

2013

## 2013 Presentation Abstracts

Grand Valley State University

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## Academic Conference Fund Presentation Abstracts 2013

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## **ACF 2013 January - March Presentations**

**Bentham, Nicholas**

January - March FY13

American Mathematical Society Joint Mathematics Meetings

"Low Dimensional Lie Algebra Dimension Reduction by Modding by the Center"

We present our work in Lie Algebras change of basis. We investigate the problem of low dimensional matrix Lie Algebras and their reduction through modding by the center. The results are applicable in quantum physics and Lie Algebra theory.

**Chairez, Julianna**

January - March FY13

Exploring Trumpet in Greece 2013

"GVSU Trumpet A Ensemble"

Exploring Trumpet In Greece offers a great opportunity for our ensemble to meet and perform with many international artists. We can also get one on one time with these artists giving us a chance to learn at a more personal level Many of our members have not traveled out of the country before making this not only a musical experience but a cultural one. We will also spend some time in different parts of Greece, giving us a chance to experience and learn about the culture. This also sets an example for Grand Valley's music program and can give us skills to improve not only ourselves but the ensembles we participate in.

**Chen, Yue**

January - March FY13

64th Annual Convention of the Conference on College Composition and Communication

"New Generation of Second Language Writing Studies in China"

The presenter focuses on China's graduate students' concerns about second language writing. After reviewing Chinese graduate students' theses and dissertations from the past five years (2007-2011), the presenter demonstrates both trends and patterns within the literature. She also presents implications to the development of second language writing studies in the English-as-a-Foreign-Language settings.

**Christensen, Janet**

January - March FY13

Exploring Trumpet in Greece 2013

"GVSU Trumpet A Ensemble"

The Exploring Trumpet in Greece music conference is an amazing opportunity. The guest trumpet players are world class, one of my all time favorite trumpet players is going to be there and I am so excited! The students get one on one time with them to ask questions and learn about playing trumpet in the professional world. As an American, it would be a learning experience to hear about the music world in Europe and the differences from the United States, and especially

in Greece to see how the trumpet players are faring in their current economy. The conference exposes its students to music, but also the culture and history of Greece. The ensemble is only a small portion of the trumpet studio and we will impart any knowledge we gain from this experience to the rest of the studio and our other ensembles we participate in. It would benefit Grand Valley because we would be giving our music program exposure on the global scale.

**Connelly, Ashley**

January - March FY13

American Therapeutic Recreation Association (ATRA) Mid-Year Conference

"Therapeutic Dolphin Encounters"

This session has been approved by the NCTRC for CEU-approval. During this presentation I will educate professionals on a newly found therapy technique, known as "Dolphin Encounters". I will highlight the experience I had at my fieldwork in Florida, improvements that I documented in the children that came for the therapy, and other facilities across the world that are engaging in this technique.

**DeHart, Abigail**

January - March FY13

Center for the Study of Scottish Philosophy (CSSP) SPRING WORKSHOP 2013: Scottish Reactions to Mandeville

"Bernard Mandeville, the Social Critic"

DeHart, Abigail E. Bernard Mandeville, the Social Critic How does a poem make its way into serious philosophical discussion? By the time Bernard Mandeville published the infamous Fable of the Bees in 1705, it included the poem The Grumbling Hive and it quickly became a public scandal. This poem has often been interpreted as directly obvious: his position on the goodness of mankind. In The Grumbling Hive, the allegorical beehive thrives on selfishness and vanity, but when virtue starts to surface, the hive deteriorates and eventually collapses. The implication



is clear for the beehive, but perhaps not for humanity because it seems paradoxical to suggest that a society is better when it promotes a culture characterized by private vice. The poem's humorous, contradictory ending demonstrates that vice can look surprisingly like virtue if implemented correctly. Because of this conclusion, many writers of the Scottish Enlightenment placed Mandeville into the same category as the egoist, Thomas Hobbes. This paper will look at Hutcheson's reaction to Mandeville as representative of the typical interpretation of his poem, namely that selfishness and vanity, while responsible for corruption, are useful because they also produce economic prosperity. The problem with this direct interpretation is that Mandeville wrote a poem, not a straightforward account of the origins of morality. Bernard Mandeville would have known the conclusion of *The Grumbling Hive* was a ridiculous answer to a social problem, which is why it is fitting to read it, instead, as a satire. If a satire was intended, then the conclusion would be rather fitting because a satire is meant to be ironic and humorous all the while shaming and shaping its target into improvement. This interpretation becomes all the more meaningful when it is read within the social context of Mandeville's life, because the poem would have been, at best, an uncomfortable read for those who were educated and had power. During the time he was writing, Mandeville strongly disagreed with the formation of the charity schools that sought to instill virtue into the poor. He was a critic of these schools because he knew the uneducated only seemed to have more vice, but realistically all that the socially educated man knew how to do was manipulate others into thinking his vice was virtue. He was not against education for the poor on principle, but rather strongly opposed a system that promoted private vice disguised as public virtue. Reassessing the Scottish response to Mandeville while interpreting his poem as a satire, this paper will reexamine the fairness of his charge as an egoist in attempt to view him as both a philosopher and a social critic.

<http://www.ptsem.edu/library/cssp/default.aspx?id=10881>

**Docter, Brianne**

January - March FY13

American Chemical Society: 23rd Enzyme Mechanisms Conference

"Probing the role of Asn 152 in the class C<sup>2</sup>-lactamase AmpC"

AmpC, a class C  $\beta$ -lactamase, is a main cause of antibiotic resistance to cephalosporins in many species of bacteria. In the hydrolytic cleavage of antibiotics by AmpC, the current proposed mechanism involves an acyl-intermediate, where the enzyme becomes covalently attached to the drug at serine-64, before an activated water molecule hydrolyzes the bond and regenerates the enzyme. Although this mechanism is generally accepted, the exact roles that the other active site residues play in recognition and breakdown of the substrate are not fully understood. Here, we investigate the role of the active site residue asparagine-152 (Asn152) in *E. coli* AmpC by mutating it to a glycine, serine, or threonine residue and examining the effect that these mutations have on kinetic and structural properties with four different  $\beta$ -lactam drugs: cefotaxime, cefoxitin, oxacillin, and a derivative of cephalothin (CENTA). We discovered that although the mutations cause higher  $K_m$  values with all substrates, they result in 50 to 150 times higher  $k_{cat}$  values against cefotaxime. In addition, the N152 mutations provided the enzyme the ability to break down oxacillin, which is not a viable substrate for the wild type AmpC. To probe the mechanism behind these observed changes in kinetics, crystal structures were obtained of AmpC WT or N152G in acyl-enzyme complex with different drugs. We determined the structures of AmpC WT and AmpC N152G both bound to cefotaxime and observed that the structures were very similar, except for a slight rotation of active site residues glutamine-120 and lysine-67, in addition to different locations of water molecules. In the structure of AmpC WT bound to oxacillin, we did not observe any major changes in the active site residues, but the proposed deacylating water molecule was displaced by a carboxylate moiety on the oxacillin. We also determined the crystal structure of AmpC N152G bound to cefoxitin, which exhibited both a higher  $K_m$  and a lower  $k_{cat}$  than AmpC WT. The structure shows the R1 amide of the drug rotating away from glutamine-120 and instead hydrogen bonding with the backbone nitrogen of serine-64; a significant change from what is typically seen in AmpC complexes. Uncovering the specific role of Asn152 in the function of AmpC, in addition to understanding the effects of other active site residues on the catalytic mechanism, will be useful in the development of drugs that may contribute to combating antibiotic resistance.

**Fortney, Damon**

January - March FY13

Michigan Academy of Science, Arts and Letters

"An empirical method to identify suitable intersections for roundabout installation in Ottawa County, Michigan"

The purpose of this research was to incorporate a variety of geospatial analysis methods to study potential locations for roundabout installation in Ottawa County, Michigan. In comparison to other forms of traffic control such as traffic signals and stop signs, roundabouts have been proven to reduce the number and severity of vehicle collisions after construction or conversion. Secondary data on vehicle collisions occurring in the study area from 2004 to 2011 was collected and GIS was used to display which intersections had the highest frequency of crashes. Remote sensing data was analyzed to determine the most suitable intersection for conversion, M-45 and 48th Avenue in Allendale Township. Further analysis of this area found that roundabouts have already been suggested by the townships master plan as a way to create a gateway into the community. After attributing a monetary value to each traffic crash and resulting injuries, it was found that \$293,068 could be saved per year at this intersection. This research concludes by making a recommendation to combine a roundabout conversion project with the plans already in place to widen 48th Avenue in 2016.

### **Hundley, Zachary**

January - March FY13

American Chemical Society: 23rd Enzyme Mechanisms Conference

"Two mutations are necessary to convert class D  $\beta$ -lactamase function to  $\beta$ -lactam sensor function"

Class D  $\beta$ -lactamases (such as OXA-24) and  $\beta$ -lactam sensors (such as BlaR1) share a common topological fold and an acylation mechanism in which a nucleophilic serine is activated by the carbamate of an unusual active site carboxyllysine.  $\beta$ -lactamases are able to complete the hydrolysis of the substrate through activation of a deacylating water, while BlaR1 maintains a persistent sensor function by remaining acylated. It has been shown that an active site valine in the class D  $\beta$ -lactamase family helps ensure persistent carboxylation of the lysine, allowing the

carboxy group to activate the deacylating water. The homologous position in  $\beta$ -lactam sensors is a neutral polar residue (asparagine or threonine), which encourages decarboxylation of the lysine and thus deacylation-deficiency. Substitution of asparagine for valine in the OXA-24  $\beta$ -lactamase greatly decreases the affinity of CO<sub>2</sub> for K84 and reduces hydrolysis rates, but does not completely eliminate catalytic turnover. We have made the double mutant V130N/N87L in OXA-24, thus introducing the  $\beta$ -lactam sensor residues found at these positions into a  $\beta$ -lactamase background. The rate of hydrolysis of ampicillin by the double mutant is very close to background, suggesting that these two residues alone may be responsible for the functional difference of these two proteins. X-ray crystallographic analysis reveals that an active site water bridging N87 to the carboxyllysine in OXA-24 is missing in the double mutant. This provides a possible explanation for the destabilization of the carboxyllysine in  $\beta$ -lactam sensors.

### **Kaitany, Kip-Chumba**

January - March FY13

American Chemical Society: 23rd Enzyme Mechanisms Conference

"A Class D  $\beta$ -lactamase Clinical Variant with Activity Against Carbapenems, Ceftazidime and Aztreonam"

Like all known class D carbapenemases, OXA-23 cannot bind or hydrolyze the 3rd generation cephalosporin ceftazidime. OXA-146 is an OXA-23 subfamily clinical variant that differs from the parent enzyme by an alanine (A220) duplication in the loop connecting  $\beta$ -strands b5 and b6. We have discovered that this insertion enables OXA-146 to bind and hydrolyze ceftazidime with efficiency comparable to other extended spectrum class D  $\beta$ -lactamases. This enzyme also binds aztreonam, cefotaxime and ampicillin with higher affinity than OXA-23. In this study, we report the crystal structures of the OXA-146 enzyme variant and compare it to the structure of OXA-23. An overlay of the two structures shows that the extra alanine moves a methionine out of its normal position where it forms a bridge over the top of the active site. The insertion also lengthens the b5-b6 loop, moving its main-chain atoms further away from the active site. A model of ceftazidime bound in the active site shows that these two structural alterations are both likely to relieve steric clashes between the bulky R1 side-chain of ceftazidime and OXA-23.

**Keeney, Lisa**

January - March FY13

Region 5 North American Saxophone Alliance Conference

"Lisa Keeney - Masterclass Participation"

Being involved in a musical masterclass at a regional conference would provide an opportunity for development at a new level. It would be very beneficial to gain new performance and learning experiences before my peers, colleagues, and teachers. It would also be a terrific way to represent the saxophone studio from Grand Valley State University at a regional level.

**Kobberstad, Matthew**

January - March FY13

Region 5 North American Saxophone Alliance Conference

"Matthew Kobberstad/Indigo Saxophone Quartet (Performance)"

Indigo Saxophone Quartet Performing: Revolutionary Etudes (2006) David Lang b.1957 II. With Unstoppable Force A Dance Not To Be Danced To (2012) Frank C.S. Nawrot b. 1989 I. Allegrissimo II. Pavane III. Finale The Indigo Saxophone Quartet was formed in 2010 at Grand Valley State University, comprised of undergraduate saxophone students studying with Dr. Jonathan Nichol. The group performed in the student concert for the NASM Accreditation Concert at GVSU in 2011, and was the first prize winner of the Sigma Alpha Iota Small Ensemble Competition in April 2012. Recently, the Indigo Quartet performed Revolutionary Etudes for composer David Lang during his residency at GVSU in 2012. The members of the Indigo Saxophone Quartet are Andrea Voulgaris, Lisa Keeney, Cameron Miller and Matthew Kobberstad. The Revolutionary Etudes is a work by Pulitzer Prize winning composer David Lang, who is very active and relevant in the current music field. However, it is an underperformed piece. The Indigo Quartet has had the opportunity to work with Lang in a masterclass to better understand how to perform the piece as he envisioned it. Such a

performance at this conference would therefore provide a good representation of the Revolutionary Etudes and performance insight from the composer. This conference provides a great opportunity to premiere a piece written by a student composer and colleague before students, teachers, and performers at the regional level.

**Koch, David**

January - March FY13

Exploring Trumpet in Greece 2013

"GVSU Trumpet A Ensemble"

This festival is a fantastic performance opportunity for Trumpet Ensemble A. It is also a chance to make connections with musicians from all across the world. Lastly, we would be able to learn more about the Greek culture which is where most music has its roots.

**Kosina, Allison**

January - March FY13

Academy of Criminal Justice Sciences (ACJS)

"An Adolescent Sex Offender Treatment Program: Recidivism Rates with Implications on Personality Types"

In 1988, the Kent County Juvenile Court (Grand Rapids, Michigan) implemented an innovative program for juvenile sex offenders. This program, the Adolescent Sex Offenders Treatment Program (ASOTP) was designed to provide comprehensive treatment services to this population. The presenters will discussed the ASOTP and review current research designed to address issues of sexual offending as it pertains to personality types and recidivism rates. This presentation is designed to assist mental health providers, juvenile court workers and judges in assessing the needs of adolescent sex offenders in order to provide comprehensive treatment services to this population

**Kupisz, Nichole**

January - March FY13

Michigan Academy of Science, Arts, and Letters

"Predictive floral biodiversity modeling for West Michigan prairie fens: a meta community study"

Prairie fen communities are classified as rare, vulnerable communities by the Michigan Natural Features Inventory containing high levels of biodiversity, including 19 plant and 18 animal threatened or endangered species. As a wetland, prairie fens provide numerous services such as the mitigation of storms and climate change via carbon sequestration. Eight prairie fens occurring in Allegan, Kent, and Barry counties, ranging from 3.4457 - 50.565 acres in size, were surveyed in the 2012 field season. To establish robust sampling protocols, species area curves were created using species richness and abundance information collected for each fen to ensure equal sampling effort. Three biodiversity indices, Shannon's evenness, Simpson's index, and Incidence - based coverage, as well as rank abundance curves were calculated for each fen using EstimateS to determine and compare dominance and evenness between fens. Prairie fen connectivity, size, and shape were accounted for and surrounding environmental matrix of each fen was quantified with Patch Analyst. This information will be used to develop a multiple regression model that can be utilized by land managers and conservation organizations to efficiently and effectively allocate resources towards the protection and restoration of fens with the highest risk to rare species or fen biodiversity.

**Lachheb, Ahmed**

January - March FY13

Instructional Systems and Technology Conference

"The Effect of Video Materials on Motivation and Performance of Advance EFL Learners"

No Abstract.

**Loza, Genesis**

January - March FY13

Kennedy Center American College Theatre Festival

"Irene Ryan Nominee Performance"

I have been nominated to participate at the 2012 Kennedy Center American College Theatre Festival for my title performance in GVSU's spring production of "Antona Garcia." As a part of this honor, I am allotted a chance to compete for a scholarship reward. From this conference, I hope to meet students from many Universities in the Midwest, be spectator to them, and build lifelong connections through my affiliation with Grand Valley and theatre. I will also attend as many workshops as I can to make this a well rounded educational experience.

**Madias, Macey**

January - March FY13

Kennedy Center American College Theatre Festival

"Performance as the Duchess of York in "Richard III""

No Abstract.

**Malfruid, Martin**

January - March FY13

Exploring Trumpet in Greece 2013

"GVSU Trumpet A Ensemble"

No Abstract.

**McCormick, Sarah**

January - March FY13



## 7th Experimental Archaeology Conference at Cardiff

"An examination of bone and antler preparation methods for tool manufacture"

This ethnozoarchaeological research project attempted to evaluate various methods of bone and antler preparation for tool manufacture. Using both fresh and dry bone, specimens were soaked, frozen and boiled as preparation methods prior to fashioning into an awl. In addition, control samples were selected and exposed to no additional processing. This created eight categories of preparation for bone samples. The same was repeated for antler in both fresh and dry condition for a further eight categories of antler tool manufacture. Following each preparation method, the specimen was broken using a hammerstone and shaped to a point using a metal file. Both qualitative and quantitative measures were used to evaluate ease and expedience of the preparation techniques.

### **Miller, Cameron**

January - March FY13

Region 5 North American Saxophone Alliance Conference

"Cameron Miller/Grand Sax (Performance)"

Grand Sax, founded in the spring of 2011 at Grand Valley State University, is a student-led performance group inspired by the original jazz saxophone group known as "Supersax" started by Med Flory in 1972. The focus of the group is performing arrangements of Charlie Parker saxophone solos, harmonized for five saxophones and rhythm section in the style of the original recordings. To present at this conference will provide an excellent opportunity for the members to perform for their peers and demonstrate their understanding of the performance traditions of the American jazz movement known as be-bop. The following tunes are to be performed with rhythm section: Just Friends (1931) Music by John Klenner, Lyrics by Sam Lewis Arr. Med Flory Yardbird Suite (1946) Charlie Parker Arr. Med Flory Moody's Mood for Love (1949) James Moody Arr. Dave Leech

**Mitchell, Joshua**

January - March FY13

American Chemical Society: 23rd Enzyme Mechanisms Conference

"A Pro'Ser mutation augments advanced generation cephaloporinase activity in both the OXA-23 and OXA-24 subfamilies"

OXA-23 and OXA-24 are class D  $\beta$ -lactamases that can hydrolyze carbapenem class antibiotics, thus greatly threatening our ability to treat some dangerous infections. Fortunately, advanced generation cephalosporins such as cefotaxime or ceftazidime remain as viable treatment options as these enzymes do not hydrolyze cephalosporin drugs very efficiently. We have investigated the properties and structures of two clinical variants containing the same Pro'Ser mutation (one in the OXA-23 background and the other in the OXA-24 background). Steady-state kinetic measurements show that compared to the parental enzymes both variants have much higher affinities for cefotaxime, ampicillin and most notably ceftazidime. Moreover, the variants maintain strong hydrolytic activity toward carbapenems such as doripenem. X-ray crystallographic analyses of both OXA-23 P227S and OXA-24 P225S reveal that the mutation causes a deviation of the main-chain atoms of the loop connecting  $\beta$ -strands b5 and b6 thus enlarging the active site. Models of ceftazidime bound to wild-type and variant enzymes suggest that this loop deviation provides more room for the binding of the bulky oxyimino side-chain of that drug. These findings warn of the emergence of class D  $\beta$ -lactamases that can provide resistance to carbapenems and advanced generation cephalosporins.

