



Department of  
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Sciences

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Celebrating Northwest: 100 years of traditions and transitions

Easterla, David A. (Distinguished University Professor of Biology)

“A Preliminary Investigation of Pleistocene (Ice Age) Vertebrate/Mammal Fossils  
Unearthed at Sand/Gravel Pits in Southwest Iowa – (Continued)”

Abstract – Northwest Missouri State University  
Faculty Research Grant

A101 25008 222  
2009-2010

A number of sand/gravel pits in southwest Iowa were investigated for vertebrate fossil remains. These fossils were occasionally unearthed accidentally as sand and gravel were excavated for commercial purposes. Most of the fossils were of local Pleistocene age (still partial bone) and had been mixed with gravel and sand during this period and deposited in curves of the Ice Age rivers. Some of the fossils were completely mineralized and dated back to the Miocene and Pliocene; these fossils undoubtedly were of glacial origin (Kansan?) and brought South from the North. Most of the mineralized fossils were fragments or badly broken and difficult to identify.

Following are Pleistocene fossils identified:

Extant:

Coyote (*Canis latrans*), Red Fox (*Vulpes fulva*), Raccoon (*Procyon lotor*), Modern Beaver (*Castor canadensis*), Modern Bison (*Bison bison*), White-tailed Deer (*Odocoileus virginianus*), American Elk (*Cervus elaphus*), and Caribou (*Rangifer tarandus*).

Extinct:

Jefferson's Ground Sloth (*Megalonyx jeffersonii*), Giant Beaver (*Castoroides ohioensis*), Ice Age Horses (*Equus sp.* – three species?), Ice Age Bisons (*Bison antiquus* and *Bison occidentalis*), Woodland MuskoX (*Symbos cavifrons*) and Harlan's MuskoX (*Bootherium bombifrons*) = conspecific?, Fugitive Deer (*Sangamona fugitiva*?), Stag-Moose (*Cervalces scotti*), Columbian Mammoth (*Mammuthus columbi*), Jefferson's Mammoth (*Mammuthus jeffersonii*), Woolly Mammoth (*Mammuthus primigenius*)?, and American Mastodon (*Mammuth americanum*).

This preliminary study suggests a very diverse mammalian fauna during the Pleistocene Ice Age in southwest Iowa and adjacent areas. During the study **MANY** vertebrate Pleistocene fossils were brought to the writer (or had been found by the writer) in adjacent rivers near the sand/gravel pits. It appears that Ice Age vertebrate fossil deposits in sand/gravel pits are just a small part of any investigation concerning the Ice Age vertebrates during a cool time when coniferous forests and their fauna dominated the area. Any future investigation of the Pleistocene fossils still eroding out of our present day rivers should provide much added information concerning this subject. Most local rivers are some 15-25 feet deep, and easily extend back in time some 10,000 to 35,000 years (e.g. approximately 100 years for every inch of soil formed).

Easterla, David A. (Distinguished University Professor of Biology)

“A Mold and Cast Made From a Fossil Skull of the Rare and Extinct Woodland (Helmeted) MuskoX (*Symbos cavifrons*) From the Platte River, Nodaway County, Missouri”

Abstract – Northwest Missouri State University Faculty Research Grant

A101 25006 222 – Summer 2009

Recently a fossil skull of the rare and extinct Woodland (Helmeted) MuskoX (*Symbos cavifrons*) was discovered in the Platte River, Nodaway County, Missouri. Although the finder wanted to keep the skull, he agreed to allow the Museum of Natural History, Department of Vertebrate Paleontology, at the University of Kansas, Lawrence, to make a mold and cast of the skull. After several transactions (and trips) involving the vertebrate paleontology department at the University of Kansas, a cast of the fossil muskoX skull was obtained from the created mold. This fine muskoX skull cast is now on display on the third floor of the Garrett-Strong Science Building in the Warren S. and Rita Peck Shuck Museum of Life Sciences.

