Spring Undergraduate Research, Scholarly, and Creative Activity Day

Thursday, April 30, 2015
12-2 pm
Riverview Ballroom
University Center

UNIVERSITY OF WISCONSIN River Falls
Spring URSCA Day
April 30, 2015
Riverview Ballroom, University Center
12:00 – 2:00 p.m.

Spring URSCA Day is an annual showcase event to celebrate the research, scholarly and creative activities of UWRF undergraduates. Campus URSCA from all areas of study is represented through undergraduate posters, short films, art exhibits, PowerPoints, and interactive displays in a content-rich event, with over 230 student participants. We hope you enjoy this opportunity to learn more about the hands-on research activities that are taking place every day on our campus. Spring URSCA Day is supported by the Office of Undergraduate Research, Scholarly and Creative Activity.

Program Details:
- URSCA projects are listed alphabetically by students’ last names.
- Faculty mentors are listed with their students’ projects as well as alphabetically in a comprehensive appendix.
URSCA Projects

Adam, Christopher
Dance Performance

Dance Theatre Performance - Instantaneous Connections

Faculty Mentor(s): Mari Kline-Kluck, Communication Studies and Theatre Arts

During the 2015 UWRF Dance Theatre Spring Concert the dance piece "Instantaneous Connections" choreographed by student choreographer Chris Adam was performed. This piece is about the instant connection you sometimes experience when you first meet a new person or group of people within your life.

Adkins, Shannon
Prezi presentation

Purity and Aromatic Application of Lavender and Peppermint Oil

Faculty Mentor(s): Dr. Bonnie Walters, Animal and Food Science; Dr. Daniel Marchand, Chemistry

The use of alternative, natural, holistic, and/or complementary medicine is becoming of higher demand by the general public. Testimonial's of the successes of the various products and practices used are available in vast quantities. The questions of effectiveness and safety are of concern. One alternative/complementary medicine is the use of essential oils for aromatherapy. Essential oils are oil extracted from plant materials to utilize their vast healing properties. This literature research was to look at the effectiveness and safety of peppermint and lavender oil from the companies of Young Living and doTERRA. The purity of the oils from the two companies could not be determined at this time due to a lack of standards in the US; therefore the true safety of these two essential oils also cannot be determine at this time. The effectiveness of lavender was assessed for its anti anxiety properties and peppermint was assessed for its alertness properties.
Alarcon Peres, Felipe
Poster

**Digital Literacy**

Research Collaborator(s): Gabriel Costa Borba, Flavia Megumi Miyabe, Erick Pereira Araruna Cruz Galvao, Caroline de Lima Moraes

Faculty Mentor(s): Conan Kmiecik, English Language Transition Program

This poster will describe Digital Literacy, its importance, how to use technology, obtain information, and improve communication. It also illustrates what we learned in J-term classes, for example, how to use some programs, websites, and apps. Finally, we will present our opinion about this topic.

Alarcon Peres, Felipe
PowerPoint presentation

**Case Study: Shopping behaviors of students at one Midwestern American university**

Research Collaborator(s): Yaoyao Zhou, Hyobin Ji, Larissa Jahnel Rodrigues de Oliveira

Faculty Mentor(s): Diane Jacobson, English Language Transition Program

Four international students collected data with the purpose of learning more about the shopping behaviors of students at one Midwestern American university. The central research question was to determine trends in shopping behavior in order to compare the results with the researchers' predictions. The researchers created a survey of ten content questions with quantifiable answers. The questions were related to three general themes: students' level of addiction to shopping, shopping preferences, and behaviors before or after shopping. Forty students on campus were interviewed. Before
conducting interviews, the group members predicted the possible shopping behavior of the students based on their pre-conceived ideas of university students living in America. After gathering the information, the results were compiled and graphed based on the four demographic indicators: gender, age, domestic or international status, and location of residence. Finally, the data was compared with the researchers’ original predictions. Of the forty graphs created, four graphs that showed unexpected differences or results were chosen to evidence the students’ behavior. The researchers were surprised to find that the results demonstrated that (a) males are more likely to use cash while females are more likely to use debit cards; (b) no matter where the students live, they prefer to go shopping in the stores instead of online shopping; (c) regardless of age, most students prefer to shop for clothing; and (d) international students go shopping less often than domestic students. This research project involved non-native speakers of English systematically identifying stereotypes related to students’ shopping behaviors, gathering data to describe the true nature of those behaviors, and comparing/contrasting the results with their original predictions. This oral presentation will include the survey questions used, the reasoning for each question, the unexpected survey results, and the group members’ conclusions based on their findings.

Amaral, Carla
Poster

**POP Culture**

Research Collaborator(s): Caio Fernandes, Manoella Moura

Faculty Mentor(s): Conan Kmiecik, English Language Transition Program

Popular. Pop. These words are synonymous with popularity, and when affixed to the word "culture," refer to products, texts, or media with broad, favorable appeal. Pop culture incorporates all forms of cultural production. While there are many types of pop culture throughout the world, U.S. pop culture is one of most dominant. As a result, many people come into contact with English through consumption of American pop culture. The purpose of this project is examine different genres of pop cultures
and consider how the study of pop culture can facilitate English language acquisition.

**Anderson, Samantha**  
Dance Performance

*Bereavement*

Research Collaborator(s): Salvatore D'Agostino, Jenna Cook, Sor Her, Morgan Stevens, Dallas Nicolai, Marcus Dryer  
Faculty Mentor(s): Mari Kline-Kluck, Communication Studies and Theatre Arts

This dance piece is about the 5 stage of grief. It explores various views/perspectives on the grieving process. The creative process used to construct the project was very collaborative. The overall vision certainly came from the choreographer (Mari Kline-Kluck), but the dancers had a very large roll in the creation of the movement and the characters in the dance. Jenna Cook researched various arrangements of the song "Ne Me Quitte Pas" that she sings during a portion of the piece. Sor Her actually wrote/transposed the version of the piano accompaniment he performs during the piece. The dancers all brought their own acting and expression into the piece and contributed in the collaborative process to create the work.

**Anderson, Cole**  
Poster

*A Survey on Oral Electrolyte Use in Wisconsin Dairy Calves*

Faculty Mentor(s): Dr. Larry Baumann, Animal and Food Science; Dr. Sylvia Kehoe, Animal and Food Science

Dairy farming in Wisconsin has a dramatic impact on the state’s economy. Over 10,500 farms are licensed to sell milk in the state. The livelihood of these farms depends on the calves that are raised to become part of the milking herd. Since calves are arguably the most important aspect of any dairy, their nutrition and health is crucial to their growth and development into lactating dairy cows. Research has
shown the importance of feeding colostrum to these calves at birth to passively transfer immunoglobulins and proteins to the calf. The feeding of oral electrolytes, however, is a common, yet unproven method of helping calves overcome stressors and diseases such as scours (liquid feces). This purpose of this survey was to provide a better understanding of why and how farmers use oral electrolytes in dairy calves.

Aparecido Teixeira da Silva, Lucas
Poster

*Health Cookie*

Research Collaborator(s): Erika Ferreira, Joaquim Vitor da Paz Neto, Magregor Oliveira, Mariana Scoqui Guimaraes

Faculty Mentor(s): Dr. Bonnie Walters, Animal and Food Science

The main purpose of this project was to create a health cookie through the addition and replacement of certain ingredients found in a traditional cookie recipe. Cookie is a common product in American market and by offering a health option will help consumers to have a good health.

The first part of this project was to define the best cookie recipe that could meet either nutritional or technologic functions. Thus, the final ingredients include: oat, all purpose flour, wheat flour, brown sugar, apple sauce, egg, baking soda, cinnamon, vanilla essence, coconut oil, salt, dried cranberries, and hazelnut. Once finalized, this step, we could move on to the second part, which included all the necessary analysis to characterize all product: protein, fiber, moisture, ash etc. The third part was to set up sensorial analysis panel to find out whether our product meets consumers perspectives or not. Finally, the last step was to scale-up the cookie production to an industrial level.

Auchterlonie, Hollie
Poster
The Geography of Tea: Tea's Past, Present, and the Effects of Climate Change Today

Faculty Mentor(s): Dr. Charles Rader, Geography and Mapping Sciences

Tea has been and still remains to this day an incredibly important beverage. This project explores the background, current state, and future predictions of the tea industry.

Azasu, Samuel
Short Film

The evolution of service-learning experiences in the digital media revolution

Research Collaborator(s): Connor Nelson, Mark Rolseth

Faculty Mentor(s): Erik Johnson, Communication Studies and Theatre Arts

The digital and social media platforms push the evolution of service learning for media and journalism students to new, creative real-world experiences. This project shares first hand findings from students perspectives of moving service learning into digital platforms. Presenters explore best practices, project pitfalls and assessment.

Azasu, Samuel
Short Film

NAB BEA Conference Video Highlights

Faculty Mentor(s): Erik Johnson, Communication Studies and Theatre Arts

A brief highlight of the conference in Las Vegas called the NAB BEA.

Azasu, Samuel
Short Film
**I've Got A Big Sucker**

Faculty Mentor(s): Erik Johnson, Communication Studies and Theatre Arts

A music video for a UWRF student.

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**Baier, Faith**

**Poster**

*Evaluation of the behavioral differences between physically and immunologically castrated male pigs*

Research Collaborator(s): Benjamin Lemmer, Samuel Getty, Bailey Post, Megan Nickel, Andrew Keller

Faculty Mentor(s): Dr. Kurt Vogel, Animal and Food Science

The standard method of castration for swine in the United States is to physically remove the testes within the first month of life, typically without the use of anesthesia or analgesia. An alternative solution to this welfare issue is to use immunological castration. This pilot study was conducted to evaluate the behavioral differences between male pigs castrated physically or immunologically. The study was conducted on 31 male pigs housed in finishing pens from 11 weeks of age until 24 weeks of age. The 31 pigs were randomly assigned to three pens of eight and one pen of seven. Two pens were physically castrated (PHYSI) while the other two were immunologically castrated (IMPRO), using a commercially available immunological product that was designed to suppress puberty in male swine (Improvest®, Zoetis, Florham Park, New Jersey). The first injection was administered on day one of the trial; four weeks later, a second injection was administered, both by a trained Zoetis employee. Eight weeks after the second injection, the pigs were sent to slaughter. Behavior was assessed using continuous 24 hour video surveillance that began on day one of the trial to correspond to the first injection date and repeated at weekly intervals for the duration of the trial. Scan sampling was used on all pigs in all pens at two minute intervals. Time budgets were recorded and analyzed for comparison between treatment groups and behavior sampling dates. Of the behavioral parameters measured (lying, eating, walking, standing,
drinking, and agonistic interactions) there were no significant differences between treatments (P > 0.05). There was a treatment by behavior sampling day interaction effect on mounting behavior (P = 0.017). Although an interaction effect was observed, the exact cause is unclear because significant differences were not recognized on a consistent basis from sampling day to sampling day. The results of this pilot study suggest that additional research is necessary to understand if behavioral implications exist for immunologically castrated swine. A larger sample size is required to fully investigate these effects.

Banitt, Jessica
Poster

To What Degree Does the Check In-Check Out Program Contribute To Increasing Positive Behaviors Within the Native American Value System

Faculty Mentor(s): Jennifer Gervais, Social Work; Tammy Kincaid, Social Work; Dr. Ogden Rogers, Social Work

The focus of this study is to examine the degree that the Check In-Check Out (CICO) program contributes to increasing positive behaviors within the Native American value system at the American Indian Magnet school (AIMS) throughout the 2013-2014 school year. Some key elements are the CICO program in general, off-task behaviors, American Indian value system/on-task behaviors, Positive Behavioral Interventions and Support (PBIS) and various contributing factors. The research conducted, via secondary data, is a simple descriptive study and XO design containing quantitative data. The sample consists of students that participated in the program the entire school year. Their information, as well as, demographics and need to know factors was retrieved from the CICO database that is confidential. The results of the study determined the intervention successful with students. The students that participated in a full school year of CICO showed and increase of on-task behaviors. The results show what is going well, what needs improvement, and what may be missing from the intervention program.

Barichello, Luana
Poster
Oral Literacy

Research Collaborator(s): Bruno Santos, Eloise Ramos, Erico Gregorio

Faculty Mentor(s): Conan Kmiecik, English Language Transition Program

Oral literacy is the foundation of learning to read and write, also it is the ability to listen. Understanding and interpreting what others mean are important tools for oral communication. Misunderstands during any of these steps can be harmful to oral comprehension. Many facts can interfere in oral literacy, such as, accent, local slangs and dialects, body language and speech intensity and variation.

Bauman, Megan
PowerPoint presentation

Sustainable Practices in Ceramics: Sourcing Local Clay

Faculty Mentor(s): Rhonda Willers, Art

The earliest forms of ceramics were made from clay dug straight from the ground. Today, many ceramic artists buy clay that is packaged in boxes which is ready for use or they mix it from materials bought in bags. The purpose of this project was to go back to the roots of ceramic ware and source local clay in a sustainable and efficient method to make a quality clay body. Two different clay bodies were found. The first, being a secondary kaolin, was dug from an abandoned kaolin mine in Redwood Falls, Minnesota. The second, being an earthenware was gathered near to where the Brule River meets Lake Superior in northern Wisconsin. Upon processing and firing the different clay bodies it was found that the earthenware was pure enough to work as a clay body, but the secondary kaolin needed amendments to fire to an appropriate strength. Though both sources produced adequate results, it seems that because of the hours and energy that it took to gather and process the materials it offsets the idea of sustainability. Instead, the clay bodies could be further tested to produce slips to use as surface treatment for ceramic ware.
Beebe, Briana
Presentation

*Listen*

Faculty Mentor(s): Dr. Steven Luebke, English

This project is a research based creative work in which I explored the controversial use of the cochlear implant in profoundly deaf individuals and investigated how people with the inability to hear communicate. The purpose of this research is to understand the feelings and reasons from both sides, those who are for the surgery and those who are strictly against it, within the deaf community. The culmination of my research is my creative fiction piece depicting a deaf child whose hearing parents wish him to receive a cochlear implant; however, the child, who is profoundly deaf from birth, struggles with this decision knowing that receiving the surgery would ostracize him from the deaf community and would change the way he communicates. I drew upon my past experiences in an American Sign Language classroom as well as from scholarly articles detailing the issue regarding cochlear implants. The documentary Sound and Fury has also aided me in my research and has allowed me to see a real life perspective of whether or not it is a parent’s decision to have their deaf child receive the cochlear implant surgery or if it is up to the individual. While many believe that the cochlear implant poses a threat to deaf culture, others see the advantages to this technology. Through the research I have done for this project, I have learned that communication is essential for human interaction and understanding, but not all individuals communicate in the same way or want to communicate in the same way; individual communication is personal and defines the way a person interacts with the world.

Bina, Lauren
Artwork

*The Monolith Project*

Research Collaborator(s): Carson Giblette
The Monolith Project is an ongoing collaborative project between sculptor Carson Giblette and photographer Lauren Bina. This work focuses on the relationship between the natural and artificial and how distortion plays in that relationship.

**Blatz, Jason**  
Poster

*Historical Growth of Natural Gas Pipelines*

Faculty Mentor(s): Matthew Millett, Geography and Mapping Sciences; Dr. Charles Rader, Geography and Mapping Sciences

This project overviews the historical growth of natural gas pipeline data in order to determine how it may affect growth in the future.

**Boss, Kristina**  
Poster

*The Effects of P.G. 600 on Follicle Growth and Ovulation Following Controlled Internal Drug Release Device Removal in Ewes*

Research Collaborator(s): Shelby Springman, Kayla Kruckenberg, Morgan Randall, Jenna Newman, Nathalia Santos

Faculty Mentor(s): Dr. Justin Luther, Animal and Food Science

Estrous synchronization is a useful technique for timed artificial insemination in sheep. Protocols have traditionally used gonadotropins to ensure ovulation and improve fertilization at CIDR removal. The purpose of this study was to determine the effects of P.G. 600 on follicle growth and ovulation in ewes. Dorset (n=13) and Hampshire (n=5) ewes were used. Ewes were blocked into three groups of six. Each group contained three P.G. 600 ewes and three control ewes. All ewes received a CIDR device that was removed 14 days later. Upon CIDR removal, control ewes were injected IM with 2 ml of sterile saline solution, and P.G. 600 ewes were injected IM with 2 ml of P.G. 600 (400
IU PMSG and 200 IU hCG). All ewes underwent transrectal ultrasonography starting at 36 h post CIDR removal. Ewes were ultrasounded every eight hours until ovulation occurred. Ovulation was defined as the disappearance of a dominant follicle (>4 mm in diameter) that was present on the ovary during the previous ultrasound. Two Dorset ewes were removed from the study. One being removed due to the loss of a CIDR prior to the 14 day removal date, and the other being removed due to excessive scar tissue buildup in the reproductive tract making access difficult. One of the removed ewes was from the control group and the other from the P.G. 600 group. Treatment with P.G. 600 did not affect (P > 0.05) the time from CIDR removal to the first observed ovulation (C, 58.0 ± 2.00 h and P.G. 600, 59.0 ± 3.38 h), and among all ewes the first ovulation occurred between 48 h and 80 h after CIDR removal. In ewes with multiple ovulations, treatment with P.G. 600 did not influence (P > 0.05) the interval between the first and last observed ovulation (P.G. 600, 4.8 ± 3.20 h and C, 4.0 ± 1.73 h). When compared to control ewes, treatment with P.G. 600 did not affect (P > 0.05) ovulation rate (C, 2.0 ± 0.27 ovulations per ewe and P.G. 600, 2.4 ± 0.38 ovulations per ewe). More ewes ovulated on both ovaries (n=12) versus the right ovary only (n=4), while none of the ewes had ovulation(s) restricted to the left ovary only. Mean follicle diameter at ovulation was similar (P > 0.05) between groups (C, 5.8 ± 0.24 mm and P.G. 600, 5.3 ± 0.36 mm). Control ewes had a greater mean follicle diameter when compared to P.G. 600 ewes at 44 h (5.5 ± 0.26 vs. 4.4 ± 0.27 mm, P < 0.005, respectively) and 52 hours (5.9 ± 0.25 vs. 5.2 ± 0.32 mm, P < 0.05, respectively) after CIDR removal. However, follicular diameter between 52 h and 62 h increased (P < 0.02) in P.G. 600 (0.56 ± 0.26) versus control ewes (-0.13 ± 0.22). In conclusion, Dorset and Hampshire ewes will ovulate 58 to 59 hours after CIDR removal, and this observation is not influenced by P.G. 600 treatment. Although treatment with P.G. 600 may influence follicular growth it does not impact ovulation rate. Although further studies are needed, the additional cost associated with using P.G. 600 at CIDR removal does not appear to offer any beneficial outcomes.

Brown, Adon
Poster

An estimation of the money demand curve from 1981-2009
Research Collaborator(s): Stephen Middlemiss, William Tammes, Darren Ward

Faculty Mentor(s): Dr. John Walker, Economics

Our research questioned if there is a stable non zero relationship between money and economic activity. Our hypotheses tested if there are statistically significant relationships between money demand and money supply as measured by M2 and MZM, price level in terms of CPI, income in terms of real GDP, interest in terms of the Federal Funds rate and MZM own rate, and housing wealth as measured by the Real Residential Property index. The results indicate a high correlation between the independent and dependent variables as measured by an ordinary least squares.

