The Society of Undergraduate Research, Scholarly and Creative Activity presents

The Fall Gala

Tuesday, December 3, 2013
5:30-7:30 PM
Riverview Ballroom, UC

UNIVERSITY OF WISCONSIN River Falls
Fall Gala
Riverview Ballroom, University Center
December 3, 2013

The Fall Gala is our annual fall showcase event to celebrate the research, scholarly, and creative activity of UWRF students. Students from all areas of study present their work through posters, art and science displays, short films, and PowerPoint or Prezi presentations. All members of the UWRF campus and local business communities, including families and alumni are invited to attend and enjoy light refreshments while viewing the wonderful undergraduate research that is happening at UWRF.

SURSCA would like to thank the UWRF Office of Alumni Relations for sponsoring the Falcon Foods meat and cheese trays for the Fall Gala.

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Small Scale Hops Thresher
Poster

Presenters: Alexander J. Yost, William Larson, and Mark Serier

Authors: Alexander J. Yost, William Larson, and Mark Serier

Faculty Mentors: Dr. Joe Shakal, Ag. Engineering Technology; Dr. Joel Peterson, Ag. Engineering Technology; Dr. Dean Olson, Ag. Engineering Technology; Dr. Veronica Justen, Plant and Earth Science

In the fall of 2012, Dr. Veronica Justen approached the Agricultural Engineering Technology department in the hopes that the seminar students could build her a small scale hops thresher for use on campus, by her and local growers. The team has designed and built a prototype thresher and it will be implemented during the growing season of 2014.

Foraging Effects of Northern pike (Esox lucius) on Yellow Perch (Perca flavescens) and Sunfish (Lepomis spp.) Population
Poster

Presenter and Author: Chao Xiong

Faculty Mentor: Anne Timm - U.S. Forest Service

Northern pikes, Esox Lucius, are a well-known predator species amongst freshwater fishes. They are a top down predator that uses a sit and wait hunting method. Since they are consider a top predator, in a many cases pike can altered prey species
population in a community (Paukert and Willis 2003). By using a sit and wait hunting method, pikes needs to be in a habitat where there is a lot of cover. Studies have shown that they tend to have the best foraging rate when using intermediate vegetation cover as their hunting ground (Savino and Stein 1989). This study examines prey species population dynamics within habitats with intermediate vegetation density (50% to 75%) and habitats that does not have intermediate vegetation density. Sizes of prey species were also measured and considered during data analysis. The two prey species that were used in this experiment are the yellow perch, Perca flavescens, and sunfishes, Lepomis spp. Standard trap nets were used to sample prey species. Three lakes in northern Minnesota were sampled. The hypothesis of this study is to show that prey counts of yellow perch and bluegill, 80mm to 130mm size class, will be the lowest in 50 to 75 percent aquatic vegetation cover, assuming that northern pikes are the main factor affecting the prey counts. The results shows that there is a correlation between sunfish population and vegetation density that in part support the hypothesis. However, the dynamics of the perch population does not support the hypothesis. This study is significant because it can help narrow down the factors that limit certain fish species in a community.

**Soil Compaction Before and After Wisconsin Farm Technology Days**

Poster

Presenter: David Gallagher

Authors: David Gallagher and Dr. Holly Dolliver

Faculty Mentor: Dr. Holly Dolliver, Plant and Earth Science

My project was on the soil compaction at the Wisconsin Farm Technology grounds. They were held in Dallas, WI and features roughly 40,000 visitors over the course of three days.
Implications of Land-Use Change on Soil Organic Carbon in Western Wisconsin

Poster

Presenter: Jabez Meulemans

Authors: Jabez Meulemans and Dr. Holly Dolliver

Faculty Mentor: Dr. Holly Dolliver, Plant and Earth Science

The largest pool of actively cycling carbon (C) in terrestrial ecosystems is soil. Organic C enters the soil in the form of soil organic matter through the process of photosynthesis and humification. Anthropogenic land-use change has caused an imbalance in the natural cycle and storage of soil organic carbon (SOC), resulting in a substantial increase in the transfer of C from the soil to the atmosphere in the form of CO2—a contributing factor to global climate change. The objective of this study was to examine the extent of alteration to SOC stocks due to land-use change from native ecosystems to agricultural cultivation at a scale locally relevant to Western Wisconsin (USA). Paired disturbed and undisturbed soil cores were collected to a depth of 100 cm. Soil physical properties and C content were measured and statistically analyzed. Land-use change resulted in a decline in total C in the county’s soils by 43%. Further, the potential for C sequestration in the county’s agricultural soils was examined for economic opportunity in a speculative C market.

The Comparison of Short-Term Aging on Gouda Cheese

Poster

Presenter and Author: Josey Pukrop

Faculty Mentor: Michelle Farner, Animal and Food Science
For this project, I made two batches of Gouda cheese and aged them for different amounts of time. The poster outlines the differences between the two cheese due to aging time. It also looks at the history of Gouda cheese, and the display will provide a comparison to store-bought Gouda cheese.

**Season Extension of Vegetable Production Using High Tunnels**

Poster

Presenter: Karen Gjelhaug

Authors: Dr. Veronica Justen and Karen Gjelhaug

Faculty Mentor: Dr. Veronica Justen, Plant and Earth Science

Considering the very short growing window of our region it is vital that we look to methods of extending our growing and harvesting season to maximize profitability of local vegetable growers. Season extension through the use of high tunnel production could increase the duration of our growing season, which in turn could contribute to higher yields, and longer periods of harvesting. The objective of our two-year trial is to compare the performance of leafy greens and tomato cultivars grown in high tunnels as compared to open field production. Duplicate trials were established in a 30 foot by 48 foot high tunnel and adjacent open field plot on the UW-River Falls Lab Farm in 2012 and 2013. The following data will be presented from both years of the study: fresh weight yield, days to harvest, harvest date, and sugars (Total Dissolved Solids; %TDS).

**Observations for the First Year of the Student Garden**

Poster

Presenter: Karen Gjelhaug
Authors: Dr. Loretta Ortiz-Ribbing, Dr. Veronica Justen, and Karen Gjelhaug

Faculty Mentor: Dr. Loretta Ortiz-Ribbing, Plant and Earth Science and Dr. Veronica Justen, Plant and Earth Science

The Student Alliance for Local and Sustainable Agriculture (SALSA) is a new club on campus whose mission is to promote the principles of sustainability in agriculture on campus for students, faculty, and the River Falls community. In 2013 the club obtained a 21 foot by 54 foot garden plot in the Outdoor Teaching Plots just south of the UWRF Amphitheater in order to grow vegetables to be made available to the campus. The objective of the first year was to determine best weed management practices, planting rates, and to achieve a late harvest date to coincide with the return of students to campus. Observational data on growth, yield, and management practices of tomatoes, mild and hot peppers, onions, and garlic as well as future goals of the student garden will be presented.

*Fecal score evaluations of pre-weaned dairy calves in group housing.*

Poster

Presenter: Morgan Kittell

Authors: Morgan M. Kittell and Dr. Sylvia Kehoe

Faculty Mentor: Dr. Sylvia Kehoe, Animal and Food Science

Group housing for pre-weaned dairy calves has gained popularity among farmers because it reduces time, labor, and money. For dairy calf managers, a common method of identifying a sick calf is the fecal score test. One of the benefits of having group housing is automatic feeders, which reduces labor and allows increased milk intake. However, this increase causes an increase in fecal score,
sometimes without the compromise of the calf’s health. The purpose of this study was to evaluate fecal score of pre-weaned dairy calves in group housing. This was our conclusion: in group housing, increased milk intake will result in higher fecal scores, which means a dairy manager will not be able to recognize sick calves on fecal score. Additional research is needed to identify effective methods for identifying sick calves in group housing with increased milk intake.