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Dear Nancy:

I have finally completed all aspects of the ‘High Resolution Mapping’ project for which I received funding via an Applied Research grant. I realize that this project was slated for completion on 1 August 2009. However, the project resulted in a second, Undergraduate Research Project that was a direct extension of the mapping project. As such, I felt that I could not adequately address the outcome of the project until this second project was completed. The second project was completed and presented at the 2010 North-Central/South-Central combined meeting of the Geological Society of America. The project was selected for oral presentation by Matt Aldieri, and undergraduate geology major from NWMSU. Undergraduates are rarely selected as oral presenters; this is a great honor for Matt and indicates the high quality of this research effort. I have attached a copy of Matt’s UGR research proposal. I can also provide a copy of the digital map if you deem it necessary. Finally, while we were not successful in all aspects of this project (the GIS work was especially daunting), the project was so successful that Dr. Rohs and I are in the planning stages for a larger grant to more thoroughly investigate the non-felsic dikes throughout the Precambrian granitic terrane in southeastern Missouri.

Please feel free to call or email if you have any questions, comments, or concerns.

Sincerely,

Aaron W. Johnson  
Assistant Professor of Geology  
Department of Geology and Geography  
Northwest Missouri State University  
80 University Drive  
Maryville, MO 64468  
660.562.1569  
aj@nwmissouri.edu

Researcher's Name: Johnson, A.W. and Rohs, C.R.  
Project Title: High resolution mapping of mafic dikes in the Silvermines Granite, St. Francois Mountains of SE Missouri.  
Type of Grant: Applied Research Grant  
Start Date: October 29, 2007  
Amount Approved: \$820.00  
Finish Date: April 30, 2010

#### Findings and Recommendations:

Previous studies of a 1.3 m-wide diabase dike intruding the Silvermines granite along the St. Francois River in SE Missouri identified plagioclase (60%), opaque minerals (17-19%), chlorite, serpentine, quartz, calcite, and pyrite and an unusual texture consisting of small spherical structures rimmed with magnetite crystals surrounding finer-grained calcite. We mapped the location of 9 mafic dikes in 1 square mile of Silvermines granite. Dikes ranged from 2 inches to 4 feet in width and 5 to 90 feet in length. We used GPS waypoints and standard mapping techniques locate these dikes to within  $\pm 3$  feet. We sampled each dike and nearby quartz veins to assess the mineralogy and chemistry of this suite of dikes. We imported a scanned topographic map into Adobe to create a digital base layer. We then analyzed 16 samples collected from eight of the non-felsic dikes located during the mapping project. Petrology of the dikes was consistent, with carbonate (8-48%), plagioclase (8-58%), sericite, olivine (tr-10%), magnetite (6-80%), and pyrite being the dominant minerals present. Two unusual textures were identified. The first consisted of aligned plagioclase crystals in a matrix of magnetite (~80% of rock volume), implying a primary origin for magnetite in this dike. The second included magnetite-rimmed carbonate-rich spherules similar to those identified in previous work. These spherules were found both in the 1.3 meter Silvermines dike and in two other dikes in the dike swarm. One sample contained what appears to be a magnetite spherule. Nine samples included quartz crystals (trace to 50%). Quartz crystals likely result from magma contamination by granite debris during emplacement of non-felsic dikes. The dikes of the Silvermines area are mafic, have been subsequently altered, perhaps by mineralizing fluids, and in some cases, magma may have encountered the proper conditions to evolve to a magnetite-rich composition.

#### Expenditures by Type and Amount:

Transportation to Field Site:	\$330.75
Postage:	\$7.20
Educational Services & Supplies:	\$286.52
Total:	\$624.47
Balance:	\$195.53

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### Applied Research Project Final Report

#### Researchers' Names, Titles, Departments

Gary McDonald, Professor, CSIS  
Merry McDonald, Professor, CSIS  
Jon Rickman, Vice-President Information Systems  
Phillip Heeler, Professor, CSIS

**Project Title:** Improving Energy Usage Awareness on the Northwest Campus

#### Grant Details

Grant type: Applied Research  
Date granted: November 24, 2009  
Amount of grant: \$3,156.00  
Date completed: July 22, 2011

#### Findings and Recommendations:

The objective of this project was to obtain and analyze data regarding current energy usage on the Northwest campus. Researchers measured power usage for typical computing equipment used on campus, including laptops, desktops, Macs, monitors, and printers.