**Mitrovich, Michael**

January - March FY13

Region 5 North American Saxophone Alliance Conference

"Michael Lawrence Mitrovich Performance"

The GVSU student group Indigo Saxophone quartet (Andrea Voulgaris, Michael Mitrovitch, Cameron Miller, Matthew Kobberstad) and the World Renowned Donald Sinta Quartet perform

"Swarm" by Matthew Browne at the North American Saxophone Alliance National Conference at the University of Illinois in Champaign-Urbana.

**Panaccio, Diane**

January - March FY13

Michigan Academy of Science, Arts and Letters

"Caves as biological hotspots: an inventory of endangered species"

This study is an examination of natural caves and associated rare and endangered species. GIS was utilized to inventory, map and classify cave systems around the world. Research literature was used to identify rare and endangered species as biological hotspots. Focus will be on the taxonomy of cave types and associated rare and endangered species present.

**Runyon, Doralynn**

January - March FY13

Society for Photographic Education (SPE) National Conference

"Celebrating Photography's Continuum"

My presentation will cover a portfolio of images, assembled specifically for the one on one reviews, the curator sessions and the open portfolio sharing. It contains photographs from a number of projects, my photographer's statement, a resume and promotional items to leave behind with the reviewers. In addition, I will have to formally speak about my images and respond to questions and feedback.

**Schmidt, Thomas**

January - March FY13

Michigan Academy of Science, Arts and Letters

"Pteridophyte community reestablishment in secondary forests of Puerto Rico: multiple approaches for predictive model assessment"

Greater than eighty-five percent of Puerto Ricos forests were converted into agricultural systems by 1950. Since then, there has been extensive abandonment of agricultural practices initiating an increase in forest regeneration and thus a considerable amount of secondary forest throughout the island. Pteridophytes (ferns and fern allies) are a major component of oceanic, tropical island forests comprising up to seventy percent of the flora. Consequently, the composition and community structure of ferns are indicative of the relative richness of these revegetated landscapes. GIS-based predictive modeling [e.g., Maximum Entropy (MaxEnt)] has become a widely-used tool due to its accuracy in determining suitable niche space for species. I will present refined MaxEnt models utilizing herbarium records collected from three major herbaria in Puerto Rico, environmental data, and forest age data. Results from field tests of these models conducted at 22 secondary forest sites in the summer of 2012 will be presented. These highly robust models can be used to: (1) design optimal biodiversity conservation management plans for Puerto Ricos recovering mid- to high-elevation forests and (2) develop new strategies in predictive modeling for pteridophytes and other plant species.

**Shields, Stephanie**

January - March FY13

Exploring Trumpet in Greece 2013

"GVSU Trumpet A Ensemble"

This festival is a really good opportunity for the trumpet ensemble to perform in Europe. The performance experience we will get in performing

**Stoddard, Micah**

January - March FY13

Exploring Trumpet in Greece 2013

"GVSU Trumpet A Ensemble"

No Abstract.

**Vega, Nicole**

January - March FY13

13th Annual Graduate Student Symposium

"Using Sarah to Free Tess"

Though both Tess and Sarah are subjected to the same oppressive and conflicting metanarratives of Victorian England, Fowles attempts to sever the controlling strings from his character and tries to, using a post-modern sense of authenticity, allow Sarah independence from a god-like narrator and the freedom of sexuality and her sex.

**Wernette, Andrew**

January - March FY13

Kennedy Center American College Theatre Festival

"A Whale in Hilton Head"

No Abstract.

**Winters, Brittney**

January - March FY13

The Louisville Conference on Literature and Culture since 1900

"Keep This Nigger-Boy Running : Misdirection and the White Trickster in Invisible Man"

As Ellison's essay, *What Would America Be Like Without Blacks*, states, since the beginning of the nation, white Americans have suffered from a deep inner uncertainty as to who they really are. One of the ways that has been used to simplify the answer has been to seize upon the

presence of black Americans and use them as a marker, a symbol of limits, a metaphor for the outsider . As such, minstrelsy is a sacrificial act, offering up the effigy of the outsider for humiliation and shame, allowing a white audience the opportunity to enjoy the taboo blackness in a safe context. This sacrificial act enables the white audience to expiate that which they perceive to be black, to be unclean and unworthy in their own lives because despite his racial difference and social status, something indisputably American about Negroes not only raised doubts about the white mans value system, but aroused the troubling suspicion that whatever else the true American is, he is also somehow black . The minstrel, then, is not the daring trickster, for that would be an elevation of status in the implications of the tricksters cunning and ability to dupe the white audience. Indeed, the white audience is an active participant, complicit in the active parodying of the white symbolic meaning of blackness. Though critical readings of Ellison's *Invisible Man* casts the eponymous invisible man as a minstrel, it is actually his audience, the white men and the white system that propel him through the narrative, keeping that nigger boy running, that has donned the mask. Through the donning of the mask and a promotion of a system that convinces African Americans that by following prescribed notions of blackness they may find themselves, the white tricksters remove authentic racial markers, authentic identity, and replace it with figurations of the symbolic that they may experience and expiate the racial difference that ultimately defines them in a non-threatening manner. In my essay, I will demonstrate that white tricksters the Battle Royal enthusiasts, the Bledsoes, the Brockways, the Brotherhood reacting to an assumption of fear and anger on the part of the protagonist, seek to erase the threatening identity of the Negroan identity that challenges the self-perception of benevolence and power. The white darky entertainer, conceived of only in terms of the contours of white symbolic needs , is a mask whose function was to veil the humanity of Negroes thus reduced to a sign, and to repress the white audiences awareness of its moral identification with its own acts and with the human ambiguities pushed behind the mask.

## **ACF 2013 April – June Presentations**

**Al Shikh Dawood, Ibrahim**

April – June FY13

245th American Chemical Society (ACS) National Meeting & Exposition: Chemistry of Energy & Food

"Microwave-assisted Cu-free cross-coupling of terminal alkynes with aryl sulfonates and vinyl sulfonates"

We investigated a microwave-assisted, copper-free Sonogashira-type cross-coupling of terminal alkynes with aryl sulfonates and vinyl sulfonates. The reaction generally completed in 20-40 minutes using various combinations of Pd-species and ligands. The corresponding alkyne and enyne products are produced in fair to good yields. A broad spectrum of aryl sulfonates, vinyl sulfonates and terminal alkynes was used. Preliminary results of the synthesis will be presented.

**Baggett, Vincent**

April – June FY13

American Society for Biochemistry and Molecular Biology (ASBMB) Annual Meeting 2013

"The N152T mutation in the class C beta-lactamase, AmpC, can serve as a substrate selectivity switch"

The class C  $\beta$ -lactamase, AmpC, is a main cause of antibiotic resistance to cephalosporins in many species of bacteria. While some active site residues have been characterized to be involved in the recognition and breakdown of the substrate, many of their specific roles in substrate selectivity are not fully understood. Previous work on the *Enterobacter cloacae* P99 cephalosporinase demonstrated that a mutation of a highly conserved residue in the active site (N152) can result in substrate selectivity changes. Here, we investigate the role of the active site residue asparagine-152 (N152) in *E. coli* AmpC by mutating it to a threonine (T) residue and examining the effect that this mutation has on kinetic and structural properties with different  $\beta$ -lactam drugs. We discovered that although the N152T mutation caused higher  $K_m$  values with all substrates, N152T exhibits over 150 fold higher  $k_{cat}$  value against cefotaxime. In addition, the N152T mutation provided the enzyme the ability to break down oxacillin, which is not a viable substrate for the wild type AmpC. To probe the mechanism behind the observed substrate

selectivity switch, the crystal structure of AmpC N125T was determined at 2.05 Å. In comparison to the wild type AmpC structure, the small structural differences in the active site have been associated with the changes in the  $K_m$  and  $k_{cat}$  kinetic values as a way to uncover the specific role of N152 in the function of AmpC.

**Brown, Andrew**

April – June FY13

East Central Writing Centers Association Annual Conference

"Self-Efficacy in the Writing Center"

Because research shows that increasing a writers self-efficacy can increase overall writing performance, understanding and implementing it can help consultants have a greater impact on students. In this workshop, consultants will learn various ways of improving writers self-efficacy and how it can effectively develop the writers strengths and writing process.

**Burrell, Lindsey**

April – June FY13

IMPACT 2013 American Academy of Physician Assistants (AAPA) 41st Annual Physician Assistant Conference

"Physician Assistants Views of HPV Vaccine"

The Food and Drug Administration has approved two vaccines that protect against the Human Papilloma Virus (HPV), and uptake of the vaccines has been unimpressive. It has been identified that health care providers have positively influenced vaccine uptake and that a clinicians recommendation is key in a patients decision to be vaccinated. The purpose of this study was to evaluate physician assistants perceptions about the HPV vaccinations, and their role as influencers in vaccine uptake. Materials and Methods: Two hundred practicing physician assistants, who were alumni of the Physician Assistant Program at Grand Valley State University, were invited to participate in a cross-sectional quantitative pilot study using an on-



line, self-report questionnaire. The 15 question survey evaluated participant demographics, informational sources about HPV vaccines, and the physician assistants beliefs and barriers in recommending or administering HPV vaccines to their male and female patients. A Mann-Whitney test was performed to examine the relationship between these influencers. Results: Twenty-seven participants completed the survey. The majority of participants were female (81.5%) and between the ages of 20-29 (59.3%). Results indicated 66.6% of the participants graduated after 2006. Family medicine was the most prevalent clinical specialty cited (37%). Results indicated that participants were more likely to recommend or administer the vaccines to female patients as compared to male patients of the same age. Potential barriers to HPV vaccination administration and recommendation were determined utilizing age, gender, year of graduation, and clinical specialty. The clinical specialty was found to be statistically significant (P-value 0.042). Conclusion: This pilot study concluded that physician assistants are more likely to recommend or administer the HPV vaccine to a female patient than a male patient of the same age group. Age, gender, and year of graduation of the participants were not found to be statistically significant influencers on whether or not physician assistants recommend or administer the vaccine. Primary barriers to recommendation or administration of HPV vaccines included: insurance coverage, safety and efficacy of the vaccine, patient compliance in completing the vaccination series, and requirement of vaccines for school attendance.

**Conigliaro, Katie**

April – June FY13

East Central Writing Centers Association Annual Conference

**"Taming the Beast: Creativity in Academic Writing"**

When writing early drafts, students often attempt to focus on all aspects of writing and editing at once, from general organization to finding the perfect word. The combination of attempting to brainstorm, formulate thoughts into coherent sentences, and editing those sentences to sound scholarly, intelligent, and impressive often results in unorganized shallow drafts and anxiety-wracked students. In this presentation we will discuss how separating students from the physical paper can relieve this pressure of producing a perfect product. This low-stressed atmosphere

allows the student to articulate their thoughts in a conversational setting, which results in more efficient brainstorming, clearer organization of ideas, and a better understanding of their personal writing process.

**Cooley, Tyler**

April – June FY13

245th American Chemical Society (ACS) National Meeting & Exposition: Chemistry of Energy & Food

"Direct Cu-free Sonogashira cross-coupling reaction of activated phenol derivatives with terminal alkynes"

We have developed a direct copper-free Sonogashira cross-coupling reaction of activated phenol derivatives with terminal alkynes. The stereoelectronic properties of the substituents in the phenol and terminal alkynes, in relation to successful Sonogashira cross-coupling have been investigated. The effect of the ligand, base, solvent, and Pd-species on the outcome of the cross-coupling was investigated. Different sulfonyl chlorides were used for the activation of the C-O bond and their effectiveness evaluated. The optimum catalyst loading for effectiveness cross-coupling was also investigated. The results of our preliminary studies will be presented.

**DeVries, Byron**

April – June FY13

The International Conference on Computational Science (ICCS) 2013

"Parallel implementations of FGMRES for solving large, sparse non-symmetric linear systems"

The Flexible Generalized Minimal Residual method (FGMRES) is an attractive iterative solver for non-symmetric systems of linear equations. This paper presents several methods for parallelizing FGMRES for a variety of architectures including multi-core CPU, Graphics Processing Units (GPU), and multi-GPU systems. The parallel implementations utilize OpenMP and CUDA kernels, and are organized according to thread scope. The linear systems employed in

this study correspond to the discrete analogues of realistic three-dimensional convection-diffusion problems, and range in size to nearly  $10^7$  linear equations. All of the parallel implementations, particularly the novel hybrid approach, show a significant speedup over the sequential version. Theoretical insight and performance data is provided to allow informed decisions as to the most effective parallelization method for a given architecture.

## **Doman, Gina**

April – June FY13

IMPACT 2013 American Academy of Physician Assistants (AAPA) 41st Annual Physician Assistant Conference

### **"Predictors of Post-Concussion Syndrome Manifestations after a Minor Traumatic Brain"**

There is a high prevalence of individuals who experience post-concussion syndrome, but there is little data that correlates pre-injury factors to specific PCS manifestations. The intent of this retrospective study is to identify a possible association between pre-injury variables and the physiological, psychological, and behavioral indicators expressed in the post-concussion syndrome. Methods: This study involves a secondary data analysis of information obtained from the post-concussion clinic at Mary Free Bed Rehabilitation Hospital. The retrospective chart review was collected on 510 patients with post-concussion syndrome who were treated at the mild brain injury clinic between 1999-2004. The data collected was examined using exploratory data analysis, with consultation of the Statistical Consulting Center at Grand Valley State University. The analysis involved the use of backwards logistic regression, multiple regression, predicted odds and predicted odds ratio. Results: Multiple regression determined the significant predictors of specific PCS manifestations. For the PCS manifestation of pain it was determined that both the mechanism of injury ( $p < 0.001$ ) and sex ( $p = 0.031$ ) were significant predictors. Subsequent data analysis determined both socioeconomic status ( $p = 0.04$ ) and LOC ( $p = 0.039$ ) as being significant predictors of PCS cognitive changes. For PCS dizziness/vertigo there was a significant association with social support ( $p = 0.021$ ), MOI ( $p = 0.027$ ), and socioeconomic status ( $p = 0.03$ ). PCS headaches had a significant association with ethnicity ( $p = 0.041$ ), LOC ( $p = 0.04$ ), and socioeconomic status ( $p = 0.047$ ). LOC was established as being a significant predictor of

PCS balance ( $p=0.048$ ). Results also concluded pre-injury psychological comorbidities ( $p<0.001$ ) was a predictor of PCS anxiety depression. Conclusions: Although risk stratification has been explored in the past, few studies have been able to create risk stratification criteria to enable health care providers to efficiently treat patients with mTBI and limit the amount of PCS symptoms post-injury. In today's practice there are no protocols for patients suffering from a mTBI and a vast majority of PCS treatment occurs when patients have already expressed symptoms. By identifying certain pre-injury factors and performing early intervention techniques may prevent PCS symptoms in the future.

**Fisher, Nicole**

April – June FY13

East Central Writing Centers Association Annual Conference

"Can I Borrow the Car?: Explaining Rhetoric to Students"

Consultants spend a lot of time advising students how to write a good essay, with advice like: include an introduction, a thesis, supporting evidence, a counterargument, etc. What gets in the way, we've found, is that students don't always understand why these basic tenants of essay-writing create effective arguments. Rather, they view these requirements as a set of arbitrary rules assigned to them by their professor. In our experience, we've found that bringing rhetorical discussions down to real-world examples help students better understand argumentation. The goal of our presentation will be to provide consultants some strategies for combatting this problem. We will present these strategies via PowerPoint, supplementing each with anecdotes from our own experience. We will also include handouts so consultants are able to take the information back to their respective writing centers. The three strategies we will discuss are: 1) Asking students why they believe a particular element of essay writing is important. (Why do you think you need a counterargument?) 2) Drawing a parallel to argument that happens in the real world, to help students understand they are already good at argumentation, they just didn't know how to apply it to their writing. Here, we will employ an essay we've written called Can I borrow the car? 3) Discussing the rhetorical situation (i.e. reader, writer, and purpose) After

presenting these strategies and anecdotes, we will open the floor to discussion, encouraging participants to talk about their own experiences describing rhetoric to students.

**French, Lauren**

April – June FY13

East Central Writing Centers Association Annual Conference

"Effectiveness of Grand Valley State University Service-Learning Project in the Grand Rapids Public Museum"

The purpose of this qualitative study was to explore the effectiveness of a service-learning project completed by Grand Valley State University occupational therapy students in collaboration with the Grand Rapids Public Museum. This study sought to discover the perceptions of service-learning projects from community collaborators perspective. A qualitative focus group was used to gather data about the museums role in the community and in learning, occupational therapys role within community settings like the museum, and the use of service-learning projects to integrate the two. Overall themes from the qualitative data analysis included: Occupational Therapy in Museums, Learning Environment, and Service-Learning. Data analysis revealed information concerning museum staff perceptions about the GVSU student service-learning project as well as their overall comprehension of the field of occupational therapy and its relevance to the museum environment. The results suggested that the collaborative project was a highly successful experience. Additionally, staff vocalized excitement and anticipation for future projects within the museum and generated additional ideas about other community institutions that might benefit from occupational therapy. Further research should be conducted to evaluate service-learning projects and perceptions of community partners, as well as occupational therapy and its role in community settings.

