarify these relationships, but dragonfly presence in restored wetlands might be affected by availability or larval microhabitats.

Our results indicate that larvae within the genus *Somatochlora* preferred the vertical stick quadrant at 8 hours, but did not have a preference for any microhabitat at 24 hours. *Tetragoneuria* did not show a microhabitat preference at 8 hours but did exhibit a microhabitat preference for the leaf quadrant at 24 hours. *Epicordulia* preferred the horizontal stick quadrant at both 8 and 24 hours, while *Orthemis* preferred the leaf quadrant at both 8 and 24 hours. *Libellula*, *Ladona*, and *Leucorrhinia* did not show a preference for any of the microhabitats. Each genus collected in this study, however, did seem to prefer quadrants that contained some sort of artificial covering: leaf, vertical stick or horizontal stick. This common pattern could be explained by the fact that all the larvae collected were within the two families *Corduliidae* and *Libellulidae*, which are considered to be bottom sprawlers (or benthic dwellers) that inhabit debris and water weed in ponds and streams in nature (Minter 2000).

**Project Dissemination:****Poster Presentation:**

Tiffany Webb and Dr. Stephanie M. Welter, (2011, April), Diversity and Habitat Preference in Larval Dragonflies Inhabiting Restored Wetlands in Eastern Kentucky, Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

**Awards and/or Honors:**

Awarded a grant for support of this project from the Kentucky Society of Natural History.

**Post-Graduation Plans (Seniors Only):**

After graduation, Ms. Webb plans to move to Florida, where she hopes to obtain an ornithology research position to gain experience in the field. Then she plans on applying for graduate school in Tallahassee, FL., to get her Master's degree in Biology.

**JEFFREY WENTE****Major:**

Biology

**Faculty Mentor:**

Allen Risk

**Research/Project Title:**

Woody Plant Community Composition in Relation to Elevation and Aspect in Spaws Creek Gorge, Menifee County, Kentucky

**Project Abstract/Summary:**

No Report Submitted

**Project Dissemination:**

N/A

**Awards and/or Honors:**

N/A

**Post-Graduation Plans (Seniors Only):**

N/A

**SARA WHEELER****Major:**

Biology

**Faculty Mentor:**

Janelle Hare

**Research/Project Title:**

Cloning and Expression of UmuD in *Acinetobacter* and *Escherichia Coli*

**Project Abstract/Summary:**

DNA is vulnerable to mutation through elements such as UV irradiation, so to protect genomes, organisms contain certain gene sequences to combat damage, such as the *umuDC* operon which is required for the error prone SOS mutagenesis response to DNA damage. The gram-negative bacterium *Acinetobacter baylyi* has a unique *umuDC* operon in that the *umuD* gene encodes an extra N-terminal domain. Biochemical analyses of the full length *UmuD*

protein and an investigation into the potential self-cleavage of UmuD was conducted with Western blot analyses after cloning either the full length umuD gene or the mutated version of the gene lacking the extra N-terminal coding region. It appears that UmuD is expressed in ADP1 and E. coli and is cleaved in a RecA-dependent way in E. coli (as predicted by the E. coli model). Our anti-UmuD peptide antibodies show UmuD expression in E. coli cells and from both promoters, and that cleavage of UmuD occurs after both mitomycin C and UV exposure. It is important to observe that not just one form of DNA damage, but two independent methods were both shown to cause cleavage of UmuD protein, suggesting that although it possesses an additional N-terminal domain, it also conserves some of the expected function of UmuD: cleavage after DNA damage. The smaller product of cleavage was seen most prominently after UV exposure as opposed to mitomycin C exposure. Another project involved examining the expression of UmuDAb in various Acinetobacter species to see if this unusual form of UmuDAb was conserved across the genus. Results are ongoing and suggest that at least some of the Acinetobacter species express a similar UmuDAb.

**Project Dissemination:**

**Poster Presentations:**

Wheeler, S., J. Wilder, K. Lambert, J. Bradley, and J. Hare, (2010), Comparisons of UmuD, a DNA Damage-related Protein Required for SOS Mutagenesis, in Various Species of Acinetobacter, Kentucky Academy of Sciences General Meeting, Bowling Green, KY.

Sara Wheeler, Kasandra Lambert, Gavin Howington, Sabal Adhikari, Dr. Janelle Hare, (2011, April), UmuD Expression in DNA Damaged and Undamaged Acinetobacter and Escherichia Coli Cells, Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

**Awards and/or Honors:**

N/A

**Post-Graduation Plans (Seniors Only):**

Ms. Wheeler had applied to graduate school at UK IBS program, but was not accepted. Application in consideration currently at University of North Carolina and also considering lab technician positions.

**MATTHEW WHITTAKER**

**Major:**

Biology

**Faculty Mentor:**

Janelle Hare

**Research/Project Title:**

Production, Cleavage and Functions of Wild-type and Mutant Forms of UmuD from Acinetobacter Baylyi

**Project Abstract/Summary:**

DNA is vulnerable to mutation through elements such as UV irradiation, so to protect genomes, organisms contain certain gene sequences to combat damage, such as the umuDC operon which is required for the error prone SOS mutagenesis response to DNA damage. The gram-negative bacterium Acinetobacter baylyi has a unique umuDC operon in that the umuD gene encodes an extra N-terminal domain. Mr. Whittaker has constructed a truncated form of UmuD that does not contain this domain into an expression vector, and has observed UmuDAb expression in vitro but not in vivo in E. coli. This UmuDAb expression partially complemented an E. coli umuD mutant for SOS mutagenesis, but interfered with SOS mutagenesis in wild type E. coli cells. This suggests that UmuDAb may interact with E. coli's UmuD, which typically acts through homodimerization. Matt has generated a number of experiments to follow up this work and examined the scientific literature to make predictions for future UmuD action that will help us design additional follow-up experiments as well.

**Project Dissemination:**

**Poster Presentation:**

Adhikari, S., A. Grice, G. Howington, M. Whittaker and J. Hare, (2010), Expression and Function of the DNA Damage Protein UmuD of Acinetobacter and its N-terminus and predicted cleavage site mutants in Escherichia coli, Kentucky Academy of Sciences General Meeting, Bowling Green, KY.

**Awards and/or Honors:**

N/A

**Post-Graduation Plans (Seniors Only):**

Mr. Whittaker plans on attending medical school: accepted at Prestonsburg Osteopathic School and interviewing at UK Medical School.



## **JODI WILDER**

### **Major:**

Biology

### **Faculty Mentor:**

Janelle Hare

### **Research/Project Title:**

SOS Mutagenesis is Found in only One Member of the Genus Acinetobacter; Transformation into ADP1.

### **Project Abstract/Summary:**

After members of our lab research team exposed Acinetobacter ursingii strain BAA-617 and also A. gyllenbergii to UV light, they exhibited SOS mutagenesis. Other members of this genus do not do SOS mutagenesis, so we want to find out why these species display SOS mutagenesis. Jodi worked on cloning and sequencing the umuDC genes from these two organisms to find out if their UmuD and UmuC proteins are more like the other Acinetobacter strains (which cannot carry out SOS mutagenesis), or are more like E. coli, which can do SOS mutagenesis.

### **Project Dissemination:**

#### **Poster Presentation:**

J. Wilder, S. Wheeler, K. Lambert, J. Bradley and J. Hare, (2010) Comparisons of UmuD, a DNA damage-related protein required for SOS mutagenesis, in various species of Acinetobacter, Kentucky Academy of Sciences General Meeting, Bowling Green, KY.

#### **Oral Presentation:**

J. Wilder, T. Elam, G. Howington, S. Wheeler, A. Grice and J. Hare, (2010) How Acinetobacter Species React to DNA Damage, 8<sup>th</sup> International Symposium on the Biology of Acinetobacter, Rome, Italy.

#### **Awards and/or Honors:**

N/A

#### **Post-Graduation Plans (Seniors Only):**

Ms. Wilder plans on working as a lab technician and then potentially attending graduate school.

## ***DEPARTMENT OF EARTH AND SPACE SCIENCES***

## **JACOB BURNS**

### **Major:**

Middle Grades Math and Science Education

### **Faculty Mentor:**

Elizabeth Roland

### **Research/Project Title:**

- 1.) An Evaluation of Pre-service Elementary and Middle Grades Teacher's Content Knowledge in Physical Science by Course Delivery Method
- 2.) An Evaluation of Pre-service Elementary and Middle Grades Teacher's Content Knowledge in Inquiry Biology.
- 3.) Enhancing Middle Grades Teacher Education in Northeastern Kentucky.

### **Project Abstract/Summary:**

The three projects were all related to middle grades teacher content knowledge and the measurement and reporting of the current state of knowledge. For the first project, students taking inquiry versus non-inquiry courses in physics appeared to have very little difference in their content knowledge by treatment, but upon further analysis, students in the inquiry course performed better than non-inquiry students in the concept of light. Recommendations for this analysis suggest that students in the inquiry course may not retain content knowledge from the inquiry course to and through science methods. Instructional strategies for heat used in the inquiry course need revision for retention of content knowledge.

The second project was an analysis of biology content knowledge pre and post as students participated in a guided inquiry course taught on campus. In this project, we have just begun analysis of the data. The data was entered by Mr. Burns, representing two semesters of inquiry biology taught by two different professors. The data entry was a very intensive process and is continuing. This data will be used to support the continuation of inquiry biology courses at the university level targeted for middle and elementary education majors. Furthermore, the data is used by the investigators to make revisions to the existing course.

In the final project, the 12 county and independent districts surrounding Morehead State University were surveyed to begin a profile of the status of science teachers. This data revealed a wide disparity of teacher professional development in science post-graduation. These inservice teachers had a range of 0 to 110 hours of science specific PD and a range of 24 to 155 hours of professional development. Furthermore, the data revealed that most teachers are certified in middle grades science, while a minority are teaching out of area. This data was used in grant reporting to the National Science Foundation and for application for a targeted math and science partnership grant.

