

Applied Research Final Report

1. Researchers' Name, Title, Department Name

Dr. George Kegode, Assistant Professor, Agriculture, Valk 120, X
1126, gkegode@nwmissouri.edu

Dr. Ming-Chih Hung, Associate Professor, Geology/Geography, GS1337, X
1797, mhung@nwmissouri.edu

Dr. Yi-Hwa (Eva) Wu, Assistant Professor, Geology/Geography, GS 1075, X
1869, ywu@nwmissouri.edu

2. Project Title

Identification and estimation of baobab tree fruit production in Southern Malawi using remote sensing

3. Type of grant - Date granted - Amount approved - Date completed

Applied Research (A101-31047-222: 2010 Baobab Tree), approved Fall 2010 with budget \$4,920, completed Summer 2013.

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

In southern Malawi, baobab (*Adansonia digitata*) trees grow wild in regions where their use as a source of food and medicine is increasing. Research was conducted to (i) detect existing baobab trees and estimate tree size using remote sensing, and (ii) relate fruit production to tree size and develop a model to estimate/predict fruit production at two locations, Mangochi and Mwanza in Southern Malawi. A Formosat-2 image taken on January 22, 2012 was obtained through SPOT Image Inc. and processed to identify trees via their shadows. Tree shadows can be distinguished from background bushes or grasses. According to the image metadata, the sun azimuth was 102.64 degree (east-southeast direction), while the elevation was 54.32 degree. Since the image was taken from an overhead position, a shadow of 1 meter indicated a height of 1.376 meter ($\tan 54 = 1.37638$). Baobab fruit production per tree can be estimated using a relationship based upon tree size and diameter at breast height (dbh), as reported in the literature. Pictures taken from a preliminary field trip to Southern Malawi (January 2010), revealed that the average ratio between height and dbh was 9.97 and between width and dbh was 8.90 in Mangochi, and 10.74 and 8.13 in Mwanza, respectively. On average, the ratio between height and dbh was 10. With sharpened Formosat-2 satellite image, the pixel size was 2 meter. With a shadow of 8 pixels in length in the direction of sun azimuth, the estimated tree shadow length was 16 meters, tree height was 22 meters, and dbh was 2.2 meters. Baobab fruit production per tree at Mangochi and Mwanza was estimated based upon the literature and will need to be validated via ground truthing prior to the development of fruit production prediction models.

Summary of the Budget Expenditures

Itemized expense:

Satellite images (SPOT)	\$ 3,350
SPOT programming fee to acquire up-to-date images	\$ 1,000
Data storage backup devices (external hard drive, DVD, etc.)	\$ 300
Color reproduction (\$3 * 90 square foot)	\$ 270
<hr/>	
Total	\$ 4,920

Total approved budget: \$ 4,785.58

Remaining fund: \$ 134.42

Research Grant Written Report

3.1 Researcher: Martha Breckenridge, PhD, Assistant Professor of Art, Art History

3.2 Project Title: *Manuscript Images of Meetings of the Order of Saint Michael, the Knights Depicted, and the Collars They Wore*

3.3 Type of Grant: Faculty Research Grant
 Chair, Stephen Town, PhD
 Awarded October, 2011.
 Amount approved \$940.
 Research continuing.

3.4 Findings and Recommendations:

Thanks again to the Faculty Research Grant Committee, I have accumulated multiple electronic reproductions of manuscript leaves showing members of the French Medieval Order of Saint Michael depicted in convocations of that chivalric order, and showing (though mostly illegibly) the collars they received upon induction and were required to wear constantly in peacetime. Other manuscript leaves show the arms of those knights, surrounded by the collar of the order, or simply marginal drawings of the collar. Earlier I had obtained a modern translation of the order's statutes, and all extant lists of the members, hoping to identify the members depicted. Unfortunately, fifteenth-century images become mere symbols of the meetings, with neither portraiture nor even realistic numbers of individuals present.

My interesting discovery -- an unresearched finding -- is that several of these miniatures depict the French order's collar around the arms of Antoine, Grand Bâtard de Bourgogne, son of the Duke of Burgundy, and mortal enemy of the King of France, Louis XI. It is unclear how

Antoine was permitted to continue in the French order, not to mention why he would have had his personal manuscripts decorated with the collar of that order, when the Burgundians and French were at war.