**Cheese Project: Fresh Mozzarella in Brine**

Poster

Presenter and Author: Sarah Fuchs

Faculty Mentor: Michelle Farner, Animal and Food Science

For this project, I was given the opportunity to investigate cheeses and invent a new one. Sample the cheese that I investigated, Fresh Mozzarella in Brine.

**Influence of corn silage as an additional feed option on rumen development in dairy calves**

Poster

Presenter: Stacy Retz


Faculty Mentor: Dr. Sylvia Kehoe, Animal and Food Science

Across Wisconsin, cow calf producers have dietary regimes in place that do not provide their young stock with adequate
nutrition, however, this may lead to poor rumen development and poor overall calf health or diarrhea which is a major cause of death. The objective of this trial was to quantify calf health using a set of biometrics that is used in the cattle industry to assess the overall effects of feedstock on calves over the course of their developmental cycle. Nine bull calves were raised in groups of three at different times at the University of Wisconsin Madison lab farm and were fed one of the three treatments for eight weeks. All treatments used pasteurized milk with either all calf starter (C) (CONTROL), 40% corn silage and 60% calf starter (CC), or all corn silage (CS). Three calves, one from each treatment, were slaughtered at a time at approximately 8 weeks of age. The calves’ rumen’s were collected and 3 samples from four areas within the rumen were taken; left side caudal dorsal sac(LB), right side caudal dorsal sac(RB), right side cranial ventral sac(RD) and left side cranial ventral sac(LD). Twelve papillae per sample were randomly measured for length and width. Concentration was observed as well as the rumen wall width. Results show there was no significant difference between areas within the stomach per treatment. Mean papillae lengths were significantly longer for C compared with the other two treatments while CS was significantly longer than CC (9.3, 7.5, and 3.9 for C, CS, and CC respectively). Mean papillae widths were also significantly longer for C compared to the others, while CS were significantly longer than CC as well (2.9, 2.5, and 1.5 for C, CS, and CC respectively). Papillae concentrations were significantly greater for CC and CS compared to C (50.2, 48.7, and 42.3 for CC, CS, and C respectively). Rumen wall thickness was not significantly different between treatments. These results indicate that calf starter may encourage the most ruminant development in calves when compared to corn silage options. However a strict corn silage diet may encourage more ruminant development than a mixture of the two.
Cheese Project: Havarti
Poster

Presenter and Author: Vanessa Freeman

Faculty Mentor: Michelle Farner, Animal and Food Science

For this project, I was given the opportunity to investigate cheeses and invent a new one. Sample the cheese that I investigated, Havarti.
Learning a Language in Two Weeks: Feasible or Impossible?
Poster

Presenter and Author: Amara Treuenfels

Faculty Mentor: Dr. Douglas Margolis, English and Kenneth Stofferahn, Communication Studies and Theatre Arts

It is commonly assumed that acquiring a second or foreign language requires intense dedication and concentration. Students spend years studying a foreign language, with no real world application. If a student is immersed within the language of study, is the learning curve shortened? How much of a language can one master in a very short amount of time? By traveling Europe for three months, this inquisition was tested. One university student immersed herself in multiple European languages with very little previous knowledge. During the study, she was able to acquire basic tourist language comprehension. By keeping a journal, using vocal recordings, and recording responses her success was proven.

Keywords: L1, L2, immersion, acquisition

Detecting Phroid Fly DNA in Honey Bees through PCR
Poster

Presenters: Kyle Karien, Mark Martinez, Sam Barton, Ted Cummins, and Zach Demoulin

Authors: Kyle Karien, Mark Martinez, Sam Barton, Ted Cummins, Zach Demoulin, Adam Groth, Dr. Kim Mogen, and Dr. Brad Mogen
Faculty Mentor: Dr. Kim Mogen, Biology and Dr. Brad Mogen, Biology

The honey bee, Apis mellifera, is valued for its honey but more importantly for its ability to pollinate the wide variety of agricultural plants we use for food [1]. There has been a staggering world-wide decline in the population of honey bees and other native pollinators. Scientists have yet to determine a single cause for the decline in honey bee population that has become known as Colony Collapse Disorder (CCD). Although progress has been made since its discovery in 2006, no definite cause, or causes have been found that explain CCD. A new parasite of honey bees, Apocephalus borealis, was recently discovered and may be a contributor to CCD. DNA was isolated from honey bees collected from local Wisconsin apiaries and was analyzed using PCR primers designed to detect the presence of Apocephalus borealis DNA. No evidence of parasitism was found in the local bee population.

**Micah Riter Show: Short Documentary Film**
Short Film

Presenter and Author: Alec Philippi

Faculty Mentor: Erik Johnson, Communication Studies and Theatre Arts

A short documentary film about my friend Micah Riter who has an intellectual disability. The film focuses more on Micah's many talents and abilities rather than his disability.

**Rodina**
Art work

Presenter and Author: Alex Mahler
Faculty Mentor: Heather Delisle, Art

My project is a copper etch plate. The image is an anchor that has the word "Rodina" over lapping the anchor. Rodina means family in Czech. I choose that word because my family roots trace from Czechoslovakia.

**Reversible Neuronal and Muscular Toxicity of Caffeine in Developing Zebrafish Embryos**

Poster

Presenter: Alex Rueber

Authors: Dr. Cheng-chen Huang, Rufino Rodriguez, and Alex Rueber

Faculty Mentor: Dr. Cheng-Chen Huang, Biology

To study the effect of caffeine toxicity on the neuronal and muscular system in developing zebrafish embryos and to screen for potential caffeine detoxifiers.

**Blue Notebook, Red Face**

Art work

Presenter and Author: Alicia Gensch

Faculty Mentor: Bernice Ficek-Swenson, Art

I think of my artwork as journal entries – a look into the life of a young person growing in the 21st century. The emotions and life changing events that shape someone for the rest of their life – anxiety, family and marital disputes, death, self-loathing and the irony of it all. I pull from automatic writing and scribbled notes on
scraps of papers. The writing is an honest interpretation of the world I have seen, and the way I feel about others and myself.

The figures are self-portraits in nature, but are meant to be standing in for anyone who identifies with the writing. I have always had an affinity for embroidery and stitching, and these little details allows for my own hand to be connected with the works. After the print is finished and the ink is dry, I continue to add myself to the work with delicate colored thread. I accent words and play with rhythm of how we speak while the eye follows the flow of line work in the faces.

The sensitivity of line, word and color all play a central role in my work – as does the delicate nature of reading a diary.

The Hidden Minority: An Exploration of the Disability Experience in the United States

PowerPoint presentation

Presenter and Author: Amy Roth

Faculty Mentor: Dr. Kathleen Hunzer, English

While race, ethnicity, gender, and sexual orientation are now familiar topics in undergraduate classrooms, the field of Disability Studies is still relatively unexplored territory; as such, it is often overlooked in discussions of minority rights and the value of diversity in the United States. The purpose of this project is to raise awareness and understanding of the societal barriers faced by people with disabilities, both in a historical and contemporary context. Particular attention is paid to the rise of disability civil rights movements in the United States as well as the effects of the Americans with Disabilities Act (ADA). The research covers a variety of conditions, including Cerebral Palsy, spinal cord injury, Autism, hearing and visual impairment, and learning disabilities. Drawing upon both personal memoirs and historical sources, this
research highlights the pursuit of legal and social equality and the battles fought by people with disabilities for basic human rights.

**Additives Consumed**  
Art work

Presenter and Author: Andrea Sorenson

Faculty Mentor: Lyz Wendland, Art

Food additives have been implemented in much of the food supply of the United States. American’s spend about ninety percent of their food budget on processed foods, which have been transformed in some way to contain substances. These additives improve shelf life, flavoring, coloring, dietary additives and transfer from packaging. There is currently 3,000 food additives approved for human consumption by the Food and Drug Administration (FDA). Chemical supplements are approved to be added to our food supply, however additives still can harm our health.

By researching the many additives in our food supply I am able to display the effects that these additives have on our bodies through visual form. Altered body forms are surrounded by the chemical makeup and items the additive consumes in my paintings.