**Bunton, Elizabeth**

PowerPoint presentation

**THE COALESCENCE OF HUMANITY AND THE CREATION OF THE COSMOS IN ITALO CALVINO’S COSMICOMICS**

Faculty Mentor(s): Dr. Michelle Parkinson, English

The exploration of science through literature is an avenue of discussion that many authors and scholars of language and literature leave untouched. Where is science’s place in literature? The hyper-idealized and apocalyptic fiction that characterizes the science fiction genre of literature does poorly to represent science in its truest essence, and many authors and literary scholars are wary of attempting to add elements of scientific theory into a literary works. Italo Calvino attempts to find the balance between the literary and the scientific in the collection of short stories called Cosmicomics. I developed the following research question as a guide to illuminating how Calvino constructs this bridge between the two genres: how does humanity fit into the creation of the universe? Scholarly articles, journals, and books tend to praise Calvino’s use of literary and creative fiction techniques, while many interviews with Calvino instead focus on the author’s admiration for literary works, and his robust curiosity for the cosmos; Calvino’s fascination reflects the deep infatuation with creation that humanity has had for centuries. Exploration of where humanity fits into the
creation of the universe proves to be a poignant topic for many because of current controversial issues such as global warming, evolution, and the ever present quest for the meaning of life. Italo Calvino proves that literature and science can coexist, even at the extremes of cosmology and fiction; each can keep the essence of the subject, while also deeply immersing each genre into the other to project that the creation of the universe and human existence are interconnected and are used to define each other.

**Burkhow, Sadie**

*Poster*  

*Computational Investigation of A Nitration Reaction that Deviates from the Expected Directing Effects of Typical Electrophilic Aromatic Substitution Reactions*

Faculty Mentor(s): Dr. Stacey A. Stoffregen, Chemistry and Dr. Karl P. Peterson, Chemistry

Electrophilic aromatic substitution of benzene and its derivatives has been heavily studied and the mechanism is believed to be well understood. However, several studies involving nitration on multi-substituted benzene rings, 2,3,4-trimethoxybenzaldehyde in particular, have shown that the in-coming nitro functional group does not go where the established directing affects would place the new group. A detailed computational analysis was done to help elucidate the mechanism leading to these unexpected results. The charge distribution on the arene that was calculated using Hartree Fock 6-31G(HF/6-31G) was inconsistent with an electrophilic aromatic substitution mechanism, suggesting that a different mechanism is responsible for the unexpected nitro positioning. The relative energies were examined using HF/6-31G, for the reaction intermediates and products, which also appear to be inconsistent with the expected electrophilic aromatic substitution mechanism. The relative energies were calculated with B3LYP/6-31++G(d,p) for the same structures. Observations of substitutions occurring at positions unexpected for electrophilic aromatic substitution on other substrates have recently been reported. Those studies provide support for a single electron transfer mechanism. We are currently exploring whether the nitration of 2,3,4-trimethoxybenzaldehyde is better explained by this mechanism.
Butterbrodt, Erich
Poster

Skin-whitening effects of A11, and MEK-I

Faculty Mentor(s): Dr. Cheng-chen Huang, Biology

A11 and MEK-I are skin-whitening compounds under investigation in our lab that were formerly investigated by the past student Kristy Martinson. In continuation of her research A11 and MEK-I were compared to four skin-whitening compounds that are currently being utilized in human products, Arbutin, Niacinamide, Kojic acid and Tretinoin, and the known melanin synthesis inhibitor, PTU (phenylthiourea).

The skin-whitening effects of A11 and MEK-I appear superior to the compounds utilized in commercial products mentioned above, which suggests that with further research these compounds could be utilized for future skin-whitening products.

Chaves, Joicy
Poster

Effects of vernalization on winter oat growth and development

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

Winter oat can be used as a cover crop in early spring and late fall, bringing many benefits to the soil structure and components, such as protection from erosion and contribution to nutrient cycling. The objective of this study is to assess if vernalization induces early maturity on winter oat. Ten varieties of winter oat will be exposed for 21 days to cold temperatures, vernalization process, that has the purpose to speed flowering time. After that, they will be transplanted to pots and grown in a green house. The varieties that pass through the process of vernalization will be compared with a non-vernalized control by growth stages rate (emergence, first leaf, first tiller, jointing, flag leaf, heading, anthesis and height).
Mapping Resilience as a Compound Personality Construct Using Big 5 Traits and Facets

Research Collaborator(s): Alison Miotke, Sarah Stoneburg

Faculty Mentor(s): Dr. Travis Tubre, Psychology

Resilience has been described as an adaptive, developmental construct representing the ability to persist and recover from adversity and stress (Reivich & Shatté, 2002). Researchers have studied resilience with a focus on improving outcomes in various settings (e.g., clinical, developmental) where people deal with adversity. Conceptualizing resilience as ability-based implies a coping process (Lazarus & Folkman, 1984) that can be acquired over time. In this view, resilience is a specific construct representing unusual responses to extreme stressors. An alternative is to study resilience as a personality trait. In this view, resilience represents general behavioral tendencies toward broader environmental challenges (Waaktaar & Torgersen, 2010). Individuals with tendencies toward maladaptive responses could be identified through personality testing and could be assisted prior to experiencing specific life stressors. A number of trait-level resilience measures have been developed to guide such efforts. We are comparing several of these measures with Big 5 personality traits to assess convergent, construct-related validity. We are interested both in the intercorrelation of various resilience scales and with how they correlate with different Big 5 traits and facets. Approximately three hundred undergraduate students will participate in the study for extra credit. We have already collected data for over two hundred cases. Participants will provide demographic data, complete the International Personality Item Pool (IPIP; Goldberg, 1999) to measure Big 5 scales and facets, and complete several measures of trait resilience: the Connor-Davidson Resilience Scale (CD-RISC; Connor & Davidson, 2003), the Ego-Resiliency 89 (ER-89; Block & Kremen, 1996), and the Ego-Resiliency Scale (ER; Klohnen, 1996). We will use zero-order correlations and regression analyses to map the relationships between the resilience measures and corresponding Big 5 traits and facets. Our goal is to align the construct
of resilience with the current hierarchical view of the FFM. Our hope is to represent resilience as an example of what Hough and Ones (2001) call a compound personality trait, or a trait that consists of various facets of different traits. In contrast to thinking of it as an ability that is developed, we believe our results will indicate that it may represent adaptive elements of general personality traits, expressed at the facet level.

**Cole, Kris**

*Poster*

*Targeting a phosphatidylinositol 3-kinase for inhibition of the malaria parasite Plasmodium falciparum*

Research Collaborator(s): Rebekah Hite, Kaitlynn Garven

Faculty Mentor(s): Dr. Fred Bonilla, Biology

The causative agent of most severe forms of human malaria is the parasite Plasmodium falciparum. Plasmodium falciparum goes through three distinct phases in its asexual reproductive cycle in the host: the ring stage, the trophozoite stage, and the schizont stage. In Plasmodium falciparum, a novel phosphatidylinositol-3-kinase (PfPI3K) has been previously shown to be involved in hemoglobin transport and digestion in the parasite, and to be exported to the host erythrocyte. Phosatidylinositols (PtdIns) are the produced specific phosphorylated variants of phosphoinositide lipid kinases (PIKs) and are potent second messengers in cellular membrane remodeling and signaling. Because PIKs are an important, emerging class of drug targets for many therapeutic areas including cancer, inflammatory and metabolic diseases, we investigated the antimalarial potential of targeting PfPI3K in Plasmodium falciparum. We successfully demonstrated the inhibition of parasite growth targeting the pathway in nM concentrations of the drug using a dual phosphatidylinositol 3-kinase/mammalian Target of Rapamycin (mTOR) inhibitor NVP-BEZ235, and other PIKs inhibitors. Specificity of effects to different stages in the parasite’s asexual life cycle are being explored through the synchronous cultures. It is believed that the trophozoite stage of the Plasmodium falciparum asexual reproductive cycle will be most affected, due to increases in metabolic activity at that stage. The purposed least affected is the ring stage, as it
is the most metabolically suppressed stage. With the ongoing issue of human malaria, there is an urgent need to develop new antimalarial chemotherapies. PfPI3K is a viable, potential drug target for further investigation as well as the PI3K/mTOR duel inhibitor NVP-BEZ235.

**Cook, Jenna**

Dance Performance

**Bereavement**

Research Collaborator(s): Salvatore D'Agostino, Samantha Anderson, Sor Her, Morgan Stevens, Dallas Nicolai, Marcus Dryer

Faculty Mentor(s): Mari Kline-Kluck, Communication Studies and Theatre Arts

This dance piece is about the 5 stage of grief. It explores various views/perspectives on the grieving process. The creative process used to construct the project was very collaborative. The overall vision certainly came from the choreographer (Mari Kline-Kluck), but the dancers had a very large roll in the creation of the movement and the characters in the dance. Jenna Cook researched various arrangements of the song "Ne Me Quitte Pas" that she sings during a portion of the piece. Sor Her actually wrote/transposed the version of the piano accompaniment he performs during the piece. The dancers all brought their own acting and expression into the piece and contributed in the collaborative process to create the work.

**Costa Borba, Gabriel**

Poster

**Digital Literacy**

Research Collaborator(s): Flavia Megumi Miyabe, Erick Pereira Araruna Cruz Galvao, Felipe Alarcon Peres, Caroline de Lima Moraes

Faculty Mentor(s): Conan Kmiecik, English Language Transition Program
This poster will describe Digital Literacy, its importance, how to use technology, obtain information, and improve communication. It also illustrates what we learned in J-term classes, for example, how to use some programs, websites, and apps. Finally, we will present our opinion about this topic.

D'Agostino, Salvatore
Dance Performance

Bereavement

Research Collaborator(s): Samantha Anderson, Jenna Cook, Sor Her, Morgan Stevens, Dallas Nicolai, Marcus Dryer

Faculty Mentor(s): Mari Kline-Kluck, Communication Studies and Theatre Arts

This dance piece is about the 5 stage of grief. It explores various views/perspectives on the grieving process. The creative process used to construct the project was very collaborative. The overall vision certainly came from the choreographer (Mari Kline-Kluck), but the dancers had a very large roll in the creation of the movement and the characters in the dance. Jenna Cook researched various arrangements of the song "Ne Me Quitte Pas" that she sings during a portion of the piece. Sor Her actually wrote/transposed the version of the piano accompaniment he performs during the piece. The dancers all brought their own acting and expression into the piece and contributed in the collaborative process to create the work.

Damiao De Oliveira, Magregor
Poster

Comparison between salting, coloring and pressuring in Muenster-Style Cheese

Research Collaborator(s): Mariana Scoqui Guimaraes, Katrina Nunes

Faculty Mentor(s): Michelle Farner, Animal and Food Science
The goal of this project is to make successfully Muenster-Style cheese comparing salting, coloring and pressuring. Historians credit that Muenster was created in Alsace, France, despite some of them believing that its origin was German. The name Muenster comes from the word monasterium or monastery because monks originally made it. The procedures during fabrication of the cheese included standard steps in cheese making as adding starter, cheese coloring, cutting, cooking and draining. However we used two different methods in three attempts while making our cheese and obtained different results from each. On our first attempt we failed to make cheese because the milk was too hot and the starter did not work. After that we made adjustments for our next trial and were able to successfully make cheese. In our second attempt with the first method we used self-pressure, a 23% brine solution and brevibacterium. Our cheese turned out very hard and dry with an unpleasantly salty flavor. It was still creamy white in color and lumpy on the outside. We learned that the vertical pressure method is more effective than the self-pressure method. We also learned that the brevibacterium was supposed to create an orange colored film on the outside of the cheese and add extra flavor to it but ours did not. In the second method we used vertical pressure, added salt to the curds, and coloring to the surface. This cheese turned out soft and moist inside with a pleasant mild flavor. It had a smooth bright orange outside with a creamy white colored center. We attested that the different procedures of coloring, salting and pressure affect the texture, appearance and flavor of the outcome.

**Damião de Oliveira, Magregor**

*Poster*

**Ice Cream Ingredient Substitute**

Research Collaborator(s): Geoffrey Snyder

Faculty Mentor(s): Michelle Farner, Animal and Food Science

The goal of the project is to develop an ice cream by adding whey protein concentrate into a basic vanilla recipe. We will analyze differences in consumer acceptability for flavor, texture, and nutritional value, as well as physiological differences between the two products.
Damião de Oliveira, Magregor
Poster

Manufacturing of Ice Cream with Whey Protein Concentrate

Research Collaborator(s): Geoffrey Snyder

Faculty Mentor(s): Michelle Farner, Animal and Food Science

The goal of the project is to develop an ice cream by adding whey protein concentrate into a basic vanilla recipe. We will analyze differences in consumer acceptability for flavor, texture, and nutritional value, as well as physiological differences between the two products.

Danielson, Tyrel
Poster

Designing and Implementing a Signal Interface Circuit for a Scanning Tunneling Microscope

Research Collaborator(s): Peter Malchow, Peter Gagliardi

Faculty Mentor(s): Dr. Lowell McCann, Physics

A scanning tunneling microscope (STM) relies on quantum tunneling to create a current between the surface scanned and a scanning tip. The magnitude of this current corresponds to the proximity of the tip to atoms on the surface, allowing the STM to image materials at the atomic level.

We completed the final portion of the electronics needed to control an existing incomplete STM. For this we designed, built, and installed a coordinate system interface (CSI), as well as testing and fixing damaged components of previously completed portions of the STM.

Davig, Grace
Poster

Keystone XL & The Potential for Water Contamination
Faculty Mentor(s): Dr. Ruth Baker, Geography and Mapping Sciences

An examination of TransCanada's proposed Keystone Pipeline XL expansion and its possible impact on surrounding watersheds.

de Azevedo Rodrigues, Tadeu
Poster

**Visual Literacy**

Research Collaborator(s): Nathalia Pereira Silva, Gabriela Mota Nogueira, Ana Fabrine Rodrigues Oliveira

Faculty Mentor(s): Conan Kmiecik, English Language Transition Program

Visual Literacy is the ability to make something meaning from information presented into the image. It can be divided by the following components: Texture, Shape, Movement, Line, and Color. It is based on the audience interpretation about those elements that compose the Visual Literacy. That means, once the image has been analyzed by the audience, it can be translated to a new form of information. In sum, Visual Literacy is the conversion from one form of information to another form keeping the exact meaning of the original form.

de Lima Moraes, Caroline
Poster

**Digital Literacy**

Research Collaborator(s): Gabriel Costa Borba, Flavia Megumi Miyabe, Erick Pereira Araruna Cruz Galvao, Felipe Alarcon Peres

Faculty Mentor(s): Conan Kmiecik, English Language Transition Program

This poster will describe Digital Literacy, its importance, how to use technology, obtain information, and improve communication. It also
illustrates what we learned in J-term classes, for example, how to use some programs, websites, and apps. Finally, we will present our opinion about this topic.

**De Moulin, Zach**
Poster

*The Effects of Propolis on the Viral Levels of Honey Bees*

Faculty Mentor(s): Dr. Kim Mogen, Biology

Apis mellifera, the European honey bee, plays a very important role in today’s society. Today, honey bees are the top pollinators of American crops, and play a major role in the pollination of products ranging from almonds, to apples and melons, and even alfalfa [1]. However, as the need for honey bees increases, the number of bees available is decreasing. This decline is believed to be a result of several different bee health issues, especially viruses. In collaboration with Renata Borba at the University of Minnesota – St. Paul, one aspect of bee health was analyzed by the amount of viral DNA present in individual bees, and testing to see if the amount of viral DNA had any correlation with the amount of propolis that was present in the hive over a one year period beginning in May 2013. Bees came from hives containing a propolis trap, a propolis envelope, or control hives containing neither. The results of this experiment indicate that the amount of propolis present in a hive did not affect the virus levels.

**De Vasconcelos Vieira, Samara**
Poster

*Ice cream with dried buttermilk*

Research Collaborator(s): Bobby Sontag

Faculty Mentor(s): Michelle Farner, Animal and Food Science

Taking out cream and adding dried buttermilk. We changed ingredients to make an alternative product.

**Dhawan, Evangeline**
This study examines two conceptions of equality, which I argue are both present in socialist constitutions, and necessary for the survival of the general will. Jean Jacques Rousseau's concept of the general will has a long tradition in democratic political theory. Key to the understanding of the general will is equality, which is the cornerstone of western-democratic constitutions. This political equality, from the liberal-democratic standpoint, ensures that all citizens are granted equal membership into "the whole community". Unequal participation or the domination of private interests leads to a misrepresentation of the general will. It is only through equality that the general will is directed toward the common good, as is its purpose. Before the industrial revolution, political equality might well have been sufficient for sustainment of the general will toward this common benefit, but what about the compelling economic interests brought about by industrialism? A great divide exists between western-democratic notions of equality, and the socialist equality (theoretically speaking) of the early, post-revolutionary constitutions of the Soviet Union and the People's Republic of China. In the west, we view these nations as totalitarian states, and in turn, these states view western notions of democracy as imperialistic class enslavement of the working people by the wealthy elite. To fully understand equality and the general will, it is necessary that we examine Rousseau's influence on these socialist constitutions.

Dietrich, Robert
Poster

Sending a Weather Balloon into the Upper Atmosphere

Faculty Mentor(s): Dr. Glenn Spiczak, Physics
A weather balloon was sent into the upper atmosphere carrying various instruments such as a thermometer, pressure gauge, and radiation detector to see how these things vary with altitude.

**dos Santos Devaud, Atalita**  
*Poster*

*Introduction of Brazilian Candy in the American Market*

Research Collaborator(s): Fernanda Franca e Souza, Nathalia Sousa Araujo, Matheus Garutti, Luiz Felipe Suzuki

Faculty Mentor(s): Dr. Bonnie Walters, Animal and Food Science

According to Brazil (1978), Brigadeiro is a cooked product prepared on the basis of condensed milk and chocolate, can be added other substances such as butter, walnuts, Brazil-Pará, brown-de-cashew and raisins and wrapped in chocolate granulated or colored sprinkles. The purpose of this study was to analyze the introduction of Brigadeiro in the American market, developing the product and adapting it to the American ingredients. In addition, this study will question the acceptance of the product by the Americans students at the University of Wisconsin in River Falls, evaluating its nutritional facts and the economic feasibility of the production in America. The introduction of a product from another culture into the market is always interesting since it can enrich the personal knowledge about other cultures and increase the options of food in the marketplace, stimulating the economy around the sector in question.

**Dryer, Marcus**  
*Dance Performance*

*Bereavement*

Research Collaborator(s): Salvatore D'Agostino, Samantha Anderson, Jenna Cook, Sor Her, Morgan Stevens, Dallas Nicolai

Faculty Mentor(s): Mari Kline-Kluck, Communication Studies and Theatre Arts
This dance piece is about the 5 stages of grief. It explores various views/perspectives on the grieving process. The creative process used to construct the project was very collaborative. The overall vision certainly came from the choreographer (Mari Kline-Kluck), but the dancers had a very large role in the creation of the movement and the characters in the dance. Jenna Cook researched various arrangements of the song "Ne Me Quitte Pas" that she sings during a portion of the piece. Sor Her actually wrote/transposed the version of the piano accompaniment he performs during the piece. The dancers all brought their own acting and expression into the piece and contributed in the collaborative process to create the work.