My goal had been to obtain electronic copies of all identified miniatures of the *Statute Book of the Order of Saint Michael* and any images which might also show the collars. The difficulty is that I cannot obtain copies of all them from Missouri, and it is currently not possible for me to travel to Europe to acquire them personally.

Thus, at this time, I feel it is appropriate to forego the remainder of my grant monies (\$337.98), as it has taken already far longer than I had proposed for the research. The report is long overdue, in part because of problems in the accounting. I plan to continue seeking copies of these manuscript leaves (all of which have proven to be in European libraries and museums) and eventually to submit an article on my findings to the *Journal of the Early Book Society*.

In the meantime, I thank the committee for your original grant support and for your patience with me! Please find attached the itemization of invoices for the copies of manuscripts I have purchased with your generous grant.

Yours very truly,

Martha Breckenridge, PhD
251 Fine Arts; marthab@nwmissouri.edu

Expenses for which I have been reimbursed by the Research Grant Committee included the initial and ensuing credit card expenses for electronic images and transmittal of them from the libraries where they are held:

Paypal and French National Library manuscript leaves and foreign fees transfer	\$81.86
Paypal and Trivulzio Library manuscript leaf and French National Library manuscript leaves and transfer fees	57.37
Pierpont-Morgan Library manuscript leaf, French National Library manuscript leaves, and transfer fee	265.39
French National Library manuscript leaf and transfer fee	28.41
Vienna National Library manuscript leaf, French National Library manuscript leaf, and transfer fees	81.84
French National Library manuscript leaves	64.74
French National Library manuscript leaf	<u>22.41</u>

Total

\$602.02

FINAL REPORT: FACULTY RESEARCH AWARD

3.1 Rebecca Dunnell, Associate Professor, Music Department

3.2 Andersen Etudes: Enhancing Understanding through Ensemble Arrangements

3.3 Faculty Research Grant

Start date 10/25/10

Amount approved: \$768.00

Date completed: March 30, 2012 (extension granted)

3.4 Findings and Recommendations

The eight volumes of etudes for flute by Joachim Andersen (1847-1909) constitute a foundation for technical and artistic mastery parallel to those by Chopin for the piano. Unfortunately, many students (and some teachers) fail to perceive the musicality of many of these etudes.

I arranged ensemble music, and in some cases, original preludes for twelve etudes from Opus 37 and Opus 41. This resulted in thirty-seven pages of music typesetting, seventeen of which were paid for with project funds. The rest I typeset myself.

I assigned the works to two students. The arrangements and preludes are intended to bring out aspects of "hidden melodies," chorales or harmonic implications, and other aspects inherent in the original etudes. My questions: 1) will the student, upon working through these preludes and/or arrangements hear clearly what is present (in a more subtle way) in the original etude; 2) will the student absorb the sense of musical style through these materials; and 3) will they approach other etudes (and repertoire) with an a more advanced sense of musicianship?

I found that the students were delighted with these materials. The hidden melodies were immediately apparent to them, and they ENJOYED playing them. They were motivated to work on the etude in its original setting with a new perspective, and share that sense of enthusiasm and depth of teaching with their own students in the future. We made recordings of most of the funded works, both as a record of this research and as proposal material in my packet to publishers.

I have sent the materials to a publisher who has produced other pedagogical work connected with Joachim Andersen. It is my understanding, as with my last publishing experience, that one should not send a project to an additional publisher until a current proposal is resolved.

3.5 Expenditures

Music Typography:	\$500.00 (invoice is \$510.00, I will pay the \$10.00 exceeding the approved amount)
Student labor:	\$174.00

I did not use professional recording services, one of the budget items.

Total: \$674.00

\$768.00 approved, - \$674.00 = balance of \$94.00 to be returned to Faculty Research account)

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

Fossils “An Investigation of Pleistocene (Ice Age) Vertebrate/Mammal

Unearthed by River Erosion in Southwest Iowa and Northwest Missouri”