A comparison of power meters was performed and it was determined that a very inexpensive meter (Kill-A-Watt) was sufficient for our needs. This significantly reduced the funds needed for this project. Additional Kill-A-Watt power meters were purchased, and these were attached to a variety of devices for extended time periods (typically one month) to determine power usage. A separate, and more expensive, power meter was purchased by Computing Services to measure energy usage for the primary computing center for campus, housed in Owens Library.

From the data collected, we were able to reach some general conclusions, such as computer monitors contribute heavily to the energy usage of a computer system, but monitors that are sleeping use a negligible amount of energy compared to a monitor that is turned off.

Overall, it turned out to be very difficult to get reliable results since results seem to depend heavily on computer configuration and usage. Extensive further testing, with computers being tested in a much more controlled environment, will be necessary to produce an accurate energy usage model.

The researchers will continue to measure power usage on their computers under a variety of different usage patterns. This will help us to determine if there are steps that individual computer users can take to reduce energy usage. The power meters we currently have are sufficient for this testing, so no further funds are requested from Applied Research.

#### **Expenditures:**

Student labor: \$266.53

Supplies: \$726.58

Equipment (power meters): \$641.58

Photocopies (for Earth Day presentation): \$85.00

Total expenditures: \$993.11

Balance remaining (to be returned to Applied Research): \$2,162.89

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**Mühsam, Armin, Associate Professor, Department of Art**

#### **“Urban Landscapes”**

**Faculty Research Grant      11/4/09              \$ 1050.00              9/9/10**

#### **Findings and recommendations**

My proposed research was to produce as much new work as possible for my solo show at Galerie Lichtpunkt in Munich, Germany, held from June 10 until July 2, 2010. The exhibit featured 12 paintings, 10 of which were brand new, all executed in the fall of 2009 and spring of 2010. Those months were very productive and I was quite pleased with the new work. The gallery published a full-color catalog in conjunction with the exhibit; if the committee is interested, I would be happy to send them a copy. Here is an excerpt of what Liviana Dan, the curator of the Contemporary Art Gallery of the Brukenthal Museum, wrote about my art:

“Armin Mühsam engages a semiotic discourse, based on an ambiguity of time as well as of space. He proposes a web of interactions, replacing the duality of man/nature with that of technology/ landscape. His works are comprehensive systems of structures - monuments of concrete, machines and roadways - which are in fact the ruins of a self-destructing society... Mühsam’s visualization of this paradox brings into discussion the “beauty” of utilitarianism, but also the wounds it inflicts. Everything that seems to have a logical efficiency, everything that seems to be suited for a new world is actually a sterile world after the disappearance of nature.”

The actual costs incurred run as follows:

a) Shipping: Maryville to Munich    \$ 190.20

b) Supplies: Painting supports        \$ 499.32

Frames                                    \$ 395.21

Total                                        \$1,084.73

## **Title: Time Machine: Pseudo-Science meets Science – An Activity in Skepticism**

Researchers: S. Offutt, Instructor, Dept of Mass Comm.  
D. Richardson, Assoc, Prof., Dept of Chemistry/Physics  
R. Toomey, Assoc. Prof., Dept of Chemistry/Physics

Grant: Applied Research, 10/2008 – 8/2010

Funded: \$700

The goals set for the project were to determine the true nature of the electronics hidden within the time machine device, and to use the time machine within the classroom to allow students to interact and draw their own conclusions about the device.