**Project Dissemination:**

**Practitioner Workshop:**

Jacob Burns and Elizabeth Roland.(2010, November). Biological Change: Evidence Based Conclusions, Kentucky Science Teachers Association, Lexington, KY, November, 2010.

**Poster Presentation:**

Jacob Burns and Elizabeth Roland (2011, April). Program and Control Evaluation for Elementary and Middle Grades Preservice Teachers: Light and Heat, Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

**Invited Paper:**

Jacob Burns and Elizabeth Roland (2010). Results of Middle School Students' Conceptual Understanding of Selected Force and Motion Topics, Unpublished Report. Report prepared for Learning in Physical Sciences. Available from Authors

**Works in Progress/Manuscript:**

Jacob Burns and Elizabeth Roland (in progress). Pre-service Elementary and Middle Grades Students Physics Content Knowledge by Instructional Mode.

**Awards and/or Honors:**

N/A

**Post-Graduation Plans (Seniors Only):**

Mr. Burns intends to apply for middle school science or mathematics teaching positions in Northern Kentucky or Southern Ohio.

## **CARA DEMOSS**

**Major:**

Biology

**Faculty Mentor:**

Benjamin Malphrus

**Research/Project Title:**

GLIOLAB: Development of a Platform for ISS CubeLab-based Biomedical Missions

**Project Abstract/Summary:**

GlioLab is a joint project between GAUSS-Group of Astrodynamics at the "Sapienza" University of Roma, Kentucky Space and the NASA Ames Research Center that involves the development of a 2U CubeLab (GlioLab) that will enable researchers to perform biomedical experiments in microgravity. GlioLab will be installed on the NanoRacks system, a platform providing low-cost research opportunities and access to space operating on the International Space Station. The primary objectives of the project are to develop a CubeLab platform for performing simple biological experiments on ISS, and to perform a case-study experiment that will drive the development of the CubeLab. The bio-lab system will incorporate a liquid mixing device design that will allow 2-3 liquids to be mixed in vials within the CubeLab. An automated system will control injection of the liquids to mix with each other in user specified ratios and at user-specified times. The system will utilize small vials containing small amounts (6-10 ml) of fluids, which will be exposed to microgravity for a specified length of time and then returned to Earth for analysis. This program undertakes the basic design of the subsystems required to develop the GlioLab components. To design the bio-lab, the team will develop a set of mission profiles based on available ascent and descent vehicles along with the current mechanisms and logistics related to access to the ISS NanoRacks system. These mission profiles will be used to inform the direction of accompanying ground based research—a case study using the Glioblastoma cancer line. The profiles as well as the ground based research (which will also serve as a control experiment during the flight) will be used to develop a set of engineering requirements for the payload.

The bio-lab system has the potential to support a variety of experiments on the ISS CubeLab platform. A flight for the GlioLab system on ISS has been secured by Kentucky Space. This project will fund development of the flight hardware. Follow-on funding will be sought to expand the bio-lab to support a wide variety of biological experiments on the CubeLab platform by adding complexity to the basic system (gas injection, multiple liquid mixing systems, more tightly constrained environmental controls, etc.)

The capability of CubeLabs for biomedical research onboard ISS could help pave the way for future affordable biomedical experiments in microgravity and yield new on-orbit and terrestrial biomedical applications and treatments.

**Project Overview**

Glioblastoma is the most common and aggressive types of primary brain tumor, accounting for 52% of all primary brain tumor cases and 20% of all intracranial tumors. The biological effects of ionizing radiation and microgravity on the human body in space are key concerns for space exploration and, at the same time, potentially provide successful biomedical applications and treatments. The purpose of the case-study experiment is to investigate the combined effects of ionizing radiation and microgravity on RNA transcription in the GBM cancer cells. The cells will be exposed to the space environment on ISS for a specified length of time (i.e. 30 days) and then preserved with an RNA fixative near the end of the experiment. The system will then be returned to Earth for RNA transcription analysis. A control experiment will simultaneously be conducted on the ground. The proposed program, therefore has four components:

- 1.) Case study on RNA transcription in Glioblastoma;
- 2.) Development of mission profiles for potential;
- 3.) Design and development of the ISS bio-lab system leading to a flight-ready CubeLab;
- 4.) Ground-based control experiment conducted simultaneously with the space mission.

The activities over the past year have provided base-line data regarding the viability of both the experimental and control cell lines at a variety of temperatures, CO2 concentrations, media varieties, cell concentrations and time intervals. A grant was submitted, though not funded it allowed the project to become more focused. An opportunity to perform a precursor experiment in microgravity aboard STS-134 and potentially aboard STS-135 will allow us to better hone our experimental conditions, but more importantly our protocol for the development of Gliolab.

**Project Dissemination:**

**Poster Presentation:**

DeMoss, C.E., Grey, W.L., DeMoss, D.L. and Malphrus, B.K., (2011, April), Gliolab: Development of a Platform for ISS Cubelab-based Biomedical Missions, Celebration of Student Scholarship, Morehead State University, Morehead, Kentucky, April.

**Awards and/or Honors:**

N/A

**Post-Graduation Plans (Seniors Only):**

N/A

**STUART GARDNER**

**Major:**

Space Science

**Faculty Mentor:**

Robert Twiggs

**Research/Project Title:**

Pico and Femto-Satellite Swarms: Buzzbots, CricketSats, and CanSats

**Project Abstract/Summary:**

No Report Submitted

**Project Dissemination:**

N/A

**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 Platform for ISS CubeLab-based Biomedical Missions

**Project Abstract/Summary:**

GlioLab is a joint project between GAUSS-Group of Astrodynamics and the “Sapienza” University of Roma, Kentucky Space and the NASA Ames Research Center that involves the development of a 2U CubeLab (GlioLab) that will enable researchers to perform biomedical experiments in microgravity. GlioLab will be installed on the NanoRacks system, a platform providing low-cost research opportunities and access to space operating on the International Space Station (ISS).

The primary objectives of the project are to develop a CubeLab platform for performing simple biological experiments on ISS, and to perform a case-study experiment that will drive the development of the CubeLab. The bio-Lab system will incorporate a liquid mixing device design that will allow 2-3 liquids to be mixed in vials within the CubeLab. An automated system will control injection of the liquids to mix with each other in user-specified ratios and at user-specified times. The system will utilize small vials containing small amounts (6-10 ml) of fluids, which will be exposed to microgravity for a specified length of time and then returned to Earth for analysis. This program undertakes the basic design of the subsystems required to develop the GlioLab components. To design the bio-lab, the team will develop a set of mission profiles 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 inform the direction of accompanying ground based research – a case study using the Glioblastoma cancer line. The profiles as well as the ground research (which will also serve as a control experiment during the flight) will be used to develop a set of engineering requirements for the payload.

The bio-lab system has the potential to support a variety of experiments on the ISS CubeLab platform. A flight for the GlioLab system on ISS has been secured by Kentucky Space. This project will fund development of the flight hardware. Follow-on funding will be sought to expand the bio-lab to support a wide variety of biological experiments on the CubeLab platform by adding complexity to the basic system (gas injection, multiple liquid mixing systems, more tightly constrained environmental controls, etc.).

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1. Case study on RNA transcription in Glioblastoma;
2. Development of mission profiles for potential;
3. Design and development of the ISS bio-lab system lending to a flight-ready CubeLab;
4. Ground-based control experiment conducted simultaneously with the space mission.

The activities over the past year have provided baseline data regarding the viability of both the experimental and control cell lines at a variety of temperatures. CO<sub>2</sub> concentrations, media varieties, cell concentrations and time intervals. A grant was submitted, though not funded it allowed the project to become more focused. An opportunity to perform a precursor experiment in microgravity aboard STS-134 and potentially aboard STS-135 will allow us to better hone our experimental conditions but more importantly our protocol for the development of GlioLab.

**Project Dissemination:****Poster Presentation:**

Will Grey, Cara DeMoss, Darrin Demoss and Benjamin Malphrus (2011, April) GlioLab: Development of a Platform for ISS Cubelab--based Biomedical Missions, Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

**Awards and/or Honors:**

N/A

**Post-Graduation Plans (Seniors Only):**

N/A

## LIM HYOUNG-SUP

**Major:**

Space Science

**Faculty Mentor:**

Bob Twiggs

**Research/Project Title:**

CubeLabs: An Experimental Platform in Microgravity for Plant Growth Experiments

**Project Abstract/Summary:**

The CubeLab is a multi-purpose research facility that interfaces standard modules into the ISS EXPRESS Racks. The CubeLab platforms are small modules that can be used within a pressurized space station environment in orbit, with a nominal length, width, and height of 100 mm and a mass of no more than 1 g. Up to 16 CubeLab modules can be inserted into a Cube Lab insert inside an EXPRESS Rack.

The undergraduate Space Science student researcher's responsibility is to work with the research team to design a generic CubeLab for plant growth experiments, interface with different members of the team to complete benchmark tasks, assist in integrating subsystems of the CubeLab, assist in pre-flight testing of the integrated system, work with NanaoRacks and NASA documentation to ensure compliance with NASA ISS flight standards, participate in engineering design reviews, and support all aspects of the mission including logistics, engineering development, and data streaming and archiving. The undergraduate student's role in these experiments will provide invaluable experience and greatly assist in completing the research benchmarks.