Abstract – Northwest Missouri State University Faculty Research Grant

A 101 – 25058 – 222
2010-2012

A number of rivers in northwest Missouri and southwest Iowa were investigated for vertebrate fossil remains. Fossil remains were unearthed by water erosion from river bottoms and banks. Extinct, fossil bones were usually mixed with extant modern bones. Unfortunately, today’s river ways still serve as trash dumps for those who still ignore the law. Bones were usually found after high water and then stream flows returning to normal. Most bones were discovered on curves of the river where sand/rock bars formed. Fossil bones of extinct animals were either mineralized, semi-mineralized, or non-mineralized. Mineralized bones were usually of the Miocene-Pliocene age and were brought south to the areas by glaciation (Kansan and Nebraskan Ice Sheets). Other fossil bones (that were semi-mineralized or bone) of extinct vertebrates lived in southwest Iowa and northwest Missouri during the Late Pleistocene some 10,000-35,000 years ago. Most of the fossil bones were fragments or badly broken from river erosion, and were often difficult to identify. Rivers researched in southwest Iowa and northwest Missouri included the West and East Forks of the Nishnabotna Rivers, three forks of the Tarkio River, three forks of the Nodaway River, three forks of the 102 River, two forks of the Platte River, three forks of the Grand River, and the West Seven Mile River. At least 10 extant vertebrate species were discovered based upon bone evidence, and about 12 species of extinct

vertebrates were discovered based upon fossil evidence. Extinct species were sometimes difficult to classify because of recent nomenclature changes, and whether sexual dimorphism existed in a given species (genus?), since no complete, articulated, fossilized skeletons have ever been discovered of a given taxon. This NWMSU Faculty Research Grant covered only travel expenses for one university car. The other car was the writers (gratus), a Ram Charger that carried the canoe.

This preliminary study suggests a very diverse mammalian fauna during the Pleistocene Ice Age in southwest Iowa and northwest Missouri. During the study **MANY** vertebrate Pleistocene fossils were brought to the writer (or had been found by the writer) in local rivers. It appears that Ice Age vertebrate fossil deposits in local floodplains 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).

Applied Research Final Report

1. Researchers' Name, Title, Department Name

Dr. Ming-Chih Hung, Associate Professor, Geology/Geography, GS1337, X 1797

Dr. Yi-Hwa Wu, Assistant Professor, Geology/Geography, GS 1075, X 1869

2. Project Title

Using Color-Infrared Photography to Create Color Vision Impairment Friendly Character Maps – Additional travel fund

3. Type of grant - Date granted - Amount approved - Date completed

Applied Research (A101-31032-222 AR-COLOR INFRARED), approved Spring 2008 with budget \$2,282, completed Fall 2010; additional travel fund approved Fall 2010 with budget \$2,812, completed Spring 2011.

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

This final report is for the additional travel fund, not the AR project. Another final report for the AR project was submitted previously when closing the AR project in Fall 2010.

5. Presentation

Hung, M.-C. & Wu, Y.-H., 2011, Character Maps from Close Range Multispectral Images, presented at the American Society for Photogrammetry and Remote Sensing (ASPRS) 2011 Conference, May 1-5, 2011, Milwaukee, WI, USA.

Summary of the Budget Expenditures

Itemized expense:

Poster printing (three copies)	\$140.06
Registration	\$490.00
Parking	\$120.00
Hotel	\$886.25
Mileage	\$478.80

total	\$2,115.11
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Total approved budget: \$ 2,812

Remaining fund: \$ 696.89

Applied Research Final Report

1. Researchers' Name, Title, Department Name

Dr. Ming-Chih Hung, Associate Professor, Humanities and Social Sciences, GS1337, X 1797

2. Project Title

Requesting funds for making a presentation at the 2014 ASPRS conference regarding findings from a previous applied research project. Conference presentation title "Estimating baobab tree size and fruit product rate from Formosat-2 satellite images"

3. Type of grant - Date granted - Amount approved - Date completed

Original Applied Research (A101-31047-222: 2010), approved Fall 2010 with budget \$4,920, completed Fall 2013.

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

The following is the citation for our presentation:

Hung, M.-C. & Wu, Y.-H. & Kegode, G., 2014, Estimating baobab tree size and fruit product rate from Formosat-2 satellite images, presented at the American Society for Photogrammetry and Remote Sensing (ASPRS) 2014 Annual Conference and co-located JACIE (Joint Agency Commercial Imagery Evaluation) Workshop, Mar. 23-28, 2014, Louisville, KY, USA.