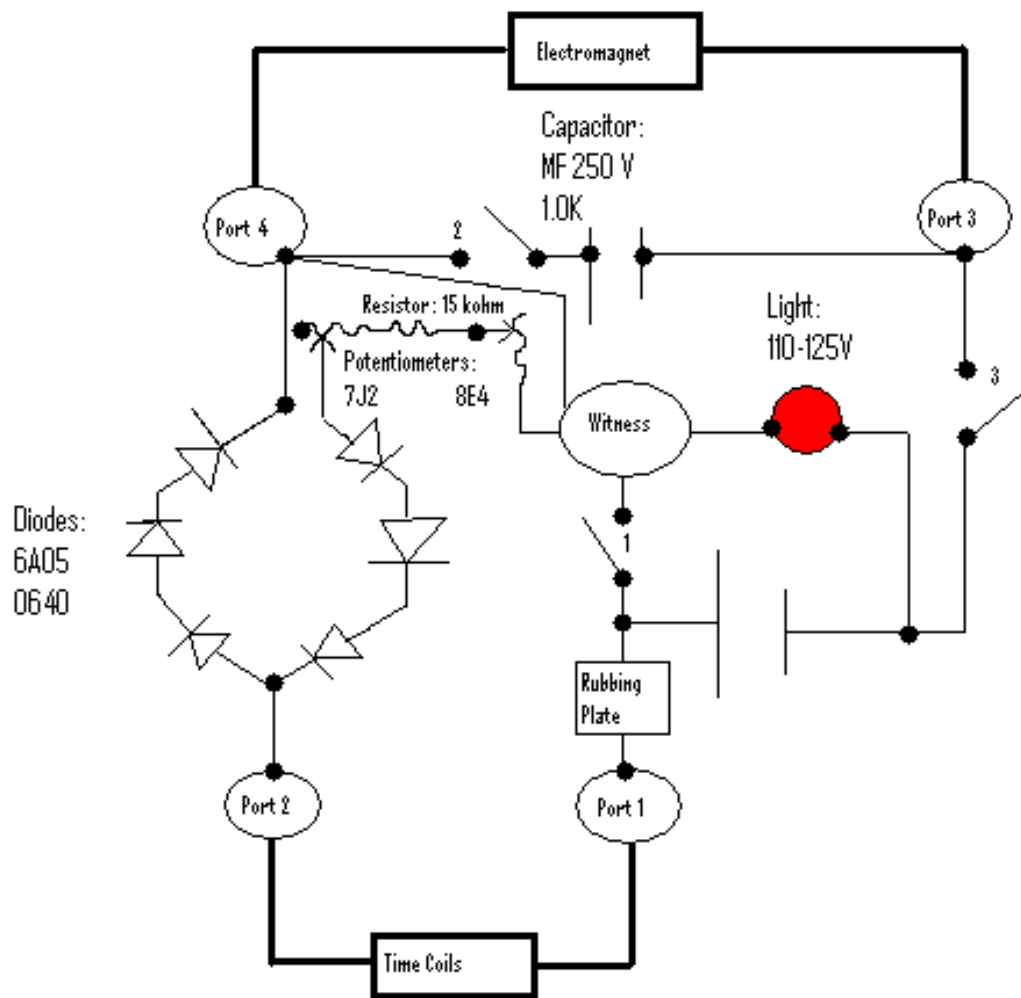
In early 2009, the device was used in a lecture and discussion during a class on Paranormal Journalism, being given by Mr Offutt. Drs Richardson and Toomey were invited to that particular class in order to give a scientific basis for the discussion of time and any possible travel through it. Students were allowed to observe the device and question its possible use and design.

In the summer of 2010, Dr Richardson and a student spent several weeks opening up the time machine and mapping its internal and external connections. A circuit diagram of the device is shown below. The circuit was connected directly to the mains wall outlet. The voltage was unmodified except for voltage variation throughout the circuit (using variable resistors), until it passed through a crude AC-DC converter. All current passed through several loops of wire, and a significant electromagnet. The design was proficient at producing weak alternating magnetic fields (no stronger than many fridge magnets) and shorting out (blowing the circuit breaker) of the electrical outlet in the lab used. No other detectable effects were seen.

In the Fall of 2011, Dr Richardson will incorporate the circuit into an electronics laboratory in order to allow students the opportunity to “reverse-engineer” the device and, independently, try to determine what task it performs.