**Project Dissemination:**

**Poster Presentation:**

Lim Hyoung-Sup and Robert Twiggs, (2011, April), Earth Odyssey Moonbeam, Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

**Awards and/or Honors:**

N/A

**Post-Graduation Plans (Seniors Only):**

N/A

## JULIA KENDRICK (O'BRIEN)

**Major:**

Space Science

**Faculty Mentor:**

Robert Twiggs

**Research/Project Title:**

Creating a CubeLab Greenhouse Kit to Provide a Hands-on Space Project for High School STEM Initiative

**Project Abstract/Summary:**

Increasing the STEM knowledge base of K-12 students is fundamental to the next generation U.S. workforce and this particular project attempts to create a type of nanosatellite, specifically a 1.5 unit (10cm X 15cm x 10cm) CubeLab greenhouse kit that high school students could use as a model for performing scientific research in microgravity with initial emphasis on plant biology. To date, I have researched various techniques for growing plants in microgravity (which range from sponge-claysoil mixtures to hydroponics and gels) and ground-based gravity perception experiments (e.g. using clinostats), and tested various plant gels to determine if it is possible to create a kit without the need of any fluidic systems - of the gels I tested, one in particular held water for six weeks plus and yielded a basil plant with an intricate root system. I also constructed a sheet metal model of the CubeLab (a design that went through several iterations) and sample internal polycarbonate boxes to serve as plant chambers (presently, the idea is for the CubeLab to host four greenhouses, but that number will depend entirely on KSTC/Kentucky Space/Prof. Twiggs requirements). Ultimately, the final greenhouse kit would provide students with structural and payload designs, and include such parts as the external aluminum box, internal polycarbonate boxes, a microcontroller, temperature sensors, LED lighting, injection and imaging systems and, if required, a fluid system.

**Project Dissemination:**

**Oral Presentations:**

Julia Kendrick-O'Brien and Robert Twiggs, (2010, November), The Weather Forecast for Today in Space: Exploring our Space Environment and Satellite Orbits, MPATE Day, November;

The Weather Forecast for Today in Space!, STEM-related presentation/skit on space weather with Robert Twiggs (presented) and SSE 120 students (performed) to two fifth grade classes at McBrayer Elementary, December. (Note: I drafted the presentation, made props and organized the event).

Julia Kendrick-O'Brien, (2011, April), Creating a CubeLab Greenhouse Kit to Provide a Hands-on Space Project for High School STEM Initiative, Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

**Awards and/or Honors:**

N/A

**Post-Graduation Plans (Seniors Only):**

N/A

**ERIKA NEACE****Major:**

Geology

**Faculty Mentor:**

Charles Mason

**Research/Project Title:**

Conodont Age and CAI Determination of Temperatures Reached of Impact Breccia Clasts from the Houghton Crater, Devon Island, Nunavut Canada

**Project Abstract/Summary:**

To date, approximately 35 to 60 samples have been completely processed and 6 more are nearly complete. It should here be pointed out that each sample takes 4 to 6 weeks to process from start to finish. We have obtained excellent results as all samples processed to date have contained enough conodonts to obtain a CAI determination of the samples thermal maturation. Also, only 2 of these samples did not contain adequate diagnostic conodonts to determine the Geological Age of the sample and its formation of origin.

**Project Dissemination:****Oral Presentation:**

Neace, Erika R. and Mason, Charles E. (2011, April), Conodonts from the Target Bedrock and Impact Breccias of the Houghton Impact Structure, Devon Island, Nunavut, Canada, Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

**Awards and/or Honors:**

Department of Earth and Space Sciences Outstanding Student for 2011.

American Institute of Professional Geologists- Kentucky Section Student Award for 2011.

**Post-Graduation Plans (Seniors Only):**

Ms. Neace was accepted into the Master's Program for Structural Geology at the following universities: Baylor, Colorado School of Mines, Notre Dame, and Ohio University with full funding. She accepted the offer from Ohio University to work under Dr. Damen Nance, a world famous Structural Geologist.

***DEPARTMENT OF HEALTH, WELLNESS, AND HUMAN PERFORMANCE*****LAURA STACY****Major:**

Exercise Science

**Faculty Mentor:**

Gina Blunt/Jennifer Dearden

**Research/Project Title:**

Using Theory to Understand Dietary Supplement Perceptions among Health, Wellness, and Human Performance Students

**Project Abstract/Summary:**

Recently, there has been much interest in understanding dietary supplement use. The consumption of dietary supplements has risen significantly while perceptions of use are poorly understood. Using theory is a common way to understand health behavior. In a previous study of 100 college students, 68% responded "yes" when asked if they currently or have ever taken a dietary supplement. While the majority felt that medical doctors (96%) and registered dietitians (85%) were the most qualified to provide information about dietary supplements, 44% stated they received advice from friends. The purpose of this study was to utilize behavioral theory (Social Cognitive and Theory of Planned Behavior) to understand perceptions of use of dietary supplements among a college-aged population.

**Project Dissemination:****Poster Presentations:**

Stacy, L., Blunt G. and Dearden, J., (2010), Dietary Supplement Usage in a College Population, Kentucky Association for Health, Physical Education, Recreation, and Dance (KAHPERD), November.

Stacy, L., Blunt, G., and Dearden, J., (2011), Using Theory to Understand Dietary Supplement Perceptions Among Health, Wellness, and Human Performance Students, Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

**Journal Publication:**

Stacy, L., Blunt, G., and Dearden, J., (2011), Dietary Supplement Perception and Behaviors Among College Health and Fitness Majors, KAHPERD Journal, Spring.

**Awards and/or Honors:**

N/A

**Post-Graduation Plans (Seniors Only):**

Ms. Stacy has applied to the Masters of Arts program in Exercise Science at the University of Kentucky.

**DEPARTMENT OF MATH, COMPUTER SCIENCE, AND PHYSICS****JAMES ADKINS****Major:**

Physics

**Faculty Mentor:**

Jennifer Birriel

**Research/Project Title:**

Measuring and Monitoring Night-Sky Brightness and Light Pollution Emissions in Eastern Kentucky using Spectrophotometric Techniques

**Project Abstract/Summary:**

Light pollution is a pervasive form of environmental pollution that plagues our modern world. Light pollution is quite simply the alteration of natural 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, salamanders, birds, etc. In addition, light pollution represents a colossal waste of energy. This project will use commercially available equipment to develop and use a portable CCD camera/spectrograph system and sky quality meters to rapidly measure night sky brightness and emissions in the Daniel Boone National Forest and surrounding areas. Documenting and monitoring light pollution is a first step

**Project Dissemination:****Poster Presentation:**

Adkins, J.K. and Birrie, J.J., (2010), A Simple, Portable Apparatus to Determine the Color Index of the Night Sky, Kentucky Academy of Science Meeting, Western Kentucky University, Bowling Green, KY, November.

**Oral Presentation:**

Adkins, J.K. and Birriel, J.J., (2011), Innovative Uses of Unihedron Sky-Quality Meters, Kentucky Association of Physics Teachers, Eastern Kentucky University, Richmond, KY, March.

**Publication:**

Birriel, J.J., and Adkins, J.K. (2010), A Simple, Portable Apparatus to Measure Night Sky Brightness at Various Zenith Angles, Journal of the American Association of Variable Star Observers, 38(2), 221-229.

**Awards and/or Honors:**

N/A

**Post-Graduation Plans (Seniors Only):**

Mr. Adkins has successfully presented his URF research for his capstone project in fulfillment of the requirements for this B.S. in Physics. He is graduating in May 2011 with a double B.S. in both mathematics and physics. He will begin graduate studies in physics at the University of Kentucky this fall. He was awarded a special fellowship for his graduate studies and this is in large part due to the URF research experience and the presentations associated with this.

**AMIR AHMADI****Major:**

Mathematics

**Faculty Mentor:**

Michael Dobranski

**Research/Project Title:**

Model Development for Lignocellulosic Biofuels

**Project Abstract/Summary:**

Second generation biofuels (biofuels from various types of biomass) hold a prominent role in current clean energy research. This presentation illustrates the economic and physical feasibility of bio-oil production from a fluidized bed reactor given a wood input's physical and cost characteristics.

**Project Dissemination:****Oral Presentations:**

Amir Ahmadi, (2011, April), Model Development for Lignocellulosic Biofuels, Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Amir Ahmadi, (2011), Model Development for Lignocellulosic Biofuels, Kentucky Section of the Mathematical Association of America (MAA), Eastern Kentucky University, Richmond, KY.

**Poster Presentations:**

Model Development for Lignocellulosic Biofuels, (2011), Joint Mathematics Meetings, MAA, New Orleans, LA.

Model Development for Lignocellulosic Biofuels, Shenandoah Undergraduate Mathematics and Statistics Conference, James Madison University, Harrisonburg, VA.

Model Development for Lignocellulosic Biofuels, 2010 Kentucky Academy of Science, Western Kentucky University, Bowling Green, KY.

**Awards and/or Honors:**

Awarded 2<sup>nd</sup> place math poster at 2010 KY Academy of Science, Bowling Green, KY, November 2010.

**Post-Graduation Plans (Seniors Only):**

After graduation, Mr. Ahmadi plans to attend graduate school.

**EVAN BOYD****Major:**

Mathematics with Teaching Option

**Faculty Mentor:**

Christopher Schroeder

**Research/Project Title:**

Ranking College Football with Various Mathematical Methods

**Project Abstract/Summary:**

There is a lot of concern with the way college football teams are being ranked, and many systems have been designed to address this issue. We considered some of these systems, and a few in particular which use Markov chains and other probabilistic methods. We focused mainly on a system by Wesley Colley, called the Colley Matrix, in which teams were rewarded both for wins and losses as well as for strength of schedule. We modified the method used by Colley to include point-differential in head-to-head matchups to rank all of the teams in the FBS College Football division. We compared the results of our modified ranking system with the original Colley Matrix and with the random walker rankings which were studied in previous years of the URF.