Summary of the Budget Expenditures

Itemized expense:

Registration	\$ 560
airplane	\$ 434.72
hotels	\$ 283.62
local transportation	\$ 40
KC airport parking	\$ 21
Car mileage	\$ 79.80

total	\$ 1,419.14
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Total approved budget: \$ 1,712
Used expense: \$ 1,419.14
Remaining fund: \$ 292.86

Applied Research Final Report

1. Researchers' Name, Title, Department Name

Dr. Ming-Chih Hung, Associate Professor, Geology/Geography, GS1337, X 1797
Dr. Yi-Hwa Wu, Assistant Professor, Geology/Geography, GS 1075, X 1869

2. Project Title

Using Color-Infrared Photography to Create Color Vision Impairment Friendly Character Maps – Additional travel fund

3. Type of grant - Date granted - Amount approved - Date completed

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Remaining fund: \$ 696.89

ABSTRACT

Kramer, Ernest (Professor of Music). *An Investigation of the Correspondence and Memorabilia of Franz von Suppé, The Creator of German Operetta*. Faculty Research Project grant for \$1857. October 2010 – July 2012.

Franz von Suppé was the first successful composer of Viennese operettas. Today Suppé's fame rests primarily on the overtures to his operettas rather than on the operettas themselves. The Edwin Mellen Press has contracted with the researcher to write the first definitive monograph based on Suppé's most important creation, the light Viennese operetta overture. The book is to be titled *The Light Cavalry, Poet and Peasant, and Other Famous Overtures by Franz von Suppé*

As a result of a 2010-2012 Faculty Research grant, the researcher was able to travel to two of Austria's most prestigious libraries: the Wiener Stadt- und Landesbibliothek and the Österreichische Nationalbibliothek. The researcher conducted an extensive investigation of the composer's materials over a five day period. Although Suppé wrote more than forty operetta overtures, the research centered on those that would be included in the book: *Morgen, Mittag, und Abend in Wien (Morning, Noon, and Night in Vienna)*, *Dichter und Bauer (Poet and Peasant)*, *Flotte Bursche (Gay Blades)*, *Pique Dame (Queen of Spades)*, *Die schöne Galatheé (The Beautiful Galatea)*, *Leichte Kavallerie (Light Cavalry)*, and *Banditenstreiche (Jolly Robbers)*.

The research proved to be invaluable. The researcher examined and photographed over one hundred thirty autographs of correspondence, memorabilia, and scores. Items that had previously only been available in print or in facsimile in the United States were now available for examination in their authentic and original states. The manuscripts scores in particular yielded a wealth of new information since they contained numerous hand-written notes by Suppé in both German and Italian that had not been previously recorded.

Final Report

1. Researchers

Dr. Yanfen Le, Asst. Prof., Geology/Geography

2. Project Title

Presentation titled “Visualization of Dynamics in Linear Referenced Transportation Data”

3. Type of grant - Date granted - Amount approved - Date completed

Type of grant: Faculty research
Date granted: October 23, 2010
Amount approved: \$1,158.00
Date completed: November 18, 2010

4. Findings and recommendations

Linear referencing represents locations along routes using relative positions. It allows locating events along routes without segmenting it, and has been applied to manage linear features in transportation and utility. In transportation, dynamics in variant attributes such as speed limit, surface material, and traffic accidents, are often saved in event tables. Although events can be displayed via dynamic segmentation, there are difficulties in handling dynamics or changes in events. When variant attributes are associated, dynamic segmentation split a route into short segments and the display can be greatly slowed down. In this study, I explored alternative approaches, including dynamic segmentation with temporal offset in 2D and 3D view, and animation for visualization of dynamics in linear referenced transportation data. In the first approach, temporal offset is introduced as a relative time axis. The older an event is, the closer it is to the route. This method works in the same way for one or variant attributes without over-segmentation. Using dynamic segmentation with temporal offset, it is not only fast in visualizing dynamics across different attributes, but also straightforward for visual analysis of the history in transportation data. The 3D view approach treats the time in transportation data as the third dimension in the space. Compared to dynamic segmentation with temporal offset in 2D, the 3D view is better for areas with dense linear features. Dynamics in both 2D and 3D view can also be animated. In summary, this study provides alternative visualization for dynamics in linear referenced transportation data. Moreover, these approaches are not limited to transportation data but can be applied toward general dynamics in linear referencing.

This conference paper is published in the conference proceeding electronically, and recommended for further review for possible publication in the *AutoCarto 2010 Special Issue* of the journal *Cartography and Geographic Information Science*.