### **Budget**

1 Time Machine @ \$232.50



**Shelley Rabel Riley**  
Assistant Professor of Chemistry  
Department of Natural Sciences

**Final Report**  
Analytical Characterization of Nanosuspensions for Poorly Water Soluble Pharmaceuticals

**Applied Research Grant**  
Date Granted: November 5, 2009  
Amount Approved: \$4,310  
Grant Extended through December 2012

**Findings**  
Naproxen was chosen as a model drug for the manufacture of nanocrystal suspensions. The effect of the type and concentration of stabilizer additives were investigated with respect to their ability to produce naproxen nanoparticles, maintain particle size, and exhibit chemical and physical stability over time. Based on Dynamic Light Scattering analysis, Methocel E6 (0.6%) and Kollidon VA64 (0.6%) were effective in producing naproxen nanoparticles with mean diameters of 184 nm and 195 nm, respectively, while Lutrol F68 (0.6%) and Polysorbate 80 (0.6%) resulted in particles with mean diameters of 367 nm and 345 nm. Particle size analysis results and particle shape were confirmed by Scanning Electron Microscopy. The particle size and chemical

stability of the naproxen nanocrystals in the presence of the stabilizers were evaluated over 10 months with no significant growth in particle size for either the Methocel E6 or Kollidon VA64 stabilized suspensions. High-performance liquid chromatography was used to assess the chemical stability of naproxen in the presence of these stabilizers after 10 months of storage at 4 °C, with no evidence of chemical degradation. Naproxen was recovered from the nanosuspensions to evaluate the physical stability of the drug. Differential Scanning Calorimetry showed an endothermic transition at approximately 155-157 °C, which was consistent with the data for naproxen as received from the supplier. X-ray powder diffraction showed no significant changes in the powder patterns of the naproxen recovered from the suspensions, suggesting no change in the crystalline structure of the drug substance occurred as a result of the manufacturing process.

## **Recommendations**

Currently we do not understand why some stabilizers are more effective than others in producing and maintaining the naproxen nanosuspensions. Further research to probe the molecular interactions of the drug and stabilizer at the nanoparticle surface using Atomic Force Microscopy may provide a rational basis for selection of stabilizers.

## **Expenditures**

Chemicals: ~\$948

Large Equipment: Jar Mill \$1941

Parts/Supplies: ~\$990

Balance Remaining: \$430.90

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## FIELD GEOLOGY OF THE BRITISH ISLES: COMBINING FACULTY AND STUDENT RESEARCH WITH COURSE DEVELOPMENT OPPORTUNITIES TO CREATE AN INTERNATIONAL GEOLOGY FIELD COURSE

[ROHS, C. Renee](#) and JOHNSON, Aaron W., Geology/Geography, Northwest Missouri State University, 800 University Dr, Maryville, MO 64468, rrohs@nwmissouri.edu

The geology program at Northwest Missouri State University has a long history of providing field experiences to enrich undergraduate education. Our field opportunities are designed to pique interest by going to cool places and seeing awesome geology. With this initial interest we are able to challenge students to apply concepts learned in the classroom to real-world settings. In addition, Northwest has adopted a commitment to student-centered international experiences. With this in mind, we developed a faculty-led, geologic field course to Scotland and Ireland. This course was open to any student who had completed at least one semester of study in geology. To maximize our time and resources, we linked research and instructional proposals to pursue funding from various internal sources. Grant proposals linked anticipated student learning outcomes to three segments of the Departmental planning process: 1) competence in a discipline; 2) multicultural competence; and, 3) cultural awareness. This multi-tiered approach allowed us to successfully combine funds from Applied Research, Improvement of Teaching and Learning, and Undergraduate Research sources with Departmental support to cover the costs of course development. With funds secured, the first step was to research and chart a reconnaissance trip to locations of geologic interest in Scotland and Ireland. This general area was chosen because of the rich geologic history not only in the rocks and structures but also in the development of the science. A team of three, including 2 faculty members and 1 undergraduate student, completed the second step by collecting GPS coordinates, driving directions, cultural significance, accessibility, rock types, tectonic structures, surficial processes, digital photos, video clips and samples, where appropriate, at 46 field locations. To understand better the complexity of the geologic setting, the team conducted additional research and constructed specific geologic maps using GIS software during the 2009-2010 academic year. Finally, the resulting field notes, samples, and digital information were analyzed and summarized to construct the field guide and associated assessment instruments for the course. Ten undergraduate students and 2 non-credit seeking attendees successfully completed the course in May 2010.