Our results showed a reasonable ranking system as compared with traditional rankings. We correctly picked the National Champion after the regular season, and also predicted a large number of the bowl games involving Top-25 correctly.

**Project Dissemination:****Oral Presentation:**

Boyd, Evan and Schroeder, Christopher, (2011, April), Division 1 College Football Rankings Based on Margin of Victory, 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 and Mathematics

**Faculty Mentor:**

Sherif Rashad

**Research/Project Title:**

Mobile Data Mining Algorithms for 4G Mobile Networks

**Project Abstract/Summary:**

The goal of our research is to develop novel mobile data mining algorithms that can be used in the mobile environment to support new services and to enhance the current services with the new integrated structure in the 4G mobile networks. These algorithms will accurately predict mobile user movements across all networks within the 4G network. This will allow for an enhanced consolidation of computing resources, improved signal reception, and the future establishment of location-based services within the 4G mobile network. Our focus for algorithms development stems from two perspectives, the individual mobile user and the individual base station. We have



compared between using MobileSPADE algorithm and the SPADE algorithm that can be used to extract the sequential mobility patterns of mobile users. Experimental results show that both algorithms can be used in the mobile environment and MobileSPADE algorithm is recommended when more mobility data about mobile users are available. We have stated also to design a novel base station ranking technique that support the network management of the new generation of mobile networks in an effort to enhance the mobility experience for each mobile user. This 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 traffic flow between the base stations. Future work includes evaluation and enhancement of the new base station ranking technique. We will focus also on developing new models that allow access points to rank neighboring access points according to the amount of traffic between different nodes in the network.

**Project Dissemination:**

**Proceedings:**

Sharif Rashad and Joshua Bradley, SmartMobiMine: Smart Mobile Data Mining Techniques to Support 4G Mobile Networks, 8<sup>th</sup> IEEE Consumer Communications and Networking Conference (CCNC 2011), Las Vegas, NV, January, 2011 (was submitted in 2010).

Joshua Bradley and Sherif Rashad, Time-based Location Prediction Technique for Wireless Cellular Networks, International Joint Conferences on Computer Information, and System Sciences, and Engineering (CISSE 2010), Fourth International Conference on Telecommunications and Networking (TeNe 10), December, 2010.

**Publication:**

Joshua Bradley and Sherif Rashad, Mining Mobile Sequential Patterns in Wireless Cellular Networks, in *Technological Developments in Networking, Education and Automation*, K. Elleithy, T. Sobh, M. Iskander, V. Kapila, M. Karim, A. Mahmood (Editors), Springer, pp. 597-602, 2010.

**Oral Presentation:**

Joshua Bradley and Sherif Rashad, Mining Mobile Sequential Patterns in Wireless Mobile Networks, 96<sup>th</sup> Annual Meeting of the Kentucky Academy of Science, Computer and Information Sciences Section, Bowling Green, KY, November, 2010. (Presented by Joshua Bradley and he was the first place winner in the undergraduate research competition).

**Poster Presentation:**

Joshua Bradley and Sherif Rashad, (2011, April), Utilizing Hodge Theory to Rank Base Stations in the 4G Mobile Network, Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

**Awards and/or Honors:**

Selected for an Internship with the National Security Agency (NSA), Summer 2011

1<sup>st</sup> Place in the 2010 Kentucky Academy of Science Undergraduate Research Competition, Computer and Information Sciences Section, November, 2010

Recipient of the Outstanding Computer Science Student Award, Department of Mathematics, Computer Science, and Physics, Morehead State University, May, 2011

Recipient of the Outstanding Senior Computer Science Student Award, Department of Mathematics, Computer Science, and Physics, Morehead State University, May, 2011

**Post-Graduation Plans (Seniors Only):**

N/A

**CHRISTOPHER ESTES**

**Major:**

Computer Science

**Faculty Mentor:**

Sherif Rashad

**Research/Project Title:**

Intrusion Detection in Mobile Networks using Data Mining Techniques

**Project Abstract/Summary:**

No Report Submitted

**Project Dissemination:**

N/A

**Awards and/or Honors:**

N/A

**Post-Graduation Plans (Seniors Only):**

N/A

## **WILLIAM MICHAEL HOLBROOK II**

**Major:**

Mathematics

**Faculty Mentor:**

Sherif Rashad

**Research/Project Title:**

The  $n + k$  Queens Separation Problem

**Project Abstract/Summary:**

A well-known problem asks for the maximum number of Queens that can be placed on an  $n \times n$  chessboard such that no two Queens attack each other. For  $n > 3$ , it is always possible to place  $n$  Queens, but no more than  $n$ , in this manner. However, it is possible to add more Queens if Pawns are added to block some attacks. An  $n \times n$  board where  $k$  pawns are added and  $k$  extra Queens can be placed on the board is called an  $n + k$  solution. Work by the mentors and previous Undergraduate Fellows has shown that it is possible to add up to  $k$  extra Queens if  $n > \max\{k + 87, 25k\}$ . One purpose of the research is to lower this bound on  $n$ .

Recently, the researchers have been working on decomposition of the chessboard. A "quad-board" solution was tried --  $4n \times n$  boards arranged in a square giving an overall board size of  $2n \times 2n$ . The student tried to place various  $n$  and  $n+1$  solutions diagonal to one another so that the free diagonals line up and each solution fits. Unfortunately, the number of available diagonals which line up correctly is too small to achieve the desired results.

Our current approach is to build  $n+2$  solutions from existing  $n+2$  solutions. This direction of research involves pursuing  $n+2$  boards where there is at least one free main diagonal. By having this free diagonal, addition of one new row and one new column on the board allows placement of another queen on the new "corner" square.

**Project Dissemination:**

**Poster Presentation:**

Holbrook II, William M. and Blankenship, Robin, Chatham, Doug, Skaggs, R. Duane. (2011, April),. The  $n + k$  Queens Separation Problem, Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

**Awards and/or Honors:**

2010-11 Outstanding Computer Science Sophomore Student

**Post-Graduation Plans (Seniors Only):**

N/A

## **RONNIE HOWARD**

**Major:**

Mathematics

**Faculty Mentor:**

Russell May

**Research/Project Title:**

Analysis of Quantum Knot Mosaics

**Project Abstract/Summary:**

A framework for studying knot theory in the context of quantum computation was laid out in a 2008 paper by Lomonaco and Kauffman. Several problems discussed in this paper are accessible to undergraduates, using tools from standard courses, such as linear algebra, combinatorics and differential equations. This project focuses on enumerating so-called quantum knot mosaics, based on their size and composition. Building on previous URF projects, the student will analyze recurrence relations that govern the construction of knot mosaics using spectral decomposition of linear transformations. The computations should take into account boundary conditions of the mosaics. Other methods, especially generating functions, may also prove to be useful.

**Project Dissemination:**

N/A

**Awards and/or Honors:**

N/A

**Post-Graduation Plans (Seniors Only):**

N/A

## **JULIE LANG**

**Major:**

Mathematics

**Faculty Mentor:**

Dora Ahmadi

**Research/Project Title:**

Analysis of College Algebra Projects at the High Schools

**Project Abstract/Summary:**

Through this project data from a three year project was analyzed and the results were summarized for a report. A draft is in progress for publication of results.

**Project Dissemination:****Oral Presentations:**

Lang, Julie (2011, April), College Algebra Project, Kentucky Section of the Mathematical Association of America, Richmond, KY, March.

Lang, Julie (2011, April), A Mathematics Dual-credit Project, Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

**Awards and/or Honors:**

Ms. Lang has been selected to participate in a Research Experience for Undergraduates Programs at Marshall University during the Summer of 2011.

**Post-Graduation Plans (Seniors Only):**

Ms. Lang plans to attend graduate school.

**LAUREN MAY****Major:**

Mathematics

**Faculty Mentor:**

R. Douglas Chatham

**Research/Project Title:**

A Comparison of Multiple Versions of Rook

**Project Abstract/Summary:**

Rook is a popular trick-taking card game. Throughout my fellowship, I have used various mathematical methods to analyze the game, determining probabilities and strategies. Because Rook is such a popular game, many different versions have been created in regions across the country. My project this year looked at the differences among the different versions of the game, and used statistical methods to determine common strategies that could hold for game play regardless of the version in play. Leading and bidding strategies were shown to be similar regardless of the version in play, however the total points possible and rounds played differed among versions and should be considered in gameplay.

**Project Dissemination:****Oral Presentation:**

May, Lauren and Chatham, Douglas, (2011, April), A Comparison of Multiple Versions of Rook, 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:**

Robin Blankenship/R. Douglas Chatham/R. Duane Skaggs

**Research/Project Title:**

Queens Domination Problem

**Project Abstract/Summary:**

The Queens domination number for an  $n \times n$  chessboard is the smallest number of Queens required to either occupy or attack all squares of the board. Each queen is said to be adjacent to a square if and only if it can attack a square in one move. For a standard  $8 \times 8$  chessboard, this can be accomplished with a minimum of 5 Queens. While there are solutions for many of the other boards, many boards still remain in question as to whether or not their solutions are a minimum dominating set. From this idea of domination numbers, other questions arise.

One study considered decreasing the domination number by one after the placement of two pawns on the chessboard. The fellow found a case where this happens for a  $5 \times 5$  board and determined this does not happen for any  $n$  smaller than 5. Another study considered whether it is possible for two pawns to decrease the domination number by two. To overcome the difficulty of finding minimum domination solutions for an  $n \times n$  board, the fellow developed an algorithm to generate boards and check domination numbers.