**Goodrich, Erica**

April – June FY13

2013 Society for Research in Child Development (SRCD) Biennial Meeting

## "Emotion Displays in Media: A Comparison Between Romanian, Turkish, Hispanic- and Euro-American Children Books"

Children acquire cultural models of appropriate emotion expressions through socialization. Children books may be an important resource of culturally appropriate emotions. Tsai, Louie, Chen and Uchida (2007) demonstrated that the desired positive affective state varied between Taiwanese Chinese and European Americans, and this difference was also reflected in children books. This study aims to expand the study by Tsai et al. (2007). We aim to broaden the cultural background by comparing Euro-American, Hispanic-American, Turkish, and Romanian children books and displays of negative emotions. Caucasians favor an individualistic emotion model, i.e., expressing emotion in a more open way, whereas Hispanics may favor a relational emotion model, i.e., expecting more moderate expressions (Friedlmeier, Corapci, & Cole, 2011). Similar to Hispanic-American cultures, Turkey and Romania are qualified as group-oriented countries (Schwartz et al., 2010), thus may also favor the relational emotion model. Three hypotheses are tested: First, all children books highlight positive emotions in a dominant way as adults aim mostly to encourage positive emotions in young children (Cole & Tan, 2007). Second, Euro-American books will display negative expressions more often than Hispanic-American, Turkish, and Romanian children books. For example, Matsumoto (1993) found that Caucasians compared to Hispanics were more willing to express disgust and fear but there were no differences found for positive emotions. And finally we predict that the displayed expressions are more intense in the Caucasian books compared to the other books. A content analysis was performed on illustrations in 40 popular Euro-American, Hispanic-American, Turkish, and Romanian children books to determine facial expressions, body posture, intensity of emotion, arousal, gender, protagonist, social partners and environmental context. Facial expressions were coded according to action units (Ekman & Friesen, 1975). Posture was coded according to Kudoh and Matsumoto (1985). Finally, 18 different types of emotions were coded and grouped into three categories: positive (e.g., joy, surprise), negative powerful (e.g., anger, jealousy), and negative powerless emotions (e.g. sadness, fear) (Timmers, Fischer, & Manstead, 1998). Independent coders from different countries and different ethnic backgrounds coded the books and interrater agreement was sufficiently high. Preliminary analyses based on loglinear modeling and ANOVAs showed that overall positive emotions were displayed the most by all of the cultures. Turkish, Romanian

and Hispanic books displayed negative powerless emotions more often than negative powerful emotions, whereas Euro-American books displayed negative powerful emotions as often as negative powerless emotions. Regarding the intensity of expressions, Euro-American books displayed emotions significantly more intense in comparison to the other three cultures. Interestingly, the intensity of negative emotion expressions was higher compared to positive emotion expressions across all four cultures. To conclude, the study demonstrates some cultural differences of emotional displays in children books. These results confirmed our hypotheses and reflect the emotion models. More detailed analyses that take context, social partners, and arousal into account will provide better insight into each individual culture.

**Gore, Vanessa**

April – June FY13

International Business Model Competition

"Soletics"

No Abstract.

**Hasso, Samantha**

April – June FY13

IMPACT 2013 American Academy of Physician Assistants (AAPA) 41st Annual Physician Assistant Conference

"Predictors of Post-Concussion Syndrome Manifestations after a Minor Traumatic Brain"

There is a high prevalence of individuals who experience post-concussion syndrome (PCS), but there is little data that correlates pre-injury factors to specific PCS manifestations. The intent of this retrospective study is to identify a possible association between pre-injury variables and the physiological, psychological, and behavioral indicators expressed in the post-concussion syndrome. Methods: This study involved a secondary data analysis of information obtained from the post-concussion clinic at a rehabilitation hospital. The retrospective chart review was

collected on 510 patients with post-concussion syndrome who were treated at the mild traumatic brain injury clinic between 1999 and 2004. The data collected was examined using exploratory data analysis, with consultation from an academic statistician. The analysis involved the use of binary logistic regression, binary multiple regression, predicted odds and predicted odds ratio. Results: Binary multiple regression determined the significant predictors of specific PCS manifestations. For the PCS manifestation of pain it was determined that both the mechanism of injury ( $p < 0.001$ ) and sex ( $p = 0.031$ ) were significant predictors. Subsequent data analysis determined both socioeconomic status ( $p = 0.04$ ) and loss of consciousness ( $p = 0.039$ ) as being significant predictors of PCS cognitive changes. For PCS dizziness/vertigo there was a significant association with social support ( $p = 0.021$ ), mechanism of injury ( $p = 0.027$ ), and socioeconomic status ( $p = 0.03$ ). PCS headaches had a significant association with ethnicity ( $p = 0.041$ ), loss of consciousness ( $p = 0.04$ ), and socioeconomic status ( $p = 0.047$ ). Loss of consciousness was established as being a significant predictor of PCS balance ( $p = 0.048$ ). Results also concluded pre-injury psychological comorbidities ( $p < 0.001$ ) was a predictor of PCS anxiety depression. In addition predicted odds ratios were calculated for these associations. Conclusions: Although risk stratification has been explored in the past, few studies have been able to create risk stratification criteria to enable health care providers to efficiently treat patients with mTBI and limit the amount of PCS symptoms post-injury. Our study identified certain pre-injury factors that could predict subsequent PCS manifestations. By identifying certain pre-injury factors and performing early intervention techniques may prevent PCS symptoms in the future.

**Holtrey, Nathan**

April – June FY13

IMPACT 2013 American Academy of Physician Assistants (AAPA) 41st Annual Physician Assistant Conference

"Predictors of Post-Concussion Syndrome Manifestations after a Minor Traumatic Brain"

This presentation will explore different aspects of assisting students with creative writing, including: common misconceptions, benefits, tips for writers, consultants, and instructors, and we will bring up possible ideas on creating a creative writing culture in the Writing Center.



**Horvath, Renata**

April – June FY13

Urban Affairs Association, Annual 43rd Conference (2013)

"Planning For Transformational Change: A Comparison of London, Sydney and New York's Sustainable Development Strategies"

The United States' experience with sustainable development is contrasted with the roots and current practices of the British and Australian approaches. This research identifies the convergence and divergence of sustainable development policies in London, Sydney and New York City, the lexicon of sustainable development tools and practices and the complex interplay of federal, state and local legislation and actions. Each city has launched its own version of a comprehensive sustainability plan in the last decade, setting ambitious goals to be achieved by 2025 or 2030, with important milestones established along the way.

**Jackson, Christopher**

April – June FY13

245th American Chemical Society (ACS) National Meeting & Exposition: Chemistry of Energy & Food

"Preparation of benzofuran trifluoroborate salts"

Benzofuran-containing natural products and synthetic derivatives exhibit a broad range of pharmacological activity including anticancer, antiviral, and antifungal behavior. Due to the significant biological activity, the benzofuran skeleton has been a synthetic target of several research groups. As a result numerous synthetic approaches are available to researchers. These methodologies include intramolecular McMurry coupling, dehydration of  $\alpha$ -phenoxy ketones, transmetallation of 3-zincio benzoheteroles, and electrophilic cyclization. In an effort to extend the breath of benzofuran chemistry and provide a new handle for further modification, we have

developed novel method for preparing benzofuran trifluoroborate salts by electrophilic cyclization.

**Joffre, Kevin**

April – June FY13

East Central Writing Centers Association Annual Conference

"Can I Borrow the Car?: Explaining Rhetoric to Students"

Consultants spend a lot of time advising students how to write a good essay, with advice like: include an introduction, a thesis, supporting evidence, a counterargument, etc. What gets in the way, we've found, is that students don't always understand why these basic tenants of essay-writing create effective arguments. Rather, they view these requirements as a set of arbitrary rules assigned to them by their professor. In our experience, we've found that bringing rhetorical discussions down to real-world examples help students better understand argumentation. The goal of our presentation will be to provide consultants some strategies for combating this problem. We will present these strategies via PowerPoint, supplementing each with anecdotes from our own experience. We will also include handouts so consultants are able to take the information back to their respective writing centers. The three strategies we will discuss are: 1) Asking students why they believe a particular element of essay writing is important. (Why do you think you need a counterargument?) 2) Drawing a parallel to argument that happens in the real world, to help students understand they are already good at argumentation, they just didn't know how to apply it to their writing. Here, we will employ an essay we've written called Can I borrow the car? 3) Discussing the rhetorical situation (i.e. reader, writer, and purpose) After presenting these strategies and anecdotes, we will open the floor to discussion, encouraging participants to talk about their own experiences describing rhetoric to students.

**Klauer, Allison**

April – June FY13

American Society for Clinical Laboratory Science (ASCLS) Michigan 2013 State Convention

## "Comparison of Pre-albumin Concentrations in a Lithium Heparin Tube versus a Serum Separator Tube on a Roche 8000 Analyzer"

This study compares prealbumin test results in a gold top serum separator tube versus a green top lithium heparin tube on a Roche 8000 analyzer. Most patients have a green cap-lithium heparin tube drawn for their chemistry tests. If prealbumin is ordered as an add-on test, being able to perform the analysis on the green top, rather than redrawing into a gold top, will significantly improve turnaround times in the chemistry department. Paired samples of green and gold top tubes from 20 high and 20 low prealbumin patients will be manually de-identified, brought to room temperature, and tested on the Roche analyzer. We hypothesize that there will be no clinically significant difference between the two tubes so that Spectrum Health hospital will be able to add on the prealbumin test to existing patient orders and run them on the green top plasma tube. This will help lower supply costs, prevent patients from having additional blood draws, and will lower turnaround times.

**Klein, Kristin**

April – June FY13

American Society for Clinical Laboratory Science (ASCLS) Michigan 2013 State Convention

## "Hyaline Cast Validation on the Clinitek AUWi at Metro Health Hospital"

The AUWi by Siemens at Metro Health Hospital is over-reporting hyaline casts. A research project is being initiated to determine if the quantification of hyaline casts could be consolidated, such that 0 to 10 hyaline casts would be reported as 0 casts. Investigative research has determined hyaline casts in high numbers are significant, while small numbers are not significant. Samples will be run through the AUWI and manual microscopic exams will also be performed on the urines. The results of the study will indicate the cut-off value where the AUWi begins reporting false positives, and this value will be the lower limit of the range reported by the instrument.

**Kurley, Michael**

April – June FY13

International Business Model Competition

"Soletics"

No Abstract.

**Michalek, Jason**

April – June FY13

East Central Writing Centers Association Annual Conference

"The Pen of Poesis: Creative Consulting in Poetry"

The writing center is a common place for varied forms and genres including narratives, reports, case studies, and business documents. By experiencing elements of writing that are similar, and obtaining complementary materials for the center, consultants are prepared to address new genres and styles that writers may introduce. However, a form of creative text that is often marginalized for its difference stands alone: poetry. The narrative essay is the basis for most creative writing. Though the essay does not prime consultants to encounter the most abstract description of poetic forms, most writing contains the same creative elements necessary to function in a poetry consultation. Comparing the elements of consulting on poetry to the more academic model of workshopping, this presentation seeks to differentiate the setting of a consultation so that a consultant can be prepared to negotiate the value of the session. In addition, this difference demonstrates the necessity of poetic preparedness to bridge a gap in the appeal of writing centers to creative writers. In a hands-on workshop model, attendees will collaborate to compose and analyze poetry, as well as learn and discuss ways of connecting with creative elements. By talking through the appeal of the center to creative writers, participants will be more equipped to engage with poetic genres as well as being better prepared to discuss the stylistic qualities of traditional academic genres in general consultations.

**Mokdad, Ariel**

April – June FY13

East Central Writing Centers Association Annual Conference

"Next Gen Learners and the Knowledge Market: What Writing Consultants Can Learn"

The Knowledge Market is a new and exciting project that has been years in the making at Grand Valley State University. This presentation will highlight how writing consultants can facilitate learning in this flexible space where students have access to a variety of resources and information.

**Munster, Susan**

April – June FY13

93rd Annual Meeting of the American Society of Mammalogists

"Differential Dispersal of Two Codistributed Species of *Pteropus* in the South Pacific"

*Pteropus samoensis* and *P. tonganus* (Chiroptera: Pteropodidae) are two species of flying fox bats found on southern Pacific islands, with regions of sympatry in the Samoan and Fijian archipelagos. Although their roosting habits differ significantly, with *P. samoensis* roosting singly or in small family groups and *P. tonganus* roosting colonially, both are dietary generalists with 61% overlap in their food plants. Furthermore, both species have experienced repeated population bottlenecks as a result of periodic cyclones. Based on these similarities in their geographical distributions, ecological niches, and recorded demography, we explored the null hypothesis that the two species have experienced similar evolutionary histories. Using mitochondrial sequence data and microsatellite genotypes, we reconstructed the genetic demography of the two species, focusing on patterns within and between Samoa and Fiji. Descriptive analyses of the two datasets show very different patterns, including patterns consistent with male-biased dispersal in *P. samoensis* but not in *P. tonganus*. Using coalescent-based ABC analyses, we will illustrate the extent to which the two species have experienced different evolutionary trajectories. Additionally, we will use these data to estimate the effective

size and spatial limits of populations for these two threatened species. This study will address the extent to which similarities in extant populations are generalizable into the past, and help to illustrate how two species might arrive at similar traits through distinct evolutionary pathways.

**Noonan, Lindsay**

April – June FY13

International Business Model Competition

"Soletics"

No Abstract.

**Norkus, Peter**

April – June FY13

Association for Psychological Science (APS) 25th Annual Convention

"Religious and conservative charitable giving reflects ingroup preferences"

In order to determine whether religiosity and conservatism are associated with generalized versus particularistic charitable giving, we offered participants a hypothetical array of charities across several domains. Regression analyses indicated that religious participants allocate more funds to religious charities. Conservatives show the same preference even controlling for religiosity.

**Patel, Heenashree**

April – June FY13

IMPACT 2013 American Academy of Physician Assistants (AAPA) 41st Annual Physician Assistant Conference

"Beliefs and Barriers to HPV Vaccination Recommendation and Administration by Physician Assistants- A Pilot Study"

The Food and Drug Administration has approved two vaccines that protect against the Human Papilloma Virus (HPV), and uptake of the vaccines has been unimpressive. It has been identified that health care providers have positively influenced vaccine uptake and that a clinician's recommendation is key in a patient's decision to be vaccinated. The purpose of this study was to evaluate physician assistants' perceptions about the HPV vaccinations, and their role as influencers in vaccine uptake. **Materials and Methods:** Two hundred practicing physician assistants, who were alumni of the Physician Assistant Program at Grand Valley State University, were invited to participate in a cross-sectional quantitative pilot study using an on-line, self-report questionnaire. The 15 question survey evaluated participant demographics, informational sources about HPV vaccines, and the physician assistants' beliefs and barriers in recommending or administering HPV vaccines to their male and female patients. A Mann-Whitney test was performed to examine the relationship between these influencers. **Results:** Twenty-seven participants completed the survey. The majority of participants were female (81.5%) and between the ages of 20-29 (59.3%). Results indicated 66.6% of the participants graduated after 2006. Family medicine was the most prevalent clinical specialty cited (37%). Results indicated that participants were more likely to recommend or administer the vaccines to female patients as compared to male patients of the same age. Potential barriers to HPV vaccination administration and recommendation were determined utilizing age, gender, year of graduation, and clinical specialty. The clinical specialty was found to be statistically significant (P-value 0.042). **Conclusion:** This pilot study concluded that physician assistants are more likely to recommend or administer the HPV vaccine to a female patient than a male patient of the same age group. Age, gender, and year of graduation of the participants were not found to be statistically significant influencers on whether or not physician assistants recommend or administer the vaccine. Primary barriers to recommendation or administration of HPV vaccines included: insurance coverage, safety and efficacy of the vaccine, patient compliance in completing the vaccination series, and requirement of vaccines for school attendance.

**Petzke, Linnea**

April – June FY13

American Occupational Therapy Association (AOTA) 93rd Annual Conference & Expo

"Service Learning: Preparing future practitioners through active learning experiences"

Service-learning in OT education provides students with active learning opportunities. This course will provide participants with the core knowledge needed to understand the benefits of service learning and how to plan, implement, and evaluate best practice elements with existing OT courses.

**Piligian, Daniel**

April – June FY13

IMPACT 2013 American Academy of Physician Assistants (AAPA) 41st Annual Physician Assistant Conference

"Predictors of Post-Concussion Syndrome Manifestations after a Minor Traumatic Brain"

There is a high prevalence of individuals who experience post-concussion syndrome, but there is little data that correlates pre-injury factors to specific PCS manifestations. The intent of this retrospective study is to identify a possible association between pre-injury variables and the physiological, psychological, and behavioral indicators expressed in the post-concussion syndrome. Methods: This study involves a secondary data analysis of information obtained from the post-concussion clinic at Mary Free Bed Rehabilitation Hospital. The retrospective chart review was collected on 510 patients with post-concussion syndrome who were treated at the mild brain injury clinic between 1999-2004. The data collected was examined using exploratory data analysis, with consultation of the Statistical Consulting Center at Grand Valley State University. The analysis involved the use of backwards logistic regression, multiple regression, predicted odds and predicted odds ratio. Results: Multiple regression determined the significant predictors of specific PCS manifestations. For the PCS manifestation of pain it was determined that both the mechanism of injury ( $p<0.001$ ) and sex ( $p=0.031$ ) were significant predictors. Subsequent data analysis determined both socioeconomic status ( $p=0.04$ ) and LOC ( $p=0.039$ ) as being significant predictors of PCS cognitive changes. For PCS dizziness/vertigo there was a significant association with social support ( $p=0.021$ ), MOI ( $p=0.027$ ), and socioeconomic status ( $p=0.03$ ). PCS headaches had a significant association with ethnicity ( $p=0.041$ ), LOC ( $p=0.04$ ),



and socioeconomic status ( $p=0.047$ ). LOC was established as being a significant predictor of PCS balance ( $p=0.048$ ). Results also concluded pre-injury psychological comorbidities ( $p<0.001$ ) was a predictor of PCS anxiety depression. Conclusions: Although risk stratification has been explored in the past, few studies have been able to create risk stratification criteria to enable health care providers to efficiently treat patients with mTBI and limit the amount of PCS symptoms post-injury. In today's practice there are no protocols for patients suffering from a mTBI and a vast majority of PCS treatment occurs when patients have already expressed symptoms. By identifying certain pre-injury factors and performing early intervention techniques may prevent PCS symptoms in the future.