**Effects of Chronic-Restrain Stress on Learning, Memory, and Self-Control in Rats**  
Poster

Presenters: Angela Daniels, Kelsey Eckstein, Kirstie Gabbert, Brittany Servent, and Shelby Winsted
Authors: Angela Daniels, Kelsey Eckstein, Kirstie Gabbert, Brittany Servent, and Shelby Winsted

Faculty Mentor: Dr. Daniel Linwick, Psychology

One physiological effect of stress is an increase in the level of corticosterone, which inhibits processes that occur during learning and memory (Bowman et al., 2001; Foy et al., 1987; Nooshinfar et al., 2011). Different types of stress affect physiology and behavior in different ways. Thus, when chronic restraint is used to elicit a stress response, rats display higher activity levels and fewer physical symptoms than when they are exposed to repeated shock (Bowman et al., 2003; Luine et al., 1994; Watanabe et al., 1992). Researchers have also shown that impairments induced by chronic restraint may be reversed with the passage of time. The current study assessed the effects of chronic-restraint stress on learning, memory, and self-control in male and female rats. Rats assigned to the experimental group were restrained for 6 hours per day over a 35-day period, whereas rats assigned to the control group were not restrained. Following the conclusion of the chronic-restraint period, activity levels were assessed by placing individual animals in an open-field apparatus. Spatial learning and memory were assessed by training the animals on a radial-arm-maze task. This task required rats to visit each of the eight arms of a radial maze, which were baited with food, only once. Finally, the effect of chronic-restraint stress on self-control was assessed with a delay-discounting task. Individual animals were placed in an operant chamber and presented a choice between one pellet of food after a 1-s delay (i.e., an immediate small reinforcer) and three pellets of food after a longer delay (i.e., a delayed large reinforcer). The maximum amount of time each animal was able to wait for the delayed large reinforcer was determined. Preliminary results indicate that chronic-restraint stress significantly reduced activity levels of male rats, but not female rats, in the open-field apparatus. Preliminary results also indicate that female rats assigned to the control group made progressively fewer errors in
the radial-arm maze over trials, whereas the performance of male rats assigned to this group was highly variable. The performance of both male and female rats assigned to the chronic-restraint group was also highly variable. Animals are currently being trained on the delay-discounting task. To date, male rats assigned to the control group have waited substantially longer for the delayed large reinforcer than male rats assigned to the chronic-restraint group, but the effect of chronic restraint on the waiting times of female rats appears to be negligible.

**Diversity of Deformed Wing Virus Isolates in Regional Honey Bee Apiaries**

Poster

Presenters: Ashley Fischer and Hannah Space

Authors: Ashley Fischer, Hannah Space, Dr. Karen Klyczek, and Dr. Brad Mogen

Faculty Mentors: Dr. Karen Klyczek, Biology and Dr. Brad Mogen, Biology

Honey bees are a keystone species that play a critical role in everyone’s day-to-day life, even though most don’t realize it. Approximately one third of our agricultural crops depend on honey bee pollination, amounting to economic impact of approximately $15 billion nationwide. Since 2006 there has been a major decline in the number of honey bees, which currently has no definitive cause (USDA 2008), but virus infections appear to play a central role.

Deformed wing virus (DWV), an important indicator of bee decline, is a single stranded RNA virus spread primarily by the parasitic varroa mite, Varroa destructor. It has previously been shown that a high population of varroa mites results in more virulent, but less diverse, viral populations. The objectives of our research were to evaluate the cloning procedure for DWV cDNA
fragments, sequence selected DWV cDNA clones and to compare the DWV sequences obtained from western Wisconsin honey bees to those previously published.

The polymerase chain reaction (PCR) was used to amplify a defined region of the DWV genome. Fragments were cloned into the bacterial vector pCR2.1-TOPO, and transformed into One Shot TOP10 competent bacterial cells. Colonies that grew on antibiotic-containing plates were screened by PCR to assure that they contained the correct DNA fragments. After verification, DNA sequences were purified for DNA sequencing by a facility at the University of Minnesota. Four separate clones were sequenced and the results verified they corresponded to the DWV gene. It was found there was little sequence variation between the individual clones.

**Untitled**

Art work

Presenter and Author: Bailey Marhoun

Faculty Mentor: Eoin Breadon, Art

An exploration into the world of body modification using abstract forms and mixed media to represent modifications from different cultures.

**From Portu-glish to English.**

Poster

Presenters: Bismarc Lopes da Silva, Ronaldo Silva Gomes, Talitha Soares Pereira

Authors: Bismarc Lopes da Silva, Ronaldo Silva Gomes, Talitha Soares Pereira
Faculty Mentor: Conan Kmiecik, English

For an assignment in our ESL writing course, we were asked to write anecdotes about our experience, as Brazilian students, learning and using the English language. Our poster compiles some of our best anecdotes which we will share with the Fall Gala audience.

*Analyzing Diel Behavior Patterns of Atelopus certus Tadpoles in Captivity*

Poster

Presenter: Blake Klocke

Authors: Blake Klocke, Dr. Gratwicke, Dr. Ibanez, Dr. Wheeler, and Angie Estrada

Faculty Mentors: Dr. John Wheeler, Biology; Dr. Joseph Gathman, Biology; Dr. Louis Porter, McNair Scholars Program

Developing captive husbandry protocols for amphibians that face extinction is vital to ex-situ conservation. My project set out to collect data on tadpole behavior so that survival rate of tadpoles could be increased in captivity. An infrared security camera coupled with a DVR allowed the capture of video of tadpoles throughout the cycle of one full day. Video analysis of tadpole feeding, competition, and movement was then completed.

*Introduction to the Korean education system*

Poster

Presenters: Bonghwan Kim and Yejin Kwon

Authors: Bonghwan Kim and Yejin Kwon
Faculty Mentor: Conan Kmiecik, English

We will introduce to the Korean education system. We talk about the feature of Korean education system. We separate Korean education system to 4 section. We compare public education and private education.

3D Felted Animals
Art work

Presenter and Author: Briana Olson

Faculty Mentor: Morgan Clifford, Art

My presentation will show the steps, materials and techniques needed to sculpt a 3D felt animal or creature. It will also display finished and in progress pieces of art.

Trichome Formation and its Role in Glucosinolate Metabolism
Poster

Authors: Britta Rued, Dr. Ross Jilk

Faculty Mentor: Dr. Ross Jilk, Chemistry

Glucosinolates are secondary metabolites in plants that act as essential defense compounds and play a role in thiosulfur metabolism. We hypothesized that trichome formation in Arabidopsis thaliana is linked to glucosinolate metabolism. Our hypothesis was tested by comparing glucosinolate levels in wild type and glabrous (non-producing trichome strain) A. thaliana. Glucosinolates were isolated via alkaline isolation procedure utilizing centrifugation and heating. This produced the breakdown product 1-thioglucose from the glucosinolates
present in A. thaliana, which could subsequently be measured via detection procedures based on an assay utilizing the reduction of ferricyanide and UV-Vis spectroanaylsis at 420 nm. All results were compared to a standard curve based on sinigrin. The results were also compared to Brassica oleracea and Armoracia rusticana as positive controls, and a blank with no sample as a negative control. Previous research has demonstrated the potential linkage between glucosinolate concentration and trichome formation.

**Hoe Boards**

Art work

Presenter and Author: Casey Dierks

Faculty Mentors: Dan Paulus, Art and Eion Breodon, Art

Logo and Skateboard design
Graphic Design Project

**Teratology of Xanthine Derivatives**

Poster

Presenter: Catelyn Steinmueller

Authors: Catelyn Steinmueller, Dr. David Rusterholz, and Dr. Cheng-chen Huang

Faculty Mentors: Dr. David Rusterholz, Chemistry and Dr. Cheng-chen Huang, Biology

In a society that continually increases its consumption of caffeine, the possibility of caffeine’s teratogenic effects on vertebrates is an increasingly important concern. In order to study the teratogenic effects of different substances, zebrafish embryos offer a useful model. Oviparous zebrafish embryos are useful as model
organisms due to their transparency and well-characterized organogenesis. The focus of my project is to design and synthesize derivatives of xanthines, a family of purine based compounds that includes caffeine. These new compounds will be used to test for different levels of affinity to tissues and teratogenesis in the zebrafish model organism.