Also, from an audience suggestion made during the Celebration of Student Scholarship, new chessboard domination problems have arisen. For example, weights could be given to chess pieces to represent their covering powers and one could investigate domination of boards with the lowest cost. Potential applications of this problem include efficient use of sensors with regards to their sensitivity and cost. Another application is considering the board as a representation of real estate, where some squares have a higher cost than others. For example, squares along the main diagonal could be considered "prime real estate." This variation would potentially be applicable in determining where to place advertisements or businesses in order for the most consumers to notice at the most efficient cost.

**Project Dissemination:**

**Poster Presentation:**

Nickell, Michael B. and Drs. R. Duane Skaggs, Doug Chatham, and Robin Blankenship, (2011, April), Queens Domination Separation Problem, Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

**Awards and/or Honors:**

N/A

**Post-Graduation Plans (Seniors Only):**

N/A

**ETHAN PLYMALE**

**Major:**

Computer Science

**Faculty Mentor:**

Sherif Rashad

**Research/Project Title:**

Intrusion Detection in 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. Our goal is to find the most time efficient algorithm for developing normal profiles of mobile users and responding to intrusions. The student involved in this project started his work by learning the basic concepts of data mining technology and its applications. We focused on classification algorithms that can be used in this project. The student implemented the K-means and the nearest neighbor algorithms. I expected that he will be able to implement other algorithms and to use a data mining tool called WEKA to classify different types of data and to compare between different data mining techniques.

**Project Dissemination:**

N/A

**Awards and/or Honors:**

N/A

**Post-Graduation Plans (Seniors Only):**

N/A

**BRIAN SALYER**

**Major:**

Engineering Technology

**Faculty Mentor:**

Robin Blankenship/R. Douglas Chatham/R. Duane Skaggs

**Research/Project Title:**

Covering Powers of Cycles by Equivalence Relations

**Project Abstract/Summary:**

The equivalence number of a graph is the minimum number of equivalence relations needed to cover the edge set of the graph. We consider in particular the Kth power of a cycle, which is formed from a cycle by adding edges between all vertices in the cycle that are at a distance less than or equal to K. We provide an upper bound on the equivalence number of powers of cycles.

**Project Dissemination:****Publications:**

<http://npluskqueens.info>

P. Duchet, Colorations Transitives Des Graphes, Cahiers Centre Etudes Rech. Oper. 20 (1978), no. 3-4, 363-371.

P. Frankl, Covering Graphs by Equivalence Relations, Theory and Practice of Combinatorics, 125-127, North-Holland Math. Stud., 60, North-Holland, Amsterdam, 1982.

**Awards and/or Honors:**

N/A

**Post-Graduation Plans (Seniors Only):**

Mr. Salyer plans to find full time employment in the field of engineering. He has also been accepted into the University of Kentucky's Mechanical Engineering Masters Program.

**ANGELA COLLIER (SPENCE)****Major:**

Physics

**Faculty Mentor:**

R. Duane Skaggs

**Research/Project Title:**

The Spectra of Complex Systems

**Project Abstract/Summary:**

This project has focused on understanding the underlying mathematical structure of complex adaptive systems, which include many different real-life networks that involve dynamic relationships among entities, and determining information that can be obtained about these networks as a result. The project applies the theory of random graphs and techniques of scientific computing to the development of a new dynamic model which includes events specific to social networking such as adding or deleting new members, making or deleting connections, or adding and deleting entire groups. The graphs created by this model offer a visual/qualitative interpretation of the data gathered when analyzing social networks.

The primary accomplishment of this first phase of the fellowship was the creation of a program that randomly generates graphical representations of social networks. The program allows the user to assign an individual probability to each of the possible modifications to the network then outputs a visual representation of the network. It also calculates various parameters of the network, such as the maximum distance between two members. These calculations show evidence of the famous "Six Degrees of Separation" concept and related ideas.

Groundwork has been established for further analysis of these complex systems using spectral techniques from linear algebra and the application of these techniques to open problems in related areas of graph theory.

**Project Dissemination:**

The program developed during this Fellowship was instrumental in the senior theses of Julie Lang and Blake Nickell, both of which were completed during Spring 2011. A joint paper combining results from the Fellowship and these two senior theses is in preparation for submission to a professional research journal.

**Related Senior Theses Oral Presentations:**

Julie Lang, (2011, April), Global Properties of Some Preferential Attachment Graphs, April.

Blake Nickell, (2011, May), Identifying Members of Dynamic Social Networks, May.

**Awards and/or Honors:**

N//A

**Post-Graduation Plans (Seniors Only):**

N/A

**KELSEY WHITAKER****Major:**

Math/Physics

**Faculty Mentor:**

Jennifer Birriel

**Research/Project Title:**

Establishment of an Online INSPIRE VLF Receiver at MSU to Monitor Natural and Man-made Very Low Frequency Radio Waves

**Project Abstract/Summary:**

No Report Submitted

**Project Dissemination:**

N/A

**Awards and/or Honors:**

N/A

**Post-Graduation Plans (Seniors Only):**

N/A

**DEPARTMENT OF PSYCHOLOGY****ALYSSA ADDISON****Major:**

Psychology

**Faculty Mentor:**

Wesley White

**Research/Project Title:**

Impact of Amphetamine and Dopamine Agonists on Acute- and Withdrawal-Phase Feeding in Rats

**Project Abstract/Summary:**

Adult male rats were housed in individual tubs in an animal colony. The animals were in a 12-12 hour light-dark cycle and had free access to water. At light onset, different groups of subjects were administered 2.0 mg/kg amphetamine, a dopamine D1 receptor, or a dopamine D2 receptor agonist. Food pellets were placed in feeding cups within each tub during hours 2, 5 and 6-24 post treatment, and food intake during each of these intervals was measured. Compared to saline control, amphetamine produced both a short-term (hours 1-3) and a long-term (hours 6-24) reduction in food intake. D2 agonist produced a similar long-term reduction. The procedure used may provide an economical way to assess the mechanisms involved in amphetamine-induced stimulant and withdrawal states. The project was supported in part by NIH grants DA015351 and RR016481.

Alyssa also did a literature search on amphetamine and acute drug withdrawal in humans.

**Project Dissemination:****Oral Presentation:**

Patane, Ronald R., Addison, Alyssa D., Holt, Nicholas A., Gibbs, Devin R., Dillow, Jared A. and White, Wesley (2010, November), The Role of Selective Dopamine Receptor Agonists in Amphetamine-induced Withdrawal-related Hypophagia, The Kentucky Academy of Science Annual Meeting, Bowling Green, KY, November.

**Poster Presentation:**

Addison, Alyssa A., Maione, G., Hold, Nicholas A. and White, Wesley (2011, April), Impact of Amphetamine and Dopamine Agonists on Acute- and Withdrawal-phase Feeding in Rats, Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

**Awards and/or Honors:**

N/A

**Post-Graduation Plans (Seniors Only):**

Accepted into the Master's Program in Counseling at the University of Kentucky.

**AARON ELLIS****Major:**

Psychology

**Faculty Mentor:**

Ilsun White

**Research/Project Title:**

Initial Title - Stress and Drug Abuse: The Role of Amygdala

Modified Project Title – Behavioral Effects of Stress and Psychostimulant in Adolescent Rats

**Project Abstract/Summary:**

Mr. Ellis was involved in one experiment that examined the behavior of adolescent rats following injection of stress hormone. This experiment was a part of our ongoing project (2003-present) that focused on the effects of stress on behavior, using a rodent model. This experiment was conducted under supervision of the faculty. Through research, Mr. Ellis learned the basic research methods, including literature review, experimental design, some basic lab skills used in neuroscience, data summary/interpretation, and presentation at a conference.

**Project Dissemination:****Poster Presentation:**

Psychostimulant and Corticosterone (CORT) Produce Differential Effects on Adolescent Rats: Gender Difference, Kentucky Academy of Science, KAS Regional Meeting.

**Awards and/or Honors:**

Placed 2<sup>nd</sup> in Undergraduate Poster Competition (Psychology), The Kentucky Academy of Science (KAS), Western Kentucky University, Bowling Green, KY, November, 2010.

**Post-Graduation Plans (Seniors Only):**

Mr. Ellis plans to complete his undergraduate degree in Psychology in May, 2012. He plans to apply to a graduate program in the field of counseling/psychology.

**KATELYN FUGATE****Major:**

Psychology

**Faculty Mentor:**

Shari Kidwell

**Research/Project Title:**

Parental States of Mind and their Association with Parent-child Behavior in an Emotion Socialization Task

**Project Abstract/Summary:**

A major aim of Dr. Kidwell's larger research agenda is to develop comprehensive measures of various aspects of sensitive caregiving, and to determine their validity by showing the expected associations with child attachment and psychosocial adjustment. The research literature suggests that developing and maintaining a secure attachment to their parents offers children clear advantages. Parenting that is sensitive to the child's emotional needs is particularly important. Katelyn, a Fellow for two years, has served an integral role in addressing these questions on our own project. Her biggest emphasis has been on coding data collected when the children were approximately 6 years of age; but she has also been highly involved in developing the data collection procedures for the latest stage of our RCPC-funded project. The children are 9-12 years old.

The first aspect of sensitive caregiving that Katelyn explored in this project involved parents taking into account their child's feelings, underlying motives, and goals (i.e., their insightfulness). We utilized the Maternal Empathic Understanding Procedure (MEUP), which asks parents to think about their child's perspective in regard to the Reminiscing Task. In the Reminiscing Task, parents discussed with their child a time when they were "good" and a time when they were "bad." Katie coded these interviews and presented the data at the Kentucky Academy of Sciences. Parent's MEUP classifications were strongly related in the expected direction with both parent and child attachment. Parents who had difficulty taking their child's internal perspective tended to be insecurely attached and tended to have insecure children. At the Kentucky Psychological Association's conference, Katelyn presented results showing that parental insightfulness was associated with their child's adjustment. More insightful parents tended to have children with lower emotional and behavioral problems and higher self-concept.