5. Expenditures

Conference registration	275
Transportation	
Maryville <--> Kansas City Airport	67.20
KC airport parking (6 days)	34.95
Ground transportation	211.67

Travel package with airfare and hotel	636.70	
Total expenditure..		\$1,225.52
Balance remaining		\$0

Final Report

6. Researchers

Dr. Yanfen Le, Associate Professor, Humanities and Social Sciences

7. Project Title

Accuracy Assessment of Teasel Mapping Using USDA NAIP Data

8. Type of grant - Date granted - Amount approved - Date completed

Type of grant:	Applied research
Date granted:	October, 2010
Amount approved:	\$1027.9
Date completed:	August 28, 2012

9. Findings and recommendations

Cut-leaved teasel, an invasive seed species, has been infesting in roadside vegetation in Missouri. With support from previous applied research, I mapped teasel in Warrensburg, MO using U.S. Department of Agriculture (USDA) National Agriculture Imagery Program (NAIP) data. Accuracy was not evaluated previously because there were only two to three teasel patches in that site. In this project, I changed study area to Interstate highway I-70 and mapped teasel near Exits 89 from 1-m 2009 NAIP multispectral imageries. Using two Garmin 62 GPS units funded in this project, I visited the study area for ground truth. Three pure teasel patches at Exit 89 were used as samples. Other GPS points are used for cross validation. In this object-based analysis, the 150 buffer along I-70 was first classified into possible and impossible zone. Next, the possible domain is further segmented and classified into teasel and non-teasel. In this evaluation, teasel has a 73% user's accuracy and 84% producer's accuracy. Compared to Wang *et al.*'s (2010) analysis using 1-m hyperspectral imagery, my user's accuracy is lower than that of their SAM classification but higher than their other algorithms; the producer's accuracy is higher than that of the SAM method but lower than others. On the other hand, it's very expensive to contract hyperspectral imagery but free to get NAIP data. Above all, it's feasible technically and economically to map teasel in road-side vegetation using NAIP data statewide. In the future, I will further teasel mapping using both NAIP and LiDAR data. Currently, LiDAR data are under processing for the study area. Results from this project will be presented on national conference and submitted to journals like *Photogrammetric Engineering & Remote Sensing*.

10. Expenditures

Approved amount of grant		\$1027.9
Expenditure		
Field trips	\$362.46	
Supplies:	\$517.15	
2 GPS receivers		
Total expenditure..		\$879.61
Balance remaining		<u>\$148.29</u>

A family member volunteered for assistance in field trips and saved costs planned on student assistance. The remaining balance (\$148.29) will be returned to the applied faculty research account.

Mühsam, Armin, Associate Professor, Department of Art

“Intervention Landscapes”

Faculty Research Grant 10/25/10 \$ 796.00 8/29/11

Findings and recommendations

My proposed research was to produce a new body of work on large formats (eight 84x64”canvases) for a solo show in the Art Gallery at Prescott College in Prescott, AZ, but, as it happened, things did not turn out exactly as planned. First, as the committee will recall, my initial budget was cut in half, from \$1,619.82 to \$ 796.00, and I consequently decided to paint fewer large formats. Then, in early 2011, Prescott College cancelled my show due to budget shortfalls. At that point, I had completed only two of the planned four large formats. However, just as unexpectedly as the show in Arizona was cancelled, my gallery in Munich, Germany, had one of its scheduled artists withdraw and offered me the May/June slot instead. In reaction to these news, I rolled up the two large canvases, shipped them to Germany in late January, and concentrated on several smaller formats and works on paper which I could take with me in my personal luggage. The show at the Galerie Lichtpunkt, Munich, opened on May 20, 2011 (without me personally present for the opening) and ran until July 1, under the title “Trauer der Vollendung”. By all accounts, it was a success; especially gratifying was the “presence” of the large canvases in the gallery space (size does matter, sometimes).