**Porambo, Alexander**

April – June FY13

American Society for Biochemistry and Molecular Biology (ASBMB) Annual Meeting 2013

"The X-ray crystal structure of the Acinetobacter-Derived Cephalosporinase, ADC-7, at 1.7 Å"

<sup>2</sup>-Lactam resistance in *Acinetobacter baumannii* presents one of the greatest challenges to contemporary antimicrobial chemotherapy. The Acinetobacter-Derived Cephalosporinases (ADCs) are class C <sup>2</sup>-lactamases found in *A. baumannii* and other *Acinetobacter* species that are responsible for resistance to penicillins, cephalosporins, and <sup>2</sup>-lactam-<sup>2</sup>-lactamase inhibitor combinations. In order to probe the mechanism of substrate turnover, as well as to design novel <sup>2</sup>-lactam antibiotics, it was important to elucidate the protein structure of an ADC enzyme. Here, we report the successful purification, crystallization, and determination of the crystal structure of ADC-7 at 1.7 Å. This complete structure allows for the critical comparison of the overall structure and active site architecture of ADC-7 with the known cephalosporinase, AmpC. Hopefully, our work will contribute to the development of a structure/function relationship for ADC-7 that will provide insight into bacterial antibiotic resistance.

**Raab, Kelsey**

April – June FY13

American Society for Clinical Laboratory Science (ASCLS) Michigan 2013 State Convention

## "A Case of Extended Allopurinol Use and Drug-induced Macrocytic Anemia"

The purpose of this study is to determine the causative relationship between long term Allopurinol therapy and macrocytic anemia. The objective is to provide findings to the patient for his better understanding of his condition and to promote awareness of a relationship between long term Allopurinol treatment and macrocytic anemia in health care professionals and researchers. With the patients consent, his medical records were obtained to review prescription drug history and hematology laboratory findings. Peer-reviewed journal articles from scientific databases were used to research a link between prolonged Allopurinol use and macrocytic anemia, and more generally, the relationship between drug therapy and macrocytic anemia.

**Rogers, Cody**

April – June FY13

245th American Chemical Society (ACS) National Meeting & Exposition: Chemistry of Energy & Food

## "Preparation of benzofuran trifluoroborate salts"

Benzofuran-containing natural products and synthetic derivatives exhibit a broad range of pharmacological activity including anticancer, antiviral, and antifungal behavior. Due to the significant biological activity, the benzofuran skeleton has been a synthetic target of several research groups. As a result numerous synthetic approaches are available to researchers. These methodologies include intramolecular McMurry coupling, dehydration of  $\alpha$ -phenoxy ketones, transmetallation of 3-zincio benzoheteroles, and electrophilic cyclization. In an effort to extend the breath of benzofuran chemistry and provide a new handle for further modification, we have developed novel method for preparing benzofuran trifluoroborate salts by electrophilic cyclization.

**Sanchez Gonzalez, Mayra**

April – June FY13

"Emotion Displays in Media: A Comparison Between Romanian, Turkish, Hispanic- and Euro-American Children Books"

Children acquire cultural models of appropriate emotion expressions through socialization. Children books may be an important resource of culturally appropriate emotions. Tsai, Louie, Chen and Uchida (2007) demonstrated that the desired positive affective state varied between Taiwanese Chinese and European Americans, and this difference was also reflected in children books. This study aims to expand the study by Tsai et al. (2007). We aim to broaden the cultural background by comparing Euro-American, Hispanic-American, Turkish, and Romanian children books and displays of negative emotions. Caucasians favor an individualistic emotion model, i.e., expressing emotion in a more open way, whereas Hispanics may favor a relational emotion model, i.e., expecting more moderate expressions (Friedlmeier, Corapci, & Cole, 2011). Similar to Hispanic-American cultures, Turkey and Romania are qualified as group-oriented countries (Schwartz et al., 2010), thus may also favor the relational emotion model. Three hypotheses are tested: First, all children books highlight positive emotions in a dominant way as adults aim mostly to encourage positive emotions in young children (Cole & Tan, 2007). Second, Euro-American books will display negative expressions more often than Hispanic-American, Turkish, and Romanian children books. For example, Matsumoto (1993) found that Caucasians compared to Hispanics were more willing to express disgust and fear but there were no differences found for positive emotions. And finally we predict that the displayed expressions are more intense in the Caucasian books compared to the other books. A content analysis was performed on illustrations in 40 popular Euro-American, Hispanic-American, Turkish, and Romanian children books to determine facial expressions, body posture, intensity of emotion, arousal, gender, protagonist, social partners and environmental context. Facial expressions were coded according to action units (Ekman & Friesen, 1975). Posture was coded according to Kudoh and Matsumoto (1985). Finally, 18 different types of emotions were coded and grouped into three categories: positive (e.g., joy, surprise), negative powerful (e.g., anger, jealousy), and negative powerless emotions (e.g. sadness, fear) (Timmers, Fischer, & Manstead, 1998). Independent coders from different countries and different ethnic backgrounds coded the books and interrater agreement

was sufficiently high. Preliminary analyses based on loglinear modeling and ANOVAs showed that overall positive emotions were displayed the most by all of the cultures (see Figure 1). Turkish, Romanian and Hispanic books displayed negative powerless emotions more often than negative powerful emotions, whereas Euro-American books displayed negative powerful emotions as often as negative powerless emotions (see Figure 1). Regarding the intensity of expressions, Euro-American books displayed emotions significantly more intense in comparison to the other three cultures (see Figure 2). Interestingly, the intensity of negative emotion expressions was higher compared to positive emotion expressions across all four cultures (see Figure 2). To conclude, the study demonstrates some cultural differences of emotional displays in children books. These results confirmed our hypotheses and reflect the emotion models. More detailed analyses that take context, social partners, and arousal into account will provide better insight into each individual culture.

### **Sartain, Hope**

April – June FY13

245th American Chemical Society (ACS) National Meeting & Exposition: Chemistry of Energy & Food

"Synthesis, f-element Complexation, Extraction and Computational Exploration of Multidentate Carbamoylmethylphosphine-Oxide Ligands: In Relation to Nuclear Reprocessing"

Carbamoylmethylphosphine oxides (CMPOs) have been used to complex lanthanides and actinides primarily for the TRUEX nuclear waste remediation process. Currently, CMPOs are also being used to study luminescence spectroscopy, fundamental f-element coordination chemistry, lanthanide and actinide extraction studies and medical contrast imaging. One main goal of this research project is to improve upon current nuclear waste remediation strategies using novel tripodal CMPOs. The research presented in this poster will include the synthesis of multidentate CMPO ligands, as well as their complexes with lanthanides and actinides. Metal extraction and structural computational data of the complexes will also be included.

**Spoelma, Trevor**

April – June FY13

27th National Conference on Undergraduate Research (NCUR)

"Safety in numbers: Exploring the relationship between group involvement and disinhibition"

It is widely recognized that being a member of a group can influence one's behavior in both prosocial and undesirable ways. Yet, little is known about the cognitive mechanisms related to how and why group contexts influence judgments and actions. Compared to acting and deciding alone, when people make consensus decisions in groups, the level of concern and threat associated with being personally responsible for choices and negative outcomes should be reduced. This is because perceived responsibility can be spread among group members, making them feel less vulnerable to punishment or harm. This has theoretical implications. When perceiving potential threat or punishment, people become inhibited and restrain themselves from acting on impulse to better avoid negative consequences. Inhibition makes people cautious and conservative. If people feel safer in groups when making decisions, they should be less inhibited compared to lone decision makers. Therefore, we predict groups compared to individuals will be more likely to make impulsive decisions, resulting in a tendency for groups to be riskier, greedier, and less ethical. Participants will be university students randomly assigned to work in either a group or individual condition. To test this hypothesis, participants will be asked to navigate a moral dilemma (trolley bridge dilemma) either alone or as a dyad. With the presented scenario, participants must decide whether or not to sacrifice the life of one individual bystander by pushing him onto a train track to save the lives of five others on the track. Past research shows people reflexively want to push the one to save the five, but ultimately restrain that impulse and choose to let the five die. We predict the safety in numbers provided by group consensus will lead dyads more than individuals to choose pushing the bystander onto the track. Participants will also be asked to complete a negotiation task (ultimatum game) as either dyads or individuals. In this task, participants must balance their desire to increase their own rewards with the risk of presenting an unfair offer their counterparts may reject. Participants are informed they only gain rewards if their counterparts accept their proposal. In past research, participants are typically generous anyways because they don't want to be perceived as unfair. We predict group

members who can hide in the crowd will be less concerned with being perceived unfair by others, and will then present less desirable offers to their counterparts. If predictions are supported, results will contribute to further understanding how group dynamics can influence psychological mechanisms and processes when making decisions that impact others. This type of knowledge could also improve our ability to understand and predict how groups and individuals may differ when making ethical and allocation decisions.

### **Springstead, Megan**

April – June FY13

IMPACT 2013 American Academy of Physician Assistants (AAPA) 41st Annual Physician Assistant Conference

"The Impact of the Affordable Care Act on Oasis of Hope: A Free Health Clinic in Michigan"

The purpose of this study was to determine the impact of the Affordable Care Act on a free health clinic which provides care to the uninsured with an income of <200% of the poverty level. The new healthcare law will have major changes in 2014 that may influence the type of patients seen by the free clinic. It is necessary to identify the patient population that the clinic will continue to treat, and will no longer treat in order to maintain operations on a financial and personnel basis. Materials and Methods: This retrospective study involved a chart review of financial and demographic information of established patients at a free clinic. The data collected consisted of patient demographics including gender, age, citizen status, education level, family size, and yearly income. The yearly income was used along with family size to determine the income bracket for each patient. This information was then used to predict what the free clinic could expect to occur to its patient sample once the Affordable Care Act goes into full effect in 2014. Results: 499 patients met the inclusion criteria during the time period of May 2011 to June 2012. Of the 499 patients, 219 were males, and 276 were females (4 unknown gender). The household size ranged from one to seven individuals with a mean of 2 individuals per household. 45% (222) of individuals received some type of Social Services with food stamps being the most common at 38% (190) of individuals. Based on the current criteria for Medicaid (1-100% poverty level), 52.3% (261) of individuals qualify but are not receiving the benefit. In addition,

an additional 73 (14.6%) would meet the 100-133% requirement. Therefore, under the new Medicaid requirement of 0-133%, 66.9% (334) of the individuals seeking care at the free clinic would qualify for Medicaid in 2014. Of the remaining individuals, 33.1%(165) either do not meet the financial requirements for Medicaid or are not US citizens. Of the 165, 95 individuals have an income greater than 133% of the poverty level which would require them to purchase insurance making them in-eligible to receive care at the free clinic, leaving 70 Non-US citizens who would qualify to receive care in the free clinic (2 Non-US citizens had an income of >200% making them in-eligible). Conclusion: When the Affordable Care Act is fully enacted in 2014, the free clinic will potentially lose 66.9% of its patients to Medicaid, and an additional 95 individuals to mandated health insurance. This would leave non US citizens qualifying for care at the clinic which would dramatically reduce the number of patients. However, based on the data collected, many of the Medicaid patients may remain uninsured, and those mandated to purchase insurance may opt out. Furthermore, most free clinics receive grants based on treating the uninsured. If this source of funding is no longer available (based on everyone being mandated to have insurance) then free clinics will need to seek financial support from other sources.

Swaney, Abigail

April – June FY13

American Society for Clinical Laboratory Science (ASCLS) Michigan 2013 State Convention

"A Case of Extended Allopurinol Use and Drug-induced Macrocytic Anemia"

The purpose of this study is to determine the causative relationship between long term Allopurinol therapy and macrocytic anemia. The objective is to provide findings to the patient for his better understanding of his condition and to promote awareness of a relationship between long term Allopurinol treatment and macrocytic anemia in health care professionals and researchers. With the patients consent, his medical records were obtained to review prescription drug history and hematology laboratory findings. Peer-reviewed journal articles from scientific databases were used to research a link between prolonged Allopurinol use and macrocytic anemia, and more generally, the relationship between drug therapy and macrocytic anemia.

**Toeller-Novak, Deirdre**

April – June FY13

2013 American Literature Association (ALA) Conference

"Ruby Turpin and O'Connor's Female Landed Gentry"

After 16 years of a highly productive and successful writing career, Flannery O'Connor enters a long period in which she agonizes over whether she has exhausted her potential. She expresses the need for grace and new vision. During 1962 and 63, O'Connor's lupus becomes more debilitating. The national culture, as O'Connor and the world around her have known it, is changing in often frightening and unexpected ways. It is then that O'Connor meets Ruby Turpin in a doctor's office. It is Ruby who becomes the queen of O'Connor's farm-owning, self-sufficient, prideful Southern women who are blind to their own faults. Only in *Revelation* do we see the female protagonist, Ruby Turpin, arrive at a place of transcendence not granted by O'Connor to her counterparts: Mrs. Cope, Mrs. Hopewell, Mrs. McIntyre, Mrs. Fox, and Mrs. May. Tracing O'Connor's journey through her awaking to Ruby Turpin and Ruby's ascent into grace, we see Ruby, full of pride, injured, and transformed through a purgatorial experience in a pig pen. While O'Connor's previous land-owner women are each given glimpses of grace and salvation, only Ruby allows her self-love to be sufficiently burned away so that she, and perhaps her author, hear the voice of the Lord.

**Toro, Lauren**

April – June FY13

IMPACT 2013 American Academy of Physician Assistants (AAPA) 41st Annual Physician Assistant Conference

"The Impact of the Affordable Care Act on Oasis of Hope: A Free Health Clinic in Michigan"

The Impact of the Affordable Care Act on Oasis of Hope: A Free Health Clinic in Michigan

Purpose: The purpose of this study was to determine the impact of the Affordable Care Act on a



free health clinic which provides care to the uninsured with an income of <200% of the poverty level. The new healthcare law will have major changes in 2014 that may influence the type of patients seen by the free clinic. It is necessary to identify the patient population that the clinic will continue to treat, and will no longer treat in order to maintain operations on a financial and personnel basis.

**Materials and Methods:** This retrospective study involved a chart review of financial and demographic information of established patients at a free clinic. The data collected consisted of patient demographics including gender, age, citizen status, education level, family size, and yearly income. The yearly income was used along with family size to determine the income bracket for each patient. This information was then used to predict what the free clinic could expect to occur to its patient sample once the Affordable Care Act goes into full effect in 2014.

**Results:** 499 patients met the inclusion criteria during the time period of May 2011 to June 2012. Of the 499 patients, 219 were males, and 276 were females (4 unknown gender). The household size ranged from one to seven individuals with a mean of 2 individuals per household. 45% (222) of individuals received some type of Social Services with food stamps being the most common at 38% (190) of individuals. Based on the current criteria for Medicaid (1-100% poverty level), 52.3% (261) of individuals qualify but are not receiving the benefit. In addition, an additional 73 (14.6%) would meet the 100-133% requirement. Therefore, under the new Medicaid requirement of 0-133%, 66.9% (334) of the individuals seeking care at the free clinic would qualify for Medicaid in 2014. Of the remaining individuals, 33.1% (165) either do not meet the financial requirements for Medicaid or are not US citizens. Of the 165, 95 individuals have an income greater than 133% of the poverty level which would require them to purchase insurance making them in-eligible to receive care at the free clinic, leaving 70 Non-US citizens who would qualify to receive care in the free clinic (2 Non-US citizens had an income of >200% making them in-eligible).

**Conclusion:** When the Affordable Care Act is fully enacted in 2014, the free clinic will potentially lose 66.9% of its patients to Medicaid, and an additional 95 individuals to mandated health insurance. This would leave non US citizens qualifying for care at the clinic which would dramatically reduce the number of patients. However, based on the data collected, many of the Medicaid patients may remain uninsured, and those mandated to purchase insurance may opt out. Furthermore, most free clinics receive grants based on treating the uninsured. If this source of funding is no longer available (based on everyone being

mandated to have insurance) then free clinics will need to seek financial support from other sources.

**Uldricks, Hillary**

April – June FY13

Pacific University Undergraduate Philosophy Conference

"Beauvoir contra Sartre: Inter-subjective existentialist ethics as a critique to hyper-individuality"

In this paper I explore the implications of assigning an individualistic ontological status to a person as opposed to assigning an inter-subjective, or relational ontological status to a person. I argue there is a direct link between the ontological status of an individual and the articulation of ethics and values made by Jean-Paul Sartre and Simone de Beauvoir. The implications of an individualistic ontological status are: solipsism, objectification of others, and relevancy. In this paper I argue assigning an inter-subjective ontological status to the individual remedies the problems created in an absolutely Subject oriented worldview.

**VanderWindt, Matthew**

April – June FY13

Urban Affairs Association, Annual 43rd Conference (2013)

"Preparing the Nonprofit Sector for Change: The Budget Control Act of 2011"

This paper explores the consequences on the nonprofit sector with the passage of the Budget Control Act of 2011. With this bill, Congress has proposed a drastic reduction in the overall size of the budget deficit and forces cuts of 1.2 trillion from the federal budget over the course of 10 years in exchange for increasing the federal budget debt ceiling limit to \$900 billion (Associated Press, 2010). The size and scope of the nonprofit sector and the impact of devolution on the growing responsibilities of nonprofits in providing social, health and welfare and education services at the state and local level make the passage of this bill particularly perilous for cash strapped states. It is unknown at the present time how these drastic cuts will affect the nonprofit

sector, thus an exploration of the patterns of collaboration between foundations, nonprofits, state and local governments and the funding provided by the federal government is necessary. In 2006, the nonprofit sector received about 60% of all revenue from the federal government (Garrow, 2006), therefore cuts the overall federal budget as sure to trickle down to nonprofit organizations, and state and local governments alike. Thus the question of providing public services under these dramatic constraints should be posed to the academic community as well as to practitioners. Using Michigan as a case study, this paper discusses the implications of these budget cuts on the nonprofit sector, taking into account the influx of foundation giving as a temporary stopgap measure. Finally, the paper proceeds to suggest steps that states, nonprofit organizations and foundations can take to stave off the dramatic losses in funding predicted by the Budget Control Act. Co-Authors: Davia C. Downey, Grand Valley State University, E. Miles Wilson, Johnson Center of Philanthropy, Matthew VanderWindt, Grand Valley State University

**Witcher, Sarah**

April – June FY13

American Society for Clinical Laboratory Science (ASCLS) Michigan 2013 State Convention

"An Case of Extended Allopurinol Use and Drug Induced Macrocytic Anemia"

The purpose of this study is to determine the causative relationship between long term Allopurinol therapy and macrocytic anemia. The objective is to provide findings to the patient for his better understanding of his condition and to promote awareness of a relationship between long term Allopurinol treatment and macrocytic anemia in health care professionals and researchers. With the patients consent, his medical records were obtained to review prescription drug history and hematology laboratory findings. Peer-reviewed journal articles from scientific databases were used to research a link between prolonged Allopurinol use and macrocytic anemia, and more generally, the relationship between drug therapy and macrocytic anemia.