This year Katelyn explored a second measure of caregiving sensitivity, specifically behavior observed during the Reminiscing Task. She reviewed considerable literature on the topic and helped develop a coding scheme and a method for implementing it. Her presentations this year (at KAS and KPA) showed large differences in how parents talked to their children about the times they were "good" and "bad." Parents of secure children were warm and understanding even while talking about negative behavior, and their children were more engaged in the conversations. The most significant difference, however, was in speaking about good behavior, where parents of insecure children showed less sensitivity and their children were very disengaged. We believe, together with the insightfulness data coded earlier, that parents of insecure children do not understand their children's motives for their behavior and this influences the quality of their conversations with them. The knowledge gained from this project is highly applicable to the prevention and treatment of emotional and behavioral problems in children.

**Project Dissemination:****Oral Presentation:**

Fugate, K., Sizemore, K., Sexton, P.J., and Kidwell, S.L. (2010), Attachment and Parental Sensitivity While Discussing Children's Behavior, Kentucky Academy of Sciences Annual Conference, Bowling Green, KY.

**Poster Presentations:**

Sizemore, K., Fugate, K., Kidwell, S.L., and Sexton, P.J. (2011), Maternal Sensitivity and Child Attachment in a Longitudinal Study, Kentucky Psychological Association, Louisville, KY.

Sizemore, K., Fugate, K., Kidwell, S.L., and Sexton, P.J. (2011, April), Maternal Sensitivity and Child Attachment in a Longitudinal Study, Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

**Awards and/or Honors:**

Ms. Fugate was awarded the Psychology Research Award both years of her fellowship.

**Post-Graduation Plans (Seniors Only):**

Ms. Fugate will be attending MSU M.S. Program in Clinical Psychology.

**KELLY GRUBER****Major:**

Psychology

**Faculty Mentor:**

Sean Reilley

**Research/Project Title:**

Impact of the M-FAST Interview to Detect Malingered AD/HD

**Project Abstract/Summary:**

The senior-level fellowship project was an extension of the student's prior URF experiences in the Cognitive Psychopathology Lab and resulted in a full range, high caliber and novel research project that was conducted in an independent fashion to address an important area in psychological practice – malingered psychopathology. Ms. Gruber reviewed the empirical literature, designed a lab-based empirical study which resulted in research and clinical training on clinical instruments (CAT-A) and a forensic interview (M-FAST, wrote the IRB proposal, solely managed subject recruitment and collection, as well as data entry analysis and initial presentation of her project findings. In her study, Ms. Gruber collected psychosocial history information, evaluated participants' AD/HD knowledge prior to and following their review of diagnostic AD/HD information, and then asked participants to feign AD/HD or respond honestly on the M-FAST, CAT-A, and comparison self-report measures. Ms. Gruber was responsible for directly contributing to data collection and analysis of over 50 participants in the Fall semester. Appropriate with her level of training, Ms. Gruber learned how to design and implement an experimentally based study and to administer common psychological measures, including the CAT-A, under the supervision of Dr. Reilley, a licensed psychologist in the state of Kentucky. These skills enhanced Ms. Gruber's familiarity with basic research skills and some of those common to clinical work. In addition, Ms. Gruber learned advanced data management and analysis skills using SPSS, a major research package used in academic research settings. Consistent with the empirical literature, Ms. Gruber's initial findings from showed that the M-FAST was a helpful, brien tool for identifying malingered psychopathology. Extending prior work, Ms. Gruber's data suggests identification of malingered AD/HD was improved when at least two of the major subscales were used, and that malingering scales on the CAT-A were superior for identifying malingered AD/HD. These are important results for better informing clinical practice about how best to use psychometric instruments to aid in the detection of AD/HD as well as malingered AD/HD. Ms. Gruber presented her initial findings at the Kentucky Academy of Science and submitted her abstract for publication in the Journal of the KAS. When published, this will be her 3<sup>rd</sup> abstract published in the JKAS. Her work will also be presented at the Celebration of Student Scholarship and the Kentucky Psychological Association in Spring, 2011. She received a Senior Scholar and Outstanding Undergraduate Research awards during the fall for her efforts. Her URF experiences have enhanced Ms. Gruber's research experiences and competitiveness for graduate study in clinical/counseling psychology while she has also maintained a 4.0 grade point average.

**Project Dissemination:****Published Abstract:**

Gruber, K.D., and Reilley, S.P. (In Press), Preliminary Data on the Use of the M-FAST to Assess Malingered AD/HD, Journal of the Kentucky Academy of Science.

**Poster Presentations:**

Reilley, S.P., and Gruber, K.L., (2011, May), Use of the M-FAST Forensic Interview and Validity Indicators on the CAT-A to Detect Malingered AD/HD, Annual Meeting of the Association for Psychological Science, Washington, DC, May.

Gruber, K.D., and Reilley, S.P., (2010, November), Preliminary Data on the Use of the M-FAST to Assess Malingered AD/HD, Annual Meeting of the Kentucky Academy of Science, Bowling Green, KY, November.

**Awards and/or Honors:**

Awarded 2010-2011 Outstanding Senior Psychology Scholar Academic Excellence and Research Excellence Awards by the Department of Psychology.

**Post-Graduation Plans (Seniors Only):**

Ms. Gruber plans to get married and seek immediate employment in the mental health field following graduation and to apply for graduate study once her husband has completed his degree.



## **LESLIE HAY (MALLORY)**

### **Major:**

Psychology

### **Faculty Mentor:**

Ilsun White

### **Research/Project Title:**

Age Effects on Emotion Recognition

### **Project Abstract/Summary:**

This project examined the effects of age on discrimination of emotional expression. The accuracy of discrimination was tested using DANVA2, which consists of four subsets with faces and voices of adults and children in four emotional categories: happy, sad, angry, or fearful. Participants were college students and senior volunteers in Morehead, Kentucky. Overall, elderly subjects made more errors across all conditions, and accuracy also depended on emotional category. Both groups made less error on positive emotion, but elderly subjects made more errors on negative facial expression. Similar patterns were shown in voice conditions. Our data suggest that our ability to discriminate emotion decreases with age and also depends with the nature of stimuli (positive or negative).

### **Project Dissemination:**

#### **Poster Presentation:**

Leslie A. Mallory-Hay, J. David Forman, and Ilsun M. White, (2011, April) Age Effects on Emotion Recognition, Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

#### **Awards and/or Honors:**

N/A

#### **Post-Graduation Plans (Seniors Only):**

Ms. Hay will begin the Alcohol and Chemical Dependency Counseling Certification Program at Morehead State University this Fall 2011. She plans to apply to a Master's Program in Social Work for Fall 2012.

## **Sydney Howard**

### **Major:**

Psychology

### **Faculty Mentor:**

Laurie Couch

### **Research/Project Title:**

Is Love Blind? Partner Expectations and Relationship Behavior

### **Project Abstract/Summary:**

Idealizing romantic partners can have a number of positive implications for relationships, including increased satisfaction and decreased conflict (e.g., Murray, Holmes, and Griffin, 1996). However, ideals may compromise the quality of relationships when people perceive their partner as not living up to ideals. To examine the implications of unfulfilled ideals, 41 females rated their perceptions of current and former relationship partners and their ideals for relationship partners. Participants also reported their satisfaction with the relationship and openness to alternative relationship partners. Results indicated that discrepancies between their partner's actual attributes and their ideals for partners were an important predictor of responses to the relationship. Specifically, the more females perceived male partners as discrepant from ideals, the less satisfied and committed they were to the relationship and more open they were to alternative relationships. To increase the sample size and examine male participants' perception of female romantic partners, additional data are currently being collected and will be analyzed over this summer.

### **Project Dissemination:**

#### **Poster Presentations:**

Howard, Sydney P., and Butz, David A., (2011, April), Is Love Blind? Partner Expectations and Relationship Behavior, Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Howard, Sydney P., and Butz, David A., (2011, March), Is Love Blind? Partner Expectations and Relationship Behavior, Kentucky Psychological Association Annual Meeting, Frankfort, KY, March.

#### **Awards and/or Honors:**

2010 Psychology Department Research Excellence Award

#### **Post-Graduation Plans (Seniors Only):**

Accepted into Master's program in General/Experimental Psychology at Morehead State University.

## **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 examines whether individuals who speak about racial diversity show signs of selective attention to faces of other races. Participants are randomly assigned to one of two conditions, which corresponds to the topic of a scripted speech they will rehearse and make on camera. The control condition includes a scripted speech on the topic of increased racial diversity in classrooms. The text of both speeches balanced with advantages and disadvantages to the respective topics. Participants then performed the dot probe detection task, participants performed their speech on camera, which will be subsequently coded by independent raters and assessed for behavioral components of anxiety. Finally, participants completed a brief questionnaire which included demographics items and a series of scales to assess factors that may moderate the effects of the experimental manipulation (e.g., motivation to respond without prejudice, prejudicial attitudes, prior experiences in interracial interactions). Data collection is currently underway (data from approximately 30 participants collected) and is anticipated to be completed by the middle of the Fall 2011 semester.

**Project Dissemination:**

**Poster Presentation:**

Ison, Chassidy N., and Butz, David B., (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:**

2010 Psychology Department Research Excellence Award

**Post-Graduation Plans (Seniors Only):**

Ms. Ison will be graduating in Fall 2011 and will be applying to graduate programs in Clinical/Counseling Psychology.