**Duggan, James**

*Poster*

**Black and White Male Earnings Difference**

Research Collaborator(s): Benjamin Schrock, Emily Grosskopf, Michael Schuenke

Faculty Mentor(s): Dr. John Walker, Economics

This study examines the determinants of black and white male earnings differences in the years 2000 and 2010. OLS regressions, estimated on the pooled sample and separately on blacks and whites, indicate the human capital variables education, experience, and usual hours worked have a positive influence on earnings. The results on the pooled sample suggest that, all else equal, white males earn 16.4% more than blacks in 2000 and 17.5% more in 2010. Oaxaca decomposition results suggest that human capital variables are important determinants of earnings for both black and white males. The decomposition also reveals that in 2010 usual hours worked play a more significant role in explaining the lower earnings of black males. Overall our results suggest human capital is important in explaining earnings differences between black and white males. Our results, however, suggest discrimination may also be a factor in explaining the lower earnings of black males. This is indicated by the positive effect for race in the pooled estimates. In addition discrimination is suggested by the unexplained variation of earnings in the Oaxaca decompositions in both 2000 and 2010.
Eggimann, Joseph
Poster

A Modern Estimation of the Phillips Curve

Research Collaborator(s): Greg Ridley, Emmanuel Udeh

Faculty Mentor(s): Dr. John Walker, Economics

This study looks at the inverse relationship between inflation and unemployment suggested by the Phillips Curve. Two models are estimated. The first using the traditional backward-looking version of expected inflation. The new Keynesian forward-looking version of expected inflation was used for the second model. Both models suggest oil prices are positively related to current inflation, while the unemployment gap is inversely related. The first model suggests that expectations play the largest role in determining current inflation. The second model suggests expected inflation is not significant in determining current inflation.

Elles, Kristina
Qualtrics Data

College and Career Preparedness

Faculty Mentor(s): Dr. Dawn Hukai, Accounting and Finance

Through a survey experiment, UWRF students from a variety of majors completed a financial literacy test. Their results in addition to some personal information were take into consideration when analyzing whether or not students were being properly prepared for the financial burdens of post college life. This study seeks to prove that some majors are better prepared than others and that all students, no matter what their chosen field of study is should take a personal finance course.

Elzy, Jacob
Poster

College students opinions on health and fitness
Faculty Mentor(s): Dr. Paige Miller, Sociology, Anthropology and Criminal Justice

Showing and telling how students on campus view their health and fitness and what the importance of this is and should be to students.

**Felipe Suzuki, Luiz**
Poster

*Development of Vanilla Ice cream with evaporated milk.*

Research Collaborator(s): Manoella Moura Monteiro de Jesus

Faculty Mentor(s): Michelle Farner, Animal and Food Science

It will be developed as a new product, a Vanilla Ice Cream, which will be prepared by the substitution of heavy whipping cream with evaporated milk in order to obtain an ice cream with reduced fat. A sensory analysis will be made, testing the preference of the consumer by texture, flavor and appearance.

**Fernandes, Caio**
Poster

*POP Culture*

Research Collaborator(s): Carla Amaral, Manoella Moura

Faculty Mentor(s): Conan Kmiecik, English Language Transition Program

Popular. Pop. These words are synonymous with popularity, and when affixed to the word "culture," refer to products, texts, or media with broad, favorable appeal. Pop culture incorporates all forms of cultural production.

While there are many types of pop culture throughout the world, U.S. pop culture is one of most dominant. As a result, many people come into contact with English through consumption of American pop culture.
The purpose of this project is examine different genres of pop cultures and consider how the study of pop culture can facilitate English language acquisition.

Fernandes, Natalia  
Visual work and powerpoint

*Geoglazing in Traditional Japanese Wood Fired Kilns*

Faculty Mentor(s): Randy Johnston, Art

An experiment was conducted to explore firing techniques that use renewable resources like wood and creating glazes from locally sourced materials. Glazes were developed using rhyolite from New Mexico, feldspar from North Carolina, iron bearing granite from Minnesota, along with other materials like deer bone, and wood ash left over from past kiln firings. The stones and bone were ground into a fine powder then mixed together starting at 100% of one material and adding another in 5% increments until it is a 50-50 mix. Test tiles were dipped at each addition. Some glazes were designed to show where a mixture turns into a slip (a rougher surface but still adheres to the surface) and when it changes into a glaze. After the tiles were fired an evaluation was done to determine which mixture yields the best result. The test tiles were fired in a traditional Japanese wood-fired kiln called an Anagama kiln. This kiln can hold many pieces but takes three days to load, five days to fire, seven days to cool and one day to unload and clean. The kiln must be stoked around the clock while it is being fired so it is extremely labor intensive. Because vast amounts of wood ash are being introduced to the air in the kiln during the firing, the ash settles on the ceramic pieces adding design and color.

Another set of tiles with the same glazes was fired in a salt kiln. This kiln was quite small in comparison and was fired with gas. Near the end of the firing salt was introduced to the atmosphere creating some decoration. These will be used to compare energy used (gas, wood, manpower), firing time, amount of work fired, and the quality of the glazes created and evaluate the potential of increasing the use of kilns that use a renewable energy source like wood.
In the future I would like to use these tiles as a teaching tool to demonstrate the potential for color variations and show the possibility of diversity in making glazes with only a few materials.

**Fernandes de Melo Marques, Lays**

*Poster*

*Vanilla Ice Cream with Raw Sugar*

Research Collaborator(s): Nathalia Pereira Silva

Faculty Mentor(s): Michelle Farner, Animal and Food Science

It will be developed a new product, a Vanilla Ice Cream, which will be prepared by the substitution of granulated sugar by raw sugar. A sensory analysis will be made, testing the preference of the consumer about the texture, flavor and appearance of the product.

**Ferreira, Erika**

*Poster*

*Health Cookie*

Research Collaborator(s): Joaquim Vitor da Paz Neto, Lucas Aparecido Teixeira da Silva, Magregor Oliveira, Mariana Scoqui Guimaraes

Faculty Mentor(s): Dr. Bonnie Walters, Animal and Food Science

The main purpose of this project was to create a health cookie through the addition and replacement of certain ingredients found in a traditional cookie recipe. Cookie is a common product in American market and by offering a health option will help consumers to have a good health.

The first part of this project was to define the best cookie recipe that could meet either nutritional or technologic functions. Thus, the final ingredients include: oat, all purpose flour, wheat flour, brown sugar, apple sauce, egg, baking soda, cinnamon, vanilla essence, coconut oil,
salt, dried cranberries, and hazelnut. Once finalized, this step, we could move on to the second part, which included all the necessary analysis to characterize all product: protein, fiber, moisture, ash etc. The third part was to set up sensorial analysis panel to find out whether our product meets consumers perspectives or not. Finally, the last step was to scale-up the cookie production to an industrial level.

Ficek-Swenson, Bernice
Artwork

Stone Portraits: An Investigation in Photogravure
2014 Faculty Research Grant

My 2014 Faculty Research Grant was used to create a series of six photogravure etchings using images of stones from significant historical locations. Each stone in the Here-Now There-Then suite of prints came from revered sites such as a D-Day Beach, Pompeii and a cremation site at Varanasi on the Ganges River.

I began by taking a photographic portrait of each stone, which was used to create a copper photogravure plate that was printed in black and colored inks. The plates were produced in my studio and at Izote Editions in Xalapa, Mexico while an Artist-in-Residence at the University of Veracruz, Mexico during my 2014 Fall Sabbatical. At UVC I collaborated with Byron Brauchli, Master Printer and Director of Izote Editions, conducted a workshop with his print students, presented a solo exhibition, El Fuego and a lecture on contemporary photogravure. Here-Now There-Then photogravures were added to the permanent collection of the Institute of Fine Arts, University of Veracruz, Mexico and Izote Editions and most recently shown in their new acquisitions exhibition.

Copper plate photogravure has been my main area of research and artistic investigation since 1995. This is a 19th century process that blends the techniques of etching and photography resulting in an image of delicate continuous tonality and the rich surface of a hand-inked etching. The color prints of Here-Now There-Then were produced with an a’ la poupe’e technique, hand wiping and blending inks of different viscosity to create one-of-a-kind prints.
Flaatten, Greg  
Poster  

*Locating the Ideal Conceptual Frac Sand Mine*  

Faculty Mentor(s): Dr. John Heppen, Geography and Mapping Sciences  

Sand mining has boomed in the Midwest since the hydrofracing process has become efficient enough to drill oil shale. The Midwest is home to the most ideal sand in the world, and the best sand in the Midwest is located in Wisconsin. Finding a frac sand site using a GIS can mainstream the process of locating a sand mine. Using wetland data, rail road data, county plat data, and geologic data a query can be used on the data to give you the result of an ideal mine site. Although the information given by the query gives a good start to finding a site, a prospecting company still needs to drill to ensure that the data is accurate.

Fleck, Luke  
Poster  

*Comparing Confidence Calibration Improvement between Intermediate and Delayed Feedback Testing*  

Faculty Mentor(s): Dr. Jamie Schneider, Chemistry  

Students in academic areas such as chemistry may feel that their knowledge of the subject is more sufficient than it actually is, and therefore they become overconfident in their ability to perform on exams. The Dunning-Kruger effect supports this miscalibration whereby high performing students underestimate their abilities and low performing students overestimate their abilities. In our testing study, we saw this same phenomenon. We wanted to determine if feedback (immediate or delayed) could influence this confidence calibration. It was determined that neither delayed nor immediate feedback was statistically significant in helping the student’s calibration improve better than the other method; however, we did see some small effects with higher achieving students.
Ford, Matthew
Documentary Film

*Semester Abroad Europe Documentary Film*

Faculty Mentor(s): Erik Johnson, Communication Studies and Theatre Arts

A documentary film which explores the experience of six student members of the UWRF 2014 Semester Abroad Independent study Research program, and their research. The film also explores the influence that Semester Abroad Europe had on their personal development and academic careers.

Franca e Souza, Fernanda
Poster

*Introduction of Brazilian Candy in the American Market*

Research Collaborator(s): Nathalia Sousa Araujo, Atalita dos Santos Devaud, Matheus Garutti, Luiz Felipe Suzuki

Faculty Mentor(s): Dr. Bonnie Walters, Animal and Food Science

According to Brazil (1978), Brigadeiro is a cooked product prepared on the basis of condensed milk and chocolate, can be added other substances such as butter, walnuts, Brazil-Pará, brown-de-cashew and raisins and wrapped in chocolate granulated or colored sprinkles. The purpose of this study was to analyze the introduction of Brigadeiro in the American market, developing the product and adapting it to the American ingredients. In addition, this study will question the acceptance of the product by the Americans students at the University of Wisconsin in River Falls, evaluating its nutritional facts and the economic feasibility of the production in America. The introduction of a product from another culture into the market is always interesting since it can enrich the personal knowledge about other cultures and increase the options of food in the marketplace, stimulating the economy around the sector in question.
Gagliardi, Peter
Poster

*Designing and Implementing a Signal Interface Circuit for a Scanning Tunneling Microscope*

Research Collaborator(s): Darren Ward, Peter Malchow

Faculty Mentor(s): Dr. Lowell McCann, Physics

A scanning tunneling microscope (STM) relies on quantum tunneling to create a current between the surface scanned and a scanning tip. The magnitude of this current corresponds to the proximity of the tip to atoms on the surface, allowing the STM to image materials at the atomic level.

We completed the final portion of the electronics needed to control an existing incomplete STM. For this we designed, built, and installed a coordinate system interface (CSI), as well as testing and fixing damaged components of previously completed portions of the STM.

Gagliardi, Peter
Poster

*Holographic optical trapping.*

Faculty Mentor(s): Dr. Lowell McCann, Physics

By adding control of the phase information of light was can create high intensity regions in 3 dimensional space where microscopic objects can be trapped and moved around.

Gagliardi, Peter
Poster

*Calibration of an LCD interface to control a Spatial Light Modulator for Holographic Optical Trapping*

Faculty Mentor(s): Dr. Lowell McCann, Physics
The field of optical tweezeing/trapping has become a powerful new area of research. The addition of holographic phase control of the light from spatial light modulators (SLM) is opening up even more opportunities by providing better and more accurate techniques for trapping. The SLM referred to in this research is optically addressed by an LCD, laser projector system.

Garutti, Matheus
Poster

*Introduction of Brazilian Candy in the American Market*

Research Collaborator(s): Fernanda Franca e Souza, Nathalia Sousa Araujo, Atalita dos Santos Devaud, Luiz Felipe Suzuki

Faculty Mentor(s): Dr. Bonnie Walters, Animal and Food Science

According to Brazil (1978), Brigadeiro is a cooked product prepared on the basis of condensed milk and chocolate, can be added other substances such as butter, walnuts, Brazil-Pará, brown-de-cashew and raisins and wrapped in chocolate granulated or colored sprinkles. The purpose of this study was to analyze the introduction of Brigadeiro in the American market, developing the product and adapting it to the American ingredients. In addition, this study will question the acceptance of the product by the Americans students at the University of Wisconsin in River Falls, evaluating its nutritional facts and the economic feasibility of the production in America. The introduction of a product from another culture into the market is always interesting since it can enrich the personal knowledge about other cultures and increase the options of food in the marketplace, stimulating the economy around the sector in question.

Garven, Kaitlynn
Poster

*Targeting a phosphatidylinositol 3-kinase for inhibition of the malaria parasite Plasmodium falciparum*

Research Collaborator(s): Rebekah Hite, Kris Cole
Faculty Mentor(s): Dr. Fred Bonilla, Biology

The causative agent of most severe forms of human malaria is the parasite Plasmodium falciparum. Plasmodium falciparum goes through three distinct phases in its asexual reproductive cycle in the host: the ring stage, the trophozoite stage, and the schizont stage. In Plasmodium falciparum, a novel phosphatidylinositol-3-kinase (PfPI3K) has been previously shown to be involved in hemoglobin transport and digestion in the parasite, and to be exported to the host erythrocyte. Phosatidylinositols (PtdIns) are the produced specific phosphorylated variants of phosphoinositide lipid kinases (PIKs) and are potent second messengers in cellular membrane remodeling and signaling. Because PIKs are an important, emerging class of drug targets for many therapeutic areas including cancer, inflammatory and metabolic diseases, we investigated the antimalarial potential of targeting PfPI3K in Plasmodium falciparum. We successfully demonstrated the inhibition of parasite growth targeting the pathway in nM concentrations of the drug using a dual phosphatidylinositol 3-kinase/mammalian Target of Rapamycin (mTOR) inhibitor NVP-BEZ235, and other PIKs inhibitors. Specificity of effects to different stages in the parasite’s asexual life cycle are being explored through the synchronous cultures. It is believed that the trophozoite stage of the Plasmodium falciparum asexual reproductive cycle will be most affected, due to increases in metabolic activity at that stage. The purported least affected is the ring stage, as it is the most metabolically suppressed stage. With the ongoing issue of human malaria, there is an urgent need to develop new antimalarial chemotherapies. PfPI3K is a viable, potential drug target for further investigation as well as the PI3K/mTOR duel inhibitor NVP-BEZ235.

Getty, Samuel
Poster

*Evaluation of the behavioral differences between physically and immunologically castrated male pigs*

Research Collaborator(s): Benjamin Lemmer, Bailey Post, Megan Nickel, Faith Baier, Andrew Keller

Faculty Mentor(s): Dr. Kurt Vogel, Animal and Food Science
The standard method of castration for swine in the United States is to physically remove the testes within the first month of life, typically without the use of anesthesia or analgesia. An alternative solution to this welfare issue is to use immunological castration. This pilot study was conducted to evaluate the behavioral differences between male pigs castrated physically or immunologically. The study was conducted on 31 male pigs housed in finishing pens from 11 weeks of age until 24 weeks of age. The 31 pigs were randomly assigned to three pens of eight and one pen of seven. Two pens were physically castrated (PHYSI) while the other two were immunologically castrated (IMPRO), using a commercially available immunological product that was designed to suppress puberty in male swine (Improvist®, Zoetis, Florham Park, New Jersey). The first injection was administered on day one of the trial; four weeks later, a second injection was administered, both by a trained Zoetis employee. Eight weeks after the second injection, the pigs were sent to slaughter. Behavior was assessed using continuous 24 hour video surveillance that began on day one of the trial to correspond to the first injection date and repeated at weekly intervals for the duration of the trial. Scan sampling was used on all pigs in all pens at two minute intervals. Time budgets were recorded and analyzed for comparison between treatment groups and behavior sampling dates. Of the behavioral parameters measured (lying, eating, walking, standing, drinking, and agonistic interactions) there were no significant differences between treatments (P > 0.05). There was a treatment by behavior sampling day interaction effect on mounting behavior (P = 0.017). Although an interaction effect was observed, the exact cause is unclear because significant differences were not recognized on a consistent basis from sampling day to sampling day. The results of this pilot study suggest that additional research is necessary to understand if behavioral implications exist for immunologically castrated swine. A larger sample size is required to fully investigate these effects.

Giblette, Carson
Artwork

The Monolith Project

Research Collaborator(s): Lauren Bina
Faculty Mentor(s): Brett Kallusky, Art

The Monolith Project is an ongoing collaborative project between sculptor Carson Giblette and photographer Lauren Bina. This work focuses on the relationship between the natural and artificial and how distortion plays in that relationship.

Goire, Jazmin
Artwork

It's Chemical

Faculty Mentor(s): Asako Nakauchi, Art

"It's Chemical" is an abstract representation of my brain on depression. It is made of brazed, and welded square steel rods.

Granlund, Leah
Poster

Ice Cream

Research Collaborator(s): Vanessa Johann

Faculty Mentor(s): Michelle Farner, Animal and Food Science

We will be changing one variable in our given ice cream recipe to see how it affects its overall composition and production of the ice cream. Our variable we will be changing is sugar, instead will we be substituting stevia in its place.

Gregorio, Erico
Poster

Oral Literacy

Research Collaborator(s): Bruno Santos, Eloise Ramos, Luana Barichello
Oral literacy is the foundation of learning to read and write, also it is the ability to listen. Understanding and interpreting what others mean are important tools for oral communication. Misunderstands during any of these steps can be harmful to oral comprehension. Many facts can interfere in oral literacy, such as, accent, local slangs and dialects, body language and speech intensity and variation.

**Grosskopf, Emily**

Poster

*Black and White Male Earnings Difference*

Research Collaborator(s): James Duggan, Benjamin Schrock, Michael Schuenke

Faculty Mentor(s): Dr. John Walker, Economics

This study examines the determinants of black and white male earnings differences in the years 2000 and 2010. OLS regressions, estimated on the pooled sample and separately on blacks and whites, indicate the human capital variables education, experience, and usual hours worked have a positive influence on earnings. The results on the pooled sample suggest that, all else equal, white males earn 16.4% more than blacks in 2000 and 17.5% more in 2010. Oaxaca decomposition results suggest that human capital variables are important determinants of earnings for both black and white males. The decomposition also reveals that in 2010 usual hours worked play a more significant role in explaining the lower earnings of black males. Overall our results suggest human capital is important in explaining earnings differences between black and white males. Our results, however, suggest discrimination may also be a factor in explaining the lower earnings of black males. This is indicated by the positive effect for race in the pooled estimates. In addition discrimination is suggested by the unexplained variation of earnings in the Oaxaca decompositions in both 2000 and 2010.

**Gustafson, Josh**

Short Film
**How To Horror: The Differences between American and Japanese Horror**

Faculty Mentor(s): Dr. Lissa Schneider-Rebozo, English

The purpose of this video is to shed some light on the fact that horror is not pulled off in one particular way. Specifically, it will discuss the differences in style between American and Japanese horror media. It opens with studying some tastes that the U.S. has in its horror, highlighting on how it is best received by the American public and how horror writers make their craft. The focus will then turn to the styles of the Japanese and how their culture influences their tales; this will also be compared to the style of American horror. The video is presented through stop motion animation with a splash of humor.