The actual costs incurred run as follows:

a) Shipping:	Maryville to Munich	\$ 109.70
b) Supplies:	Painting supplies	\$ 72.83
	Frames	\$ 613.47
Total		\$ 796.00

Pope, J.P., Leger, A.M., and Britton, L. 2008. Recognition and Significance of Minor Sea Level Changes in Pennsylvanian Cyclothem of the Northern Midcontinent Iowa Shelf Region: North-Central Section Geological Society of America (GSA) 42nd annual meeting, GSA Abstracts with Programs, v. 40, no. 5, p. 14. (Evansville, IN)

Minor transgressive events have been seen in the regressive systems tract of several Middle and Upper Pennsylvanian cyclothem in the northern Midcontinent and Illinois basins. Some examples are the Ardmore Limestone of the Verdigris cyclothem, Worland Limestone of the Altamont cyclothem, Bethany Falls Limestone of the Swope cyclothem, Winterset Limestone of

the Dennis cyclothem, Flat Creek Limestone (Illinois) and correlative Cement City Limestone (Midcontinent) of the Dewey cyclothem, Plattsmouth Limestone of Oread cyclothem.

At least one minor regressive event has been recognized for some time in a high stand systems tract, the Haynies Limestone in the Larsh-Burroak Shale (Deer Creek cyclothem). Recently three other minor high-order cycles have been recognized in the early regressive deposits of the Larsh-Burroak Shale and two in the overlying Ervine Creek Limestone in the southwest Iowa region. More recently, several minor high-order cycles have been recognized in the high-stand and early regressive deposits of the Holt Shale (upper Topeka cyclothem) and the mid-Hartford Limestone. These deposits include a limestone in the Holt Shale and mid-Hartford shale that are analogous to the Haynies Limestone of the Larsh-Burroak interval, and dark gray to black conodont-rich shales separated by lighter gray shales.

For the most part, these minor cycles can only be recognized lithologically, in the shallower water of the northern Midcontinent Shelf region of northeastern Kansas, northwestern Missouri, southeastern Nebraska and southwestern Iowa. This is where relatively small changes in sea level could affect bottom sedimentation, by changing where dysoxic/anoxic water and sunlight impinged on the ocean bottom. Farther to the south, in deeper water, these smaller sea level changes may not be recognized lithologically, because bottom sedimentation was not significantly affected.

ABSTRACT

Researcher's(s') Name, Title, Department Name:

Dr. Curtis Richardson, Assistant Professor, HHPPS

Project Title:

“A Kinder, Gentler Russia: Hierarchies of Violence, Domestic Abuse, and the Family: The Foundations of a new Domesticity in Imperial Russia.”

Type of grant - Date granted - Amount approved - Date completed:

Faculty grant, awarded October 27, 2010 for \$1,410.00.

Research at the Library of Congress completed on August 8, 2011.

Findings and recommendations:

The week's research enabled me to expand significantly three types of literature invaluable to the project: memoir literature, Orthodox Church findings, and legal approaches to divorce and domestic abuse in addition to establish a critical contact with the primary Slavic/Russian librarian at the Library of Congress.

The first listed type of source has opened a window to me concerning the voices of eighteenth- and nineteenth-century Russian elite women, which had been missing from my research. These voices are both necessary for my investigation of perceptions of domestic abuse and difficult to access because of the nature of the activities. The Library of Congress had among its holdings a number of anthologies of Russian women's writings, memoirs, and letters.

The second listed type of source is crucial because the Orthodox Church largely supervised family law in the Russian Empire in these years. While the Library of Congress had little on this information, it did offer significant writings from Church fathers concerning divorce and its

acceptable causes. The widespread problem of abuse is clear in their clear references to it repeatedly in arguments about should it be accepted as a cause and admonitions to women to bear what they must to protect marriage.

The third type of listed source shed light for me on the opinions of mid- to late nineteenth-century, legal scholars, who increasingly sought to make divorce a governmental, not a Church, issue. The Library of Congress holds extensive legal documents and legal opinions of Russia's jurists in this era. The struggle over women's legal position in the Empire, the idea of a woman being an adult, a legal person, was critical to the evolving dynamics over the issues of abuse, divorce, and the image of Russia as a new state.

Expenditures:

Round-trip flight from Chicago's Midway Airport to Washington, DC's Dulles Airport:	\$265.40.
Hotel in DC:	\$1,309.91.
Round-trip bus from Dulles Airport to the hotel in DC:	\$12.00
Round-trip drive from home in Loves Park, IL to Chicago's Midway Airport:	
73 miles X 2 = 146 miles, 146 miles X 0.42/mile =	<u>\$61.32.</u>
	\$1,648.63.