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### **The Effects of Formal and Informal Controls on Violence, Drug Use and Public Disorder**

-----A Joint Multi-Response Generalized Hierarchical Linear Model

Dr. Han Yu, assistant professor in Department of Mathematics and Statistics

in collaboration with Dr. Shanhe Jiang, Professor in Department of Criminal Justice, University of Toledo

**Type of Grant:** Faculty Research. **Amount:** \$3,400

**Date Approved:** November 4, 2009 **Encumbered until** December 31, 2010

**Duration of the Project:** One academic year, 2009 – 2010

**Expenditure: Computer:** \$1727.17, **SAS software for one year license:** \$854, **Hotel and Materials:** \$818.83

**Balance:** \$0

#### **Project Summary/Conclusion**

Social disorganization theory has suggested that informal social control is an important predictor of deviance and crime at both the individual level and group (neighborhood) level. However, it has not paid enough attention to the effect of formal control and lacks research on the interaction effect between formal and informal controls on deviance and crime. Using 2,309 individuals from 66 neighborhoods in the two largest cities of a southern state, this study has examined the impact of formal control, informal control and other variables at the both individual and neighborhood levels on three dependent variables (violence, drug abuse and



disorder). Violence, drug use and disorder are highly likely to be associated on its own right. Thus, a joint hierarchical generalized linear model (HGLM) was used for the non-normal data analysis.

This study advanced the literature in two ways. First, it extends social disorganization theory via investigating the effect of the formal-informal control interaction on the three outcomes. Second, it is the first effort to investigate the three correlated outcomes using a high dimensional joint model to get less biased and more effective inferences. Analytical results for non-normal HGLM are generally not available and Fixed, adaptive, and stochastic numerical integration methods for approximate likelihood methods have been developed and made commercially accessible only for use with generalized linear mixed effects models (GLMMs) having low-dimensional random effect distributions. However, none of the numerical ML methods have been made computationally practical for models with high-dimensional random effects. In order to implement this analytical intractable and computationally intensive analysis, Bayesian methods using Markov Chain Monte Carlo (MCMC) are unique solutions with exact inferences up to Monte Carlo error though it is slow and technically more challenging. Detailed analytical methods and findings were presented in Bureau of Justice Statistics (BJS), Washington DC and some results were presented in American Society of Criminology (ASC) annual conference in San Francisco, CA. Preparation of manuscripts continues for a peer reviewed journal.

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### Faculty Research Final Report

**Researcher:** Dr. Rebecca Dunnell, Associate Professor of Music, Department of Music

**Title:** “*Mozart Concerto for Flute and Harp, K. 299: Research in the National Archives in Paris.*”

Faculty Research, approved February 2009, amount: **\$1625.00**. Travel completed summer 2009.

travel	\$791.39
lodging	<u>701.40</u>
total	<b>\$1492.79</b>

Balance remaining, to be returned to the Faculty Research account: **\$132.71**.

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**Dunnell, Rebecca (Associate Professor of Music in the Department of Music). "Mozart Concerto for Flute and Harp, K. 299: Research in the National Archives in Paris." Summer 2009.**

During the summer of 2009, I conducted archival research at the Archives Nationales in Paris about the family who commissioned Mozart's 1778 Concerto for Flute and Harp, K. 299. I am grateful for the NWMSU Research Grant which funded my flight and some of the living expenses while in Paris for one week. Mozart's patrons are a topic in Mozart studies, and (as outlined in the proposal) this particular commission is 1.) relatively unexplored and 2.) marred by errors and assumptions.

K. 299 was commissioned by the Duc de Guines, Adrien-Louis Bonnières de Souastre (1735-1806), an avid flutist, to play with his harpist daughter, Marie Louis Philippine. Working in the Archives, I found that the daughter's auspicious marriage to the Duc de Castries was providential in that this was the joining of two very illustrious families. Indeed, in the period after the Revolution, Marie Louise's surviving son restored the l'hotél de Castries (the familial home) and merged the collections of the de Guines and de Castries families, this collection which became 306 AP in the Archives Nationales.

I was enlightened through this collection on the importance of these two families. In addition, I was able to correct misinformation in the literature and unearth leads for future research, both in contextual studies and also in more purely musical issues, having to do (so far) with questions concerning instruments.