**Guth, Sophia**

**Poster**

*Gender Differences Among College Students and Binge Drinking*

Faculty Mentor(s): Dr. Paige Miller, Sociology, Anthropology and Criminal Justice

I am studying the gender differences among college students at the University of Wisconsin - River Falls when it comes to the activity of binge drinking. Previous studies have found that women are reporting that they are consuming larger amounts of alcohol and are doing so more frequently than in the past. A few other studies have reported that women are the primary applicants for undergraduate institutions in today's society. My hypothesis concludes that women are drinking more frequently and in larger amounts due to stress and depression, especially in a college setting where education is a primary responsibility for these young adults and is of extreme importance for their futures. By creating a survey with specific, directed questions I hope to identify the patterns and/or characteristics that play an important role when trying to explain male and female drinking patterns.

**Harman, Taylor**
Drug addiction is a major public health and serious economic concern in the United States costing taxpayers billions of dollars annually. Experimental evidence shows that exposure to stress is not only a factor in the development of addiction; but also a trigger for drug relapse, or reinstatement. As tobacco use has been linked to a number of cancers and represents the leading cause of preventable death in the United States, elucidation of the effects of stress on nicotine-seeking behavior and relapse is critical. A critical role of chronic stress in the compulsion to seek tobacco and other nicotine delivering products has long been suspected. Although many studies have provided compelling evidence for a role of chronic stress in the enhanced sensitivity to cocaine-seeking behavior and relapse, few have assessed the contribution of chronic stress on nicotine-seeking behavior. In fact, stress induced cross-sensitization to nicotine remains controversial. Additionally, there have been no studies investigating the effects of chronic stress on nicotine-seeking relapse, or reinstatement. Thus, these experiments assess the ability of repeated exposure to variable stress to augment nicotine-seeking behavior and relapse in an animal model of drug addiction. Male Long-Evans rats were exposed to variable stress that consisted of the exposure to different stressors twice a day in random order for 14 days. During this period the control group was left undisturbed except for cage cleaning. Following the chronic stress procedure, rats were surgically implanted with IV catheters in the external jugular vein for nicotine self-administration. Following recovery, rats were allowed to self-administer nicotine (0.03 mg/kg/infusion) under fixed ratio schedules of reinforcement across 15 consecutive daily sessions. Responding under a progressive ratio schedule of reinforcement was assessed over the following six daily sessions. This schedule allows for break points to be analyzed, a measure that reflects the motivation to self-administer nicotine. Following up to 20 days of extinction training, rats were tested for nicotine-seeking behavior reinstatement by a non-
contingent injection of nicotine (0.4 mg/kg, IP). Nicotine self-administration, break points, extinction, and nicotine-primed reinstatement data were analyzed. As data collection is underway, we hypothesize that exposure to chronic variable stress will lead to the facilitation of nicotine self-administration, increases in break points, resistance to nicotine self-administration extinction, and enhancements in nicotine-primed reinstatement, or relapse. The results of the proposed experiments have important implications regarding the design of effective and lasting smoking cessation interventions in humans.

Hastings, Katlin
Poster

The Impact of Play and Learn Groups on School Readiness

Research Collaborator(s): Madeleine Pemberton, Emily Philips

Faculty Mentor(s): Dr. Molly Gerrish, Teacher Education; Dr. Gay Ward, Teacher Education

Research focused on determining the impact of Family Resource Center Play and Learn groups on school readiness. The purpose of the study was to evaluate the effectiveness of Play and Learn activities and to determine if and how the program can be improved. Areas identified for study included: parent support; health, safety, and nutrition; social and emotional development and relationships; language and communication; approaches to learning; motor development and behavior management. Data was collected through parent and teacher interviews which were analyzed for recurring themes. Triangulation was provided by researcher observations and parent surveys. Evidence reflected that children were benefiting in every learning domain with socialization and language development noted most often by the parents. Data from parents indicated that the support offered in the Play and Learn sessions served to increase parental confidence levels, reduced stress and enhanced the parent/child relationship. These sessions also played a critical role in parental understanding of child development. Analysis of data supported the effectiveness of the play and learn program components in supporting school readiness, and also revealed its effectiveness in enhancing parenting skills.
Hauge, Brielle
Poster

*Ice cream with rice syrup*

Research Collaborator(s): Mariana Scoqui Guimaraes

Faculty Mentor(s): Michelle Farner, Animal and Food Science

The goal of this project is to research the substitution of sugar with rice syrup in vanilla ice cream using sensory analysis, consumer preference and physiochemical analysis compared with a simple ice cream recipe.

Heiskari, Brenna
Poster

*It’s a Small World: Analysis of a New Cluster of Arthrobacter Phage*

Research Collaborator(s): Noah Stueven

Faculty Mentor(s): Dr. Karen Klyczek, Biology; Dr. Fred Bonilla, Biology

The UWRF phagehunters courses isolated several new phages infecting Arthrobacter sp. The DNA of two of these phages, Toulouse and TymAbreu, was submitted for sequencing. The genomes of these phages are small, with Toulouse at only 15,319 bp, and TymAbreu at 15,556 bp. Only one Siphoviridae phage with a smaller genome has been reported, Rhodococcus phage RRH1 at 14,270 bp. Interestingly, phage isolated at Lehigh University (Maggie) and Bucknell University (Sandman) were similar to the two phages isolated at UWRF. All four phages share extensive nucleotide homology, with TymAbreu and Maggie differing by only 8 bp. The gene products of the four ‘little’ phage have very low homology with sequences in the NCBI database. Ongoing studies demonstrate Toulouse and TymAbreu replicate optimally at 25-30°C and at a pH range of 5-11. The addition of CaCl2 to the Arthrobacter host is not strictly required for phage replication, but did enhance efficiency as measured by plaque titer. We also examined the host range of these phage among other members of the Actinomycetales.
Toulouse and TymAbreu did not lyse Mycobacterium smegmatis, Corynebacterium xerosis, or Rhodococcus globerulus in any of the culture conditions tested. However, one of the other phage isolated in the class, Lola, was able to lyse R. globerulus. Another ongoing study suggests that the forward and reverse genes, that are in the same relative spot, and called by Glimmer and GeneMark, are both real genes, due to having similar amount of cDNA after RT-PCR.

**Her, Sor**
Dance Performance

**Bereavement**

Research Collaborator(s): Salvatore D'Agostino, Samantha Anderson, Jenna Cook, Morgan Stevens, Dallas Nicolai, Marcus Dryer

Faculty Mentor(s): Mari Kline-Kluck, Communication Studies and Theatre Arts

This dance piece is about the 5 stage of grief. It explores various views/perspectives on the grieving process. The creative process used to construct the project was very collaborative. The overall vision certainly came from the choreographer (Mari Kline-Kluck), but the dancers had a very large roll in the creation of the movement and the characters in the dance. Jenna Cook researched various arrangements of the song "Ne Me Quitte Pas" that she sings during a portion of the piece. Sor Her actually wrote/transposed the version of the piano accompaniment he performs during the piece. The dancers all brought their own acting and expression into the piece and contributed in the collaborative process to create the work.

**Hite, Rebekah**
Poster

*A Collaborative Project: Protocol Development and Testing of Potential Legume Crop Seed Inocula of Nitrogen-Fixing, Growth-Promoter Bacteria using Bradyrhizobium japonicum*
Drought, heat flux and flooding are just a few of the environmental stressors crops undergo. To protect the ongoing health of the crops, some amount of resistance to these factors provides a beneficial competitive edge. Bradyrhizobium japonicum has been noted to form a symbiotic relationship with legume crops to increase the availability of nitrogen required for continued growth. In conjunction with a local company this research developed initial protocols for analysis of Bradyrhizobium japonicum stability in industry seed treatments. Treatments were analyzed through seed surface extraction of treated seeds, as well as the viability over time of the bacterium when exposed to the chemicals themselves. This research lays the foundation for future collaborative work between local companies and the UW-River Falls Biology department in the analysis of microbes beneficial to the production of crops.

Hite, Rebbekah
Poster

Targeting a phosphatidylinositol 3-kinase for inhibition of the malaria parasite Plasmodium falciparum

Research Collaborator(s): Kaitlynn Garven, Kris Cole

Facult Mentor(s): Dr. Fred Bonilla, Biology

The causative agent of most severe forms of human malaria is the parasite Plasmodium falciparum. Plasmodium falciparum goes through three distinct phases in its asexual reproductive cycle in the host: the ring stage, the trophozoite stage, and the schizont stage. In Plasmodium falciparum, a novel phosphatidylinositol-3-kinase (PfPI3K) has been previously shown to be involved in hemoglobin transport and digestion in the parasite, and to be exported to the host erythrocyte. Phosatidylinositols (PtdIns) are the produced specific phosphorylated variants of phosphoinositide lipid kinases (PIKs) and are potent second messengers in cellular membrane remodeling and signaling. Because PIKs are an important, emerging class of drug targets for many therapeutic areas including cancer, inflammatory and metabolic
diseases, we investigated the antimalarial potential of targeting PfPI3K in Plasmodium falciparum. We successfully demonstrated the inhibition of parasite growth targeting the pathway in nM concentrations of the drug using a dual phosphatidylinositol 3-kinase/mammalian Target of Rapamycin (mTOR) inhibitor NVP-BEZ235, and other PIKs inhibitors. Specificity of effects to different stages in the parasite’s asexual life cycle are being explored through the synchronous cultures. It is believed that the trophozoite stage of the Plasmodium falciparum asexual reproductive cycle will be most affected, due to increases in metabolic activity at that stage. The purposed least affected is the ring stage, as it is the most metabolically suppressed stage. With the ongoing issue of human malaria, there is an urgent need to develop new antimalarial chemotherapies. PfPI3K is a viable, potential drug target for further investigation as well as the PI3K/mTOR duel inhibitor NVP-BEZ235.

Hoffman, Ashley
Poster

Research Presentation of Teachers’ Authority in UW-RF Classrooms based on gender

Faculty Mentor(s): Dr. Paige Miller, Sociology, Anthropology and Criminal Justice

I will be presenting my research project that aims to identify patterns associated with authority and gender of teachers here on campus. The results of the survey that I designed for students will be quantitatively analyzed and conclusions will be presented on my poster. In addition to this survey, interviews with professors will provide another perspective and help establish a detailed analysis on this topic for presentation.

Howell, Sydney
Poster

The Process of Scripting

Faculty Mentor(s): Joseph Blum, Communication Studies and Theatre Arts
My poster will outline the process one must go through to write a standard movie script, and I will use examples from the script I wrote for the Broadcast Educator's Association's Festival of Media Arts competition.

**Howell, Sydney**

*Short Film*

*Dreadwood, 2014, TRT: 2:49*

Faculty Mentor(s): Erik Johnson, Communication Studies and Theatre Arts

For our Halloween themed episode, I wanted to produce some content that dealt with the holiday and how some people spend it. I discovered Dreadwood, a local haunted trail, that goes all out for Hallow's Eve.

**Inlow, James**

*Artwork*

*Pneuma*

Faculty Mentor(s): Bernie Ficek-Swenson, Art

Pneuma is an exploration of the imagery presented in the book of Acts during the apostles receiving of the Holy Spirit during Pentecost. Pneuma is the Greek word for breath and when used in a religious context it means spirit or soul. This piece is a reduction woodcut using four different colors. Woodcuts have been used to depict religious scenes for centuries.

**Jahnel Rodrigues de Oliveira, Larissa**

*PowerPoint presentation*

*Case Study: Shopping behaviors of students at one Midwestern American university*

Research Collaborator(s): Yaoyao Zhou, Hyobin Ji, Felipe Alarcon Peres
Faculty Mentor(s): Diane Jacobson, English Language Transition Program

Four international students collected data with the purpose of learning more about the shopping behaviors of students at one Midwestern American university. The central research question was to determine trends in shopping behavior in order to compare the results with the researchers’ predictions. The researchers created a survey of ten content questions with quantifiable answers. The questions were related to three general themes: students’ level of addiction to shopping, shopping preferences, and behaviors before or after shopping. Forty students on campus were interviewed. Before conducting interviews, the group members predicted the possible shopping behavior of the students based on their pre-conceived ideas of university students living in America. After gathering the information, the results were compiled and graphed based on the four demographic indicators: gender, age, domestic or international status, and location of residence. Finally, the data was compared with the researchers’ original predictions. Of the forty graphs created, four graphs that showed unexpected differences or results were chosen to evidence the students’ behavior. The researchers were surprised to find that the results demonstrated that (a) males are more likely to use cash while females are more likely to use debit cards; (b) no matter where the students live, they prefer to go shopping in the stores instead of online shopping; (c) regardless of age, most students prefer to shop for clothing; and (d) international students go shopping less often than domestic students. This research project involved non-native speakers of English systematically identifying stereotypes related to students’ shopping behaviors, gathering data to describe the true nature of those behaviors, and comparing/contrasting the results with their original predictions. This oral presentation will include the survey questions used, the reasoning for each question, the unexpected survey results, and the group members’ conclusions based on their findings.

Janke, Amanda
Poster

*Effects of Chronic Stress on Nicotine-Seeking Behavior and Reinstatement*
Drug addiction is a major public health and serious economic concern in the United States costing taxpayers billions of dollars annually. Experimental evidence shows that exposure to stress is not only a factor in the development of addiction; but also a trigger for drug relapse, or reinstatement. As tobacco use has been linked to a number of cancers and represents the leading cause of preventable death in the United States, elucidation of the effects of stress on nicotine-seeking behavior and relapse is critical. A critical role of chronic stress in the compulsion to seek tobacco and other nicotine delivering products has long been suspected. Although many studies have provided compelling evidence for a role of chronic stress in the enhanced sensitivity to cocaine-seeking behavior and relapse, few have assessed the contribution of chronic stress on nicotine-seeking behavior. In fact, stress induced cross-sensitization to nicotine remains controversial. Additionally, there have been no studies investigating the effects of chronic stress on nicotine-seeking relapse, or reinstatement. Thus, these experiments assess the ability of repeated exposure to variable stress to augment nicotine-seeking behavior and relapse in an animal model of drug addiction.

Male Long-Evans rats were exposed to variable stress that consisted of the exposure to different stressors twice a day in random order for 14 days. During this period the control group was left undisturbed except for cage cleaning. Following the chronic stress procedure, rats were surgically implanted with IV catheters in the external jugular vein for nicotine self-administration. Following recovery, rats were allowed to self-administer nicotine (0.03 mg/kg/infusion) under fixed ratio schedules of reinforcement across 15 consecutive daily sessions. Responding under a progressive ratio schedule of reinforcement was assessed over the following six daily sessions. This schedule allows for break points to be analyzed, a measure that reflects the motivation to self-administer nicotine. Following up to 20 days of extinction training, rats were tested for nicotine-seeking behavior reinstatement by a non-contingent injection of nicotine (0.4 mg/kg, IP). Nicotine self-administration, break points, extinction, and nicotine-primed reinstatement data were analyzed. As data collection is underway, we hypothesize that exposure to chronic variable stress will lead to the facilitation of nicotine self-administration, increases in break points,
resistance to nicotine self-administration extinction, and enhancements in nicotine-primed reinstatement, or relapse. The results of the proposed experiments have important implications regarding the design of effective and lasting smoking cessation interventions in humans.

Ji, Hyobin
PowerPoint presentation

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Faculty Mentor(s): Diane Jacobson, English Language Transition Program

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domestic students. This research project involved non-native speakers of English systematically identifying stereotypes related to students’ shopping behaviors, gathering data to describe the true nature of those behaviors, and comparing/contrasting the results with their original predictions. This oral presentation will include the survey questions used, the reasoning for each question, the unexpected survey results, and the group members’ conclusions based on their findings.

**Johann, Vanessa**
Poster

*Ice Cream*

Research Collaborator(s): Leah Granlund

Faculty Mentor(s): Michelle Farner, Animal and Food Science

We will be changing one variable in our given ice cream recipe to see how it affects its overall composition and production of the ice cream. Our variable we will be changing is sugar, instead will we be substituting stevia in its place.

**Johann, Vanessa Cristina**
Poster

*Making a Sugar-Free Vanilla Ice Cream*

Faculty Mentor(s): Michelle Farner, Animal and Food Science

Ice cream is one of the most popular frozen desserts throughout the world. The major consumers countries are New Zealand, the United States, Canada, Australia, Belgium, Finland, and Sweden. It is a combination of fat, milk solids-not-fat (the principal source of protein), sweetener, stabilizer, emulsifier and flavoring agents. Wide range of sweeteners has been used in ice cream formulation, which the most common is sucrose (or sugar). Sugar provides sweetness, depresses freezing point, creamy texture, enhances flavor, and impact on economics. However, the high consumption of sugar is correlated with high glycemic index (GI) level contributing with metabolic syndrome, diabetes mellitus (DM), obesity, hypertension, and ischemic heart
diseases. The aims of this project were (1) formulate and develop a vanilla ice cream with a sugar substitute by using Stevia, and (2) compare the final product with eight variables vanilla ice cream in taste, texture and appearance.

Johnson, Emily
PowerPoint presentation

"Pindemonium"-Nonfiction Personal Essay

Faculty Mentor(s): Dr. Jennifer Brantley, English

This counter is too tall. I stand on tip-toes, shrug my shoulders, and thrust my palms deep within the dough. Five minutes since I started, and still I try to incorporate the last bits of flour into the mound before me. Such a small ball—perhaps the size of a premature newborn’s head. Where did all the flour go—the mountain I had piled, cup by cup six and a half times, into the bowl (which I had feared was not going to be big enough, and it almost wasn’t). The chemistry is astounding here, almost magic. Just moments ago I had sugar, yeast, flour, Crisco, orange juice, milk. It’s like the beginning of the universe. Basic matter—gasses, maybe violet, indigo, rubicund and yellow swirling in the infinite black. Then POW, something forced it all together.

I will not stop, not until all the flour is cooperating like the rest of the team. I plunge the base of my palm into the heap, holding half of it steady with the other hand, and I slide the dough towards the backsplash on this floury, yellow laminate countertop. Quarter-turn. Dive in again. Fold it onto itself. Quarter-turn, repeat, switch palms. Forearm and shoulder cramp. I remember mom telling me that kneading takes at least ten minutes. I asked her how to know when I should stop. "It’s kinda hard to knead too much."

Jorgenson, Henrik
Artwork

Honeycomb Goblets

Faculty Mentor(s): Eoin Breadon, Art
I was working on a production style piece and chose to try to make goblets using both soft glass from the hot-shop and borosilicate flame-worked glass honeycomb stems. They are three separate pieces: foot, cup, and stem. All three are coldworked and cold assembled with hental glass glue.