## **MEDINA JACKSON**

**Major:**

Psychology

**Faculty Mentor:**

Sean Reilley

**Research/Project Title:**

Impact of Malingering on the Digit Vigilance Test

**Project Abstract/Summary:**

Ms. Jackson's senior-level fellowship project greatly extended her prior URF experiences in the Cognitive Psychopathology Lab by allowing her to fully develop and conduct a high caliber research project to address a critical area in neuropsychological assessment for AD/HD – malingered pathology. Ms. Jackson was responsible for all aspects of her project. She reviewed the empirical literature and with faculty supervision designed a lab-based empirical study which resulted in research and clinical training on well used clinical instruments (Digit Vigilance Test, Dot Counting Test, and self-report AD/HD measures). Ms. Jackson co-wrote the IRB proposal, solely managed subject recruitment and collection, as well as data entry, analysis, and presentation of her project findings. In her study, Ms. Jackson collected psychosocial history information, evaluated participants' AD/HD knowledge prior to and following their review of diagnostic AD/HD information, and then asked participants to feign AD/HD or respond honestly on the Digit Vigilance Test, Dot Counting Test, and self-report AD/HD measures. Ms. Jackson was solely responsible for data collection and analysis of over 100 participants across the Fall and Spring semesters. Appropriate with her level of training, Ms. Jackson learned how to design and implement an experimentally based study to address her hypotheses and to administer common psychological measures, including the DVT and Dot Counting Test, under the supervision of Dr. Reilley, a Licensed Psychologist in the State of Kentucky. These skills enhanced Ms. Jackson's familiarity with basic research skills and some of those common to clinical work. In addition, Ms. Jackson learned advanced data management and analysis skills using SPSS, a major research package used in academic research settings. Ms. Jackson's initial findings from showed that the DVT was a helpful, brief neuropsychological measure which could reliably differentiate between real and malingered AD/HD. In addition, she provided the first data suggesting that the Dot Counting Test could additionally be used as a supplemental measure to detect malingered AD/HD 45-88% of the time. These are important results for better informing clinical practice about how best to use psychometric instruments to aid in the detection of AD/HD as well as malingered AD/HD. Ms. Jackson presented her initial findings at the Kentucky Psychological Association, the Mid-America Undergraduate Research Conference, the Kentucky Academy of

Science and submitted her abstract for publication in the Journal of the KAS. When published, this will be her 3<sup>rd</sup> abstract published in the JKAS. Her work will also be presented at the Celebration of Student Scholarship. She received a Senior Scholar and Outstanding Undergraduate Research awards during the Fall for her efforts and the Outstanding Senior Psychology Student and the Outstanding Undergraduate Student in Psychology for the College of Science and Technology in Spring 2011. She additionally was selected as the student commencement speaker as she has also maintained a 4.0 grade point average during her URF.

**Project Dissemination:**

**Published Abstract:**

Jackson, M., and Reilley, S.P., (2011), Preliminary Data on the Impact of AD/HD Malingering on the Digit Vigilance Test, Journal of the Kentucky Academy of Science, 71(1-2), 110-111.

**Poster Presentations:**

Jackson, M., and Reilley, S.P., (2011, May), Use of the Digit Vigilance Test to Determine Honest and Feigned AD/HD, Annual Meeting of the Association for Psychological Science, Washington, D.C., May.

Jackson, M., and Reilley, S.P., (2011, March), The Impact of AD/HD Malingering on the Digit Vigilance Test, Annual Meeting of the Kentucky Psychological Association, Frankfort, KY, March.

Jackson, M., and Reilley, S.P., (2011, April), The Impact of AD/HD Malingering on the Digit Vigilance Test, Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Jackson, M., Krishna, R., Kidwell, S.L., and Couch, L., (2011, March), Attachment as a Moderator of Young Women's Responses to Betrayal, Annual Meeting of the Kentucky Psychological Association, Frankfort, KY.

Jackson, M., and Reilley, S.P., (2010, November), Preliminary Data on the Impact of AD/HD Malingering on the Digit Vigilance Test, Annual Meeting of the Kentucky Academy of Science, Bowling Green, KY.

**Oral Presentation:**

Jackson, M., and Reilley, S.P., (2011, April), Preliminary Data on the Ability of the Dot Counting Test to Detect Malingered AD/HD, Annual Meeting of the Mid-American Undergraduate Research Conference, Richmond, IN.

**Awards and/or Honors:**

Awarded 2010-2011 Outstanding Senior Psychology Scholar Academic Excellence and Research Excellence Awards by the Department of Psychology.

Awarded 2010-2011 Outstanding Undergraduate in Psychology and Outstanding Senior in Psychology by the College of Science and Technology.

Selected to be commencement speaker for May, 2011 graduation.

**Post-Graduation Plans (Seniors Only):**

Ms. Jackson applied and received four offers of admission for graduate study in clinical psychology. She will attend the M.S. in Clinical Psychology program at Morehead State University starting in Fall, 2011.

**BRITNEY MAYNARD**

**Major:**

Psychology

**Faculty Mentor:**

Ilsun White

**Research/Project Title:**

Effects of Alcohol on Social Interaction in Adolescent Rats

**Project Abstract/Summary:**

Guided by our previous work on alcohol-induced impairment on simple and complex learning, this project examined the effects of alcohol exposure on social interaction. Adolescent rats were subchronically injected with alcohol. After withdrawal period of 1-2 weeks, their social interaction with control rats was measured. Unlike learning situation, their social interaction was not impaired by repeated exposure to alcohol exposure. Our data suggest that there is a clear dissociation alcohol effects on behavior with minimal effects on social interaction, but a significant impairment in learning, simple and complex.

**Project Dissemination:**

**Poster Presentations:**

Britney A. Maynard, Sarah-Lee E. Schoenhagen, and Ilsun M. White, (2011, April), Alcohol Effects on Social Interaction in Adolescent Rats, Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Britney A. Maynard, Sarah-Lee E. Schoenhagen, and Ilsun M. White, (2011, April), Effects of Alcohol on Social Interaction and Simple Learning in Adolescent Rats, Kentucky Chapter Society for Neuroscience, University of Louisville, Louisville, KY, April.

Sarah-Lee E. Schoenhagen, Britney A. Maynard, and Ilsun M. White, (2011, April), Effects of Methamphetamine on Interaction with Food: Involvement of Prefrontal Cortex, Kentucky Chapter Society for Neuroscience, University of Louisville, Louisville, Ky, April.

**Awards and/or Honors:**

Third place, Undergraduate Research Competition, Kentucky Chapter Society for Neuroscience, University of Louisville, Louisville, KY, April.

**Post-Graduation Plans (Seniors Only):**

Ms. Maynard has been accepted into a Master's Program in Experimental Psychology, Psychology Department, Morehead State University. She will begin her graduate work this Fall 2011.

**SHAYLA MILLER****Major:**

Psychology

**Faculty Mentor:**

David Butz

**Research/Project Title:**

Memories for Social Events

**Project Abstract/Summary:**

Commitment to promoting racial diversity in local environments, such as in schools and in the workplace, has increased the likelihood that people of different races will have the opportunity to interact. However, there is evidence that many people find interracial interactions to be more tense and stressful experiences than social interactions with individuals of their own race, and if given the opportunity, will avoid interracial interactions. The present work provides a new perspective on these differential responses to same-race versus interracial interactions by examining the content and quality of memories for social and interracial interactions. In particular, this study examined the role of prior memories in interracial interactions with a specific focus on comparing memories for prior social and interracial interactions. Participants completed an internet survey in groups of up to 8 individuals in which they reported up to five memories about same-race social interactions and up to five memories about interracial interactions. After describing each memory, participants rated each memory on a series of dimensions, including the pleasantness, perspective, clarity and difficulty in recalling the memory. Preliminary analyses involving 14 White/Caucasian participants indicated that participants reported a similar number of memories for same-race and interracial interactions and these memories were rated as similarly pleasant. However, analyses also revealed important differences between social and interracial memories. Participants reported that memories for interracial interactions were more difficult to recall and less clear than memories for same-race interactions. Additional data collection has been completed (approximately 30 participants total) and analyses will be conducted during the summer. This study will shed light on the different ways that social and interracial interactions are represented in memory, which may provide insight into why many people respond to interracial interactions with anxiety and avoidance.

**Project Dissemination:****Poster Presentations**

Miller, Shayla, Howard, Sydney P., Ison, Chassidy N., King, Kera Ti V., Klik, Kathleen A., and Butz, David A. (2011, March), The Effect of Expectations on Responses to Interracial Interaction, Southeastern Psychological Association Annual Meeting, Jacksonville, FL, March.

Miller, Shayla, Klik, Kathleen A., and Butz, David A. (2011, March), Expectations of Acceptance and Rejection in Interracial Interactions, Kentucky Psychological Association Annual Meeting, Frankfort, KY, March.

Miller, Shayla, Howard, Sydney P., Ison, Chassidy N., King, Kera Til V., Klik, Kathleen A., and Butz, David A., (2010, November), The Effect of Expectations on Responses to Interracial Interactions, Kentucky Academy of Science Annual Meeting, Bowling Green, KY, November.

**Awards and/or Honors:**

2010 Psychology Department Research Excellence Award.

**Post-Graduation Plans (Seniors Only):**

Ms. Miller will be employed as a case-worker at Safe Harbor emergency shelter and advocacy center in Ashland, KY.

**ELIZABETH MOORE****Major:**

Chemistry

**Faculty Mentor:**

Ilsun White

**Research/Project Title:**

Stress and the Time-course of Cortisol Level in Rats

**Project Abstract/Summary:**

Previously we reported that cortisol, a stress hormone, disrupts learning and food motivation, and that presentation of stressor produce a similar effects 40-60 minutes after stressor was presented. To correlate changes in behavior and the level of cortisol, this project examined the time-course of cortisol concentration in the body following injection of cortisol. Rats showed the highest level of cortisol shortly after stressor was presented, cortisol level remained high 40 minutes after stressor or cortisol injection. Our data are consistent with impaired learning 40-60 minutes after exposure to stress; and also provide evidence that behavioral changes are highly correlated with changes in cortisol level.