I also conducted research at the Bibliothèque nationale de France to follow up on that at the Archives. In addition, it was tremendously exciting to walk (and photograph) the area of Paris where these families lived, and to infer their standing in society. The de Guines's home was across the Seine from the Palace, and the de Castries's home (still standing) was only a few blocks southeast of that.

This research was relevant to my October 2009 lecture at the Royal College of Music in London, where I spoke concerning application of research to further one's musical interpretation. In addition, I have been invited to present at the 2010 Convention of the British Flute Society on the subject of Mozart and his works for flute.

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## **Faculty Research Grant Final Report**

### **1. Researchers' Names, Titles, Department Name:**

- Anthony Olson, Assistant Professor of Music, Department of Music
- Charles Badami, Instructor of Music; Department of Music

**2. Project Title:** Performance edition of Claude Debussy's two-piano arrangement of the *Prelude to the Afternoon of a Faun*

### **3. Type of grant - Date granted - Amount approved - Date completed:**

Faculty Research Grant, February 2009, \$419 approved, completed May 2009.

### **4. Findings and recommendations:**

This project prepared a practical performance edition of Claude Debussy's two-piano arrangement of his *Prelude to the Afternoon of a Faun*. The researchers set up the score to match the typical format, placing the two piano parts one above the other. While preparing a usable performance edition, the co-authors revised and edited the piece. Numerous passages were greatly improved through redistribution of the notes between the two parts.

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## **Final Report Faculty Research and Applied Research**

### **Researcher's(s') Name, Title, Department Name**

Rebecca Hendrix, Ph.D, Assistant Professor, Department of Psychology, Sociology, and Counseling  
Ryan Wessell, Ph.D, Assistant Professor, Department of Psychology, Sociology, and Counseling  
Linda Sterling, Ph.D, Assistant Professor, Department of Psychology, Sociology, and Counseling

### **Project Title.**

Crib Notes and Grades

### **Type of grant - Date granted - Amount approved - Date completed**

Applied Research – February 15, 2009 - \$2209 – May 25, 2009

### **Findings and recommendations.** (Be brief, not to exceed 300 words).

A travel grant was requested to attend the annual Association for Psychological Science meeting in San Francisco, CA. It was held from May 21-25, 2009. A poster was presented depicting the findings below.

One hundred twenty-nine general psychology students at a Midwestern university participated in a study on the effects of note cards on exam performance, exam anxiety, and cheating. Students were divided into three groups. Group A was allowed to use a 3 X 5 inch note card on all four course exams. Group B was allowed to use a note card on the last two course exams. Group C was not allowed to use note cards on exams. All three groups were surveyed regarding the experience of using note cards.

Results indicated that the majority of students in Groups A and B felt that using note cards helped with exam performance. Group C indicated that if given a choice, students in this group would use note cards too. When asked about the level of anxiety on exams when permitted to use note cards compared to exams without note cards, 43.4% ( $n = 56$ ) reported a less anxiety with note card use. Both students who used cards and those who did not use cards were asked whether they thought using sanctioned note cards on exams would impact cheating on exams. The majority thought the use of note cards on exams would relieve most cheating.

Repeated measures ANOVA revealed a significant interaction between exams scores and using the note card as well as a main effect of using the note card. On exam 1, Group A had significantly higher scores than Group C. For exams three and four, both Groups A and B had significantly higher scores than Group C.

These results add some credence to the hypothesis that using note cards on exams did influence exam performance, anxiety, and cheating.

## Budget Report

Hotel.....	\$781.80
Flight.....	\$287.78
Bag Fees.....	\$30.00
APS Registration.....	\$275.00
Mileage to KCI (78 miles x 2 x \$.45).....	\$70.20
Shuttle.....	\$28.00
Poster.....	\$25.00
<b>Total .....</b>	<b>1497.78</b>

Ryan Wessell should be getting refunds on his flight and his registration. They may not yet be refunded to the grant.