Geology Assessment Modules

Applied Research

C. Renee Rohs

Presented at Geological Society of America Meeting: Oct. 2006

Geology, by its nature, is an interdisciplinary science that requires multiple sources of information to address problem-solving tasks. Currently, there are two assessment tools available to evaluate geology students including the ACAT-geology and the ASBOG-fundamentals of geology examinations. Both the ACAT and ASBOG exams focus on content knowledge in a multiple-choice format, however, this study presents an assessment concept that seeks to assess the use of knowledge in problem solving and critical thinking. The evaluation tool presented in this study is designed to engage the student much like a short laboratory exercise where several different resources are used to answer a set of questions. The content area of mineralogy/petrology was developed as a prototype and field tested in an introductory level earth science course and in the petrology courses at three separate universities. A total of 102 students completed the module and a corresponding survey including 73 undergraduate students (non-geology majors), 27 undergraduate geology majors, and two geology graduate students. Preliminary results from the field testing showed that introductory students that had not taken a course in mineralogy or petrology had an average score of 41% while upper level geology students that were completing a course in petrology had an average score of 75%. The scores for upper level geology students varied among the three universities ranging from 74 to 85% on average. The accompanying survey included a series of Likert statements ranging from "strongly agree" at 1.00 and "strongly disagree" at 5.00. Results from the survey were divided into geology and non-geology students. Distinct differences were noted between the student

groups with geology majors indicating that the content was familiar (1.90) and the test was moderately challenging (2.52). In contrast, the non-geology majors found the test to be quite challenging (1.96) and the content familiarity to be low (3.90). Based on the preliminary results of this study, this type of assessment tool could provide an accurate assessment of the student's ability to use geologic information in a problem-solving capacity. Since the results were similar for geology students among the three universities, there is evidence that this type of assessment tool can be reliable and independent from an individual program.

Applied Research Project Summary

Researcher: C. Renee Rohs, Ph.D.
Geology/Geography Dept.
GS1374, 562-1719
rrohs@nwmissouri.edu
Associate Professor of Geology

Title: Presentation of Findings from "Field research and geology of the Buchan and Barrovian metamorphic sequences in Scotland"

Abstract: The research associated with the applied research project titled as "Field research and geology of the Buchan and Barrovian metamorphic sequences in Scotland" was completed during the time frame of May 2009 to June 2010. With completion of the project, we submitted a scientific abstract to the Geological Society of America for their annual meeting for 2010 in Denver, CO. Our abstract was accepted for an oral presentation on November 2, 2010. The presentation was given in the Technical Session-48 Teacher Research and Instruction Abroad: A Pathway to Improved Geosciences Education along with 12 other papers. The presentation was received well and generated discussion that continued well beyond the technical session.

Budget Summary:

Round-trip airfare:	\$142.40
Parking at airport	\$18.00
Lodging in Denver	\$388.00
Transportation to Denver Conference Center	<u>\$24.00</u>
Total:	\$572.40
AR-Funds used	\$556.00

Accepted Abstract

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

Final Report on Funded Research

Researcher's Name/Title/Department

Thomas B. Smith
Assistant Professor
English Department

Project Title

How a negative student teaching experience shapes a first-year teacher's perception of and reaction to teaching

Type of Grant/Date Granted/Amount Approved/Date Completed

Faculty Research Grant (Theoretical)
Oct. 20, 2010
\$541.00
August 13, 2011

Findings and Recommendations

While there is much literature in the field of teacher education that addresses and demonstrates the importance of the student teaching experience in teacher learning, there is no research that addresses the impacts of a negative student teaching experience. This study aimed to do that through interview and observation. It was found that the teacher-participant in this study showed an over-reliance on the faculty around her to determine not simply pedagogical decisions but also her own position in regards to curricular decisions and administrative politics. In a related vein, it was found that she felt handcuffed by certain school/district policies, although it would be hard to say with any degree of certainty that this was due simply to her negative teaching experience. Finally, it was found that as time passed, she re-wrote her student teaching experience as not negative; however, she stopped short of suggesting that it had been a positive experience, either. The implications seem to be that first and foremost, negative student teaching experiences do have long term negative

consequences and work to hinder teacher learning. So, while it is possible to learn from these situations (the teacher-participant of this study did learn from her student teaching experience), they should be avoided. Also, if a teacher has a negative experience, it is even more important than usual to surround her with a strong support system and mentoring situations.