Keller, Andrew
Poster

*Evaluation of the behavioral differences between physically and immunologically castrated male pigs*

Research Collaborator(s): Benjamin Lemmer, Samuel Getty, Bailey Post, Megan Nickel, Faith Baier

Faculty Mentor(s): Dr. Kurt Vogel, Animal and Food Science

The standard method of castration for swine in the United States is to physically remove the testes within the first month of life, typically without the use of anesthesia or analgesia. An alternative solution to this welfare issue is to use immunological castration. This pilot study was conducted to evaluate the behavioral differences between male pigs castrated physically or immunologically. The study was conducted on 31 male pigs housed in finishing pens from 11 weeks of age until 24 weeks of age. The 31 pigs were randomly assigned to three pens of eight and one pen of seven. Two pens were physically castrated (PHYSI) while the other two were immunologically castrated (IMPRO), using a commercially available immunological product that was designed to suppress puberty in male swine (Improvevest®, Zoetis, Florham Park, New Jersey). The first injection was administered on day one of the trial; four weeks later, a second injection was administered, both by a trained Zoetis employee. Eight weeks after the second injection, the pigs were sent to slaughter. Behavior was assessed using continuous 24 hour video surveillance that began on day one of the trial to correspond to the first injection date and repeated at weekly intervals for the duration of the trial. Scan sampling was used on all pigs in all pens at two minute intervals. Time budgets were recorded and analyzed for comparison between treatment groups and behavior sampling dates. Of the behavioral parameters measured (lying, eating, walking, standing, drinking, and agonistic interactions) there were no significant
differences between treatments (P > 0.05). There was a treatment by behavior sampling day interaction effect on mounting behavior (P = 0.017). Although an interaction effect was observed, the exact cause is unclear because significant differences were not recognized on a consistent basis from sampling day to sampling day. The results of this pilot study suggest that additional research is necessary to understand if behavioral implications exist for immunologically castrated swine. A larger sample size is required to fully investigate these effects.

Kent, Jake-Ryan
PowerPoint presentation

*Through Our Ancestors’ Eyes: An Exploration of Religion Through The Sexual, Spiritual, and Cultural Identities*

Faculty Mentor(s): Dr. Greta Gaard, English

“Through Our Ancestors’ Eyes is a look at three world religions as they pertain to contemporary America. In exploring Christianity, Buddhism, and Paganism through a Queer studies lens, the threads of cultural, spiritual, and sexual identities come together to paint a progressive picture of faith and human studies. Utilizing the scholarship of Colin R. Johnson, Judith Butler, John D’Emilio, and Eve Sedgwick in Queer studies along with personal interviews conducted for the purpose of this paper; “Through Our Ancestors’ Eyes” binds together religion with their messages for the public in a modern and down to earth approach that highlights the importance of sociological and LGBT studies together, not separate from, these paths of faith.

Kerr, Elliot
Short Film

*@The Almighty Dave: a superhero short*

Research Collaborator(s): Justin Lund

Faculty Mentor(s): Erik Johnson, Communication Studies and Theatre Arts
My partner and I strived to create a short superhero film in less than 48 hours for the 48 Hour Film Festival.

**Kersten, Elsie**
Poster

*The Distribution of Bacteria from Hand Dryers on Campus*

Research Collaborator(s): Elliott Mann, April Schattner
Faculty Mentor(s): Dr. Kim Mogen, Biology

In order to determine which environmentally sustainable hand dryer is the best fit for the UWRF campus, we conducted this experiment to compare the distribution of introduced bacteria on the Mitsubishi, the Toto, and the American Dryer: Extreme Air. We introduced a known bacteria in an enclosed environment around the three different hand dryers and counted the colonies that grew on plates. We then compared the data using a series of Mann-Whitney tests.

**Ketterhagen, Taylor**
Poster

*Small Scale Hops Thresher*

Research Collaborator(s): Kyle Willfahrt, Paul Reberg
Faculty Mentor(s): Dr. Joseph Shakal, Agricultural Engineering Technology; Dr. Joel Peterson, Agricultural Engineering Technology; Dr. Veronica Justen, Plant and Earth Science

Engineering a Hops Cleaning Unit in Tandem with a Hops Thresher Kyle Willfahrt, Agricultural Engineering Technology (Class of 2015) With the big boom of craft breweries and micro-breweries popping up across the nation, the need arises for these organizations to get hops to craft their brews. As engineering technology students we focus on getting our hands on in creating a solution to the brewer’s problems. A need for a hops thresher and cleaning unit is then formulated and manufactured. From there, testing is done on the prototype equipment and then modifications are described from the threshing efficiency that was
tabulated by testing freshly harvested hops. Specifically, we made modifications to a hops threshing unit to ensure optimal threshing based on how many hops cones remained after a threshing. Also, fresh hops and aged hops were tested to define what type of hops threshes best. Moreover, we also went through the engineering design process to design, modify, and create a materials list for a new cleaner unit to work together with the hops thresher that was tested. This was all carried out after calculations concerning torque and horsepower for the powertrain that the project requires. We received 2 grants for our research, one each for the hops thresher and cleaner. Materials were then purchased and fabrication of a hops cleaning unit is now on going. When completed, the team wants to collaborate with the agricultural business department and test the validity of mass production of thresher and cleaning units. Patent research and price formulations are what the team will then research. From there, a feasibility study will then be conducted to determine if mass production is possible.

Khalar, Brady
Poster

*Family Links to Delinquent Acts*

Faculty Mentor(s): Dr. Paige Miller, Sociology, Anthropology and Criminal Justice

Studying college adults who have participated in delinquent acts such as truancy or stealing. Along with family background like divorced, or married parents.

Klimek, Hannah
Poster

*Effects of Chronic Stress on Nicotine-Seeking Behavior and Reinstatement*

Research Collaborator(s): Taylor Harman, Amanda Janke, Anna Miller

Faculty Mentor(s): Dr. James Cortright, Psychology
Drug addiction is a major public health and serious economic concern in the United States costing taxpayers billions of dollars annually. Experimental evidence shows that exposure to stress is not only a factor in the development of addiction; but also a trigger for drug relapse, or reinstatement. As tobacco use has been linked to a number of cancers and represents the leading cause of preventable death in the United States, elucidation of the effects of stress on nicotine-seeking behavior and relapse is critical. A critical role of chronic stress in the compulsion to seek tobacco and other nicotine delivering products has long been suspected. Although many studies have provided compelling evidence for a role of chronic stress in the enhanced sensitivity to cocaine-seeking behavior and relapse, few have assessed the contribution of chronic stress on nicotine-seeking behavior. In fact, stress induced cross-sensitization to nicotine remains controversial. Additionally, there have been no studies investigating the effects of chronic stress on nicotine-seeking relapse, or reinstatement. Thus, these experiments assess the ability of repeated exposure to variable stress to augment nicotine-seeking behavior and relapse in an animal model of drug addiction.

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Kruckenberg, Kayla
Poster

The Effects of P.G. 600 on Follicle Growth and Ovulation Following Controlled Internal Drug Release Device Removal in Ewes

Research Collaborator(s): Shelby Springman, Kristina Boss, Morgan Randall, Jenna Newman, Nathalia Santos

Faculty Mentor(s): Dr. Justin Luther, Animal and Food Science

Estrous synchronization is a useful technique for timed artificial insemination in sheep. Protocols have traditionally used gonadotropins to ensure ovulation and improve fertilization at CIDR removal. The purpose of this study was to determine the effects of P.G. 600 on follicle growth and ovulation in ewes. Dorset (n=13) and Hampshire (n=5) ewes were used. Ewes were blocked into three groups of six. Each group contained three P.G. 600 ewes and three control ewes. All ewes received a CIDR device that was removed 14 days later. Upon CIDR removal, control ewes were injected IM with 2 ml of sterile saline solution, and P.G. 600 ewes were injected IM with 2 ml of P.G. 600 (400 IU PMSG and 200 IU hCG). All ewes underwent transrectal ultrasonography starting at 36 h post CIDR removal. Ewes were ultrasounded every eight hours until ovulation occurred. Ovulation was defined as the disappearance of a dominant follicle (>4 mm in diameter) that was present on the ovary during the previous ultrasound. Two Dorset ewes were removed from the study. One being removed due to the loss of a CIDR prior to the 14 day removal date, and the other being removed due to excessive scar tissue buildup in the reproductive tract making access difficult. One of the removed ewes was from the control group and the other from the P.G. 600 group. Treatment with P.G. 600 did not affect (P > 0.05) the time from CIDR removal to the first observed ovulation (C, 58.0 ± 2.00 h and P.G. 600, 59.0 ± 3.38 h), and among all ewes the first ovulation occurred between 48 h and 80 h after CIDR removal. In ewes with multiple ovulations, treatment with P.G. 600 did not influence (P > 0.05) the interval between the first and last observed ovulation (P.G. 600, 4.8 ± 3.20 h and C, 4.0 ± 1.73 h). When compared to control ewes, treatment with P.G. 600 did not affect (P >
0.05) ovulation rate (C, 2.0 ± 0.27 ovulations per ewe and P.G. 600, 2.4 ± 0.38 ovulations per ewe). More ewes ovulated on both ovaries (n=12) versus the right ovary only (n=4), while none of the ewes had ovulation(s) restricted to the left ovary only. Mean follicle diameter at ovulation was similar (P > 0.05) between groups (C, 5.8 ± 0.24 mm and P.G. 600, 5.3 ± 0.36 mm). Control ewes had a greater mean follicle diameter when compared to P.G. 600 ewes at 44 h (5.5 ± 0.26 vs. 4.4 ± 0.27 mm, P < 0.005, respectively) and 52 hours (5.9 ± 0.25 vs. 5.2 ± 0.32 mm, P < 0.05, respectively) after CIDR removal. However, follicular diameter between 52 h and 62 h increased (P < 0.02) in P.G. 600 (0.56 ± 0.26) versus control ewes (-0.13 ± 0.22). In conclusion, Dorset and Hampshire ewes will ovulate 58 to 59 hours after CIDR removal, and this observation is not influenced by P.G. 600 treatment. Although treatment with P.G. 600 may influence follicular growth it does not impact ovulation rate. Although further studies are needed, the additional cost associated with using P.G. 600 at CIDR removal does not appear to offer any beneficial outcomes.

Landsberger, Alyssa
Poster

*Analysis of Therapy Animal Volunteers' Experience*

Faculty Mentor(s): Dr. Paige Miller, Sociology, Anthropology and Criminal Justice

The study is designed to determine the experience therapy animal volunteers have during their volunteering. The project is based on the previous research that has found significant effects therapy animals have on psychosocial health of people, which is described as a combination of a person’s emotional, social, mental, and spiritual magnitudes. Previous research has primarily focused on the effects of therapy animals on people who are both physically and/or mentally ill. The current study focused on the effects therapy animals have on the people who volunteer with these animals, who have little to no physical or mental illness. The hypothesis for this project is therapy animal volunteers gain holistic and therapeutic benefits, which improve psychosocial health, through interactions with both humans and animals. The research involved interviewing 18 participants who volunteer in the organization “North Star Therapy Animals’. The
interview questions were designed to find the emotions and attitudes experienced by these volunteers during their time working with therapy animals in facilities of various sorts. The study found three significant themes that involved both mental and emotional states that are experienced by the volunteers. These three themes consisted of reducing/inducing stress, positive emotions and attitudes, and building a strong relationship with animals. These themes concluded that therapy animal volunteers experience both positive and negative states during their volunteering sessions.

**Lemmer, Benjamin**  
Poster

*Evaluation of the behavioral differences between physically and immunologically castrated male pigs*

Research Collaborator(s): Samuel Getty, Bailey Post, Megan Nickel, Faith Baier, Andrew Keller

Faculty Mentor(s): Dr. Kurt Vogel, Animal and Food Science

The standard method of castration for swine in the United States is to physically remove the testes within the first month of life, typically without the use of anesthesia or analgesia. An alternative solution to this welfare issue is to use immunological castration. This pilot study was conducted to evaluate the behavioral differences between male pigs castrated physically or immunologically. The study was conducted on 31 male pigs housed in finishing pens from 11 weeks of age until 24 weeks of age. The 31 pigs were randomly assigned to three pens of eight and one pen of seven. Two pens were physically castrated (PHYSI) while the other two were immunologically castrated (IMPRO), using a commercially available immunological product that was designed to suppress puberty in male swine (Improvest®, Zoetis, Florham Park, New Jersey). The first injection was administered on day one of the trial; four weeks later, a second injection was administered, both by a trained Zoetis employee. Eight weeks after the second injection, the pigs were sent to slaughter. Behavior was assessed using continuous 24 hour video surveillance that began on day one of the trial to correspond to the first injection date and repeated at weekly intervals for the duration of the trial. Scan sampling was used on all pigs in all pens at two minute
intervals. Time budgets were recorded and analyzed for comparison between treatment groups and behavior sampling dates. Of the behavioral parameters measured (lying, eating, walking, standing, drinking, and agonistic interactions) there were no significant differences between treatments ($P > 0.05$). There was a treatment by behavior sampling day interaction effect on mounting behavior ($P = 0.017$). Although an interaction effect was observed, the exact cause is unclear because significant differences were not recognized on a consistent basis from sampling day to sampling day. The results of this pilot study suggest that additional research is necessary to understand if behavioral implications exist for immunologically castrated swine. A larger sample size is required to fully investigate these effects.

Ludvigsen, Angela
Poster

*Sizing Optically Levitated Aerosol Droplets*

Research Collaborator(s): Elliot Pachniak

Faculty Mentor(s): Dr. Lowell McCann, Physics

Optical traps use a laser beam to catch and hold small transparent objects. Past observations of optically trapped aqueous aerosol droplets have shown that the droplet moves between two or more stable positions depending upon the power of the trapping laser. It is hypothesized that this movement coincides with a resonance of the laser light with the droplet called a Whispering Gallery Mode. When the resonance occurs, additional forces act on the droplet. To investigate this behavior, Raman scattered light from the droplet is measured using a spectrometer while simultaneously recording the droplet’s position. The Raman spectrum exhibits a series of peaks that appear due to the very spherical shape of the droplet called Cavity Enhanced Raman Spectroscopy. The location and spacing of the peaks are related to the diameter and the optical properties of the droplet. In order to achieve an accurate determination of the radius from this spectrum, the magnitude of the electric and magnetic fields of the light scattered off the droplet are calculated. This allows for a precise measurement of the droplet’s radius at the moment that the droplet moves between stable positions.
Ludvigsen, Angela
Poster

*Using Spontaneous Parametric Down-Conversion to Determine Quantum Properties of Light*

Research Collaborator(s): Gillian McDonald

Faculty Mentor(s): Dr. Lowell McCann, Physics

A non-linear BBO crystal was used to produce pairs of down-converted photons through Spontaneous Parametric Down-Conversion (SPDC) that were detected using two single photon detectors. The dark count rates of the detectors were measured using both LabView and an oscilloscope and were found to be in agreement with the manufacturer’s specifications. We also found that a longpass filter, used to block visible light, fluoresces when green or blue light shines directly into the filter. The work done to produce down converted photons will help prepare future students for experiments proving the particle and wave-like characteristics of light.

Lund, Justin
Short Film

@TheAlmightyDave: a superhero short

Research Collaborator(s): Elliot Kerr

Faculty Mentor(s): Erik Johnson, Communication Studies and Theatre Arts

My partner and I strived to create a short superhero film in less than 48 hours for the 48 Hour Film Festival.

Macomber, Bridget
Poster

*How Successful Staff Views Music and Memory at the Baldwin Care Center*
Music therapy is about learning how music can influence a person with dementia’s memory, behavior, socialization, etc. Music therapy has had many experiments showing how music affects residents at skilled facilities and what changes occur within the resident. The non-profit organization Music and Memory is observed at a skilled nursing facility in rural Wisconsin to view the changes and the improvements of the residents that participated in the program within the first month of being implemented. Within this study there were a pre survey and a post survey to Music and Memory being implemented at the Baldwin Care Center (BCC). This study shows that there is an improvement within the residents that suffer from dementia and are given an iPod with personalized music, although the study needs to be a longer than the one month that was given with this particular study. This study also shows that there should be more research conducted on music therapy.

Malchow, Peter
Poster

*Designing and Implementing a Signal Interface Circuit for a Scanning Tunneling Microscope*

Research Collaborator(s): Darren Ward, Peter Gagliardi

Faculty Mentor(s): Dr. Lowell McCann, Physics

A scanning tunneling microscope (STM) relies on quantum tunneling to create a current between the surface scanned and a scanning tip. The magnitude of this current corresponds to the proximity of the tip to atoms on the surface, allowing the STM to image materials at the atomic level.

We completed the final portion of the electronics needed to control an existing incomplete STM. For this we designed, built, and installed a coordinate system interface (CSI), as well as testing and fixing damaged components of previously completed portions of the STM.
Malchow, Peter  
Poster  

*Resistivity Measurements of Thin Gold Films*  

Faculty Mentor(s): Dr. Lowell McCann, Physics  

Gold thin films 10, 15, 20 and 40 nanometers thick were created using thermal evaporation deposition. The samples were deposited in a configuration allowing measurements of electrical resistance to be made. The resistivity for each sample was calculated from these measurements and compared to theoretical values based on the each samples’ geometry.

Mann, Elliott  
Poster  

*The Distribution of Bacteria from Hand Dryers on Campus*  

Research Collaborator(s): Elsie Kersten, April Schattner  

Faculty Mentor(s): Dr. Kim Mogen, Biology  

In order to determine which environmentally sustainable hand dryer is the best fit for the UWRF campus, we conducted this experiment to compare the distribution of introduced bacteria on the Mitsubishi, the Toto, and the American Dryer: Extreme Air. We introduced a known bacteria in an enclosed environment around the three different hand dryers and counted the colonies that grew on plates. We then compared the data using a series of Mann-Whitney tests.

Mariette, Daniel  
Short Film  

*The MemoryCare Plays for St. Croix Valley Foundation Promotional Video*  

Faculty Mentor(s): Erik Johnson, Communication Studies and Theatre Arts
A short film promoting and explaining "The Remember Project." The St. Croix Valley Foundation is raising awareness for Alzheimer's disease through this project by performing the MemoryCare plays in local venues. This short film interviews key members of the organization and shows footage of the plays being performed. It is being used on their website, and to be sent to prospective venues for informative purposes.

**Martinez, Mark**

*Poster*

*Progress toward the total synthesis of Piperodione*

Faculty Mentor(s): Dr. Karl Peterson, Chemistry

Piperodione is an amide alkaloid isolated from the methanol extract of the dried fruits of the plant Piperaceae retrofactum. The compound was reported as having potent neurite-outgrowth promoting activity, which could have implications for treating neurodegenerative disorders such as Alzheimer’s disease. The purpose of this research is to achieve the first reported total synthesis of piperodione. A four-step convergent synthesis has been proposed, including a Friedel-Crafts acylation of 1,3-benzodioxole with 3-chloropropanoyl chloride, and the copper(I) iodide-catalyze aerobic oxidation of an a-cyanopiperidine amide as key steps. Progress and challenges will be presented and discussed.

**McDonald, Gillian**

*Poster*

*Using Spontaneous Parametric Down-Conversion to Determine Quantum Properties of Light*

Research Collaborator(s): Angela Ludvigsen

Faculty Mentor(s): Dr. Lowell McCann, Physics

A non-linear BBO crystal was used to produce pairs of down-converted photons through Spontaneous Parametric Down-Conversion (SPDC) that were detected using two single photon detectors. The dark count rates of the detectors were measured using both LabView and an oscilloscope and were found to be in agreement with the manufacturer’s
specifications. We also found that a longpass filter, used to block visible light, fluoresces when green or blue light shines directly into the filter. The work done to produce down converted photons will help prepare future students for experiments proving the particle and wave-like characteristics of light.

**McFarland, Kelly**

*Poster*

_Acoustic Levitation Using Ultrasonic Transducers_

Research Collaborator(s): Victoria Wahlquist

Faculty Mentor(s): Dr. Lowell McCann, Physics

Acoustic levitation was studied using piezoelectric transducers to create a standing pressure wave in air. Multiple polystyrene balls were simultaneously levitated at a frequency of 63.348 ± .005 kHz. The polystyrene balls were more stable when using a concave reflector versus a flat reflector.