## **ACF 2013 July - September Presentations**

**Baisch, David**

July - September FY13

142nd Annual Meeting of the American Fisheries Society

"Origin of Great Lakes Brown Trout, *Salmo trutta*: A Phylogeographic Analysis Using mtDNA Sequence Variation"

The brown trout, *Salmo trutta*, was first introduced to the Laurentian Great Lakes in 1887 from European broodstocks to found a recreational salmonid fishery; however, the origins of these progenitor lineages remain largely unknown. The objective of this study was to determine the European lineages of brown trout found in the Great Lakes. We analyzed 125 brown trout from ten watersheds across Michigan and Wisconsin and identified their strain assignment using eight mtDNA ND-1 sequences. European progenitor lineages occurring within these strain assignments were then identified using the first 309 base pairs of the mtDNA control region. We identified seven ND-1 haplotypes in the 71 trout sampled and a total of three different European lineages were identified by 4 SNPs in the mtDNA control region. Fisheries managers can use this information to make informed stocking decisions by stocking strains whose associated lineages are better adapted to Michigan streams.

**Betz, Jordyn**

July - September FY13

Biennial Conference on Chemical Education (BCCE) 2012

"The role of textbooks: does the course content or faculty member matter?"

The role of the textbook in college chemistry courses can be evaluated from two perspectives: How do students use the chemistry textbook and how do chemistry professors integrate the textbook into the course? It is also reasonable to think that the role played by the textbook might differ because of the course content. To determine the role the textbook played for faculty and

students in general chemistry and organic chemistry, a semi-structured interview protocol was developed and refined by both researchers. Faculty were interviewed by one researcher and students by the other. Each group of interviews, faculty or student, were analyzed and themes emerged. A set of common themes were identified and used to analyze the pooled data. Similarities and differences between faculty and students perceptions of the role of the textbook and the role of the textbook in different courses have been identified. It is hoped that these results will help faculty determine if the money you spent on textbooks is worth the investment.

**Cusick, Jeremy**

July - September FY13

Biennial Conference on Chemical Education (BCCE) 2012

"Why don't fish die in the winter? Using 3D magnetic models to visualize particulate level arrangements of water"

A robust understanding of the particulate level allows students to understand the chemistry they are doing rather than rely on algorithmic problem solving. This activity uses magnetic water models to help students see and feel the effect of hydrogen bonds on the way water interacts at the particulate level. Students can feel the attraction between the water molecules and see the differences in spacing and density for the different states of matter. By incorporating other magnetic ions and nonmagnetic covalent compounds students can also observe the effects of temperature on solubility of different types of compounds. With proper facilitation students can then apply their knowledge to different properties of water and their effects on lakes and fish. This presentation will include facilitation tips to assist implementation, sample student responses, and teacher reflections on the activity.

**Esch, Michael**

July - September FY13

Mathfest 2012

Some Applications of Bifurcations in Chemistry, Biology and Engineering

The mathematical concept of bifurcations has widespread applications in Engineering and the applied sciences such as Chemistry and Biology. It is especially useful in predicting how dynamical systems which commonly arise in real-life applications evolve with time. In this talk, we perform an in-depth analysis of the mathematical concepts behind some common applications of bifurcations in Chemistry, Biology and Engineering. In particular, we apply analytical techniques such as linearized stability analysis of equilibrium points and geometrical techniques where such analytical techniques fail to understand why the real-life outcomes of such applications appear as they do.

**Hamilton, Lacey**

July - September FY13

Biennial Conference on Chemical Education (BCCE) 2012

"The role of textbooks: does the course content or faculty member matter?"

The role of the textbook in college chemistry courses can be evaluated from two perspectives: How do students use the chemistry textbook and how do chemistry professors integrate the textbook into the course? It is also reasonable to think that the role played by the textbook might differ because of the course content. To determine the role the textbook played for faculty and students in general chemistry and organic chemistry, a semi-structured interview protocol was developed and refined by both researchers. Faculty were interviewed by one researcher and students by the other. Each group of interviews, faculty or student, were analyzed and themes emerged. A set of common themes were identified and used to analyze the pooled data. Similarities and differences between faculty and students perceptions of the role of the textbook and the role of the textbook in different courses have been identified. It is hoped that these results will help faculty determine if the money you spent on textbooks is worth the investment.

**Harris, Brandon**

July - September FY13

142nd Annual Meeting of the American Fisheries Society

## Evaluating Removal and Mark-Recapture Methods for Estimating Abundance of a Small, Non-Game Fish.

Unbiased estimates of stream fish abundance are critical for sound fisheries management. Most studies investigating the bias associated with estimates of stream fish abundance focus on salmonines, yet non-game fishes often comprise a major portion of many stream fish assemblages. We evaluated mark-recapture (i.e., Lincoln-Peterson model with Chapman correction) and removal methods (i.e., models Mb and Mbh) for estimating the abundance of mottled sculpin (*Cottus bairdii*), a common non-game fish. Specific objectives were to: (1) compare estimates of mottled sculpin abundance, (2) assess bias of removal methods by comparing estimated abundance to known abundance, and (3) evaluate closed-population model assumption. We sampled eight streams via backpack electrofishing; each stream was sampled over 2-days. On day one, fish were batch marked in three sections of a 90-m reach. On day two, fish were captured and temporarily removed from the stream during four electrofishing passes; the number and marking status of fish was recorded during each pass. Removal abundance estimates generated with program CAPTURE were significantly lower (range=22-58%) than mark-recapture estimates. Moreover, the removal method underestimated (range=38-59%) known abundances of marked mottled sculpins. Movement of marked fish was minimal among sections of the 90-m reach in all but one study stream. Survival and mark retention of mottled sculpin after capture was 100% for fish retained overnight in stream enclosures (n=405 fish). Our results suggest the closed-population assumption was valid in most streams and the removal method yielded negatively biased abundance estimates. Consequently, we recommend using mark-recapture methods to estimate abundance of small, non-game fishes.

**Harvey, Amanda**

July - September FY13

13th Annual Lily Conference of College and University Teaching

"The Project: Renewing Michigan - One Student at a Time"

In meeting GVSU's goal of supporting service learning, an interdisciplinary team composed of students and faculty, known as The Project, was formed. Utilizing a common passion for civic engagement, the team promotes the development of marketable skill sets for students towards public service. By linking critical thinking with action learning, The Project provides a vehicle whereby students are given the opportunity to design, implement, and sustain endeavors leading to jobs within Michigan.

**Homola, Jared**

July - September FY13

142nd Annual Meeting of the American Fisheries Society

"Environmental and Fish Community Influences on Presence of a Microsporidian Parasite in Mottled Sculpin"

Disease can play a critical role in structuring fish population, although little is known about the factors that influence the spatial distribution of disease in aquatic ecosystems. Knowledge of these complex ecological processes could enhance population risk-assessment capabilities and improve forecasting the spread of infectious disease. Mottled sculpin and the microsporidian parasite *Glugea* spp. provide an ideal host-parasite system for investigating patterns of disease spatial distribution due to the host species broad range and high abundance, as well as the parasites dichotomous nature of either high prevalence or near complete absence. We evaluated fish community composition and 15 environmental variables in 5 streams with infected mottled sculpin populations and 7 streams without infection. Presence of the parasite was not significantly related to any of the measured environmental variables, although water temperature appeared positively correlated with likelihood of infection. Within-basin land use showed no relationship with disease prevalence. A marginally significant difference exists among the fish communities in infected and uninfected streams, further supporting the importance of water temperature in determining disease presence. Additionally, mottled sculpin were observed to have lower densities and relative abundances in infected streams, suggesting a potential host population abundance regulation role for the parasite.



**Hotchkiss, Brooke**

July - September FY13

13th Annual Lily Conference of College and University Teaching

"Undergraduate Grantwriting: Fostering the Sustainability of Civic Engagement"

Colleges and universities prepare students for excellence in their chosen career paths. Students who have participated in hands-on learning experiences are better equipped to handle the responsibilities of employment and civic engagement in the future. Grantwriting courses provide students with applicable skills that enhance their marketability to organizations because they are capable of generating revenue. As such, grantwriting is a valuable skill that provides benefits for students, as well as the communities in which they live.

**Hoxworth, Aaron**

July - September FY13

13th Annual Lily Conference of College and University Teaching

"The Project: Renewing Michigan - One Student at a Time"

In meeting GVSU's goal of supporting service learning, an interdisciplinary team composed of students and faculty, known as The Project, was formed. Utilizing a common passion for civic engagement, the team promotes the development of marketable skill sets for students towards public service. By linking critical thinking with action learning, The Project provides a vehicle whereby students are given the opportunity to design, implement, and sustain endeavors leading to jobs within Michigan.

**LeaTrea, Matthew**

July - September FY13

Biennial Conference on Chemical Education (BCCE) 2012

"Inquiry into nuclear decay"

Nuclear chemistry is a topic rarely covered in high school chemistry classes, yet in today's society it is a topic of interest to many students. Furthermore, given the increased concerns concerning nuclear processes, it is arguably an important topic with respect to generating a general population able to make informed decisions about such issues. This activity uses a combination lab stations, online simulations, and demonstrations to help high school students gain an understanding of nuclear decay. By experimenting with safe exposure levels of sealed sources to determine the effects of shielding and distance on radioactive exposure and observing decay particles in a cloud chamber to experimentally determine the half-life of an isotope students gain valuable experience with radioactive decay. They then use computer simulations to better understand alpha decay, beta decay, and nuclear fission. A description of each lab station, suggestions for facilitation, and sample student outcomes will be presented.

**O'Neil, Mary**

July - September FY13

13th Annual Lily Conference of College and University Teaching

"The Project: Renewing Michigan - One Student at a Time"

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**Perry, Jessica**

July - September FY13

13th Annual Lily Conference of College and University Teaching

"The Project: Renewing Michigan - One Student at a Time"

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**Quackenbush, Erin**

July - September FY13

13th Annual Lily Conference of College and University Teaching

"Undergraduate Grantwriting: Fostering the Sustainability of Civic Engagement"

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**Ragan, Douglas**

July - September FY13

Biennial Conference on Chemical Education (BCCE) 2012

"Where's my salt: A guided inquiry activity looking at dissolving of ionic compounds"

Research indicates that students have several misconceptions associated with the dissolving of ionic compounds in water. Additionally, even after instruction, most students have difficulty providing a correct particulate level description of what happens when an ionic compound dissolves in water. This activity, created as part of the Target Inquiry Program at Grand Valley

State University, addresses misconceptions by identifying students initial ideas about what happens when a salt dissolves, challenging these ideas by comparing these ideas with particulate animations of NaCl dissolving in water, and testing their revised understanding with an additional interactive simulation. The guiding questions in this activity are designed to focus students on the role of the solvent in the dissolving process and the difference between the makeup of atoms and ions of the same element. This presentation will include an overview of the activity, sample student data, and facilitation tips.

**Schoenborn, Ryan**

July - September FY13

Biennial Conference on Chemical Education (BCCE) 2012

"A Very Cool Investigation: A Guided Inquiry Lab"

High school chemistry students often struggle with concepts related to thermochemistry and enthalpy. The misconceptions related to heat and temperature are well documented. This lab, developed as part of the Target Inquiry Program at Grand Valley State University, requires students to use thermochemistry to determine how many disposable ice bags are required to induce therapeutic hypothermia for an accident victim. Using a guided inquiry format, this lab helps students understand the difference between heat and temperature as they investigate the concept of enthalpy of dissolution. Facilitation tips and sample student data will be provided.

**Simon, Kristen**

July - September FY13

Biennial Conference on Chemical Education (BCCE) 2012

"The Role of the Textbook for Students in Organic and Analytical Chemistry"

This study is to observe and analyze how undergraduate chemistry students use their textbooks to study and learn chemistry. This work seeks to identify fundamentally different ways students interact with the text. Seventeen in-depth interviews with second and third year organic and

analytical chemistry students were conducted to identify the role the text plays in student learning of chemistry. After analyzing these interviews it is clear that the instructors actions affect students textbook usage. The book is seen mostly as a backup to their professor and as a source of problems for the student. We believe we have found the various roles for the text and that we can soon begin work on a questionnaire that will measure how the students use their textbooks as they study and learn chemistry. This poster will present our analysis of the interviews and our in-depth findings of how the students view the roles of their textbook.

**Swanson, Neal**

July - September FY13

142nd Annual Meeting of the American Fisheries Society

"Juvenile Steelhead in the Muskegon River: Analysis of Larval Drift and Juvenile Diet"

Steelhead (*Onchorhynchus mykiss*) are an important component of the Lake Michigan ecosystem and provide an important regional fishery. Steelhead populations are heavily supplemented with hatchery stocks due to low production in many coastal Michigan streams. Understanding the early life history is critical to improving wild fish populations. During spring 2010 and 2011 maximum larval steelhead drift varied from 0.259/m<sup>3</sup> to 0.045/m<sup>3</sup> respectively, with peak drift between May 31 and June 7. The total estimated numbers of larvae drifting during the two sample periods were higher for 2010 than 2011. Physical factors, particularly discharge, may account for some of the variation between years. During summer 2011, juvenile diets were dominated by hydropsychids, baetids, midge larvae and adults, and simuliids. Fall diets were dominated by hydropsychid larvae. Juvenile diets averaged more prey items per fish in the fall. Juvenile diets have varied over the past ten years apparently in response to the introduction of zebra mussels. Understanding the relationship between larval drift and annual year class, as well as diet, may provide managers with additional tools to manage steelhead stocks in the Great Lakes region.

**Thompson, Lauren**

July - September FY13

Biennial Conference on Chemical Education (BCCE) 2012

"What type of fish will you catch in warm water?"

No Abstract.

**Tole, Olvi**

July - September FY13

24th European Medical Informatics Conference - MIE 2012

"Translational Meta-Analysis Tool for Temporal Gene Expression Profiles"

Widespread use of microarray technology that led to highly complex datasets often is addressing similar or related biological questions. In translational medicine research is often based on measurements that have been obtained at different points in time. However, the researcher looks at them as a progression over time. If a biological stimulus shows an effect on a particular gene that is reversed over time, this would show, for instance, as a peak in the genes temporal expression profile. Our program SPOT helps researchers find these patterns in large sets of microarray data. We created the software tool using open-source platforms and the Semantic Web tool Protégé-OWL.

**Tryc, Lindsay**

July - September FY13

The Association for the Authentic, Experiential, and Evidence-Based Learning (AAEEBL) Annual Conference: ePortfolios as a Catalyst for Connections: Celebrating the Curious, Creative, and Capable Learner

"Inside Out: ePortfolios for Program Assessment"

The presentation introduces an ePortfolio model that facilitates students demonstration of mastery of learning outcomes and a developmental assessment of their personal growth and

identity as a professional. The model assesses individual mastery and intended program outcomes that permeate from the first year through the capstone experience.

**Wieten, Alex**

July - September FY13

142nd Annual Meeting of the American Fisheries Society

"Movement and Spatial Distribution of Juvenile Lake Sturgeon in Muskegon Lake, Michigan"

Efforts to restore remnant populations of lake sturgeon, *Acipenser fulvescens*, are hindered by the lack of information on juvenile habitat requirements. We examined the movements and spatial distribution of juvenile lake sturgeon in Muskegon Lake, Michigan, a drowned river mouth lake that links the Muskegon River to Lake Michigan. Juveniles were captured in gill nets, surgically implanted with ultrasonic transmitters, and tracked during August-November in 2008 and 2009 and from September 2010 to November 2011. Weekly vertical profiles of dissolved oxygen concentration and temperature were measured at two locations frequented by juvenile lake sturgeon (September 2010-November 2011). In the summer, juvenile lake sturgeon were observed near (d 1.5 km) the mouth of the Muskegon River in Muskegon Lake, then moved to deeper waters at fall turnover (i.e., loss of thermal and dissolved oxygen stratification). Additionally, multiple cohorts of juvenile lake sturgeon were caught in Muskegon Lake throughout the study. Our results suggest that Muskegon Lake serves as an important nursery habitat for juvenile lake sturgeon that hatched in the Muskegon River before they enter Lake Michigan and that there are seasonal shifts in the spatial distribution of juveniles in Muskegon Lake.

**Wisniewski, Emily**

July - September FY13

13th Annual Lily Conference of College and University Teaching

"Submersive Learning"

No Abstract.

**Zhu, Huijing**

July - September FY13

American Society of Plant Biologists (ASPB) Annual Meeting: Plant Biology 2012

"Induction of Desiccation Tolerance in Developing Seed of *Phalaenopsis amabilis*: the Role of the Late Embryogenesis Abundant Proteins"

The Orchidaceae is the most diverse family of flowering plants and is famous for its unusual and beautiful structural floral variation. It is distributed predominantly in rapidly disappearing tropical and sub-tropical forest ecosystems. Long-term seed storage banks can be a solution for threatened plant species but the stored seeds must tolerate extreme drying and cold. This ability is acquired during the last stage (maturation drying) of seed development and is correlated with a decline in water content and expression of the Late Embryogenesis Abundant (LEA) protein genes. Our goal is to investigate whether and when orchid seeds acquire desiccation tolerance during normal maturation and, if harvested prematurely, can be artificially induced to become desiccation tolerant. The specific aim of this work is to monitor changes in water content, germinability, desiccation tolerance and LEA protein gene expression in seeds undergoing natural (in planta) and artificial drying in *Phalaenopsis amabilis*. The moisture content of fresh seeds drops quickly between 150DAP (when it is 70% moisture) and 165DAP (when it is 50% moisture), suggesting the onset of the maturation drying phase. Freshly harvested seeds can germinate as early as 90DAP but they are not capable of surviving desiccation (defined as the ability to germinate after drying to 5-10% moisture) until 170DAP. On the other hand seeds as young as 120 DAP can tolerate desiccation if they are slowly dried. During slow drying, seeds are placed in atmospheres of progressively lower relative humidity. During this time, seeds maintained their starting moisture content of 70% for 3 days, and then dried to 10-15% moisture on the 4th day. During this time, they acquired desiccation tolerance. Our results suggest that mature seeds of *Phalaenopsis amabilis* can tolerate desiccation and, if seeds are harvested prematurely, they can be rendered desiccation tolerant by appropriate post-harvest treatments.