After the synthesis of derivatives of xanthine, pharmacological evaluations were conducted that involved the introduction of .25mM of compound 1 (1-(4-Chlorobenzyl)-3,7-dimethyl-1H-purine-2,6-dione) and 5mM of compound 2 (1-(2-(4-Bromophenyl)-2-oxoethyl)-3,7-dimethyl-1H-purine-2,6-dione) in a well with an embryo 24 hours post-fertilization. For compound 1, the phenotype was noted two times every 6 hours after which the compound was washed from the solution at 36 hours post-fertilization. The phenotype was noted at 48 hours post-fertilization. The embryo was treated with compound 2 starting at 24 hours post-fertilization for 24 hours. The phenotype was noted at 30, 36 and 48 hours post-fertilization. The results were presented as the percent of embryos expressing teratogenic defects. These values were compared to a standard 5 mM caffeine treatment over 48 hours post-fertilization treatment.

After analyzing the compared values, Compound 1 did not have any teratogenic effects during the first 12 hours of treatment. It was noted that compound 1 showed teratogenic effects after the compound was washed away. This is different from the caffeine standard, whose embryos began to recover after the chemical was removed. Compound 3 behaved similarly to caffeine. Synthesis of additional compounds will be conducted and evaluated. It is hoped that the discovery of a potent teratogenic xanthine derivative may provide a tool for further understanding the mechanism by which such compounds cause their effects.
Aristolochic Acid (AA) is a chemical that causes heart failure in zebrafish embryos with a currently unknown toxicological mechanism. AA makes the hearts of the zebrafish small, weak, and reduces the function of the hearts low enough to cause death. One of the main factors in heart failure is inflammation. Studies from human and mice indicate a strong correlation between inflammation and heart failure prognosis. Our previous results also showed elevated inflammation in the AA-induced heart failure in zebrafish embryos. It is known that when inflammation is induced at high levels it increases the permeability of the vessels, allowing neutrophils to exit the bloodstream and migrate to the inflamed areas. In this project we hypothesize that AA might enhance neutrophil behavior leading to heart failure. We purchased the TG(mpx:GFP) transgenic zebrafish line which expresses GFP in neutrophils through the promoter of a neutrophil specific gene called myeloperoxidase (mpx). These transgenic zebrafish allow us to observe the neutrophil behavior in live embryos. Preliminary results show that upon AA treatment, the mpx:GFP embryos developed heart failure as other zebrafish strains that we used before. In addition, we were excited to find many neutrophils outside the bloodstream in the AA-treated embryos compared with the controls. This result is consistent with the high inflammation that we observed. More importantly, we found that in the embryos where the AA-induced heart failure is attenuated by drugs the neutrophils were mostly contained in the blood vessels. These results reveal a strong correlation between neutrophil behaviors and heart failure development.
**Infinite Rip in Space and Time: Dino Abduction**
Art work

Presenter and Author: Christina DaCruz

Faculty Mentor: Eoin Breadon, Art

My painting is 243.8cm x 96.5cm and is done primarily in oil with some crushed glass accents. It unifies a variety of images and icons in a complex composition that is nothing short of bizarre.

**Campus Safety: A focus on lighted walking paths on the University of Wisconsin River Falls campus**
Poster

Presenters: Christopher Langland, Randy Raveling, and Molly MacDonald

Authors: Christopher Langland, Randy Raveling, and Molly MacDonald

Faculty Mentor: Dr. Mathew Dooley, Geography and Mapping Sciences

An analysis of lighted walk ways on the campus with an emphasis on campus safety, future growth, and needs of students. The main objective is to maintain campus safety and increase overall confidence and satisfaction of students.

**Islamic Geometric Composition**
Art work

Presenter and Author: Dan Risinger
Faculty Mentor: Bernice Ficek-Swenson, Art

Islamic tile patterns hold philosophical and religious significance within the Muslim world. Viewing such works sparked a three semester long inquiry into this philosophical and spiritual tradition. My studies have led to a new understanding and appreciation of the art form, as well as a composition which utilizes the geometric construction techniques used in Islamic Designs. I will present the composition and explain what I have learned from my studies and how it relates to the work I am presenting.

*Untitled*
Art work

Presenter and Author: David Hodder

Faculty Mentor: Eoin Breadon, Art

Large sandblasted blown vessels with multiple colors.

*Otis*
Art work

Presenter and Author: Devin LaPlante

Faculty Mentor: Eoin Breadon, Art

Mixed media, glass cast lizard fish like creature (ceramic glaze and glass)
**Owls**
Art work

Presenter and Author: Devin LaPlante

Faculty Mentor: Eoin Breadon, Art

Multiple owls painted using both oil and acrylic paint.

*My project doesn't have a title. It's just the process of the intaglio process of polymer gravure.*

Art work

Presenter and Author: DJ Steinmetz

Faculty Mentor: Bernice Ficek-Swenson, Art

I would bring several prints, proofs, test plates, and actual polymer plates of the intaglio printmaking process of polymer gravure. I would be able to explain my creative process as well as the technical process of executing a gravure print.

**Reticello encalmo bowl.**
Art work

Presenter and Author: Dylan Martinez

Faculty Mentor: Eoin Breadon, Art

Blown glass is a tradition dating back to some of our earliest civilizations. The techniques used in this piece come from the height of Venetian glass era in the mid 16th century. A time when these techniques were so coveted that the artists were secluded to the small island of Murano. My artwork has Brecon a mixture of old techniques juxtaposed with modern design elements.
**Misinformation and Social Media**

Poster

Presenter and Author: Elise Lundequam

Faculty Mentor: Dr. Cyndi Kernahan, Psychology

This study set out to examine misinformation and social media. Misinformation is defined as the distortion of memory that occurs as a result of inaccurate information attained after an event. We compared the impact of misinformation delivered either via a twitter feed or a traditional news article. We had no set hypotheses given the lack of previous research, but generally expected to find misinformation effects that may or may not be amplified as a result of social media. As social media becomes more prevalent this study may help us to better understand how social media can influence news acquisition and belief.

**Shark and Stingray Population Diversity off the Gulf Coast of Florida**

Poster

Presenter: Emily Beskar

Author: Emily Beskar, Moriah Moore and Dr. J. Alfred Bonilla

Faculty Mentor: Dr. Fred Bonilla, Biology

The study represents the examination of many different species of sharks and stingrays off the coast of Florida in order to fulfill a study of the diversity of species in this area. In the long term, the three-year goal of this study is to see how these species are adapting to environmental changes (ex. water temperature increases) and to see if the dominant species change in the area at all. Many different methods were utilized in order to capture these specimens and record information about them. The results
obtained from summer 2013 will be one-third of the total data present at the end of the project, so the results will be hard to see now, but in the future will provide a sense of what kind of changes are happening to oceans near the U.S.

**Paper Pulping**  
Art work

Presenter and Author: Emily Moelter

Faculty Mentor: Jeannine Kitzhaber, Art

In the past paper was used to date births, marriages and deaths. Today in the modern age paper has been used to record memories in photographs and journals. This information using paper has been passed down for generations. From everyday use of computers and internet, paper had become obsolete from modern technology. As an artist I want to bridge the gap and reuse the paper, making the paper beautiful and important again

**Crow Relief Print #1**  
Art work

Presenter and Author: Hannah Kane

Faculty Mentor: Bernice Ficek-Swenson, Art

This is a relief print pulled from an edition of three prints that I had made in Intro to Printmaking, carved in a linoleum block.