**Project Dissemination:****Poster Presentation:**

Elizabeth S. Moore, Mark Blankenbuehler, IIsun M. White, (2011, April), The Longitudinal Study of Cortisol Levels in Stressed Rats, Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

**Other:**

Ms. Moore has also participated in a group project that examined alcohol-withdrawal effects on recognition of emotion among college students in Spring 2010; and she presented the group work at the Celebration of Student Scholarship in April, 2010.

**Awards and/or Honors:**

N/A

**Post-Graduation Plans (Seniors Only):**

Ms. Moore has been accepted into the School of Pharmacy, University of Kentucky, beginning this fall 2011.

**LEAH SMITH****Major:**

Psychology

**Faculty Mentor:**

Shari Kidwell

**Research/Project Title:**

Maternal Expressed Emotion and Children's Attachment and Adjustment

**Project Abstract/Summary:**

Expressed emotion describes the way in which parents talk about their children and their relationship with them, particularly with respect to criticism and/or overinvolvement. It has been shown to be an excellent predictor of symptom relapse in families with a loved one who has mental illness. However, far less is known about its validity in younger children and with normative samples. We were particularly interested in it as a measure of parental sensitivity. It allows assessment not just of parent's caring attitudes towards their children, but also their ability to understand their child's unique personality and internal perspective as separate from their own. Other findings from our longitudinal study, and the larger literature, suggest that caregiving sensitivity is a major influence on the quality of parent-child relationships (i.e., child attachment) and child adjustment.

Ms. Smith coded expressed emotion from audiotaped interviews with our parent participants when their children were 4-years old. Guided by published research, interviews were rated for both content and affect in the parent's voice.

Ms. Smith's findings supported our hypotheses in that parents who were negative, critical, or dissatisfied with their children tended to have children who were insecurely attached. Parents who were rated high in overinvolvement (e.g., overprotective, self-sacrificing, enmeshed, or overly emotional) also tended to have children who were insecurely attached. Ms. Smith presented these findings at several regional conferences. (See below.)

Ms. Smith's exceptional ability to quickly learn how to code these interviews led to my request for her to rate interviews from another study, one involving urban, African American children. We will, thus, be able to examine the same important questions among that population. These studies are highly publishable and Ms. Smith will be involved in those manuscripts. Additionally, she has played a central role in developing data collection procedures for the next phase of our RCPC-funded project. Our child participants are now 9-12 years of age. Gaining a deeper understanding of the relationship between parenting sensitivity and child adjustment will be very helpful for future grant-writing endeavors designed to prevent emotional and behavioral problems among children in our region and beyond.

**Project Dissemination:****Poster Presentations:**

Smith, L., Witt, C., and Kidwell, S.L. (2011, April), Parental Expressed Emotion and Children's Attachment, Celebration of Student Scholarship, Morehead State University, Morehead, KY, April.

Smith, L., Witt, C., and Kidwell, S.L. (2011), Parental Expressed Emotion and Children's Attachment, Tri-State Psychology Conference, Huntington, WV.

**Oral Presentation:**

Smith, L.K., Witt, C.L., and Kidwell, S.L., (2010), Parent's Expressed Emotion and its Correlation to Child Attachment Styles, Kentucky Academy of Science's Annual Conference, Bowling Green, KY.

**Awards and/or Honors:**

Ms. Smith earned the Senior Psychology Student Research Award this year.

**Post-Graduation Plans (Seniors Only):**

Ms. Smith will be attending Morehead State University's M.S. in Clinical Psychology Program in the Fall.

## **KENTUCKY CENTER FOR TRADITIONAL MUSIC**

**THOMAS ALBERT****Major:**

Communication Studies/Traditional Music Minor

**Faculty Mentor:**

Jesse Wells

**Research/Project Title:**

An Exploration of Traditional and Modern Acoustic Guitar Construction Techniques, Designs, and Materials to Determine How Luthiers Achieve Desired Tone.

**Project Abstract/Summary:**

The project stemmed from a strong interest in luthiery and woodworking I possess. I have always wanted to know how to achieve an excellent sounding instrument. So, I began researching types of wood and their tonal qualities. I found information that not only discussed the types of choice woods and their densities, but also the relationship between sound and grain type. I traveled to Athens, Ohio to meet with distinguished mandolin builder and tool maker, Don MacRostie. While in Don's shop, I became informed of characteristics of construction that control the sound of an instrument. All of the information pertaining to tone woods and guitar construction has been documented. Part of the project was intended to include the start of construction on my own instrument. In doing so, I would apply the techniques and advice previously learned. Originally, I began to cut rough lumber for the construction of a guitar. After realizing how long it would take to build all of the jigs necessary to start from scratch, and having no prior experience, I decided to order a Stewart-MacDonald guitar kit. This kit provided me with pre-bent sides, top, back, and all other parts needed to assemble a guitar. Even though I acquired all of the parts, there is still a large amount of precision work to be performed to successfully complete the guitar. At this point, I have assembled the sides to the neck and tail block, built clamping jigs, installed shell inlay on the guitar top, and have begun to shape the braces for the underside of the guitar top. I am estimating to be finished with the project by the end of the 2011 summer.

**Project Dissemination:**

The research materials, including audio and video recordings and interview transcriptions will be housed in the Traditional Music Archives at the Kentucky Center for Traditional Music. A presentation of the project and materials was made during the Kentucky Center for Traditional Music Finale concert on May 2, at the Rowan County Arts Center.

**Awards and/or Honors:**

N/A

**Post-Graduation Plans (Seniors only):**

N/A

**Brock O'CULL****Major:**

Philosophy

**Faculty Mentor:**

Jesse Wells

**Research/Project Title:**

Exploring Regional Characteristics of Appalachian Culture through the Art of Traditional Instrument Luthier

**Project Abstract/Summary:**

Through research for this project I was able to examine the people, music and the art of lutherie of Appalachian culture and its historical significance to better aid in the preservation of its qualities. Focusing on recording material in the field I was able to capture and preserve the musical styles of Appalachia I performance and spontaneous music making. Also, I completed the reconstruction of a vintage tenor banjo to help develop techniques in traditional music lutherie.

**Project Dissemination:**

The research materials, including audio and video recordings and interview transcriptions will be housed in the Traditional Music Archives at the Kentucky Center for Traditional Music. A presentation of the project and materials was made during the Kentucky Center for Traditional Music Finale concert on May 2<sup>nd</sup> at the Rowan County Arts Center.

**Awards and/or Honors:**

N/A

**Post-Graduation Plans (Seniors only):**

N/A

**JOHN RODGERS****Major:**

Communications/Production

**Faculty Mentor:**

Jesse Wells

**Research/Project Title:**

Blues in the Appalachian Mountains

**Project Abstract/Summary:**

Through this project I was able to make connection and create a better understanding of roots blues music and the traditional Appalachian repertoire. Variations of songs and tunes were transcribed and presented to show the scope of influence that blues music has had in this region of Appalachia, including West Virginia, Southeast Virginia and East Kentucky. Recordings and film of performances and interviews were collected, both modern and archival materials, to show this far reaching influence.

**Project Dissemination:**

The research materials, including audio and video recordings and interview transcriptions will be housed in the Traditional Music Archives at the Kentucky Center for Traditional Music. A presentation of the project and materials was made during the Kentucky Center for Traditional Music Finale concert on May 2, at the Rowan County Arts Center.

**Awards and/or Honors:**

N/A

**Post-Graduation Plans (Seniors Only):**

N/A

**JOHN RYSTER****Major:**

Construction Management

**Faculty Mentor:**

Jesse Wells

**Research/Project Title:**

An In depth Look at the Traditional Fiddle Music of Southern Ohio

**Project Abstract/Summary:**

This project examined fiddle music and it's regional traditions in Southern Ohio. This research provided a link between MSU and the KCTM and some of the traditional music and musicians of Southern Ohio, and information on the songs and playing styles. The research that was done for this fellowship revealed that there are a number of people in Southern Ohio still playing traditional fiddle tunes. A lot of these fiddlers have modernized their playing a little bit, but still play the old fiddle tunes like they learned them through the oral tradition. Through this project I have determined there weren't as many original tunes and songs that come from the area, but there is certainly a distinct sound that can be picked up on by the trained ear. I collected video and audio recordings and conducted phone interviews.

**Project Dissemination:**

The research materials, including audio and video recordings and interview transcriptions will be housed in the Traditional Music Archives at the Kentucky Center for Traditional Music. A presentation of the project and materials was made during the Kentucky Center for Traditional Music Finale concert on May 2, at the Rowan County Arts Center.

**Awards and/or Honors:**

N/A

**Post-Graduation Plans (Seniors Only):**

N/A

**ASHLEY SMITH****Major:**

Agricultural Education/Traditional Music

**Faculty Mentor:**

Tara Sansom

**Research/Project Title:**

Traditional Music Resource Availability Research

**Project Abstract/Summary:**

Ms. Smith researched and categorized existing sources (both written and audio) concerning traditional music that are available in Morehead State University's library. She then compiled a list of other outside sources that would also be beneficial for the building of new courses within the Kentucky Center for Traditional Music Program, academic research, regional and community engagement, historical preservation and advancement of this aspect of our region's cultural and musical heritage. She conducted very thorough and helpful research and compilation of sources and lack there of, all of which are beneficial and necessary for the doings within the Kentucky Center for Traditional Music, both on an educational and outreach level.

**Project Dissemination:**

Ms. Smith presented her research through a short presentation held during the Kentucky Center for Traditional Music Final Concert in May.

**Awards and/or Honors:**

N/A

**Post-Graduation Plans (Seniors Only):**

N/A