**McGee, Reven**

*Poster*

_UW-RF Women and Development Survey 2014-2015_

Research Collaborator(s): Arianna Pajtash, Shannon McNamara, Andrew Trapp

Faculty Mentor(s): Erick Highum, Political Science

The UW-RF Women and Development survey is designed to determine the level of support that UW-RF students have for domestic and international policies of the United States on issues regarding women and development. There was a variety of questions asked spanning controversial topics about gender equality, family planning programs, and sexual assault in the military. The following demographic information collected will be used as a basis of comparison on views of the issues of women and development: age, sex, year in school, registered voter, political party affiliation, political leaning, and military
experience. The total number of surveys collected was 335. Student researchers administered the surveys to fellow students in classes in which the instructor gave prior consent as well as randomly collected responses from students on campus. This survey was confidential and anonymous. Participation in the survey was voluntary, and the subject could have withdrawn from participation at any time. Information was gathered on hard copy questionnaires and then recorded into SurveyMonkey for data analysis. Overall survey findings will be posted on the UW-RF Political Science website when the analysis has been completed.

McNamara, Shannon
Poster

**UW-RF Women and Development Survey 2014-2015**

Research Collaborator(s): Arianna Pajtash, Reven McGee, Andrew Trapp

Faculty Mentor(s): Erick Highum, Political Science

The UW-RF Women and Development survey is designed to determine the level of support that UW-RF students have for domestic and international policies of the United States on issues regarding women and development. There was a variety of questions asked spanning controversial topics about gender equality, family planning programs, and sexual assault in the military. The following demographic information collected will be used as a basis of comparison on views of the issues of women and development: age, sex, year in school, registered voter, political party affiliation, political leaning, and military experience. The total number of surveys collected was 335. Student researchers administered the surveys to fellow students in classes in which the instructor gave prior consent as well as randomly collected responses from students on campus. This survey was confidential and anonymous. Participation in the survey was voluntary, and the subject could have withdrawn from participation at any time. Information was gathered on hard copy questionnaires and then recorded into SurveyMonkey for data analysis. Overall survey findings will be posted on the UW-RF Political Science website when the analysis has been completed.
Meng, Ronald  
Poster  

**International Friendly**  

Faculty Mentor(s): Dr. Paige Miller, Sociology, Anthropology and Criminal Justice  

Analysis on reasons why international students decide to study at UWRF.

Michel, Drew  
Poster  

**Crime and Seasons in Minneapolis 2000-2013**  

Faculty Mentor(s): Matthew Millett, Geography and Mapping Sciences; Dr. John Heppen, Geography and Mapping Sciences; Dr. Ruth Baker, Geography and Mapping Sciences; Dr. Charles Rader, Geography and Mapping Sciences  

The poster shows the seasonal crime rates in certain neighborhoods in Minneapolis. The point of the project is to show whether or not that the average crime rates correlate with the seasonal temperatures.

Michelon, Fernanda  
Poster  

**Storage testing of Mozzarella cheese to identify packaging material to reduce home cheese waste**  

Faculty Mentor(s): Karalyn Littlefield, Animal and Food Science  

Storage testing of Mozzarella cheese, in 3 forms (blocks, shredded and sliced) with different packaging material (plastic container, plastic bag, plastic wrap, aluminum foil and wax paper) in order to identify and recommend for consumers the one(s) that present better performance in preventing spoilage of Mozzarella cheese, in order to reduce home cheese waste.
Middlemiss, Stephen
Poster

*An estimation of the money demand curve from 1981-2008*

Research Collaborator(s): Adon Brown, William Tammes, Darren Ward

Faculty Mentor(s): Dr. John Walker, Economics

Our research questioned if there is a stable non zero relationship between money and economic activity. Our hypotheses tested if there are statistically significant relationships between money demand and money supply as measured by M2 and MZM, price level in terms of CPI, income in terms of real GDP, interest in terms of the Federal Funds rate and MZM own rate, and housing wealth as measured by the Real Residential Property index. The results indicate a high correlation between the independent and dependent variables as measured by an ordinary least squares.

Miller, Anna
Poster

*Effects of Chronic Stress on Nicotine-Seeking Behavior and Reinstatement*

Research Collaborator(s): Hannah Klimek, Taylor Harman, Amanda Janke

Faculty Mentor(s): Dr. James Cortright, Psychology

Drug addiction is a major public health and serious economic concern in the United States costing taxpayers billions of dollars annually. Experimental evidence shows that exposure to stress is not only a factor in the development of addiction; but also a trigger for drug relapse, or reinstatement. As tobacco use has been linked to a number of cancers and represents the leading cause of preventable death in the United States, elucidation of the effects of stress on nicotine-seeking behavior and relapse is critical. A critical role of chronic stress in the compulsion
to seek tobacco and other nicotine delivering products has long been suspected. Although many studies have provided compelling evidence for a role of chronic stress in the enhanced sensitivity to cocaine-seeking behavior and relapse, few have assessed the contribution of chronic stress on nicotine-seeking behavior. In fact, stress induced cross-sensitization to nicotine remains controversial. Additionally, there have been no studies investigating the effects of chronic stress on nicotine-seeking relapse, or reinstatement. Thus, these experiments assess the ability of repeated exposure to variable stress to augment nicotine-seeking behavior and relapse in an animal model of drug addiction.

Male Long-Evans rats were exposed to variable stress that consisted of the exposure to different stressors twice a day in random order for 14 days. During this period the control group was left undisturbed except for cage cleaning. Following the chronic stress procedure, rats were surgically implanted with IV catheters in the external jugular vein for nicotine self-administration. Following recovery, rats were allowed to self-administer nicotine (0.03 mg/kg/infusion) under fixed ratio schedules of reinforcement across 15 consecutive daily sessions. Responding under a progressive ratio schedule of reinforcement was assessed over the following six daily sessions. This schedule allows for break points to be analyzed, a measure that reflects the motivation to self-administer nicotine. Following up to 20 days of extinction training, rats were tested for nicotine-seeking behavior reinstatement by a non-contingent injection of nicotine (0.4 mg/kg, IP). Nicotine self-administration, break points, extinction, and nicotine-primed reinstatement data were analyzed. As data collection is underway, we hypothesize that exposure to chronic variable stress will lead to the facilitation of nicotine self-administration, increases in break points, resistance to nicotine self-administration extinction, and enhancements in nicotine-primed reinstatement, or relapse. The results of the proposed experiments have important implications regarding the design of effective and lasting smoking cessation interventions in humans.

Miotke, Alison
Poster

*The Impact of Living Green Walls on Student Attitudes, Moods, and Academic Performance*

Research Collaborator(s): Brittany Rootes
Research from multiple disciplines (e.g., environmental psychology, interior design, horticulture/landscape design) suggests that the physical environment in which an individual lives and works can impact their lifestyle, health, subjective well-being, and productivity. Studies conducted in office and academic settings in such diverse locations as Japan (Shibata & Suzuki, 2004), the United Kingdom (Knight & Haslam, 2010), and the Netherlands (Nieuwenhuis, Knight, Postmes, & Haslam, 2014) have consistently demonstrated that indoor plants can positively impact student and worker moods, attitudes toward work, and even productivity. The goal of our research project is to extend on this previous research by studying whether these same benefits would be seen for a Greenwall (i.e., a vertically arranged, living wall of plants) that is actually built into the physical environment. The main objective of our experiment is to study student well-being, engagement, and academic performance in a classroom whose physical space has been altered by the addition of a Greenwall. In addition, we want to examine whether these benefits are ongoing and might increase with longer-term exposure to such conditions. The first part of our study will be to survey students about their current states of well-being, engagement, and academic performance in the classrooms before the Greenwall is put in. Next, we will run a series of experimental sessions, where student participants will be randomly assigned to complete measures of academic anxiety, academic self-efficacy, mood, concentration, environmental restoration, and information processing in either the target room that will contain the Greenwall or the control classroom with a goal of demonstrating the initial equivalence of the rooms. Following installation, we will again run several experimental sessions where participants will complete the above measures in the two classrooms (one Greenwall enhanced and one control). We will also collect in-class data from each classroom on variables like class performance and course satisfaction. We will compare the before-installation and after-installation survey results with the hope of finding actual academic benefits of the Greenwall in the classroom. Our analytic strategy will be to conduct t-tests to examine experimental and control group differences on key study variables. Because multiple t-tests will
be involved, we will make corrections for familywise error in our analyses. Our goal is to have all survey data collection completed by the end of February and to get academic performance measures collected a couple of weeks before Spring Break followed shortly by data entry and extensive analysis. Our results will allow us to draw conclusions regarding enhancing classroom environments to maximize student and faculty performance through the use of Greenwall installations. Results could also benefit the interior plantscaping industry by providing evidence-based marketing advantages of utilizing a Greenwall in an indoor workspace.

**Miotke, Alison**

**Poster**

*Mapping Resilience as a Compound Personality Construct Using Big 5 Traits and Facets*

Research Collaborator(s): Julia Chous, Sarah Stoneburg

Faculty Mentor(s): Dr. Travis Tubre, Psychology

Resilience has been described as an adaptive, developmental construct representing the ability to persist and recover from adversity and stress (Reivich & Shatté, 2002). Researchers have studied resilience with a focus on improving outcomes in various settings (e.g., clinical, developmental) where people deal with adversity. Conceptualizing resilience as ability-based implies a coping process (Lazarus & Folkman, 1984) that can be acquired over time. In this view, resilience is a specific construct representing unusual responses to extreme stressors. An alternative is to study resilience as a personality trait. In this view, resilience represents general behavioral tendencies toward broader environmental challenges (Waaktaar & Torgersen, 2010). Individuals with tendencies toward maladaptive responses could be identified through personality testing and could be assisted prior to experiencing specific life stressors. A number of trait-level resilience measures have been developed to guide such efforts. We are comparing several of these measures with Big 5 personality traits to assess convergent, construct-related validity. We are interested both in the intercorrelation of various resilience scales and with how they correlate with different Big 5 traits and facets. Approximately three hundred undergraduate
students will participate in the study for extra credit. We have already collected data for over two hundred cases. Participants will provide demographic data, complete the International Personality Item Pool (IPIP; Goldberg, 1999) to measure Big 5 scales and facets, and complete several measures of trait resilience: the Connor-Davidson Resilience Scale (CD-RISC; Connor & Davidson, 2003), the Ego-Resiliency 89 (ER-89; Block & Kremen, 1996), and the Ego-Resiliency Scale (ER; Klohnen, 1996). We will use zero-order correlations and regression analyses to map the relationships between the resilience measures and corresponding Big 5 traits and facets. Our goal is to align the construct of resilience with the current hierarchical view of the FFM. Our hope is to represent resilience as an example of what Hough and Ones (2001) call a compound personality trait, or a trait that consists of various facets of different traits. In contrast to thinking of it as an ability that is developed, we believe our results will indicate that it may represent adaptive elements of general personality traits, expressed at the facet level.

**Miyabe, Flavia Megumi**

**Poster**

*Digital Literacy*

Research Collaborator(s): Gabriel Costa Borba, Erick Pereira Araruna Cruz Galvao, Felipe Alarcon Peres, Caroline de Lima Moraes

Faculty Mentor(s): Conan Kmiecik, English Language Transition Program

This poster will describe Digital Literacy, its importance, how to use technology, obtain information, and improve communication. It also illustrates what we learned in J-term classes, for example, how to use some programs, websites, and apps. Finally, we will present our opinion about this topic.

**Moeller-Roy, Taylor**

PowerPoint presentation

*The American Studio Glass Movement*
Faculty Mentor(s): Dr. Kaylee Spencer, Art; Eoin Breadon, Art

The American Studio Glass Movement Taylor Moeller-Roy River Falls, WI

ABSTRACT In order to comprehend a growing medium it is essential to understand how it started. Glass making can be traced back as far as 3500 BCE in Mesopotamia. Countries such as Czechoslovakia, Italy, and Sweden have maintained a thriving glass culture dated centuries before production lines and research laboratories. Originally considered a decorative art, glass as a medium has expanded much further than production work. In the 1900’s new advancements in glass were being discovered in laboratories experimenting with borosilicate glass and fiber optics. It wasn’t until the 1960’s that the possibility of using glass as an artistic medium was even available to Americans. Now considered the father of studio glass, one man relentlessly brought glass art to the American masses. In 1962 with the aid of Otto Wittmann, the director of the Toledo Museum of Art at the time, and Dominick Labino, a glass research scientist, Harvey Littleton initiated America’s first studio glass workshop in a garage on museum grounds. Artists were taught techniques from retired factory workers. Within the span of the same year, Littleton initiated the first collegiate program in America at the University of Wisconsin, Madison. His first students include Dale Chihuly, Marvin Lipofsky, Michael Taylor, and Audrey Handler. Some of who went out and initiated glass programs at other schools and art facilities. Over 50 years later Americans have gained a style of their own while retaining a lot of the same techniques and methods learned from countries that have been working with glass for centuries. While the glass medium continues to grow today, a growing appreciation for Harvey Littleton and his life’s work spreads across the country. His persistence and passion put America on the map, fueling the growing appreciation for the glass medium.

Monson, Laura
Poster

In Vitro Growth Optimization of Bradyrhizobium japonicum

Faculty Mentor(s): Dr. Kim Mogen, Biology
Bradyrhizobium japonicum is a gram negative, filamentous bacillus that forms a symbiotic relationship with certain legume plants. Their nitrogen fixing capability allows for reduced fertilizer applications to soybean crops and enhanced yield. Currently, B. japonicum is used as a soil treatment in South America. However, efficiency would be increased if it could be harnessed as a seed application. In this research, growth patterns were observed and optimized in both yeast mannitol broth and agar. A specific broth recipe and growth procedure were established; based on pH, water source, precipitates of salts, temperature, commercial versus “hand-made” broths, sterilization techniques, and manner of storage/ incubation.

Moreira, Camila
Poster

The impact that different classroom experiences and grades have on students’ attitudes towards Chemistry

Research Collaborator(s): Leandro Souza

Faculty Mentor(s): Dr. Jamie Schneider, Chemistry

This quantitative research’s main goal was to study students’ attitude toward chemistry pre- and post- taking General Chemistry I at a small mid-western public university. Data was collected using a 8-item semantic differential survey that could be analyzed into two factors, emotional satisfaction (ES) and intellectual accessibility (IA). In addition, students were asked an open response question that assess whether this course influenced their major degree choice. These same surveys were taken during two different fall semesters. Both semesters were taught by the same instructor using the same instructional strategies (active learning with group work) but one term was taught in a tiered lecture hall (population 1) and one term was taught in an active learning classroom (population 2). Changes in their attitude in both classrooms were analyzed in order to identify patterns related to student grades and response to major change question.

The data showed that high-grade students tend to have more positive attitudes whereas low-grade students tend to have less positive
attitudes. However, this pattern in the lecture hall was not as clear as it was in the active learning classroom.

**Mota Nogueira, Gabriela**

*Poster*

*Visual Literacy*

Research Collaborator(s): Nathalia Pereira Silva, Ana Fabrine Rodrigues Oliveira, Tadeu de Azevedo Rodrigues

Faculty Mentor(s): Conan Kmiecik, English Language Transition Program

Visual Literacy is the ability to make something meaning from information presented into the image. It can be divided by the following components: Texture, Shape, Movement, Line, and Color. It is based on the audience interpretation about those elements that compose the Visual Literacy. That means, once the image has been analyzed by the audience, it can be translated to a new form of information. In sum, Visual Literacy is the conversion from one form of information to another form keeping the exact meaning of the original form.

**Moura, Manoella**

*Poster*

*POP Culture*

Research Collaborator(s): Caio Fernandes, Carla Amaral

Faculty Mentor(s): Conan Kmiecik, English Language Transition Program

Popular. Pop. These words are synonymous with popularity, and when affixed to the word "culture," refer to products, texts, or media with broad, favorable appeal. Pop culture incorporates all forms of cultural production.

While there are many types of pop culture throughout the world, U.S. pop culture is one of most dominant. As a result, many people come
into contact with English through consumption of American pop culture. The purpose of this project is examine different genres of pop cultures and consider how the study of pop culture can facilitate English language acquisition.

**Moura Monteiro de Jesus, Manoella**

*Poster*

*Development of Vanilla Ice cream with evaporated milk.*

Research Collaborator(s): Luiz Felipe Suzuki

Faculty Mentor(s): Michelle Farner, Animal and Food Science

It will be developed as a new product, a Vanilla Ice Cream, which will be prepared by the substitution of heavy whipping cream with evaporated milk in order to obtain an ice cream with reduced fat. A sensory analysis will be made, testing the preference of the consumer by texture, flavor and appearance.

**N. Guimaraes, Denner**

*Poster*

*Investigating the Use of Partridge Pea and Silky Lupine to Protect Native Grasses from Knapweed*

Faculty Mentor(s): Dr. Sonja Maki, Plant and Earth Science

The invasive Knapweed plant is causing serious harm to landscapes in North America, particularly in the Western and Midwestern United States. Leguminous plants such as Silky Lupine have been shown to provide some benefit to native grasses when planted in knapweed infested sites. We were interested in whether another legume, the Partridge Pea (Chamaecrista fasciculata) would have similar protective effects. Partridge Pea is native to the Upper Mississippi River Valley and has been developed as a model system for plant biology. We grew knapweed, big bluestem, partridge pea, and silky lupine in both a greenhouse experiment and in a lab setting to investigate whether partridge pea has any protective effects on native grasses. Results from these experiments will be presented.
Nelson, Connor
Short Film

The evolution of service-learning experiences in the digital media revolution

Research Collaborator(s): Mark Rolseth, Samuel Azasu

Faculty Mentor(s): Erik Johnson, Communication Studies and Theatre Arts

The digital and social media platforms push the evolution of service learning for media and journalism students to new, creative real-world experiences. This project shares first hand findings from students perspectives of moving service learning into digital platforms. Presenters explore best practices, project pitfalls and assessment.