**Bordeaux Clamp Resist Sample**  
Art work

Presenter and Author: Hannah Kane
Faculty Mentor: Morgan Clifford, Art

This is a sample I had made in Intro to Fibers where I was testing a clamp resist process in Shibori surface design.

**Trapt**
Art work

Presenter and Author: Harley Hotchkiss

Faculty Mentor: Eoin Breadon, Art

"Trapt" is two piece glass form that has bubbles trapped inside of each of them. I incorporated one piece inside the other like the bubbles that are trapped inside of the glass. To add to the presentation of the piece I added a light inside the base to illuminate the piece and use not only the glass, but the bubbles to refract the light in different various ways.

**Honeycomb Pendant**
Art work

Presenter and Author: Henrik Jorgensen

Faculty Mentor: Eoin Breadon, Art

Borosilicate Glass pendant incorporating a "honeycomb" design

**Iceland**
Poster

Presenter and Author: Hollie Auchterlonie
Faculty Mentor: Dr. Mathew Dooley, Geography and Mapping Sciences

A reference map of Iceland that shows the terrain, arrangement of cities, and some major physical features.

**Conch Shell**  
Art work

Presenter and Author: Jamison Schlotte

Faculty Mentor: Eoin Breadon, Art

Hot Sculpted Glass, Wood.

**Eco-dyed Quilts**  
Art work

Presenter and Author: Jazmin Goire

Faculty Mentor: Lyz Wendland, Art

I have been exploring natural dying silk, cotton, and wool fabrics. Once the fabric pieces have been dyed, they are cut and pieced together into organically shaped quilts. I have created a series of eco-dyed wall pieces.

**Self Portrait**  
Art work

Presenter and Author: Jazmin Goire

Faculty Mentor: Jeannine Kitzhaber, Art
This self portrait is an oil painting done on a round canvas. The painting was based on the idea of being playful even past adolescence.

**Design and Synthesis of TRPM8 Antagonists: Tools for the Investigation of the Cold Receptor**

Poster

Presenter: D. Rusterholz

Authors: Jennifer M. Rang (David Rusterholz, Advisor)

Faculty Mentor: Dr. David Rusterholz, Chemistry

The purpose of this project was to prepare a series of new chemical compounds that were designed to interact with the TRPM8 receptor. The TRPM8 receptor is a protein that is found in many tissues in the human body (and the cells of many other living systems). In 2002 the TRPM8 receptor was identified as the major mechanism by which our nervous system detects the sensation of cold. Not very much is known about its function in living systems, other than its mediation of a cold sensation. Through the creation of chemical agents that have the ability to either selectively activate or antagonize the actions of this protein, its role in various biological systems may be revealed.

During the course of investigation of analogs of the cold-sensation producing compound icilin (1), several amide derivatives of meta-nitrocinnamic acid (2) were created. These compounds were found to have significant antagonist action at the TRPM8 receptor. The purpose of the research reported here was to prepare a series of cinnamamide derivatives to delineate the structure activity relationships (SAR) for TRPM8 antagonism in these derivatives. A series of 19 such derivatives was created and evaluated for TRPM8 antagonism. The synthesis and the results of the biological testing of these compounds will be presented.
**Asian Folklore and Legend**  
Poster

Presenter: Jeremiah Liend

Authors: Jeong Inseop, Moss Roberts, Arthur Waley, James R. Brandon, Tamako Niwa, Ying Chang Compestine, Brandon, Malm, Shively, Johnny Saldana, Frances Carpenter, Thich Nhat Hanh, Michiko Iwasaka, Barre Toelken, Nguyet Cam, Dana Sachs, Patrik Drazen, Aaron Shepar

Faculty Mentor: Robin Murray, Communication Studies and Theatre Arts

The poster will show the region of study, the method of collection, and production elements of the theatrical work to be presented in Spring 2014. Will be available to answer any specific or general questions related to research or production.

**Turningpoint For Victims of Domestic and Sexual Violence:**  
**Spanish Language Training Video Series**  
Short Film

Presenter and Author: Jonathan M. Reid

Faculty Mentor: Erik Johnson, Communication Studies and Theatre Arts

I produced a series of intake videos in Spanish for the Turningpoint domestic violence shelter. The shelter often receives women whose primary language is Spanish. Translators can be expensive and are not always readily available. Therefore, the shelter needed a series of videos to serve as a temporary substitute for a translator. I produced three videos: one video walks through intake paper work, one video explains guidelines for parents, and the final video tours the facility.
Childhood Lost
Art work

Presenter and Author: Julian Gelhaye

Faculty Mentor: Eoin Breadon, Art

"Childhood Lost" is the beginning of my Senior BFA Exhibition. It is a collection of pieces that represent the end of an era. Children in coming generations may never use a rotary telephone, read a newspaper, or play with toys made in their grandfathers woodshop. I am recreating such toys out of glass to show the disappearance of what past generations knew as childhood and the fragility of that idea. This includes a solid glass rocking horse and bead maze.

Urban Hallway
Art work

Presenter and Author: Justin Collins

Faculty Mentor: Brett Kallusky, Art

Shot in downtown Madison Wisconsin this image shows the living and evolving nature of urban landscapes.

The Kansas City Chiefs and River Falls: Big Team Little City
Short Film

Presenter and Author: Justin Lund

Faculty Mentor: Erik Johnson, Communication Studies and Theatre Arts
The Kansas City Chiefs and River Falls: Big Team Little City, is a documentary short about the pro football team's time spent right here in River Falls.

**Look! Magazine: The Push Towards Visual Literacy**

Poster

Presenter and Author: Katherine Spevak

Faculty Mentor: Dr. Lissa Schneider-Rebozo, English

Look! Magazine was constructed as a way to examine how Graphic Novels can be considered a type of visual and print literacy and how they can be used in a classroom. Eight pages in length, Look! has seven articles which examine the meaning of literacy, explore authors of prominent Graphic Novels, explores the origin of Graphic Novels, provide alternative perspectives, and elaborates on how to use a Graphic Novel in a Language Arts classroom.

"Innocence near the water"

Art work

Presenter and Author: Kathleen Johnson

Faculty Mentor: Asako Nakauchi, Art; Eoin Breadon, Art; Heather Delisle, Art; Kaylee Spencer, Art; Stephen Parliament, Psychology

Through my art I often refer back to my childhood. I have fond memories of my best friend and myself exploring the lake in our neighboring back yards. The creatures, the summer water and the stunning beauty of water lilies are things I think of. I created this piece to capture the pureness of being a child, delicate beauty and the fragility of life. As a curious child, I often picked water lilies (though it is an illegal act in Minnesota) as I have always been
fascinated by them. Every once and a while, I will pick one just to take me back. Natural environments of water

**Calcium Signaling in Human Cortical Astrocytes after Treatment with the Synucleins**

Poster

Presenters: Kathryn Hoffman and Elizabeth Daniels

Authors: Kathryn Hoffman, Elizabeth Daniels, and Andrew Koob

Faculty Mentor: Dr. Andrew Koob, Biology

The synucleins are a family of soluble proteins implicated in neurodegenerative disease. \(\alpha\)-Synuclein (\(\alpha\)-syn) is known to accumulate in Lewy Body formations. \(\gamma\)-Synuclein (\(\gamma\)-syn) also increases in the cerebral spinal fluid of patients with Alzheimer’s Disease and Dementia with Lewy Bodies. Mice overexpressing \(\alpha\)-syn and \(\gamma\)-syn have been shown to develop age dependent neuropathology. \(\beta\)-Synuclein (\(\beta\)-syn) has been shown to be both neuroprotective and a factor in neurodegeneration. Mutations of \(\beta\)-syn were linked to pathogenesis in patients with Dementia with Lewy Bodies and these results were confirmed by transgenic mouse models. In this study, we treated human cortical astrocytes with the synucleins and measured calcium signaling response. \(\gamma\)-Syn and \(\alpha\)-syn treatment of human cortical astrocytes resulted in increased calcium signaling. \(\beta\)-synuclein treatment resulted in a decrease in calcium signaling. When BAPTA was added in all treatment preparations, it diminished the calcium signaling effect. Since it has been known that \(\alpha\)-syn also causes increased GFAP reactivity and apolipoprotein E redistribution to the cytosol in human cortical astrocytes, immunocytochemistry was performed as well after \(\gamma\)-syn treatment. GFAP expression increased after \(\gamma\)-syn treatment, but apolipoprotein E redistribution was not observed.
Evaluating the Efficacy of Equine-Assisted Psychotherapy in Eating Disorder Patients