**Zuiderveen ,Grady**

July - September FY13

Botany 2012 - The Next Generation

"A Genetic Analysis of Native and Invasive *Phragmites australis* along Michigan's West Coast"

*Phragmites australis* (common reed) consists of a native North American group with several genetic forms, and a non-native and highly invasive introduced group with a single genetic form. Little is known about the environmental factors that affect the distribution of native and non-native populations, and it is difficult to differentiate between the two based on physical characteristics alone. The west Michigan region provides an excellent opportunity to evaluate the relationship between environmental gradients and the spread of *Phragmites*. The Lake Michigan coast presents a strong temperature gradient from the north to the south, whereas a strong moisture gradient is found along the east-west axis from the Lake Michigan shoreline inland. Thus, the goals of this study are to: 1) determine the genetic composition of common reed populations along the west Michigan coast from southern (warmer) to northern (cooler) Lake Michigan, 2) determine the genetic composition of common reed populations along an east-west (wetter-drier) gradient from the west Michigan coast to more inland locations, 3) determine the current distribution of the exotic *Phragmites* in western Michigan, and 4) evaluate the importance of genotype in the distribution and abundance of the native common reed. Examination of 44 populations of *Phragmites australis* throughout western Michigan yielded only the non-native haplotype in the southern regions and a mixture of native and non-native haplotypes in the northern regions. A single population contained individuals of both haplotypes. No trends have been observed along the east-west axis.

## **ACF 2013 October - December Presentations**

**Amity, Rachel**

October – December FY13

National Conference of Peer Tutoring in Writing

## "Talking the Talk: Linguistic Face Theory in the Writing Center"

Writing consultants simultaneous identities as peers and tutors can sometimes pull them in different directions: on one hand, they are specially trained, semi-professionals; on the other, they are young adults with the same challenges and stressors as the students with whom they work. One way for tutors to balance and synthesize these identities is to apply linguistic face theory to their consultations. In linguistics, face refers to one's public self-image. Everyone has face, and though we may not realize it, we constantly and unconsciously respond to face in our everyday interactions. Knowing about face allows us to communicate more effectively and to negotiate social power dynamics more efficiently. This is especially true in the Writing Center, as tutors often construct, balance, and share power through their discourse with students. This presentation combines published literature, original naturalistic observations, and feedback from tutors to investigate the various face-saving and face-threatening acts that tutors can use to not only help students become better writers, but also to help tutors themselves feel more clear and confident about their identities in the Writing Center.

**Austin, Lisa**

October – December FY13

Midwest Modern Language Association

## "Awful Doubt or Faith so Mild: Skepticism and Environmental Morality in Percy Bysshe"

As he gazes over the landscape of the Chamonix Valley, Percy Bysshe Shelley explains how the vista engenders a sentiment of ecstatic wonder, not unallied to madness (Shelley, *History of a Six Weeks Tour* 151-2). Though he is captivated by Nature, and in awe of its power, Shelley does not regard it within a conventional or static mindset. For instance, Shelley's contemporary William Wordsworth describes Nature with language that imbues the landscape with divine significance. However, Shelley regards Nature skeptically, and is uncomfortable with the notion that it is a symbol of divinity. He is unconvinced of the idea that a deity created the earth for humanity. Thus in my paper, I argue that Shelley crafts "Mont Blanc" in response to the dominionist attitude toward Nature often associated with the Bible, and that "Mont Blanc" is in

conversation with Wordsworth's "Tintern Abbey," a poem that posits the human imagination as fundamentally in harmony with the natural world. I also examine Shelley's skepticism as potentially corrective to the dominionist mindset. In lieu of both conventionally religious and secular visions of humanity's transcendence with respect to the natural world, Shelley's Mont Blanc initiates a radically materialist understanding of our species role, status, and place within a world of indeterminacy, chance, and dynamic change .

**Belmonte, Paul**

October – December FY13

22nd Annual Argonne Symposium

"Synthesis of Novel Antimicrobial Agents Containing Peptide Bonds"

Antibiotics, produced naturally by microorganisms, have been used for decades in the battle against pathogenic microbes. Bacterial resistance to antibiotics is an ongoing medical issue throughout the world. In an effort to produce novel synthetic antimicrobial agents, amide bond synthesis techniques were used to affix an aliphatic carbon chain and an amino acid residue to an aromatic scaffold. Solution phase organic synthesis was utilized. Thin layer and column chromatography were used to determine reaction completion and purify products, respectively. Infrared and <sup>1</sup>H NMR spectroscopy were employed to characterize the structure of the molecules. The synthesized compounds were assayed for antimicrobial activity using *E. coli* (gram-negative) and *S. aureus* (gram-positive) bacteria. For multiple compounds, bioassay data suggested antimicrobial activity against gram-positive bacteria, and further analysis suggested one compound's low affinity for binding to human serum proteins. Further synthesis is targeted at dipeptide bond synthesis in an attempt to increase this compound's zone of inhibition.

**Crabtree, Kathryn**

October – December FY13

National Conference of Peer Tutoring in Writing

"Reading in the Digital Age: When Reading and Writing Intersect in the Writing Center"

Effective reading comprehension entails that readers engage their texts, but the digital medium tends to discourage active reading strategies. This presentation discusses how tutors can help students while researching, particularly with reading texts on-screen rather than on-paper. Participants will learn how to adapt active reading strategies to the digital environment.

**Darbyshire, Paige**

October – December FY13

Annual Michigan Art Education Association Conference 2012

"Identity at Risk"

This presentation will begin with a short description of what our chapter does as an organization. Then, we will proceed to describe a workshop we did in collaboration with the organization PALS at Grand Valley State University. This will include the explanation of two separate projects done with at risk children and their mentors which focused on the concept of identity. A lesson plan will be provided for each project.

**Durstun, Mary**

October – December FY13

2012 American Society of Cell Biology (ASCB) Annual Meeting

"Identifying a regulatory role for the tumor metastasis suppressor gene KAI1/CD82 in metastatic prostate cancer cell lines"

KAI1/CD82, a metastasis prostate tumor suppressor gene expression is lost when the cancer progresses from a primary to a metastatic stage. CD82 has also been shown to be down-regulated in cancers of the gastrointestinal tract, colon, cervix, breast, lung, pancreas, skin, thyroid and liver etc. As a member of the tetraspanin family of proteins, CD82 interacts with proteins and may act as a master regulator of membrane organization at the cell surface. Even though some of the interacting proteins have been identified, the significance of these associations and its role in

metastasis prevention is unclear. By reintroducing CD82 into highly metastatic prostate cells (PC3), we have shown CD82 to regulate c-Met (phosphorylation) and activation. Currently we are focused on studying the exact mechanism by which CD82 regulates c-Met. CD82 does not seem to associate with c-Met nor does it seem to down-regulate c-Met. Preliminary indications are that as a tetraspanin and thus as a molecular organizer it may be redistributing c-Met on the cell surface. It is also highly possible that it may bring a c-Met specific phosphatase (such as DEP-1) to the surface to dephosphorylate and deactivate c-Met. We are currently exploring both possibilities. Even though we have identified c-Met protein to be regulated by CD82, we have reason to believe that there may be more proteins regulated by CD82. Microarray studies done on CD82 (+/-), on both tumor and normal prostate cells suggests that CD82 may be regulating genes involved in cell cycle, growth, and metastatic suppression. To validate the results, we have utilized Q-PCR assays, investigating genes specifically involved in metastasis suppression and growth. These genes include: CXCR4, CXCR7, RUNX3, TFF-3, and MMP10. CXCR4 and CXCR7 are chemokine receptors, RUNX3, a tumor suppressor gene, and MMP10, which encodes the matrix metalloproteinase 10 needed for invasion and continuation of metastasis. Two of the genes involved in metastasis (TFF-3, RUNX-3) have been quantified and the data correlates with the microarray data. MMP10, CXCR4, and CXCR7 are currently being validated. Identifying the proteins regulated by CD82 and deciphering the downstream signaling mechanisms involved in this regulation is the focus of our future studies.

### **Ebert, Justin**

October – December FY13

Association for the Advancement of Sustainability in Higher Education (AASHE) 2012:

Investing in the Future

"Sustainable Impact: The Challenges of Creating Courses on Food, Food Systems, and Food Justice to Empower Students to Action"

When looking to de-silo the often-segregated, triple-bottom line of sustainability, food seems the ideal course subject to broaden understanding. The class was formulated with a three-tiered structure where our food comes from, the choices we make, and the waste and excess the class

was designed to explore food systems locally, regional, nationally, and globally; and investigated the environmental, economical, and cultural aspect of each of the three areas. Over the course of two semesters, these students began to see the Herculean tasks involved with understanding our food systems. From readings to dialogues, from projects to papers, from watching films to cooking meals, the class attempted to explore an enormous range of issues. Engaging with traditional in-class lectures, service-learning activities, movie nights, and cooking together; high-impact practices and experiential learning were pivotal to the methodology and success of the course as was the active partnership with the university's sustainability office. From the impact on their diet, to the way they handle waste, to their greater involvement with sustainability initiatives both on and off campus, this class engaged students both in and out of the classroom and had a campus-wide impact. This presentation openly discusses all aspects good, bad, and ugly of this incredible journey from the perspectives of the faculty member that envisioned the course, the students who took it, and the sustainability project manager that facilitated a variety of opportunities, in hopes that others will develop similar courses to move toward a more sustainable future.

### **Formsma, Kevin**

October – December FY13

Meaningful Play 2012

"ParabolaX: Learner Engagement with Serious Games"

Video games continue to be a growing and vibrant industry. With the popularity of mobile devices, casual games such as Angry Birds are reaching out to an ever growing audience. These games have an unprecedented ability to persuade their players to overcome gameplay challenges. Many researchers argue that playing games is inherently a learning experience for the players [1] [2] [3]. Some have claimed that games make their players better people[4]. In the classroom learners are much different today than just 10 years ago. Digital devices – mobile phones, tablets, computers and game consoles are providing fundamentally different experiences during a child's development than in past generations. As educators struggle to motivate their learners, games provide a great opportunity to enrich the education curriculum. ParabolaX is a Serious

Game designed to teach principles of quadratic function concepts to high school mathematics learners [5]. Preliminary results with ParabolaX showed that 95% of learners either agree or strongly agree that the game helped them understand quadratic functions. Learners also found the game to be enjoyable and interesting. Many learners indicated they would be interested in using Serious Games in the class room [5]. However, researchers have criticized that engagement isn't driven by the Serious Game content but rather by the new and unique experience of using a game in the classroom [6] [7]. To address and investigate these concerns three distinct versions of ParabolaX are to be developed with growing inclusion of gamification techniques and features. The basic version will feature limited scoring and graphics. The more advanced version will include dynamic feedback and high scoreboards. Student engagement will be measured and compared between these three game versions. Engagement will be evaluated using measures recorded in game, such as time spent playing and number of attempts per level, in addition to a self-assessment survey. Hopefully the results of this forthcoming study will help resolve some criticism of the use of games in the classroom. [1] J. P. Gee, "Good Video Games and Good Learning," Phi Kappa Phi Forum, pp. 33-37, Summer 2005. [2] M. Prensky, "Digital Game-Based Learning," ACM Computers in Entertainment, vol. 1, no. 1, 2003. [3] B. Winn, "The Design, Play and Experience Framework," in Handbook of Research on Effective Electronic Gaming in Education, Hershey, PA, IGI Global Publication, 2008. [4] J. D. Sutter, "Games 'tap into the best version of yourself'," CNN, 12 April 2012. [Online]. Available: <http://whatsnext.blogs.cnn.com/2012/04/12/games-tap-into-the-best-version-of-yourself/>. [Accessed 14 April 2012]. [5] A. Montoya, "Using Handheld Touch Screen Enabled Devices and Persuasive Game Mechanics to Teach Quadratic Functions," Technical Library, 2011. [6] D. Bavelier, C. S. Green and M. W. Dye, "Children, Wired: For Better and for Worse," Neuron, pp. 692-701, 2010. [7] J. Teixeira and T. P., "Zun - A Math Exergame," in Videojogos 2011, 2011.

**Furner, Jennifer**

October – December FY13

Society for the Study of American Women Writers (SSAWW) Conference 2012: Citizenship and Belonging

"Cold War Containment in Shirley Jackson's "Flower Garden"

The societal restrictions white Americans placed on themselves in the Cold War era were psychologically damaging for many citizens, and Shirley Jackson underscored the absurdities of containment and the social ills it caused in much of her fiction. People find her most anthologized work *The Lottery* shocking, but her short story *Flower Garden*, a less-appreciated but much more subtle depiction of the times, dramatizes the idea of Cold War containment. *Flower Garden* and *The Lottery* both depict small towns that turn their backs on one of their own because they fear change. While neither Mrs. MacLane nor Tess Hutchinson, respectfully, may have been actual threats, their communities sacrificed them in order to uphold their perceived sense of security against exposure to nuclear war, communism, and segregation. My paper will show how the fiction of Shirley Jackson aptly faces the fears of Cold War America, reveals the truth about suburbia living, and explains the painstaking efforts one makes in order to be a good citizen.

**Gemmen, Heather**

October – December FY13

National Conference of Peer Tutoring in Writing

"Reading in the Digital Age: When Reading and Writing Intersect in the Writing Center"

Effective reading comprehension entails that readers engage their texts, but the digital medium tends to discourage active reading strategies. This presentation discusses how tutors can help students while researching, particularly with reading texts on-screen rather than on-paper. Participants will learn how to adapt active reading strategies to the digital environment.

**Gilewski, Carlene**

October – December FY13

2012 Geological Society of America (GSA) Annual Meeting and Exposition

"Constraints on P-T Conditions during Deformation within the Terrane Bounding Chunky Gal Mountain Fault, Central Blue Ridge, North Carolina"



The terrane bounding Chunky Gal Mountain Fault (CGMF) in the Southern Appalachian Central Blue Ridge lies adjacent to the Buck Creek-Chunky Gal mafic-ultramafic complex (BCC), an ocean crustal fragment that experienced peak (Taconian) conditions of ~ 825 oC, 1.2 GPa. Mylonitic amphibolites, garnet-biotite, and sillimanite-garnet-biotite gneisses from the fault zone preserve complex physical and chemical textures that may help constrain the emplacement history of the BCC.

In the type exposure, the CGMF separates BCC amphibolite from biotite gneisses and includes several focused shear zones. A compositionally layered amphibolite mylonite (11J1A) from the main fault zone shows apparent normal shear and includes a hornblende-rich domain with biotite-plagioclase-sphene, a scapolite-rich domain with epidote-sphene, and a biotite-rich ultramylonite with garnet, epidote, and plagioclase porphyroclasts. Garnet shows complex zoning.

A nearby biotite gneiss ultramylonite (11L3) with sinistral asymmetry includes asymmetric garnet, K-feldspar, plagioclase, and muscovite porphyroclasts. Garnet zoning suggests preservation of outward prograde zoning (increasing Mg/decreasing Ca). Increased Ca and Mn with decreasing Mg toward the rims is distinctive.

Large garnets from biotite mylonites with a shallow sillimanite lineation in the nearby Jake Ridge outcrop (JR22) preserve 3 distinct garnet growth periods. Inclusion rich, high Ca/high Mg cores are surrounded by inclusion-free zones with distinctly lower Ca, and slightly higher Mg. Symmetrical triangular tails include fibrous sillimanite and preserve a distinct increase in Ca with decreasing Mg.

Preliminary use of TWQ, Theriak-Domino, and Hb-Pl thermometry suggests minimum peak temperatures of ~ 750 oC, and matrix deformation conditions of ~ 600 oC. Pressure estimates are more complex. Garnet growth zoning in both JR22 and 11L3 are similar to zoning reported for large garnets at Winding Stair gap, where peak granulite facies are documented. However, in these two samples, we see an additional sharp increase in Ca toward the rims that has not been

previously reported. This may indicate a relatively late increase in pressure at reasonably high (sillimanite-stable) temperature conditions within the Chunky Gal Mountain Fault.

**Gillett, Kelli**

October – December FY13

Society for Neuroscience Annual Meeting: Neuroscience 2012

"Protracted withdrawal from ethanol and the enhanced responsiveness to mild stress: Regulation via the dynorphin/kappa opioid receptor system"

Withdrawal is one of the defining characteristics of alcohol dependence, and is often characterized by impaired physiological function and enhanced negative affect. These alterations in mood can be long-lasting in nature, as abstinent alcoholics show symptoms of anxiety for months and even years after their last drink. When examined under animal models of alcoholism, laboratory animals with a history of ethanol dependence show an enhanced responsiveness to mild stressors and alterations in neurobiological stress systems for weeks after they are no longer given access to ethanol. The biological mechanisms underlying these changes, however, have yet to be fully explored. Recent evidence suggests that the dynorphin (DYN)/kappa opioid receptor (KOR) system may be a key mediator in the negative affect often associated with drugs of abuse. The objective of the present experiments was to determine the role of the kappa opioid system in the regulation of anxiety-related behaviors during protracted withdrawal from ethanol. Male Wistar rats (n=76) were fed an ethanol or control liquid diet for 28 days. Six weeks after removal of the diet, rats were exposed to a mild stressor (20 minutes of immobilization), and the ability of the KOR antagonist nor-BNI to attenuate increases in anxiety-like behavior in the elevated plus maze was investigated. A comparison study was also conducted following direct activation of the DYN/KOR system. Six weeks after removal of the liquid diet, rats received injections of U50,488 (0.1 or 1.0 mg/kg, i.p.) or saline 10 minutes prior to testing in the elevated plus maze. Rats with a history of ethanol dependence showed a significant decrease in open arm exploration compared to controls when exposed to the mild stressor, an effect that was blocked by nor-BNI. Interestingly, injections of U50,488, which has previously been shown to enhance stress-related behaviors in laboratory animals, did not lead to an anxiety-like response in rats

with a history of dependence. There were no effects of treatment on locomotor activity. These results suggest that preventing KOR activation may be sufficient in attenuating the enhanced responsiveness to stress observed during long-term withdrawal from ethanol. However, the KOR/DYN system may not be necessary in producing this anxiety-like state. Further investigation will aid in clarifying the role of the kappa opioid receptor system in protracted abstinence from ethanol. Supported by: R15 AA018213 from NIAAA.

**Haapala, Michelle**

October – December FY13

Annual Michigan Art Education Association Conference 2012

"Identity at Risk"

This presentation will begin with a short description of what our chapter does as an organization. Then, we will proceed to describe a workshop we did in collaboration with the organization PALS at Grand Valley State University. This will include the explanation of two separate projects done with at risk children and their mentors which focused on the concept of identity. A lesson plan will be provided for each project.