Newman, Jenna
Poster

The Effects of P.G. 600 on Follicle Growth and Ovulation Following Controlled Internal Drug Release Device Removal in Ewes

Research Collaborator(s): Shelby Springman, Kristina Boss, Kayla Kruckenberg, Morgan Randall, Nathalia Santos

Faculty Mentor(s): Dr. Justin Luther, Animal and Food Science

Estrous synchronization is a useful technique for timed artificial insemination in sheep. Protocols have traditionally used gonadotropins to ensure ovulation and improve fertilization at CIDR removal. The purpose of this study was to determine the effects of P.G. 600 on follicle growth and ovulation in ewes. Dorset (n=13) and Hampshire (n=5) ewes were used. Ewes were blocked into three groups of six. Each group contained three P.G. 600 ewes and three control ewes. All ewes received a CIDR device that was removed 14 days later. Upon CIDR removal, control ewes were injected IM with 2 ml of sterile saline solution, and P.G. 600 ewes were injected IM with 2 ml of P.G. 600 (400
IU PMSG and 200 IU hCG). All ewes underwent transrectal ultrasonography starting at 36 h post CIDR removal. Ewes were ultrasounded every eight hours until ovulation occurred. Ovulation was defined as the disappearance of a dominant follicle (>4 mm in diameter) that was present on the ovary during the previous ultrasound. Two Dorset ewes were removed from the study. One being removed due to the loss of a CIDR prior to the 14 day removal date, and the other being removed due to excessive scar tissue buildup in the reproductive tract making access difficult. One of the removed ewes was from the control group and the other from the P.G. 600 group. Treatment with P.G. 600 did not affect (P > 0.05) the time from CIDR removal to the first observed ovulation (C, 58.0 ± 2.00 h and P.G. 600, 59.0 ± 3.38 h), and among all ewes the first ovulation occurred between 48 h and 80 h after CIDR removal. In ewes with multiple ovulations, treatment with P.G. 600 did not influence (P > 0.05) the interval between the first and last observed ovulation (P.G. 600, 4.8 ± 3.20 h and C, 4.0 ± 1.73 h). When compared to control ewes, treatment with P.G. 600 did not affect (P > 0.05) ovulation rate (C, 2.0 ± 0.27 ovulations per ewe and P.G. 600, 2.4 ± 0.38 ovulations per ewe). More ewes ovulated on both ovaries (n=12) versus the right ovary only (n=4), while none of the ewes had ovulation(s) restricted to the left ovary only. Mean follicle diameter at ovulation was similar (P > 0.05) between groups (C, 5.8 ± 0.24 mm and P.G. 600, 5.3 ± 0.36 mm). Control ewes had a greater mean follicle diameter when compared to P.G. 600 ewes at 44 h (5.5 ± 0.26 vs. 4.4 ± 0.27 mm, P < 0.005, respectively) and 52 hours (5.9 ± 0.25 vs. 5.2 ± 0.32 mm, P < 0.05, respectively) after CIDR removal. However, follicular diameter between 52 h and 62 h increased (P < 0.02) in P.G. 600 (0.56 ± 0.26) versus control ewes (-0.13 ± 0.22). In conclusion, Dorset and Hampshire ewes will ovulate 58 to 59 hours after CIDR removal, and this observation is not influenced by P.G. 600 treatment. Although treatment with P.G. 600 may influence follicular growth it does not impact ovulation rate. Although further studies are needed, the additional cost associated with using P.G. 600 at CIDR removal does not appear to offer any beneficial outcomes.

Nickel, Megan
Poster

_Evaluation of the behavioral differences between physically and immunologically castrated male pigs_
The standard method of castration for swine in the United States is to physically remove the testes within the first month of life, typically without the use of anesthesia or analgesia. An alternative solution to this welfare issue is to use immunological castration. This pilot study was conducted to evaluate the behavioral differences between male pigs castrated physically or immunologically. The study was conducted on 31 male pigs housed in finishing pens from 11 weeks of age until 24 weeks of age. The 31 pigs were randomly assigned to three pens of eight and one pen of seven. Two pens were physically castrated (PHYSI) while the other two were immunologically castrated (IMPRO), using a commercially available immunological product that was designed to suppress puberty in male swine (Improvest®, Zoetis, Florham Park, New Jersey). The first injection was administered on day one of the trial; four weeks later, a second injection was administered, both by a trained Zoetis employee. Eight weeks after the second injection, the pigs were sent to slaughter. Behavior was assessed using continuous 24 hour video surveillance that began on day one of the trial to correspond to the first injection date and repeated at weekly intervals for the duration of the trial. Scan sampling was used on all pigs in all pens at two minute intervals. Time budgets were recorded and analyzed for comparison between treatment groups and behavior sampling dates. Of the behavioral parameters measured (lying, eating, walking, standing, drinking, and agonistic interactions) there were no significant differences between treatments (P > 0.05). There was a treatment by behavior sampling day interaction effect on mounting behavior (P = 0.017). Although an interaction effect was observed, the exact cause is unclear because significant differences were not recognized on a consistent basis from sampling day to sampling day. The results of this pilot study suggest that additional research is necessary to understand if behavioral implications exist for immunologically castrated swine. A larger sample size is required to fully investigate these effects.

Nickel, Megan
Poster
Effects of nucleotide supplementation on growth, performance and intestinal health in dairy calves

Research Collaborator(s): Rachel O'Leary

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

One objective of this research was to determine if adding nucleotides, through yeast supplementation in milk replacer would reduce the mortality and morbidity of young calves. To address this, growth, performance, and intestinal health have been evaluated. Calves were assigned to one of three treatments including a control (N; no supplement, no challenge), a challenged group with no supplement (C; no supplement, with challenge), and a challenged supplemented group (S; yeast supplement, with challenge). Another objective of this trial was to test if the nucleotide supplement affected growth, performance and intestinal health in the calves. Measures for growth include calf weight, wither height, hip height and feed intake. For performance, scoring of feces, attitude and overall health are being completed. Intestinal health is measured by administering both a sucrose and xylose challenge depending on treatment assignment. Later, blood samples are collected to determine intestinal absorbency. The trial is still ongoing and will be completed by the end of summer 2015. The overall goal of this research is to provide farmers with an easy and cost efficient method to prevent scours and its detrimental effects.

Nicolai, Dallas
Dance Performance

Bereavement

Research Collaborator(s): Salvatore D'Agostino, Samantha Anderson, Jenna Cook, Sor Her, Morgan Stevens, Marcus Dryer

Faculty Mentor(s): Mari Kline-Kluck, Communication Studies and Theatre Arts

This dance piece is about the 5 stage of grief. It explores various views/perspectives on the grieving process. The creative process used
to construct the project was very collaborative. The overall vision
certainly came from the choreographer (Mari Kline-Kluck), but the
dancers had a very large roll in the creation of the movement and the
characters in the dance. Jenna Cook researched various arrangements
of the song "Ne Me Quitte Pas" that she sings during a portion of the
piece. Sor Her actually wrote/transposed the version of the piano
accompaniment he performs during the piece. The dancers all brought
their own acting and expression into the piece and contributed in the
collaborative process to create the work.

**Nogueira, Gabriela**

Poster

*Evaluation of cakes containing different types of eggs which vary according to the chicken's fed diet*

Faculty Mentor(s): Dr. Bonnie Walters, Animal and Food Science

Evaluation of cakes which was used different types of eggs which vary
according to the chickens fed diet such as Regular, Organic, Vegetarian,
Omega-3 & Lutein and Omega-3 fed diet.

**Nohre, Allison**

Poster

*Effects of Emulsifying Salts on Processed Gouda Cheese*

Research Collaborator(s): Molly Patterson

Faculty Mentor(s): Michelle Farner, Animal and Food Science

According to the USDA, per capita cheese consumption in the US has
increased over the last 25 years. More specifically, Gouda volume sales
in grocery stores have increased by double digits in 2011-2012. By re-
purposing a current edible waste product to develop a new marketable
product, a new processed cheese was able to be created. The processed
cheese was made using varying combinations of emulsifying salts.
Several characteristics were observed such as: pH, meltability,
sliceability, and moisture content of three separate trials. In the
production of processed cheese, emulsifying salts are responsible for physiochemical variations within the product. This development could be the gateway to a new line of processed cheese which would fulfill the demand in the marketplace and reduce edible waste products in the cheese industry.

**Nohre, Allison**
Poster

*Vanilla Ice Cream Made with Molasses*

Research Collaborator(s): Sierra Solum, Jordan Steinhorst

Faculty Mentor(s): Michelle Farner, Animal and Food Science

This research project consists of creating a batch of Vanilla Ice Cream, substituting one cup of granulated sugar with one cup of molasses. The product is to be made in the UW-River Falls Dairy Pilot Plant. The resulting ice cream will be evaluated with a sensory evaluation and a melt-ability test. The results of these tests will be compared and contrasted with the control vanilla ice cream, which is made with granulated sugar.

**Nunes, Katrina**
Poster

*Comparison between salting, coloring and pressuring in Muenster-Style Cheese*

Research Collaborator(s): Magregor Damiao De Oliveira, Mariana Scoqui Guimaraes

Faculty Mentor(s): Michelle Farner, Animal and Food Science

The goal of this project is to make successfully Muenster-Style cheese comparing salting, coloring and pressuring. Historians credit that Muenster was created in Alsace, France, despite some of them believing that its origin was German. The name Muenster comes from the word monasterium or monastery because monks originally made it. The procedures during fabrication of the cheese included standard steps in
cheese making as adding starter, cheese coloring, cutting, cooking and draining. However we used two different methods in three attempts while making our cheese and obtained different results from each. On our first attempt we failed to make cheese because the milk was too hot and the starter did not work. After that we made adjustments for our next trial and were able to successfully make cheese. In our second attempt with the first method we used self-pressure, a 23% brine solution and brevibacterium. Our cheese turned out very hard and dry with an unpleasantly salty flavor. It was still creamy white in color and lumpy on the outside. We learned that the vertical pressure method is more effective than the self-pressure method. We also learned that the brevibacterium was supposed to create an orange colored film on the outside of the cheese and add extra flavor to it but ours did not. In the second method we used vertical pressure, added salt to the curds, and coloring to the surface. This cheese turned out soft and moist inside with a pleasant mild flavor. It had a smooth bright orange outside with a creamy white colored center. We attested that the different procedures of coloring, salting and pressure affect the texture, appearance and flavor of the outcome.

O'Leary, Rachel
Poster

*Effects of nucleotide supplementation on growth, performance and intestinal health in dairy calves*

Research Collaborator(s): Megan Nickel

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

One objective of this research was to determine if adding nucleotides, through yeast supplementation in milk replacer would reduce the mortality and morbidity of young calves. To address this, growth, performance, and intestinal health have been evaluated. Calves were assigned to one of three treatments including a control (N; no supplement, no challenge), a challenged group with no supplement (C; no supplement, with challenge), and a challenged supplemented group (S; yeast supplement, with challenge). Another objective of this trial was to test if the nucleotide supplement affected growth, performance and intestinal health in the calves. Measures for growth include calf weight,
wither height, hip height and feed intake. For performance, scoring of feces, attitude and overall health are being completed. Intestinal health is measured by administering both a sucrose and xylose challenge depending on treatment assignment. Later, blood samples are collected to determine intestinal absorbency. The trial is still ongoing and will be completed by the end of summer 2015. The overall goal of this research is to provide farmers with an easy and cost efficient method to prevent scours and its detrimental effects.

**Oliveira, Magregor**

**Poster**

**Health Cookie**

Research Collaborator(s): Erika Ferreira, Joaquim Vitor da Paz Neto, Lucas Aparecido Teixeira da Silva, Mariana Scoqui Guimaraes

Faculty Mentor(s): Dr. Bonnie Walters, Animal and Food Science

The main purpose of this project was to create a health cookie through the addition and replacement of certain ingredients found in a traditional cookie recipe. Cookie is a common product in American market and by offering a health option will help consumers to have a good health.

The first part of this project was to define the best cookie recipe that could meet either nutritional or technologic functions. Thus, the final ingredients include: oat, all purpose flour, wheat flour, brown sugar, apple sauce, egg, baking soda, cinnamon, vanilla essence, coconut oil, salt, dried cranberries, and hazelnut. Once finalized, this step, we could move on to the second part, which included all the necessary analysis to characterize all product: protein, fiber, moisture, ash etc. The third part was to set up sensorial analysis panel to find out whether our product meets consumers perspectives or not. Finally, the last step was to scale-up the cookie production to an industrial level.

**Onegin, Irina**

**Poster**
A research on Bullying in 6th 7th and 8th graders

Faculty Mentor(s): Dr. Paige Miller, Sociology, Anthropology and Criminal Justice

The findings from a bullying research conducted in Woodbury Jr. High school.

O'Toole, Christine
Poster

Slayers and Idjits and Gender Roles, Oh My: Male and Female Narratives in Supernatural Television

Faculty Mentor(s): Dr. Jennifer Willis-Rivera, Communication Studies and Theatre Arts

This project provides analysis of the television series Buffy the Vampire Slayer and Supernatural when Feminist Criticism is applied to scenarios within each show that are similar, focusing on the way that gender roles are used to reinforce stereotypes. It also examines how male and female led narratives are handled differently in popular television.

Pachniak, Elliot
Poster

Sizing Optically Levitated Aerosol Droplets

Research Collaborator(s): Angela Ludvigsen

Faculty Mentor(s): Dr. Lowell McCann, Physics

Optical traps use a laser beam to catch and hold small transparent objects. Past observations of optically trapped aqueous aerosol droplets have shown that the droplet moves between two or more stable positions depending upon the power of the trapping laser. It is hypothesized that this movement coincides with a resonance of the laser light with the droplet called a Whispering Gallery Mode. When the resonance occurs, additional forces act on the droplet.
To investigate this behavior, Raman scattered light from the droplet is measured using a spectrometer while simultaneously recording the droplet’s position. The Raman spectrum exhibits a series of peaks that appear due to the very spherical shape of the droplet called Cavity Enhanced Raman Spectroscopy. The location and spacing of the peaks are related to the diameter and the optical properties of the droplet. In order to achieve an accurate determination of the radius from this spectrum, the magnitude of the electric and magnetic fields of the light scattered off the droplet are calculated. This allows for a precise measurement of the droplet’s radius at the moment that the droplet moves between stable positions.

**Pajtash, Arianna**

**Poster**

*UW-RF Women and Development Survey 2014-2015*

Research Collaborator(s): Shannon McNamara, Reven McGee, Andrew Trapp

Faculty Mentor(s): Erick Highum, Political Science

The UW-RF Women and Development survey is designed to determine the level of support that UW-RF students have for domestic and international policies of the United States on issues regarding women and development. There was a variety of questions asked spanning controversial topics about gender equality, family planning programs, and sexual assault in the military. The following demographic information collected will be used as a basis of comparison on views of the issues of women and development: age, sex, year in school, registered voter, political party affiliation, political leaning, and military experience. The total number of surveys collected was 335. Student researchers administered the surveys to fellow students in classes in which the instructor gave prior consent as well as randomly collected responses from students on campus. This survey was confidential and anonymous. Participation in the survey was voluntary, and the subject could have withdrawn from participation at any time. Information was gathered on hard copy questionnaires and then recorded into SurveyMonkey for data analysis. Overall survey findings will be posted
Passofaro, Jill
Poster

*Parental Involvement on juvenile delinquency rates in high school*

Faculty Mentor(s): Dr. Paige Miller, Sociology, Anthropology and Criminal Justice

This project will look at a correlation between parental involvement and juvenile delinquency rates in high school. This will be done by interviewing the principle and teachers of the River Falls high school to discuss how often they see parents come in for meetings when it involves their child getting into trouble at school.

Patterson, Molly
Poster

*Effects of Emulsifying Salts on Processed Gouda Cheese*

Research Collaborator(s): Allison Nohre

Faculty Mentor(s): Michelle Farner, Animal and Food Science

According to the USDA, per capita cheese consumption in the US has increased over the last 25 years. More specifically, Gouda volume sales in grocery stores have increased by double digits in 2011-2012. By repurposing a current edible waste product to develop a new marketable product, a new processed cheese was able to be created. The processed cheese was made using varying combinations of emulsifying salts. Several characteristics were observed such as: pH, meltability, sliceability, and moisture content of three separate trials. In the production of processed cheese, emulsifying salts are responsible for physiochemical variations within the product. This development could be the gateway to a new line of processed cheese which would fulfill the demand in the marketplace and reduce edible waste products in the cheese industry.
Patterson, Molly
Poster

Producing Artisinal Asiago Style Cheese

Faculty Mentor(s): Michelle Farner, Animal and Food Science

The objective of this project was to produce an Asiago style cheese. The name of Asiago originates from the Asiago Plateau in the Veneto foothills of Italy. Traditionally, it was produced using sheep’s milk, but today it is made using unpasteurized cow’s milk. The color of Asiago ranges from white to dark yellow, and contains small to medium sized holes. Asiago can be categorized into two types: fresh Asiago or Asiago Pressato, which has a smooth texture; and aged Asiago or Asiago d’allevo, which has an increasingly crumbly texture. There are three age categories of Asiago d’allevo: Mezzano, aged 4 to 6 months; Vecchio, aged 10 or more months; and Stravecchio, aged 2 or more years. With increased age, Asiago develops a more robust and nutty flavor. The equipment used in the processing of this cheese include: HTST pasteurization system, 900 pound “OO” cheese vat, cheese curd draining table, pH meter, thermometer, horizontal cheese press, and 20 pound cheese hoops (2). The final product met the color, texture, and odor characteristics of fresh Asiago. Due to the design of the cheese knives in the “OO” vat, the curds were not cut into consistent ¼ inch cubes. Also, controlling the temperature throughout the process was very challenging. This experiment could be improved by eliminating these equipment related obstacles.

Pereira, Luiz
Prezi presentation

Living and Learning in Different Americas - Oral History Project

Faculty Mentor(s): Rhonda Petree, English

Students in ESL 311: Research Writing conducted an Oral History Project in which they interviewed one person from their home country and one person from River Falls.
Students created a timeline of their interviewees’ lives where they showed the events in their personal lives and other historical, political, economic, cultural, and social events that occurred during their lives. Finally, students integrated the timeline and highlights from the interviews into visual presentations using Prezi and PowerPoint.

**Pereira Araruna Cruz Galvao, Erick**  
Poster

*Digital Literacy*

Research Collaborator(s): Gabriel Costa Borba, Flavia Megumi Miyabe, Felipe Alarcon Peres, Caroline de Lima Moraes

Faculty Mentor(s): Conan Kmiecik, English Language Transition Program

This poster will describe Digital Literacy, its importance, how to use technology, obtain information, and improve communication. It also illustrates what we learned in J-term classes, for example, how to use some programs, websites, and apps. Finally, we will present our opinion about this topic.

**Pereira Silva, Nathalia**  
Poster

*Visual Literacy*

Research Collaborator(s): Gabriela Mota Nogueira, Ana Fabrine Rodrigues Oliveira, Tadeu de Azevedo Rodrigues

Faculty Mentor(s): Conan Kmiecik, English Language Transition Program

Visual Literacy is the ability to make something meaning from information presented into the image. It can be divided by the following components: Texture, Shape, Movement, Line, and Color. It is based on the audience interpretation about those elements that compose the Visual Literacy. That means, once the image has been analyzed by the
audience, it can be translated to a new form of information. In sum, Visual Literacy is the conversion from one form of information to another form keeping the exact meaning of the original form.

Pereira Silva, Nathalia
Poster

*Vanilla Ice Cream with Raw Sugar*

Research Collaborator(s): Lays Fernandes de Melo Marques

Faculty Mentor(s): Michelle Farner, Animal and Food Science

It will be developed a new product, a Vanilla Ice Cream, which will be prepared by the substitution of granulated sugar by raw sugar. A sensory analysis will be made, testing the preference of the consumer about the texture, flavor and appearance of the product.

Pessoa, Lindomar
Poster

*Comparative Analysis of Breast Cancer Mammospheres Derived from Induced 3D Artificial Tissues and Hanging Drop Cultures.*

Faculty Mentor(s): Dr. Timothy Lyden, Biology

According to American Cancer Society statistics, breast cancer was the leading type of new cancer cases reported for women during 2013. In that year, it represented 29% of new cases reported, while it was the second leading cause of cancer deaths among women. As with most cancers, breast cancer generally causes death by a process called metastatic spread. In this pathologic process cells or clusters of cells detach from the original primary tumor and exit into body fluids, eventually entering the blood stream and traveling to distant locations where it then establishes new secondary tumors. This process is the common cause of mortality in almost all types of cancer. Despite many decades of study and experimentation, a great deal is still not understood concerning the mechanisms responsible for this cellular behavior. In order to address this lack of understanding, our laboratory
has been applying 3D culture techniques in order to develop modeling systems which replicate natural physiologic conditions in the body. In this study we have been studying the breast adenocarcinoma cell line MCF7, which, under certain conditions, will generate cellular spheroids displaying many characteristics in common with invasive metastases. Particularly, in this presentation we report on continuing studies comparing and contrasting the characteristics, population dynamics, structural details and invasive potential of spheres generated by media induction of 3D artificial tumor tissues produced with the MCF7 cell line and those spheroids produced with a recently developed “hanging drop” technique. These two approaches generate distinct populations of spheres which seem to share many attributes. Preliminary and ongoing studies have already demonstrated that these spheres reflect the metastatic process in many ways and therefore represents an excellent modeling system. The current work reported here focuses on internal spheroid structural details, stromal tissue attachment and subsequent cellular invasion. Future projects will build on these observations to examined potential pathways for blockage or inhibition of those invasive processes.