Poster

Presenter and Author: Kelly Sobczak

Faculty Mentor: Dr. Todd Wilkinson, Psychology

The study is designed to evaluate practitioners' beliefs about Equine-Assisted Psychotherapy's effectiveness as compared to other better-studied counseling techniques, specifically in eating disorder patients. The study will also identify the common themes and factors among practitioners and programs of equine-assisted psychotherapy that may account for its effectiveness. Equine-Assisted Psychotherapy is an emerging field with little quantitative research. As such, this project is working to gather evidence for the narrative benefits of Equine-Assisted Psychotherapy in this patient population. Efficacy in this study is being defined and evaluated by clinicians who are experienced in practicing Equine-Assisted Psychotherapy and will be synthesized with correlations.

Order Up!

Short Film

Presenter and Author: Kelsey Goneau

Faculty Mentor: Erik Johnson, Communication Studies and Theatre Arts

A documentary production about the Lakers Breakfast Nook program at Wayzata High School in Plymouth, MN. It is a special education program where students gain basic retail skills as they provide a breakfast service throughout the school. The documentary highlights the founder of the program and how it
got started, the duties the students are responsible for and the skills that they gain from this experience.

**Search for Safer Skin Whitening Reagents**

*Poster*

**Presenter:** Kristy Martinson

**Authors:** Kristy Martinson and Dr. Cheng-Chen Huang

**Faculty Mentor:** Dr. Cheng-Chen Huang, Biology

Throughout the cosmetic industry skin whitening has become a major practice because of its ability to correct uneven skin pigmentation, lighten natural skin tones, and treat pigment disorders. However, many chemicals presently used in skin whitening exhibit adverse health effects including skin sensitivity, and cancers such as leukemia. The goal of this project is to explore new skin whitening chemicals that act in different mechanistic pathways than the present therapeutic options in hopes of developing safer skin-whitening alternatives. Three current human drugs, Arbutin, Niacinamide, and Tretinoin, and a known melanin synthesis inhibitor, PTU (phenylthiourea) were included as a comparison for our newly discovered skin whitening agents, A11 and MEK-I. To test the melanin synthesis inhibition, the zebrafish embryos were treated with the drugs from 24 to 76 hours post-fertilization (hpf). The embryos were monitored and imaged to track the development of melanin development. As expected, PTU produced embryos with ~0% pigmentation. The human drugs Arbutin, Niacinamide, and Tretinoin at sublethal dosage produced embryos reduced to 5%, 30%, and 80% pigmentation, respectively. Our new chemicals produced >90% melanin reduction by A11 and ~40% reduction by MEK-I. To test the effect of these drugs on existing melanin, the embryos were treated with the chemicals at 48 hpf, after pigment had developed. Human drugs, Arbutin and Niacinamide, show
some melanin removal, however Tretinoin does not. Interestingly, we found that A11 halted melanin pigment formation; whereas MEK-I and PTU removed existing pigment, suggesting two different mechanisms. Additionally, when treatment was washed away, all embryos exhibit melanin recovery, except those treated with A11, suggesting the effects of A11 may be longer lasting. Furthermore, toxicity of varying degrees was found in embryos with all treatments other than A11. This suggests that A11 may be used as a safer skin whitening reagent.

**Monolith**

Art work

Presenters: Lauren Bina and Carson Giblette

Authors: Lauren Bina and Carson Giblette

Faculty Mentor: Brett Kallusky, Art

The photographs that I take are a critical look into the interaction between objects created by man and objects created by nature. These images are designed to push our understanding of nature as an untouched and natural force. The distortion of natural landscapes and imagery projected against a man made geometric form creates a relationship that makes one question how far nature can be manipulated until we no longer consider it natural. These photographs have allowed me to consider the barrier between natural objects and those that are created by man. I wanted to find the line that separates our idea of natural versus artificial. Pushing the boarder between these two realms by creating photographs allowed me to examine the idea of the transition from nature to a manufactured world.
Weaving Double Weave Finger nail polish
Art work

Presenter and Author: Lisa Marshall

Faculty Mentor: Morgan Clifford, Art

Demonstrating weaving double weave and showing a painting of a mass produced item in repetition.

Thinking beyond English-only: Exploring Collaborative Brokering among Bilingual Children
Poster

Presenter: Mao Sea Lee

Authors: Mao Sea Lee and Mariana Pacheco, Ph.D.

Faculty Mentor: Dr. Melanie Ayres, Psychology, UW-River Falls and Dr. Mariana Pacheco, Curriculum and Instruction, UW-Madison

Many bi/multilingual children broker daily for their family who may speak little to no English. Brokering has its advantages; it benefits families, institutions, and the brokers themselves. Yet, brokering is both complex and ambiguous. Thus, this literature review examines this social practice to explore the advantages collaborative brokering has, specifically within a classroom setting. This literature review covers brokering, collaboration, and collaborative language practices. Excerpts of brokering among third-grade Spanish-English speaking children will be used to illustrate the specific skills, linguistic resources, and cultural knowledge teachers could leverage as they implement collaborative brokering in classroom settings.
Mammalian central nervous system regeneration using an in vitro rat model
Poster

Presenter: Mark Renelt

Author: Mark Renelt, Juan Diaz, and Dr. Karen Echeverri

Faculty Mentor: Dr. Cheng-Chen Huang, Biology

Utilizing miRNA and known stem cell marking genes, gene levels were manipulated in an effort to generate a more permissive environment for axonal regrowth following an injury to the central nervous system.

Coldcomo
Art work

Presenter and Author: Matthew Cihaski

Faculty Mentor: Eoin Breadon, Art

Three glass pieces glued together cold to create a single vessel.

Mycobacteriophage cluster determination using immunity testing and multiplex PCR
Poster

Presenters: Megan Kreitzman and Laura Robey

Authors: Megan E. Kreitzman, Alexis M. Barna, Ciara A. Buechner, Erich W. Butterbrodt, Kristopher D. Cole, Emily Falch, Gabrielle F. Field, Brittany J Grandaw, Kaitlyn E. Graven, Ashley H. Holm, Daphne D. Hussey, Bobbi L. Kelling, Marie-Morella Y. Kponou, Samantha
Faculty Mentors: Dr. Fred Bonilla, Biology; Dr. Kim Mogen, Biology; Dr. Karen Klyczek, Biology

The in situ Phage Hunters course provides several opportunities to make tentative cluster assignments for newly isolated mycobacteriophages. These include analysis of electron micrographs, restriction enzyme digestion patterns, plaque morphology and growth characteristics. Our goal was to supplement these existing methods to determine which phages should be selected for sequencing. Our strategy was to use immunity testing with lysogens created from a known panel as well as our unknowns, based on the principal the lysogens and lysates from the same cluster/subcluster are immune to superinfection. Lysogens were grown from mesa colonies, cultured on L-agar plates, and transferred to 7H9 broth cultures. The lysogen status of bacteria that did produce lawns was confirmed by spotting dilutions of their own phage. Lysates from the known panel were spotted on confirmed unknown lysogens, lysates from the fall semester unknowns were spotted on known confirmed lysogens, and unknown lysates were tested against unknown lysogens. A second strategy we employed was PCR using cluster or sub cluster specific primers developed at Morehouse College, Queens College, and UWRF. The primers were used in multiplex reactions of 3-4 primer pairs, using lysates from the known panel as controls. Combing these methods allowed us to narrow the possible clusters of most unknown phages, and to predict the cluster assignment of 70-80% of phages with some degree of confidence. Immunity testing is technically simple, it is labor intensive and stable lysogens are hard to attain. PCR requires more expensive reagents and a thermocycler, but it is easier to get definitive results relatively quickly.
From the Bedroom to the World: the Appeal of Djent