**Harp, Robert**

October – December FY13

Council of Administrators of Special Education (CASE) Conference

"The Use of Student Achievement Data In Special Education Teacher Performance"

Research has revealed that the effectiveness of a teacher directly impacts the achievement of the students they teach. The highly effective teacher impacts school improvement by improving the success of their students in the skill areas being taught. Many states have recently mandated performance evaluation systems that establish approaches to the measurement and use of data on student growth as a significant factor in teacher performance evaluations. An exploration of the research on effective measurement of teacher performance has aided in the development of a

performance evaluation tool to be used with teachers of students with low incidence disabilities that incorporates the functional and academic areas of instruction appropriate for these students with moderate to severe cognitive disabilities. An effective student growth measurement tool must acknowledge the variety of ways a student can show growth in the special education setting while maintaining the standards required in the performance evaluation of teachers. The student growth model developed addresses the varying skills upon which special education teachers focus instruction and the assessments available to show student growth in these areas. Additionally, the tool combines the need to focus on Common Core standards for all students with the equally compelling need for focus on functional skills as dictated by the individualized education plan for each student with a disability.

**Hillman, Tamara**

October – December FY13

The Wildlife Society 19th Annual Conference

"Study of a reintroduced American marten population using noninvasive hair snares"

Prior to European settlement, the American marten (*Martes americana*) ranged throughout most of northern North America. Colonization and logging led to large scale habitat loss, and in combination with over-trapping of the fur bearing species led to extirpation of marten in many areas of their native range. Years of more conservative logging and land use practices resulted in forest regeneration and made reintroductions of marten possible in several regions. Michigan's northern Lower Peninsula is an example of an area historically part of marten range that has performed marten reintroductions, and will be the focus of this study. Marten were last sighted in the Lower Peninsula in 1911, then were later reintroduced in the mid-1980s in two areas; the Pigeon River Country State Forest (n=49, sex ratio 1:1), and the Manistee National Forest (n=36, sex ratio 1.4 M :1 F). Little is known about the current status of the marten populations in these regions, and the goal of this study will be to gain insight into the Manistee National Forest (MNF) population. The objectives of this research are to use noninvasive hair snares to collect hair from marten and use population genetics techniques to assess genetic diversity, relatedness, distribution, and estimate population size. This will be accomplished by deploying 100 single

sampling hair snares throughout areas of suitable marten habitat in the MNF. The results of this research should provide a view of the current marten population status in the MNF, and assess feasibility of hair snare methods for future monitoring and ongoing management of marten in other regions, as well as similar species such as fisher (*M. pennanti*). This study will take place beginning this summer, 2012 and continue through spring of 2014.

**Horne, Nicole**

October – December FY13

4th American Society of Microbiology (ASM) Conference on Beneficial Microbes

"Removal Efficacy of Harmful Microbes and Contaminants in Biosand Filter Microcosms"

Freshwater is a shrinking resource in large parts of the Earth, with overuse and contamination in underdeveloped countries further rendering the available supply of water unsafe. An inexpensive remedy is the use of Biosand filters of 60-100 L volume (BSFs) in every household, classroom, and hospital, delivering safe potable water a UN Millennium goal. Whereas physical filtration of particulate impurities through graded sand is well known, there is poor understanding of the effectiveness of the microbial biofilm within BSFs in ridding water of harmful contaminants. To address this void, we investigated the efficacy of BSFs in filtering harmful contaminants: total coliforms, *E. coli*, arsenic, and microcystin-LR in a 3-phase study, using self-designed microcosm syringes of 60 mL volume micro scale analogs of BSFs. Muskegon Lake, a mesotrophic urban lake in Michigan, served as the source water. In Phase I, filters exhibited significant pathogen removal from source water, upon biofilm maturity. Over a 3-day period, a reduction of total coliforms from 12.2  $\pm$  6.3 MPN/100mL in input water to 1.0 - <1 MPN/100mL in output water was observed a 92 - 86% removal efficiency (RE). Concurrently, *E. coli* was reduced from 7.5  $\pm$  5.2 MPN/100mL in input water to 1.0 - <1 MPN/100mL in output water an 87 - 83% RE. In a repeated experiment, over a 6-day period, a reduction in total coliforms from 42.0  $\pm$  8.5 MPN/100mL in input water to 2.0 - <1 MPN/100mL in output water was observed, a 95 - 89% RE. Scale-up into the full-sized HydrAid® BSF (Cascade Engineering) showed a reduction in total coliforms ranging from 104  $\pm$  21.6 MPN/100mL in input water to 3.0  $\pm$  1.0 MPN/100mL in output water over a 3-day sampling period, a 99 - 86% RE. In Phase II, addition

of rusted Fe filings to microcosms resulted in reduction of arsenic (a common groundwater contaminant in many parts of Asia) from 100¼g As in input water to 0¼g As in output water, a 100% mean RE (n=4) in two separate experiments. Without rusted Fe fillings, mean RE was 65-75%. Phase III involved the investigation of microcystin-LR (a hepatotoxin produced by bloom-forming cyanobacteria in eutrophic lakes worldwide) removal in the absence and presence of a mature biofilm. Before biofilm maturity, mean removal efficiency was 17-30% (n=4) over a 3-day period. Following biofilm maturation, mean removal efficiency ranged from 82-95% over a 6-day period. Upon scale-up into the full-sized Hydraid® BSF, a reduction in microcystin-LR ranged from 94 - 93% mean RE (n=3) over a period of 3 days. Our study demonstrates that mature BSFs effectively remove common pathogenic microbes and harmful cyanobacteria toxins and chemical contaminants, making them a viable option for delivering safe point-of-use drinking water in undeveloped countries.

**Horvat, Emily**

October – December FY13

Annual Michigan Art Education Association Conference 2012

"Identity at Risk"

This presentation will begin with a short description of what our chapter does as an organization. Then, we will proceed to describe a workshop we did in collaboration with the organization PALS at Grand Valley State University. This will include the explanation of two separate projects done with at risk children and their mentors which focused on the concept of identity. A lesson plan will be provided for each project.

Jones, Erica

October – December FY13

National Conference of Peer Tutoring in Writing

"Writing Consultant Training: Is It Enough?"

Two consultants from Grand Valley State University conducted research about the different training techniques of writing centers around the nation. Many of the students that visit writing centers are from diverse backgrounds and majors. Often their expectations are based off of their past writing experiences, which are multifaceted, and many times, not in line with typical writing center pedagogy. To effectively combat this, tutor training should prepare staff members for working with different learning styles, preventing unsatisfying consultations. We have, through surveys and scholarly journals, researched the different learning styles, such as tactile, kinesthetic, visual/audio, etc. and the ways in which writing centers across the nation train their consultants.

In this presentation, we will begin with a detailed comparison of different training techniques, highlighting the most popular types of training, and the ensuing conversation will evaluate the inefficiencies and the gaps in said training. Not only will the presenters provide background information, they will also provide proposed solutions to gaps in this training based on nationwide tutor feedback. To explore the potential success of new training techniques, the Grand Valley Writing Center, at their annual training session for new consultants, had new consultants explore and discuss their feelings of preparedness in this area. This feedback was subsequently evaluated next to returning consultants perception of their trainings effectiveness, which occurred before the new programs were introduced. We will challenge center directors to look at new avenues of tutor training through audience discussion, leading to more successful consulting

**Kluck, Emily**

October – December FY13

American Urogynecologic Society (AUGS) 33rd Annual Scientific Meeting

"Robotic-Assisted Sacrocolpopexy: A Retrospective Review of 211 Cases"

Objectives: Robotic-Assisted Sacrocolpopexy (RSC) is gaining popularity as an alternative to open abdominal sacrocolpopexy. The purpose of this study was to evaluate intraoperative and postoperative complications of RSC performed by a single operator.

**Materials and Methods:** This was a retrospective study involving a review of 211 patients who underwent RSC between October 2007 and February 2012 in a community hospital.

**Results:** Two hundred and eleven patients underwent RSC for advanced pelvic organ prolapse stage 3 (135 patients) and stage 4 (76 patients). Patients had a mean age of 63.79 (range 39-83) years and mean BMI of 27.60 (SD 3.99). One hundred forty-eight (77%) had previous abdominal surgery. Two hundred six patients (98%) were treated concomitantly with the following procedures: supracervical hysterectomy in 97 (46%), total hysterectomy in one (0.5%), bilateral, right or left oophorectomy in 127 (60%), and lysis of adhesions in 142 (68%). There were three patients (1.5%) who were converted to an open abdominal procedure; two had extensive adhesions and one had a difficult pre-sacral space. Intra-operative complications included one patient (0.5%) who had a cystotomy and was converted to open abdominal. There were no ureter, rectal, small bowel, or major vessel injuries and no blood transfusions. Cystoscopy was routinely performed. Postoperative complications occurred in five patients (2.3%) which included the following: one mesh erosion, one patient developed subcutaneous emphysema, one patient developed post-operative mesh infection, one patient with back pain (discitis), and one patient readmitted with ileus herniated small bowel. Mean operative time was 157.69 (SD 32) minutes and mean length of stay was 24 (SD 4.58) hours.

**Conclusions:** RSC is a newly evolved procedure for pelvic organ prolapse repair. It is a feasible and safe procedure with minimal intraoperative and postoperative complication rates when performed by a single surgeon.

**Latshaw, Skylar**

October – December FY13

American Literature Association: Cormac McCarthy, Ernest Hemmingway and Their Traditions

"Foucault's Panopticonic Gaze and Cormac McCarthy's *The Road* (abbreviated)"



Cormac McCarthy's *The Road* is not only considered one of his masterpieces, but also the black sheep of his novels. Many critics and fans of McCarthy note that its post-apocalyptic setting sets *The Road* apart from the realism of McCarthy's other works, some even arguing that it should be classified and read as science fiction. The world, deprived of flora and fauna, is certainly an alien landscape, with the few people left shells of who they once were, many resorting to cannibalism. The post-apocalyptic setting of *The Road* functions differently than the world before the cataclysmic event. Priorities have shifted; survival and medical skills are essential. Sight is by far the most important of the senses, allowing for scavenging and avoiding danger. The novel's protagonists, an unnamed father and son, are constantly searching abandoned houses for food, hiding from cannibals, scouting and keeping watch. The ocular is survival.

As concrete as the ocular is, it goes beyond the literal in *The Road*. A component of sight, the gaze, the ability to see and be seen, becomes a psychological obsession with the father, informing his actions, outlook, and goals. Although the gaze is a term used by several critics and philosophers (including Jean-Paul Sartre and Jacques Lacan), Michel Foucault's panopticonic gaze is most apt to apply to the father's situation. By viewing the father through this lens, my paper reveals how much of an impact Foucault's panopticonic gaze has on the father in *The Road*. The gaze creates in him an anxiety of surveillance, isolation from other people and, ultimately, a consistent sense of fear. I argue that it is the father's own psyche that is not only both the greatest help and hindrance to him and his son, but also an insightful framework to view the novel's key themes—especially good and evil, religion, and generosity—through.

## **Lee, Joshua**

October – December FY13

Society for Neuroscience Annual Meeting: Neuroscience 2012

"Screening the effects of gene overexpression on markers of neural progenitor differentiation in the developing chick Spinal cord"

The chick embryonic neural tube offers an effective model to monitor the effects of gene overexpression or knockdown on neural progenitor differentiation at multiple different points

during development. To better characterize the effect of gene manipulation by in ovo electroporation, we are using quantitative PCR to screen the effect of gene overexpression on markers of neural progenitor differentiation, followed by anatomical analysis of interesting candidate genes. Genes are selected from those enriched in neural stem cell populations, or criteria that suggest a role in neuronal or glial differentiation. These approaches are undertaken with undergraduate researchers, providing an optimal forum to reinforce principles of developmental biology and also to identify and characterize unknown genes or genetic mutants. These approaches can be applied broadly to allow investigators to readily screen for changes in neural progenitor differentiation.

**Leslie, Caitlin**

October – December FY13

2012 Geological Society of America (GSA) Annual Meeting and Exposition

"Recent Folding, Geomorphic Evolution, and Paleoclimate: Apsheron Peninsula Azerbaijan"

The Apsheron Peninsula, Azerbaijan in the southern foreland of the Caucasus Mountains exposes the Pliocene clastic Productive Series and Pleistocene-Quaternary flanking carbonate-rich units in a number of long, narrow oil-saturated anticlines. We are beginning to study the tectonics, geomorphology, and exhumation history of the Apsheron Peninsula and Yasamal and Kirmaky anticlines using GIS, apatite U-Th-He and fission-track thermochronology, and  $^{10}\text{Be}$  and  $^{26}\text{Cl}$  surface exposure dating. With GIS (digital elevation models, Google Earth, aerial photos, and digital geologic maps), we investigated the morphology, gradients, and relative timing of streams flanking and crossing these two anticlines and how they vary along, across, and between the two structures. Drainage density varies systematically along and across the Yasamal anticline. The higher drainage density of streams on the eastern flank of the anticline may be associated with steeper surface slopes and/or steeper bedrock dips along this flank. The systematic decrease in drainage density toward the southern fold nose probably indicates that the anticline recently propagated to the south during an older (T1) wet climate. The flanking dry Yasamal valley post-dates earlier (fold-related) streams which are left as hanging valleys on west side of Yasamal valley and east side of the Yasamal

anticline. Yasamal valley has a non-standard rectangular cross-sectional shape, trends N-S, parallel to today's prevailing winter and summer winds, and slopes southward toward the Caspian Sea. Yasamal valley appears to be wind sculpted, and likely formed during a dry period, T2, that followed T1. Kirmaky Valley appears to be a similar T2 N-S, wind-sculpted, rectangular valley. Kirmaky anticline has no T1 fold-affected streams, suggesting that it may be younger than Yasamal anticline. Results from a suite of ~30 U-Th-He, apatite fission-track samples, and several  $^{26}\text{Cl}$  and  $^{10}\text{Be}$  samples will be forthcoming; these, and links to calibrated paleoclimate records, will help us establish the absolute timing of the exhumation (unburial) of the rocks in the two Apsheron anticlines and that of the wet/dry climate cycles that helped sculpt the landscapes of the Apsheron peninsula.

**Liebig, Jennifer**

October – December FY13

American Geophysical Union (AGU) Fall Meeting

"Community Change in Long-term Vegetation Monitoring Sites in Northern Alaska"

Vegetation in the Arctic is changing in response to global climate change. Warming in high latitudes has been documented and is expected to continue. With data from sites established in the mid-1990s, we can predict how Arctic vegetation will continue to change using observed changes from both ambient and experimental warming. The four sites are in northern Alaska, where there is a wet meadow site and a dry heath site in Barrow ( $71^{\circ}17'24.43''\text{N}$   $156^{\circ}45'25.93''\text{W}$ ) and a wet meadow site and a dry heath site in and in Atkasuk ( $70^{\circ}28'40''\text{N}$   $157^{\circ}25'25.3''\text{W}$ ). Each consists of 24 experimental plots warmed by passive open-topped warming chambers and 24 control plots. The cover of plant species was sampled using a point-frame method four times from the establishment of the sites until the most recent sampling in 2012. The change in cover in response to warming was assessed individually for each species. These data were then lumped into different grouping schemes based on traits that could potentially be used to predict response. A two-way ANOVA was used to compare difference in cover among groups between the warmed and control plots. If the groups within a grouping scheme responded significantly differently to the warming treatment (i.e., there was an interaction between warming treatment

and grouping scheme), then that grouping scheme was considered useful for predicting change in tundra communities. Of the grouping schemes used for this analysis, some were based on geographic distribution, such as distribution zones defined by Young 1971, some were based on phenology of the species, such date of flower opening as observed in these sites, and some were based on other morphological and life history traits, such as the wintering state of buds as defined by Sørensen 1971. Overall, the response to warming by species with particular traits varied from site to site, as did the usefulness of an individual grouping scheme. The observed changes may be driven by the increase or decrease in cover of a few abundant species, *Carex aquatilis* in particular. These grouping schemes are useful for increasing our understanding of how and why community composition is changing; however, a more complex grouping system that combines different traits is needed to more fully understand and better predict the response of Arctic plant species to warming.

### **Lund, Andrew**

October – December FY13

92nd Anniversary Meeting of the Classical Association of the Middle West and South (CAMWS) Southern Section

"Power, Presages, and Portrayal: Suetonius' Representation of Livia"

Soon after her marriage to Octavian, Livia Drusilla received a *présage* foretelling his sovereignty: an eagle dropped into Livias lap a white hen clutching a laurel sprig in its beak. (A *présage* is an all-inclusive term that Vigourt uses to describe any and all types of divination, including omens, portents, and prodigies [2001: *passim*; Nice 2003].) This *présage*, however, brings to mind a number of striking similarities between the Livia story and another eagle *présage* this time on the part of Tanaquil, foretelling Lucumos supreme power (Liv. 1.34.8-9). Whereas Livy depicts Tanaquil as an overly assertive and power-hungry manipulator of men, going so far as to hide the death of her husband so as to ensure that Servius Tullius would become king (1.41.1-7), Suetonius portrait of Livia ( Galb. 1) stands out for its comparatively benign treatment of the empress. What is more, Livias hiding the death of her husband so as to ensure the succession of Tiberius a connection to Tanaquil which has not gone unnoticed (e.g.

Rutland 1978; Bauman 1994) is noticeably absent from the *De Vita Caesarum*. I argue, then, that while Livia's eagle *présage* brings to mind the specter of a woman in power, Suetonius does not portray Livia as the menacing threat that is Livy's Tanaquil. Instead, he diminishes this threat by detailing Livia's divinatory prowess, by using language and rhetorical strategy to distance Livia from the realm of politics, and through the simple though effective use of precedent.

While scholars have noted a connection between the tales of Suetonius and Livy (e.g. Flory 1989; Murison 1992; Reeder 1997), less attention has been paid to the role of Livia in the story of her eagle *présage*. Inasmuch as [w]omen did not divine nor did amateurs make prophecies without the assistance of a professional seer (Ogilvie 1978 [1965]: 144, following Enkling 1959: 78), Livia acts in an unconventional way. She does not seek priests for guidance and explanation as would have been expected (e.g. North 2006 [2000]: 27-8) but instead acts independently. Moreover, by reading this strange event as a *présage*, we may take into consideration the Roman belief that *présages* were expected to be sent to the person in the best position and with the greatest responsibility to act upon the message, that is, the person with the most real power and influence (Ripat 2006: 159). Livia in Suetonius' account, not a priest or a magistrate, had the requisite power and influence to act upon the *présage*.