Listing of Expenditures

Travel (11/23/10, 3/29/11, & 5/26/11)	\$295.20
TOTAL	\$292.50
Balance to be returned	\$248.50

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

Linda K. Sterling, Assistant Professor
Jennifer Pratt-Hyatt, Assistant Professor
Psychology, Sociology, & Counseling Department (now Behavioral Sciences Department)

Project Title.

The Influence of a Sport Psychology Intervention on Adherence and Motivation in Beginning Runners

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

Applied Research Project/October 2010 (extended December 2010)/ \$2,250.00/May 2012

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

Most individuals are aware of the benefits of an exercise program, but fail to maintain a fitness routine for a variety of reasons (Matsumoto & Tekenaka, 2004). Many exercisers attribute their attrition from a training program to external factors. Previous research has explored both internal and external variables (Phillips et al., 2004). The purpose of this study was to identify predictors of exercise adherence. Participants were 39 male and female beginning runners who wanted to train for a 5K race. Participants completed several questionnaires, including the Athletic Identity Measurement Scale (Brewer et al., 1993) and the Mini International Personality Item Pool (Donnellan et al., 2006). They followed the Couch to 5K program and were asked to log their workouts for nine weeks. Twenty participants were randomly assigned to a check-in condition. They were encouraged to attend weekly meetings to discuss their progress with a sport psychology consultant. The remaining participants did not attend these meetings and served as the control group. Indicators of program adherence were the training time and mileage logged by participants and completion of a 5K race at end of the program. Results indicated that many runners attributed their attrition to external factors (e.g., busy schedules). Several runners in the control condition cited a lack of accountability and guidance. However, data from this study suggest that runners who were encouraged to attend the weekly meetings were no more likely to

complete the program than runners who did not have access to the weekly meetings. Rather, several individual/internal variables, such as Athletic Identification and Extraversion, predicted participants' adherence. Although individuals who discontinue a training program are prone to demonstrate self-serving biases (making external attributions rather than internal ones), these results highlight the importance of internal factors in exercise adherence.

Listing of expenditures by type (student labor, travel, supplies, etc.), total spent and balance remaining (if any) to be returned to the Faculty or Applied Research account.

Copies (informed consent, training logs, etc).....	\$18.00		
Student Body (participant training shirts).....	\$455.00		
HRM USA (pedometers).....	\$255.00		
Enter2run-CliffHanger (race registration).....	\$120.48		
Enter2run-Cliffhanger (race registration).....	\$ 758.00		
Total Spent	\$1,571.48	Total Returned	\$678.52

Abstract

Town, Stephen (Professor of Music in the Department of Music). “*The Morning Watch* by Edmund Rubbra: Context, Poetry, Sketches, and Setting”—A Presentation for the Athens Institute of Education and Research (AT.IN.E.R.) International Conference for the Fine and Performing Arts. Fall 2010

Since 1993, Dr. Town has conducted archival research [funded by the NWMSU Faculty Research Committee and the Carthusian Trust of Godalming, England] at The British Library (St Pancras, London), the Royal College of Music Library (South Kensington, London), and the Oxford University Bodleian Library (Oxford) on the voluminous autograph manuscripts of Ralph Vaughan Williams, Hubert Parry, Charles Stanford, Edmund Rubbra *et al.*

The focus of this presentation was *The Morning Watch*, Op. 56 (1941/premiered 1946), by Edmund Rubbra (1901-1986), a motet on the mystical poem of Henry Vaughan, begun by the composer in 1941 at the end of his fecund 1936–42 period, discontinued during his wartime service, and finished in 1946. Intended originally by the composer as his fifth (choral) symphony, it shares some harmonic and melodic affinities with the fourth, while combining symphonic rhetoric with vocal polyphony, which suggests a continuity of thought that is striking, all the more so because of the propinquity of the sketches in a Rubbra sketchbook—those of the fourth symphony are contiguous with *The Morning Watch*. What may not be seen in the sketch of *The Morning Watch* are the choral parts. Based on such evidence, and other interesting features, one might speculate that *The Morning Watch* started out as a purely orchestral work, if not a non-vocal fifth symphony then a programmatic, two-movement essay.

In summary, this presentation discussed *The Morning Watch* and the sketches, Vaughan's poetry and Rubbra's setting, vis-à-vis the context of the time. The presentation was given in Athens, Greece on 6 June 2011.

15 June 2011
Dr. Stephen Town