Poster

Presenter and Author: Michael E. Shrake

Faculty Mentor: Dr. Lissa Schneider-Rebozo, English

"From the Bedroom..." is an analysis and a timeline of the development of “djent”, which is a rhythm-based form of heavy metal. Djent rose in popularity due to internet forums and bedroom recording; members of forums would record pieces of songs in their bedrooms and place them online for other forum members to critique. This led to an unprecedented flurry of networking worldwide, with projects forming between collaborating citizens of different countries, as well as a microculture of community-taught sound engineers and technical musicians. Due to the ease-of-use and relatively cheap cost to enter this style of music, it has reached most of the world in a relatively short time, and bands are composed of members from the rich to the extremely poor.

Raw Jewelry

Art work

Presenter and Author: Natalia Schiller Fernendes

Faculty Mentor: Randy Johnston, Art

With the transition from metals to sculpture in the art department I have worked at developing well made jewelry. Working with found glacial rocks and industrial metals I create abstract jewelry that is a celebration of the materials. Aside from safety demos I am a self taught jeweler.
**Party Bird Air**
Art work

Presenter and Author: Nicole Moscowitz

Faculty Mentor: Dan Paulus, Art and Eion Breodon, Art

The complete graphic standards guidelines for the created company of Party Bird. This is a created brand and company for a class project that has evolved into a highlight and example of brand representation.

**Bending Gender**
Art work

Presenter and Author: Nicole Pederson

Faculty Mentor: Jeannine Kitzhaber, Art

I will be showing one or more of my large paintings depicting 50s era portraits.

**Sculpting in Hot Glass: The Human Head**
Art work

Presenter and Author: Phil Reed

Faculty Mentor: Eoin Breadon, Art

Over this past semester I have begun sculpting blown glass heads in preparation for my Senior BFA exhibition spring semester, 2014. My focus on sculpting the head is just part of a number of larger sculptures. My goal from the start has been on achieving realistic head proportion - starting with sculpting some of the major features and working back to a more ambiguous figure. The
Djembe #1
Artwork

Presenter and Author: Phillip King
Faculty Mentor: Eoin Breadon, Art

This artwork consists of a blown glass djembe shell, a goatskin head, and ring and rope attachments. The piece titled "Djembe #1" is from a larger body of work which will be used in a musical performance on December 16th. This work focuses on the sound produced by the drum itself, more so than the visual qualities of the object.

Potential Drugs for Rescuing Doxorubicin Induced Heart Failure
Poster

Presenter: Rebecca Haugen
Authors: Rebecca Haugen, Cheng-chen Huang
Faculty Mentor: Dr. Cheng-Chen Huang, Biology

Enhanced Toxicity of Doxorubicin by Potential Heart Failure Drugs: Doxorubicin is a DNA intercalating drug used to treat various cancers including Hodgkin’s lymphoma. Its most serious side effect is severe heart damage leading to heart failure. Our goal was to determine whether any of the compounds being tested to rescue AA-induced (aristolochic acid) heart failure in zebrafish embryos could also rescue Doxorubicin-induced heart
failure. The compounds with the most promising results were A11, NS398, MEK-I, C25, and two Chinese herbal extracts. To determine the effective concentrations of doxorubicin, zebrafish embryos were treated with different concentrations of doxorubicin. At 200 µM doxorubicin, 100% embryo death resulted in less than 24 hours, while concentrations below 50 µM were not diagnostically effective. The concentrations with the greatest effectiveness at 72 hours post treatment were found to be between 80 and 100 µM doxorubicin. Treatment groups were then set up with doxorubicin plus 10 µM concentrations of A11, MEK-I, C25, and NS398. The Chinese herbal extracts were also tested. Preliminary results indicate that NS398 and C25 show the most promise in rescuing doxorubicin-induced heart failure, with an average attenuation rate 30% and 23% higher than that seen in the control group, respectively. MEK-I shows no discernible attenuation when compared to the control group. Surprisingly, A11 and both Chinese herbs show enhanced doxorubicin toxicity when combined with doxorubicin. In addition, the Chinese herb treatments exhibit an unexpected phenotype: misshapen heads, extreme cardiac edema, and shorter bodies. Further experiments may help us to better understand the mechanism of doxorubicin toxicity in order to treat it more effectively, and also raise awareness of potentially fatal pharmacological interactions.

Chemistry Mural Project
PowerPoint presentation

Presenter and Author: Rome Gonstead
Faculty Mentor: Jeannine Kitzhaber, Art

The project was to create a mural project which represented the Chemistry Department. For the presentation, it will consist of a poster board of the progress and a more detailed PPT of the process.
**Single Wall Carbon Nanotube Films Deposited by Spray Coating for Vertical Field Effect Transistors**

Poster

Presenter and Author: Rory Jones

Faculty Mentor: Dr. Lowell McCann, Physics

Since their first identification in 1991 Carbon nanotubes have fascinated the scientific community. Beginning with efforts to scale up the material production and its purification to their detailed property characterization the focus today lies largely in their potential applications. The filtration method for forming ultra-thin, homogeneous films of nanotubes has provided a workhorse method for a variety of such applications but suffers from a limited scalability. An alternative spray deposition technique for making such films overcomes that limit. Here we make direct comparisons between the properties of films made by the two methods and use the films to make carbon nanotube-based vertical organic field effect transistors. This novel transistor architecture, which relies on the specific properties of carbon nanotubes to function, overcomes the low mobility associated with organic semiconductors and provides a particularly severe test for the spray deposition technique.

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**The Adventures of Shaft-Switching**

Art work

Presenter: Rosemarie M. Bermudez

Author: Rosemarie M. Bermudez

Faculty Mentor: Morgan Clifford, Art

The project submitted is of wool, shaft-switched, hand-dyed/hand-woven rugs. This is a non-traditional approach to
weaving rugs in which the weaver has the ability to manipulate the threading of a particular piece while the project is still on the loom.

**Investigating the Role of Conservatism in Brand Preferences**

Poster

Presenters: Samuel Minor, Julia Chous, and Coleman Sandstrom

Authors: Samuel Minor, Julia Chous, and Coleman Sandstrom

Faculty Mentor: Dr. Travis Tubre, Psychology

To extend previous findings on the role of conservatism in consumer decisions, we examined trait-level (conscientiousness and openness to experience) and behavior-level (worship attendance and Republican voting) predictors of preference brand-name and generic soda. The trait-level, but not the behavior-level, variables predicted greater affinity for the brand-name product.

**Serendipity**

Art work

Presenter and Author: Sarah Longen

Faculty Mentor: Lyz Wendland, Art

A charcoal drawing of a guitar covered in leaves

**Double Weave**

Art work

Presenter and Author: Shandelle McDuffie
Faculty Mentor: Morgan Clifford, Art

Double weave is like making little pockets in your weaving projects, its two layers or like weaving 2 scarfs at once. But what I will be working on is the pockets but with two different thicknesses of thread to cause contrasting and mixing of color to be different.

A Look at Death and Obon in Japan
Poster

Presenter and Author: Shawna Hutchison

Faculty Mentor: Dr. Lissa Schneider-Rebozo, English

"A Look at Death and Obon in Japan" is a magazine created to illustrate the importance death and remembering family members who have passed away. The perspective is very broad, including a children's movie, the Obon festival, religious aspects that feed into the perception of afterlife, and the mourning and funeral process. The magazine includes articles and illustrations to represent the different concepts discussed.