Present in both narratives, then, is the specter of a woman exercising power. The two episodes signal just how much power Livia and Tanaquil wield, a power which contributes to the varying accounts of Livia's eagle *présage* in Pliny the Elder (HN 15.136-37), Suetonius (Galb. 1), and Cassius Dio (48.52.3-4). Suetonius' version, however, stands out for its comparatively benign treatment of Livia, providing us with a rather different glimpse of Livia than do Dio and Pliny. Suetonius achieves this by distancing Livia from politics (it was the Caesars, and not Livia, who began the imperial custom of wearing laurel crowns from the grove [Galb. 1]), and through simple precedent: Livia was not the first woman to receive and interpret an eagle *présage*, and is therefore not so transgressive.

Scholars have noted that Suetonius did document carefully his assertions when he wanted to call authors to account for inaccuracies (Hurley 2001: 9). By diminishing the negative connotations of the Tanaquil story through his portrayal of Livia, then, Suetonius may well have been trying to

correct what he saw as a misrepresentation of Livia: Livia is no Tanaquil. Instead, Suetonius Livia, quite unlike Livys Tanaquil, uses her religious and divinatory prowess in a way that does not threaten male authority.

**Maodush-Pitzer, Nicholas**

October – December FY13

Association for the Advancement of Sustainability in Higher Education (AASHE) 2012:

Investing in the Future

"Sustainable Impact: The Challenges of Creating Courses on Food, Food Systems, and Food Justice to Empower Students to Action"

When looking to de-silo the often-segregated, triple-bottom line of sustainability, food seems the ideal course subject to broaden understanding. The class was formulated with a three-tiered structure where our food comes from, the choices we make, and the waste and excess the class was designed to explore food systems locally, regional, nationally, and globally; and investigated the environmental, economical, and cultural aspect of each of the three areas. Over the course of two semesters, these students began to see the Herculean tasks involved with understanding our food systems. From readings to dialogues, from projects to papers, from watching films to cooking meals, the class attempted to explore an enormous range of issues. Engaging with traditional in-class lectures, service-learning activities, movie nights, and cooking together; high-impact practices and experiential learning were pivotal to the methodology and success of the course as was the active partnership with the university's sustainability office. From the impact on their diet, to the way they handle waste, to their greater involvement with sustainability initiatives both on and off campus, this class engaged students both in and out of the classroom and had a campus-wide impact. This presentation openly discusses all aspects good, bad, and ugly of this incredible journey from the perspectives of the faculty member that envisioned the course, the students who took it, and the sustainability project manager that facilitated a variety of opportunities, in hopes that others will develop similar courses to move toward a more sustainable future.

**Martin, Alynn**

October – December FY13

North American Symposium on Bat Research

**"A Comparison of DNA Yields from Different Tissue Types and Storage Media"**

Preserved tissues provide a wealth of genetic information that can be revisited by researchers, but the quality of the DNA in preserved tissue is affected by the method and conditions under which it is preserved. Due to sampling location climate and logistics, tissue preservation methods are often limited. While tissue and storage media type may impact the extent to which DNA degrades, the relative efficacy of commonly-used storage media has never been directly tested. We analyzed differences in DNA yield for wing tissue preserved in three media: ethanol, dimethyl sulfoxide (DMSO), and silica gel desiccant. DNA extraction yield was also compared for different types of non-lethally sampled tissues: buccal swabs and wing punches. We found that wing tissues preserved in silica gel yield significantly more total DNA ( $\mu\text{g}/\mu\text{L}$ ) than in DMSO ( $P = 0.032$ ) or ethanol ( $P = 0.029$ ), and wing punches yield more total DNA than buccal swabs ( $P = 3.332 \times 10^{-7}$ ). Additionally, qPCR was used to determine which tissue type and preservation methods yielded the highest quality bat DNA. These results demonstrate that choices in sampled tissue and storage media type can have significant impacts on the quantity and quality of DNA obtained from genetic samples.

**McCann, Joanna**

October – December FY13

American Urogynecologic Society (AUGS) 33rd Annual Scientific Meeting

**Objectives:** Robotic-Assisted Sacrocolpopexy (RSC) is gaining popularity as an alternative to open abdominal sacrocolpopexy. The purpose of this study was to evaluate intraoperative and postoperative complications of RSC performed by a single operator.

**Materials and Methods:** This was a retrospective study involving a review of 211 patients who underwent RSC between October 2007 and February 2012 in a community hospital.

**Results:** Two hundred and eleven patients underwent RSC for advanced pelvic organ prolapse stage 3 (135 patients) and stage 4 (76 patients). Patients had a mean age of 63.79 (range 39-83) years and mean BMI of 27.60 (SD 3.99). One hundred forty-eight (77%) had previous abdominal surgery. Two hundred six patients (98%) were treated concomitantly with the following procedures: supracervical hysterectomy in 97 (46%), total hysterectomy in one (0.5%), bilateral, right or left oophorectomy in 127 (60%), and lysis of adhesions in 142 (68%). There were three patients (1.5%) who were converted to an open abdominal procedure; two had extensive adhesions and one had a difficult pre-sacral space. Intra-operative complications included one patient (0.5%) who had a cystotomy and was converted to open abdominal. There were no ureter, rectal, small bowel, or major vessel injuries and no blood transfusions. Cystoscopy was routinely performed. Postoperative complications occurred in five patients (2.3%) which included the following: one mesh erosion, one patient developed subcutaneous emphysema, one patient developed post-operative mesh infection, one patient with back pain (discitis), and one patient readmitted with ileus herniated small bowel. Mean operative time was 157.69 (SD 32) minutes and mean length of stay was 24 (SD 4.58) hours.

**Conclusions:** RSC is a newly evolved procedure for pelvic organ prolapse repair. It is a feasible and safe procedure with minimal intraoperative and postoperative complication rates when performed by a single surgeon.

### **McDonald, Hollie**

October – December FY13

National Conference of Peer Tutoring in Writing

"Writing Center's Role In Freshmen Preparedness"

As a writing consultant at Grand Valley State University, I will present my research on the writing centers role in student preparedness. The focus of the research was freshman in required composition classes. At Grand Valley State University, there is one required writing course,



which all students must pass before graduation. The vast majority of students take this course their first year. This course requires students to submit a portfolio of three essays at the end of the semester. This past semester, I noticed an increased number of freshman composition students visiting the writing center in the first few weeks of the semester, long before their papers were due. This led to the question: Is the role of the writing center changing, and is it helping students be more proactive and prepared with their coursework?

To explore this topic, I examined the session notes filled out at the end of every consultation. My research spanned six semesters, and I will present the trends that arose, or changed, within the first five weeks of the semesters. I will address the specific topics of focus for the consultations, and present on the changes that have occurred over the semesters researched. I will relay any patterns I find in the research to the session attendees; however, it will not be one sided. I intend to open the floor for discussion between fellow consultants, writing center directors and other attendees.

**Miller, Jessica**

October – December FY13

National Conference of Peer Tutoring in Writing

"I Demand Euphoria! When Good Isn't Good Enough: Felt Sense in the Writing Center"

The theory of felt sense challenges the practice of tutoring on writing as a product, refocusing the central concern of the tutorial on students interactions with their pieces. Felt sense is the bodily sensation that writers experience throughout the writing process that guides their writing decisions. Based on our findings, we will offer new tutoring techniques and strategies that will allow consultants to better aid students in developing a felt sense in their writing processes. Beginning with the pioneering research of Sondra Perl, we will transition into our primary research findings, which are drawn from personal interviews with professional writers from Grand Valley State University and observations of consultations within the Frederik Meijer Center for Writing and Michigan Authors. After presenting our research, we will hold an open discussion for participants to share their experiences with felt sense while also allowing time for

them to ask us any questions. We will also provide them with a handout of the tutoring techniques and strategies we discovered to leave them with ways our research can be used practically within their own writing centers. We hope participants will leave this session with a strong understanding of felt sense theory and applicable, engaging strategies for guiding student writers to develop a felt sense for their writing process.

**Orttenburger, Marie**

October – December FY13

National Conference of Peer Tutoring in Writing

"We Can Go All Night: Supporting students and fostering community during the Long Night Against Procrastination"

Continuing work begun by several European writing centers, our university hosted a Long Night Against Procrastination in 2012. The event supported students while promoting services and a community of writers. This presentation covers the logistics of planning a similar event as well as the programmatic.

**Pankow, Sarah**

October – December FY13

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Conclusions: RSC is a newly evolved procedure for pelvic organ prolapse repair. It is a

feasible and safe procedure with minimal intraoperative and postoperative complication rates when performed by a single surgeon.

### **Parker, Thomas**

October – December FY13

Meaningful Play 2012

"Accessorized Therapeutic Game Experiences for Tablets"

In the world of physical therapy, a number of consumer gaming devices have been used with various levels of success. Most commercially available video games are designed for the general population and are, in most cases, overwhelming and difficult for traumatic brain injury (TBI) or stroke patients to use. Specialized therapeutic medical devices are not only expensive and non-portable, they also make limited use of gamification techniques to better engage and motivate the patient. This paper examines the use of inexpensive, portable handheld devices, together with a custom sensor accessory in order to drive a set of therapist designed and configured, short video

games. Games have been designed that are intended to elicit specific therapeutic movements from the patient, are customizable by the therapist for a given patients needs, and also produce clinical output for the therapists to use. The games have been evaluated in clinics by physical therapists who treat TBI patients, and the results indicate our approach addresses the shortcomings therapists have experienced with prior attempts at gamification in physical therapy. Moreover, game controllability by the therapist has been identified as a key component in successfully gamifying treatment of TBI patients as it allows the therapist to customize the game experience to suit a patients individual needs.

**Ringerwole, Neal**

October – December FY13

2012 Geological Society of America (GSA) Annual Meeting and Exposition

"New Pliocene Paleomagnetic Constraint on Tobago's Rotation History"

We present results continuing previous paleomagnetic work on the rotational history of Tobago. Earlier published paleomagnetic work showed that Tobago has experienced approximately 90° of clockwise, finite, vertical axis rotation since the Albian (108 Ma), however, an incremental rotation history is still lacking. The goal of our work is to incorporate newly acquired paleomagnetic data from the Pliocene Rockley Bay Formation, exposed in south Tobago. The Pliocene of Tobago is unstudied from a paleomagnetic perspective. The Rockly Bay Formation is of the right age (2-5Ma) to add a younger constraint to the earlier published work. This muddy, fossiliferous, marine carbonate has a relatively stable, low-coercivity, magnetic remanence. We collected paleomagnetic data from three large, oriented hand specimens, by producing 35 core plugs that were analyzed using AF-demagnetization, thermal demagnetization, and then tested for susceptibility. Following AF-demagnetization, the Bingham average paleomagnetic poles for each of the large sample are 359.6°, 21.4°; 351.7°, 21.3°; and 357.5°, 25.8°. The magnetic mineralogy of the Rockley Bay Formation is likely characterized by primarily pseudo-single-domain magnetite with an added component of an antiferromagnetism, which is likely due to hematite, goethite, or possibly mixtures of the two. A thermal susceptibility bridge was also used to determine mineralogy, however, unexpected thermo-

chemical alterations observed during the heating and cooling rendered these tests inconclusive. Additional chemical tests (dissolution, XRD, SEM) are in progress. These results suggest that Rockley Bay Formation carbonates we collected carry a primary magnetization that shows that Tobagos bulk tectonic rotation ceased by the Pliocene (2-5 Ma). This could have resulted from the late Neogene change from oblique convergence to dextral transform motion the Caribbean-South American plate boundary.

**Sawyer, Garrett**

October – December FY13

National Women's Studies Association 2012 Conference: Feminism Unbound: Imagining a Feminist Future

"Social Networks as Virtual Outreach: The It Gets Better Project and Experiences of LGBTQ Youth"

This project focuses on how the It Gets Better Project utilizes social networks constructively to help LGBTQ youth facing harassment, bullying, and rejection. Through audio and visual content analysis, the study examines themes and messages of It Gets Better Project videos, distinguishing between messages made by LGBTQ contributors and those made by allies. Preliminary research indicates LGBTQ contributors focus more directly on homophobic bullying, often including emotional personal coming out stories, while allies use bullying in broader contexts. This research provides a critical lens for analyzing the impact of social networking to a contemporary issue.

**Shultz, Aaron**

October – December FY13

"Desire and Attachment: Finding Union With God"

Southern Illinois University Edwardsville Undergraduate Philosophy Conference

No Abstract.

**Singh, Shambhavi**

October – December FY13

2012 American Society of Cell Biology (ASCB) Annual Meeting

"Identifying a regulatory role for the tumor metastasis suppressor gene KAI1/CD82 in metastatic prostate cancer cell lines"

KAI1/CD82, a metastasis prostate tumor suppressor gene expression is lost when the cancer progresses from a primary to a metastatic stage. CD82 has also been shown to be down-regulated in cancers of the gastrointestinal tract, colon, cervix, breast, lung, pancreas, skin, thyroid and liver etc. As a member of the tetraspanin family of proteins, CD82 interacts with proteins and may act as a master regulator of membrane organization at the cell surface. Even though some of the interacting proteins have been identified, the significance of these associations and its role in metastasis prevention is unclear. By reintroducing CD82 into highly metastatic prostate cells (PC3), we have shown CD82 to regulate c-Met (phosphorylation) and activation. Currently we are focused on studying the exact mechanism by which CD82 regulates c-Met. CD82 does not seem to associate with c-Met nor does it seem to down-regulate c-Met. Preliminary indications are that as a tetraspanin and thus as a molecular organizer it may be redistributing c-Met on the cell surface. It is also highly possible that it may bring a c-Met specific phosphatase (such as DEP-1) to the surface to dephosphorylate and deactivate c-Met. We are currently exploring both possibilities. Even though we have identified c-Met protein to be regulated by CD82, we have reason to believe that there may be more proteins regulated by CD82. Microarray studies done on CD82 (+/-), on both tumor and normal prostate cells suggests that CD82 may be regulating genes involved in cell cycle, growth, and metastatic suppression. To validate the results, we have utilized Q-PCR assays, investigating genes specifically involved in metastasis suppression and growth. These genes include: CXCR4, CXCR7, RUNX3, TFF-3, and MMP10. CXCR4 and CXCR7 are chemokine receptors, RUNX3, a tumor suppressor gene, and MMP10, which encodes the matrix metalloproteinase 10 needed for invasion and continuation of metastasis. Two of the genes involved in metastasis (TFF-3, RUNX-3) have been quantified and the data correlates with the microarray data. MMP10, CXCR4, and CXCR7 are currently being validated.

Identifying the proteins regulated by CD82 and deciphering the downstream signaling mechanisms involved in this regulation is the focus of our future studies.

**Stokosa, Allyson**

October – December FY13

Premier Michigan Public Health Conference

"Collegiate Service Learning through International Partnership-GVSU and the Philippines"

No Abstract.

**Stoyka, Lindsay**

October – December FY13

National Conference of Peer Tutoring in Writing

"I Demand Euphoria! When Good Isn't Good Enough: Felt Sense in the Writing Center"

The theory of felt sense challenges the practice of tutoring on writing as a product, refocusing the central concern of the tutorial on students interactions with their pieces. Felt sense is the bodily sensation that writers experience throughout the writing process that guides their writing decisions. Based on our findings, we will offer new tutoring techniques and strategies that will allow consultants to better aid students in developing a felt sense in their writing processes. Beginning with the pioneering research of Sondra Perl, we will transition into our primary research findings, which are drawn from personal interviews with professional writers from Grand Valley State University and observations of consultations within the Frederik Meijer Center for Writing and Michigan Authors. After presenting our research, we will hold an open discussion for participants to share their experiences with felt sense while also allowing time for them to ask us any questions. We will also provide them with a handout of the tutoring techniques and strategies we discovered to leave them with ways our research can be used practically within their own writing centers. We hope participants will leave this session with a

strong understanding of felt sense theory and applicable, engaging strategies for guiding student writers to develop a felt sense for their writing process.

**Theuerkauf, Drew**

October – December FY13

American Urogynecologic Society (AUGS) 33rd Annual Scientific Meeting

"Robotic-Assisted Sacrocolpopexy: A Retrospective Review of 211 Cases"

Objectives: Robotic-Assisted Sacrocolpopexy (RSC) is gaining popularity as an alternative to open abdominal sacrocolpopexy. The purpose of this study was to evaluate intraoperative and postoperative complications of RSC performed by a single operator.

Materials and Methods: This was a retrospective study involving a review of 211 patients who underwent RSC between October 2007 and February 2012 in a community hospital.

Results: Two hundred and eleven patients underwent RSC for advanced pelvic organ prolapse stage 3 (135 patients) and stage 4 (76 patients). Patients had a mean age of 63.79 (range 39-83) years and mean BMI of 27.60 (SD 3.99). One hundred forty-eight (77%) had previous abdominal surgery. Two hundred six patients (98%) were treated concomitantly with the following procedures: supracervical hysterectomy in 97 (46%), total hysterectomy in one (0.5%), bilateral, right or left oophorectomy in 127 (60%), and lysis of adhesions in 142 (68%). There were three patients (1.5%) who were converted to an open abdominal procedure; two had extensive adhesions and one had a difficult pre-sacral space. Intra-operative complications included one patient (0.5%) who had a cystotomy and was converted to open abdominal. There were no ureter, rectal, small bowel, or major vessel injuries and no blood transfusions. Cystoscopy was routinely performed. Postoperative complications occurred in five patients (2.3%) which included the following: one mesh erosion, one patient developed subcutaneous emphysema, one patient developed post-operative mesh infection, one patient with back pain (discitis), and one patient readmitted with ileus herniated small bowel. Mean operative time was 157.69 (SD 32) minutes and mean length of stay was 24 (SD 4.58) hours.



Conclusions: RSC is a newly evolved procedure for pelvic organ prolapse repair. It is a feasible and safe procedure with minimal intraoperative and postoperative complication rates when performed by a single surgeon.

**Urban, Anna**

October – December FY13

Premier Michigan Public Health Conference

"Collegiate Service Learning through International Partnership-GVSU and the Philippines"

No Abstract.

**Waite, Molly**

October – December FY13

National Conference of Peer Tutoring in Writing

"The Cursing Consultant: The Role of Profanity in Writing Centers"

This presentation will explore the positive and negative ways vulgarity functions within the writing center. Profanity is generally viewed as unprofessional and is avoided, but it can play a role in establishing rapport between peers and explaining topics unhindered by the confines of professional discourse.

**Worm, Anna**

October – December FY13

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