Flight.....	\$282.00
Registration.....	\$275.00

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# Faculty Research Grant Final Report

## 1. Researcher's (s') Name, Title, Department Name

Rebecca Hendrix, Assistant Professor  
Department of Psychology/Sociology/Counseling

Alisha Francis, Assistant Professor  
Department of Psychology/Sociology/Counseling

## 2. Title of Research

Student and Faculty Perceptions of Undergraduate Research Conferences

## 3. Type of Grant: Faculty Research Grant

**Date Granted:** February 5, 2009

**Amount Approved:** \$1174

**Date Completed:** May 25, 2009

## 4. Findings and Recommendations

A travel grant was requested to attend the annual Association for Psychological Science meeting in San Francisco, CA. It was held from May 21-25, 2009. A poster was presented depicting the findings below.

By participating in research, students gain several skills: research techniques, written and oral communication, preparation and submission of manuscripts (Burns, 2006; Landrum, 2006). In addition, such involvement leads to collaboration with professors that are helpful in getting letters of reference (Burns, 2006). Such students are often encouraged to present their findings at conferences, but little research has been performed looking at their satisfaction and learning from this experience. The current project used online surveys to ask students and faculty about the goals they sought in participating in undergraduate research conferences.

Sixty-one participants (17 faculty, 37 undergraduates, 5 graduate students, and 2 other attendees) responded. Students perceived research design as positively related to critical thinking,  $r(30) = .596$ ,  $p = .000$ , analysis/interpretation,  $r(30) = .443$ ,  $p = .011$ , communication,  $r(29) = .371$ ,  $p = .04$ , and professional development,  $r(29) = .600$ ,  $p = .000$ . Professional development was related to critical thinking,  $r(29) = .600$ ,  $p = .00$  and communication,  $r(28) = .457$ ,  $p = .011$ . Finally, analysis/interpretation was related to communication,  $r(29) = .433$ ,  $p = .015$ .

Faculty perceived critical thinking as positively related to analysis/interpretation,  $r(12) = .602$ ,  $p = .023$ . Additionally, professional development was related to analysis/interpretation,  $r(11) = .684$ ,  $p = .01$ , and communication,  $r(11) = .708$ ,  $p = .007$ .

## Budget Report

Flight.....	\$224.00
Bag Fees .....	\$30.00
APS Registration .....	\$275.00
Mileage to KCI (80 miles x 2 x \$.45).....	\$72.00
Shuttle.....	\$28.00
Poster .....	\$25.00
<b>Total.....</b>	<b>\$599.00</b>

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### Standardized Final Report Format

**Researcher's Name:** Ame Lambert

**Title:** Director of Intercultural Affairs

**Department Name:** Intercultural Affairs

**Project Title:** The Vision and Empowerment Institute (VEI)

**Grant Type:** Applied Research Grant

**Date Grant issued:** February 19<sup>th</sup>, 2009

**Amount Approved:** \$3,000

**Date Completed:** October 18<sup>th</sup>, 2009 follow-up still continuing

**Findings and Recommendations:** The Vision and Empowerment Institute project was officially completed on October 18<sup>th</sup>, 2009. As a final project, the students hosted a simulation project and forum with campus leaders. They are now charged with following up on their recommendations to ensure that some of them become reality. We learned from the project that authentic empowerment and paradigm shifts are a much slower and more complex process than we initially thought. We envisioned a 30 hour program and ended up investing over a hundred hours. We also learned that in order not to create an atmosphere of learned helplessness, we needed to prepare administrators and leaders as well as students. Students went into the final project expecting that if they did their due diligence, administrators would respond with an enthusiastic next steps/follow up plan, rather than an admonition to follow up. We should have done a better job of preparing for that. Although many lessons were learned and attrition was quite high (45%) we consider this pilot to be a success. Two of the students successfully ran for a student senate seat using the leadership skills and techniques learned through VEI to design their campaign. There were no African American students on senate prior to this so it was a big deal. Students have also applied the skills and knowledge they learned in their personal lives and leadership positions. Long term, we would like to obtain external funds to host a 2 year project starting 2<sup>nd</sup> semester freshman year through first semester junior year. We believe this will allow students the required amount of time to process and internalize the information. We also believe that this will reduce attrition as it will allow the many students that work several weekly hours to fit this into their schedule and graduate from the program

**Listing of Expenditures by type:** all \$3,000 went to the Harbor Institute