Are you ready? - Gap between present and future among UWRF students
PowerPoint presentation

Presenter: Shuhao Jiang

Authors: Shuhao Jiang, Jiemei He and Jue Xiang

Faculty Mentor: Diane Jacobson, English
It’s a survey on studying whether UWRF students have a clear plan for their future, and to what extend they know how hard they should study at present.

**Chemistry Murals**
PowerPoint presentation

Presenters: Taylor Berman and Rome Gonstead

Authors: Taylor Berman and Rome Gonstead

Faculty Mentor: Jeannine Kitzhaber, Art

When applying for the Falcon Promise-Student Stipend and Expenses Grant, we proposed to coalesce the departments of Art and Chemistry through the interdisciplinary action of creating chemistry-themed murals in the halls of Centennial Science Hall. Our presentation(s) will detail the process of imagining, planning, and creating these large-scale works of art.

"**Who Doesn't Love Awkward?**" entitles a glass sculpture designed to initiate conversations among viewers about sexual views in society and how society as a whole approaches the subject of sex.

Art work

Presenter: Taylor Moeller-Roy

Author: Taylor Moeller-Roy

Faculty Mentor: Eoin Breadon, Art

A pair of glass lips hugging the tip of a sculpted banana, that is raised upon a pedestal like foot.
Monte Carlo Integration Using Mathematica
PowerPoint presentation

Presenter and Author: Theodore McDonough

Faculty Mentor: Dr. Robert Coffman, Mathematics

My presentation includes a short Power Point describing the background of my project, followed by a demonstration of my Mathematica program. I will require a computer with Mathematica and Power Point installed on it.

Painting using mixed media and found objects
Art work

Presenter and Author: Theresa Schneveis

Faculty Mentor: Jeannine Kitzhaber, Art

The paintings I will be presenting are non traditional paintings. They are assembled pieces of wood, cloth, leather, metal, and any other pieces of objects I find. I started doing paintings like this because I was told that the canvases I build were crooked and wrong. I decided that I would create my own canvases that the rules of a perfect square didn't apply to. After I assemble pieces I paint onto the surface, and add more pieces as the work progresses.

Potential Heart Failure Drugs from Chinese Herbs
PowerPoint presentation

Presenter: Travis Carlson

Authors: Travis Carlson and Dr. Cheng-Chen Huang
Faculty Mentor: Dr. Cheng-Chen Huang, Biology

My overall goal of this project is to determine an effective dosage and time window for two Chinese Herbal extracts, CH-18 and CH-93, used to suppress inflammation during Congestive Heart Failure. As well as purifying and testing these extracted compounds.

Creating a Pulsed Laser for Thin Film Deposition Applications
Poster

Presenter and Author: Tyler Capek

Faculty Mentor: Dr. Lowell McCann, Physics

A laser-diode end-pumped Nd:YVO4 pulsed laser was created for thin film deposition applications. Passive Q-switching was accomplished by placing a Cr:YAG saturable absorber inside the laser cavity. Intracavity frequency doubling was performed with a nonlinear KTP crystal. The laser was pumped with a four Watt, 808 nanometer, GaAlAs fiber-coupled laser-diode. When the laser was pumped with 2.77 W, the laser’s average continuous wave power, at a wavelength of 532 nanometers, was 1.36±0.06 mW. When operated in pulsed mode the laser’s average pulse width was measured to be 429±75ns and the frequency of the pulses was measured to be 143±15kHz. The average power of each pulse was calculated to be 51±11 mW. The average energy of the each pulse was calculated to be 22.1±6.0 nJ.
*PepsiCo Inc.*

Poster

Presenter and Author: Cristy Studeman

Faculty Mentor: Dr. Dawn Hukai, Accounting and Finance

This is an audit plan for PepsiCo Inc.

**Preliminary Audit Plans for the 3 Leading Companies in the Beverage Industry**

Poster

Presenters: Lyndsey Peck, Maren Greenwaldt and Jessica Saari

Authors: Lyndsey Peck, Maren Greenwaldt and Jessica Saari

Faculty Mentor: Dr. Dawn Hukai, Accounting and Finance

We have constructed audit plans for the three leading companies in the beverage industry--Coca-Cola Co., Pepsico, and Dr Pepper Snapple Group. The audit plans include the audit objectives; preliminary business and industry condition analysis; client objectives, strategies, and business risk; significant risks; significant accounting and auditing matters; preliminary analytical procedures; and planning materiality.

*Auditing research on Apple*

Poster

Presenter and Author: Liyuan Feng
Faculty Mentor: Dr. June Li, Accounting and Finance

Audit for the financial statement of Apple Inc., for the year ended December 31, 2012. Also obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, enabling the auditor to express an opinion on whether the financial statements are presented fairly, in all material respects, in accordance with an applicable financial reporting framework and report on the financial statements, and communicate as required by GAAS, in accordance with the auditor’s findings.

Audit Planning for Online Marketplaces
Poster

Presenters: Lindsay Fedie and Margaret Brion

Authors: Lindsay Fedie and Margaret Brion

Faculty Mentor: Dr. Dawn Hukai, Accounting and Finance

Proposed audit plans for online retailers eBay, Inc. and Amazon.com Inc.. Including market outlooks and industry comparisons.

Comparing the Wendy's Company audit analysis to Burger Kings audit analysis.
Poster

Presenters: Ramesh Girdhari and Matt Ryan

Authors: Ramesh Girdhari and Matt Ryan

Faculty Mentor: Dr. Dawn Hukai, Accounting and Finance
I will be presenting a poster of the audit project I did on the Wendy's Company as well as how it compares with Matt Ryans analysis of Burger King.

**The Phillips Curve**

Poster

Presenters: Kelsey Kennedy, Geoffrey Shewmake, Simon Sikulu and Ruth Tucker

Authors: Kelsey Kennedy, Geoffrey Shewmake, Simon Sikulu and Ruth Tucker

Faculty Mentor: Dr. John Walker, Economics

The purpose of this research is to determine whether a stable, functional relationship exists between inflation and unemployment. The hypotheses examine variables that may have an impact on inflation rates. The hypotheses are tested through use of regression to determine the significance of any relationships between the variables and inflation. This research supports Friedman (1968) and Phelp’s (1968) argument that the Phillips Curve is shifting up.

**Demand for Money**

Poster

Presenters: Scott Jensen, Anne Costanzo, Zach Schieffer, Shirwa Adan

Authors: Scott Jensen, Anne Costanzo, Zach Schieffer, Shirwa Adan

Faculty Mentor: Dr. John Walker, Economics
Research to determine if there is a stable and non-zero relationship between money and economic activity. Results suggested there is a stable relationship.

**The effect of decoy on student choice**

Poster

Presenter and Author: Shirwa Adan

Faculty Mentor: Dr. John Walker, Economics

This study examines the influence of a decoy effect on individual choice on Tablets and Coffeemakers, with brand names and without brand names; Using a sample data of 334 UWRF freshmen and sophomore students in the College of Business and Economics. Preliminary results do not suggest a decoy effect on student choice; this may be due to the sampling procedure of student grouping. Some groups indicated choice with decoy and others without decoy and this may not allowed us to control difference in student preferences. Students also indicated their knowledge on Tablets and Coffeemakers.
The productive dilemma: Making use of student teacher reflections to bridge theory to practice in culturally relevant pedagogy

PowerPoint presentation

Presenter: Kelsey Iverson

Author: Kelsey Iverson and Ann Mogush Mason, Ph.D.

Faculty Mentor: Dr. Ann Mogush Mason, Teacher Education

This presentation describes an undergraduate summer research project that explored how two recent student teachers engaged with the tension between theory and practice in their pursuit of culturally relevant pedagogy. This work demonstrates how today's young teachers can constitute the new majority in our communities as activist-oriented, sociopolitically aware professionals who see and seek transformation.