Peterson, Kodi
Poster

Investigation of the Heck Reaction for the Preparation of Substituted Cinnamamides

Faculty Mentor(s): Dr. David Rusterholz, Chemistry

Previously in this laboratory a series of substituted N-phenylcinnamamides have been prepared and investigated for their usefulness as antagonist drugs at TRPM8 (transient receptor potential melastatin type 8) receptors. The preparation of these compounds has followed a fairly traditional synthetic pathway starting with a substituted benzaldehyde, conversion to a cinnamic acid, derivatization to an acid chloride, and reaction with a substituted aniline. Choosing variously substituted anilines permitted easy creation of variation on the second phenyl ring. Evaluation of the first series of compounds revealed that good TRPM8 antagonist activity could be obtained with a meta-isopropyl group on the second phenyl ring. However, many of the compounds showed minimal water solubility which limited their ease of
administration in animals. The purpose of the current research was to create substituted N-phenyl cinnamamides that bear substituents on the first phenyl ring that improve their solubility and thereby make their administration to animals easier. However, to do this following the traditional method of synthesis required the synthesis of a variety of substituted benzaldehydes which proved to be laborious. The Heck reaction is a carbon-carbon bond forming coupling reaction between an alkene and an aryl halide mediated by a palladium catalyst. This reaction offered an excellent opportunity to create the desired compounds by preparing substituted aryl iodides, which can be readily accomplished, and then coupling these via the Heck reaction to the acrylamide derivative of meta-isopropyl aniline. The details of this successful approach to cinnamamide synthesis will be described.

Peterson, Samantha
Poster

Shelter for the Homeless: Individual Shelter for Our Neighbors’ Place

Faculty Mentor(s): Jennifer Gervais, Social Work; Tammy Kincaid, Social Work

This study is looking at the benefits of having an emergency shelter for individuals experiencing homelessness in River Falls Wisconsin. This study is an exploratory study and has quantitative aspects to it as well. For this study, a survey (n=100) will be given to those individuals who came into contact with the Our Neighbors’ Place organization looking for shelter in the year of 2014. This survey will be voluntary and will be given to the participants from the location of Our Neighbors’ Place Day Center in River Falls, Wisconsin. It is hypothesized that having an emergency shelter for individuals experiencing homelessness will be seen as needed and beneficial for this rural area. The data was composed from only myself, and the participant’s information was kept confidential by the assigning random numbers to their name. Once these participants were contacted their information was deleted so that the only thing that could be traced back was to the random number and not any identifying information. The results are still to be calculated, but will be done by April 10th. This study was approved by the IRB.
Philips, Emily
Poster

The Impact of Play and Learn Groups on School Readiness

Research Collaborator(s): Katlin Hastings, Katlin Hastings

Faculty Mentor(s): Dr. Molly Gerrish, Teacher Education; Dr. Gay Ward, Teacher Education

Research focused on determining the impact of Family Resource Center Play and Learn groups on school readiness. The purpose of the study was to evaluate the effectiveness of Play and Learn activities and to determine if and how the program can be improved. Areas identified for study included: parent support; health, safety, and nutrition; social and emotional development and relationships; language and communication; approaches to learning; motor development and behavior management. Data was collected through parent and teacher interviews which were analyzed for recurring themes. Triangulation was provided by researcher observations and parent surveys. Evidence reflected that children were benefiting in every learning domain with socialization and language development noted most often by the parents. Data from parents indicated that the support offered in the Play and Learn sessions served to increase parental confidence levels, reduced stress and enhanced the parent/child relationship. These sessions also played a critical role in parental understanding of child development. Analysis of data supported the effectiveness of the play and learn program components in supporting school readiness, and also revealed its effectiveness in enhancing parenting skills.

Phillippi, Michael
Poster

Player Representation In The Upper Midwest High School Hockey Elite League

Faculty Mentor(s): Dr. John Heppen, Geography and Mapping Sciences
The Upper Midwest High School Elite League is a hockey league that is based out of New Hope, MN. The league started in 2002 and is home to Minnesota and North Dakota's top high school hockey players divided into teams by region. The goal of this project is to display what high schools, and in what frequency, each player in the league attended. Using the annual rosters, I was able to visually display high school representation in the UMHSEL.

**Post, Bailey**

Poster

_Evaluation of the behavioral differences between physically and immunologically castrated male pigs_

Research Collaborator(s): Benjamin Lemmer, Samuel Getty, Megan Nickel, Faith Baier, Andrew Keller

Faculty Mentor(s): Dr. Kurt Vogel, Animal and Food Science

The standard method of castration for swine in the United States is to physically remove the testes within the first month of life, typically without the use of anesthesia or analgesia. An alternative solution to this welfare issue is to use immunological castration. This pilot study was conducted to evaluate the behavioral differences between male pigs castrated physically or immunologically. The study was conducted on 31 male pigs housed in finishing pens from 11 weeks of age until 24 weeks of age. The 31 pigs were randomly assigned to three pens of eight and one pen of seven. Two pens were physically castrated (PHYSI) while the other two were immunologically castrated (IMPRO), using a commercially available immunological product that was designed to suppress puberty in male swine (Improvest®, Zoetis, Florham Park, New Jersey). The first injection was administered on day one of the trial; four weeks later, a second injection was administered, both by a trained Zoetis employee. Eight weeks after the second injection, the pigs were sent to slaughter. Behavior was assessed using continuous 24 hour video surveillance that began on day one of the trial to correspond to the first injection date and repeated at weekly intervals for the duration of the trial. Scan sampling was used on all pigs in all pens at two minute intervals. Time budgets were recorded and analyzed for comparison between treatment groups and behavior sampling dates. Of the
behavioral parameters measured (lying, eating, walking, standing, drinking, and agonistic interactions) there were no significant differences between treatments (P > 0.05). There was a treatment by behavior sampling day interaction effect on mounting behavior (P = 0.017). Although an interaction effect was observed, the exact cause is unclear because significant differences were not recognized on a consistent basis from sampling day to sampling day. The results of this pilot study suggest that additional research is necessary to understand if behavioral implications exist for immunologically castrated swine. A larger sample size is required to fully investigate these effects.

Ramos, Eloise
Poster

**Oral Literacy**

Research Collaborator(s): Bruno Santos, Erico Gregorio, Luana Barichello

Faculty Mentor(s): Conan Kmiecik, English Language Transition Program

Oral literacy is the foundation of learning to read and write, also it is the ability to listen. Understanding and interpreting what others mean are important tools for oral communication. Misunderstands during any of these steps can be harmful to oral comprehension. Many facts can interfere in oral literacy, such as, accent, local slangs and dialects, body language and speech intensity and variation.

Randall, Morgan
Poster

*The Effects of P.G. 600 on Follicle Growth and Ovulation Following Controlled Internal Drug Release Device Removal in Ewes*

Research Collaborator(s): Shelby Springman, Kristina Boss, Kayla Kruckenberg, Jenna Newman, Nathalia Santos

Faculty Mentor(s): Dr. Justin Luther, Animal and Food Science
Estrous synchronization is a useful technique for timed artificial insemination in sheep. Protocols have traditionally used gonadotropins to ensure ovulation and improve fertilization at CIDR removal. The purpose of this study was to determine the effects of P.G. 600 on follicle growth and ovulation in ewes. Dorset (n=13) and Hampshire (n=5) ewes were used. Ewes were blocked into three groups of six. Each group contained three P.G. 600 ewes and three control ewes. All ewes received a CIDR device that was removed 14 days later. Upon CIDR removal, control ewes were injected IM with 2 ml of sterile saline solution, and P.G. 600 ewes were injected IM with 2 ml of P.G. 600 (400 IU PMSG and 200 IU hCG). All ewes underwent transrectal ultrasonography starting at 36 h post CIDR removal. Ewes were ultrasounded every eight hours until ovulation occurred. Ovulation was defined as the disappearance of a dominant follicle (>4 mm in diameter) that was present on the ovary during the previous ultrasound. Two Dorset ewes were removed from the study. One being removed due to the loss of a CIDR prior to the 14 day removal date, and the other being removed due to excessive scar tissue buildup in the reproductive tract making access difficult. One of the removed ewes was from the control group and the other from the P.G. 600 group. Treatment with P.G. 600 did not affect (P > 0.05) the time from CIDR removal to the first observed ovulation (C, 58.0 ± 2.00 h and P.G. 600, 59.0 ± 3.38 h), and among all ewes the first ovulation occurred between 48 h and 80 h after CIDR removal. In ewes with multiple ovulations, treatment with P.G. 600 did not influence (P > 0.05) the interval between the first and last observed ovulation (P.G. 600, 4.8 ± 3.20 h and C, 4.0 ± 1.73 h). When compared to control ewes, treatment with P.G. 600 did not affect (P > 0.05) ovulation rate (C, 2.0 ± 0.27 ovulations per ewe and P.G. 600, 2.4 ± 0.38 ovulations per ewe). More ewes ovulated on both ovaries (n=12) versus the right ovary only (n=4), while none of the ewes had ovulation(s) restricted to the left ovary only. Mean follicle diameter at ovulation was similar (P > 0.05) between groups (C, 5.8 ± 0.24 mm and P.G. 600, 5.3 ± 0.36 mm). Control ewes had a greater mean follicle diameter when compared to P.G. 600 ewes at 44 h (5.5 ± 0.26 vs. 4.4 ± 0.27 mm, P < 0.005, respectively) and 52 hours (5.9 ± 0.25 vs. 5.2 ± 0.32 mm, P < 0.05, respectively) after CIDR removal. However, follicular diameter between 52 h and 62 h increased (P < 0.02) in P.G. 600 (0.56 ± 0.26) versus control ewes (-0.13 ± 0.22). In conclusion, Dorset and Hampshire ewes will ovulate 58 to 59 hours after CIDR removal, and this
observation is not influenced by P.G. 600 treatment. Although treatment with P.G. 600 may influence follicular growth it does not impact ovulation rate. Although further studies are needed, the additional cost associated with using P.G. 600 at CIDR removal does not appear to offer any beneficial outcomes.

Reberg, Paul
Poster

*Small Scale Hops Thresher*

Research Collaborator(s): Kyle Willfahrt, Taylor Ketterhagen

Faculty Mentor(s): Dr. Joseph Shakal, Agricultural Engineering Technology; Dr. Joel Peterson, Agricultural Engineering Technology; Dr. Veronica Justen, Plant and Earth Science

Engineering a Hops Cleaning Unit in Tandem with a Hops Thresher Kyle Willfahrt, Agricultural Engineering Technology (Class of 2015) With the big boom of craft breweries and micro-breweries popping up across the nation, the need arises for these organizations to get hops to craft their brews. As engineering technology students we focus on getting our hands on in creating a solution to the brewer’s problems. A need for a hops thresher and cleaning unit is then formulated and manufactured. From there, testing is done on the prototype equipment and then modifications are described from the threshing efficiency that was tabulated by testing freshly harvested hops. Specifically, we made modifications to a hops threshing unit to ensure optimal threshing based on how many hops cones remained after a threshing. Also, fresh hops and aged hops were tested to define what type of hops threshes best. Moreover, we also went through the engineering design process to design, modify, and create a materials list for a new cleaner unit to work together with the hops thresher that was tested. This was all carried out after calculations concerning torque and horsepower for the powertrain that the project requires. We received 2 grants for our research, one each for the hops thresher and cleaner. Materials were then purchased and fabrication of a hops cleaning unit is now ongoing. When completed, the team wants to collaborate with the agricultural business department and test the validity of mass production of thresher and cleaning units. Patent research and price formulations are what the
team will then research. From there, a feasibility study will then be conducted to determine if mass production is possible.

**Ridley, Greg**

Poster

*A Modern Estimation of the Phillips Curve*

Research Collaborator(s): Joseph Eggimann, Emmanuel Udeh

Faculty Mentor(s): Dr. John Walker, Economics

This study looks at the inverse relationship between inflation and unemployment suggested by the Phillips Curve. Two models are estimated. The first using the traditional backward-looking version of expected inflation. The new Keynesian forward-looking version of expected inflation was used for the second model. Both models suggest oil prices are positively related to current inflation, while the unemployment gap is inversely related. The first model suggests that expectations play the largest role in determining current inflation. The second model suggests expected inflation is not significant in determining current inflation.

**Robles Perez, Debora**

Poster

*Glaciers on Mars*

Faculty Mentor(s): Dr. Charles Rader, Geography and Mapping Sciences

Mars is covered globally with a thick subsurface layer of soil that remains frozen throughout the years (permafrost). Temperatures colder than -50ºC dominate the Martian soils. Mars shows traces of a warmer time, a period when its atmosphere was thick and great floods scoured channels across its surface.

I will discuss how to answer the below questions using Geographic Information System (GIS) techniques.

+ Where did the ice come from?
+ What is the distribution of water and ice in the Martian subsurface?
+What kind of glacial landforms have occurred?
+Are the terrestrial analogs?
+Can we predict climate changes that may occur on Earth knowing Martian past climate?

**Rocha Amaral, Carla Amanda**

*Poster*

*Development of a Vanilla Ice Cream with low fat rate by the replacement of ingredients.*

Research Collaborator(s): Ana Fabrine Rodrigues Oliveira

Faculty Mentor(s): Michelle Farner, Animal and Food Science

Ice Cream is a product that pleases a variety of tastes, and there is a wide range of ingredients that can be used to enrich and diversify its recipes. However, the industries have been investing little in ice creams with more nutritional characteristics. This project has the purpose of developing a healthier vanilla ice cream by replacing the sugar and the heavy cream with fat-free sweetened condensed milk in order to reduce the caloric value and maintain an attractive taste. The acceptance of the ice cream is also going to be evaluated through the sensorial analyze.

**Rodrigues Oliveira, Ana Fabrine**

*Poster*

*Visual Literacy*

Research Collaborator(s): Nathalia Pereira Silva, Gabriela Mota Nogueira, Tadeu de Azevedo Rodrigues

Faculty Mentor(s): Conan Kmiecik, English Language Transition Program

Visual Literacy is the ability to make something meaning from information presented into the image. It can be divided by the following components: Texture, Shape, Movement, Line, and Color. It is based on the audience interpretation about those elements that compose the Visual Literacy. That means, once the image has been analyzed by the
audience, it can be translated to a new form of information. In sum, Visual Literacy is the conversion from one form of information to another form keeping the exact meaning of the original form.

**Rolseth, Mark**  
Short Film

*The evolution of service-learning experiences in the digital media revolution*

Research Collaborator(s): Connor Nelson, Samuel Azasu  
Faculty Mentor(s): Erik Johnson, Communication Studies and Theatre Arts

The digital and social media platforms push the evolution of service learning for media and journalism students to new, creative real-world experiences. This project shares first hand findings from students perspectives of moving service learning into digital platforms. Presenters explore best practices, project pitfalls and assessment.

**Rolseth, Mark**  
Short Film

*Falconer Pride*

Faculty Mentor(s): Joseph Blum, Communication Studies and Theatre Arts; Kathy Helgeson, University Communications

This video piece documents the story of UWRF Graduate Jordan Jones, a falconer responsible for training the University's first live mascot - the real Freddy Falcon.

**Romportl, Anna**  
Poster

*Communication Apprehension Cross-Culturally*

Faculty Mentor(s): Dr. Jerry Halvorson, Communication Sciences and Disorders
The study is designed to determine an overall rating of students’ speech fear or speech anxiety by comparing students’ Communication Apprehension scores from the United States and Ecuador. Documented evidence supports that about a quarter of the general population have a high fear of speaking, or Communication Apprehension (CA). CA negatively effects students’ social interactions as well as academic performance. Minimal research has been done on populations outside of the United States with CA, and no research has been done in Ecuador specifically.

**Rootes, Brittany**

*Poster*

*The Impact of Living Green Walls on Student Attitudes, Moods, and Academic Performance*

Research Collaborator(s): Alison Miotke

Faculty Mentor(s): Dr. Travis Tubre, Psychology; Dr. Terry Ferriss, Plant and Earth Science; Dr. David Trechter, Agricultural Economics

Research from multiple disciplines (e.g., environmental psychology, interior design, horticulture/landscape design) suggests that the physical environment in which an individual lives and works can impact their lifestyle, health, subjective well-being, and productivity. Studies conducted in office and academic settings in such diverse locations as Japan (Shibata & Suzuki, 2004), the United Kingdom (Knight & Haslam, 2010), and the Netherlands (Nieuwenhuis, Knight, Postmes, & Haslam, 2014) have consistently demonstrated that indoor plants can positively impact student and worker moods, attitudes toward work, and even productivity. The goal of our research project is to extend on this previous research by studying whether these same benefits would be seen for a Greenwall (i.e., a vertically arranged, living wall of plants) that is actually built into the physical environment. The main objective of our experiment is to study student well-being, engagement, and academic performance in a classroom whose physical space has been altered by the addition of a Greenwall. In addition, we want to examine whether these benefits are ongoing and might increase with longer-term
exposure to such conditions. The first part of our study will be to survey students about their current states of well-being, engagement, and academic performance in the classrooms before the Greenwall is put in. Next, we will run a series of experimental sessions, where student participants will be randomly assigned to complete measures of academic anxiety, academic self-efficacy, mood, concentration, environmental restoration, and information processing in either the target room that will contain the Greenwall or the control classroom with a goal of demonstrating the initial equivalence of the rooms. Following installation, we will again run several experimental sessions where participants will complete the above measures in the two classrooms (one Greenwall enhanced and one control). We will also collect in-class data from each classroom on variables like class performance and course satisfaction. We will compare the before-installation and after-installation survey results with the hope of finding actual academic benefits of the Greenwall in the classroom. Our analytic strategy will be to conduct t-tests to examine experimental and control group differences on key study variables. Because multiple t-tests will be involved, we will make corrections for familywise error in our analyses. Our goal is to have all survey data collection completed by the end of February and to get academic performance measures collected a couple of weeks before Spring Break followed shortly by data entry and extensive analysis. Our results will allow us to draw conclusions regarding enhancing classroom environments to maximize student and faculty performance through the use of Greenwall installations. Results could also benefit the interior plantscaping industry by providing evidence-based marketing advantages of utilizing a Greenwall in an indoor workspace.

Ross, Trevor
Poster

Attitudes Toward Marijuana Legalization

Faculty Mentor(s): Dr. Paige Miller, Sociology, Anthropology and Criminal Justice

I will be presenting a research project examining attitudes of college students at UWRF on marijuana legalization.
Santos, Bruno
Poster

**Oral Literacy**

Research Collaborator(s): Eloise Ramos, Erico Gregorio, Luana Barichello

Faculty Mentor(s): Conan Kmiecik, English Language Transition Program

Oral literacy is the foundation of learning to read and write, also it is the ability to listen. Understanding and interpreting what others mean are important tools for oral communication. Misunderstands during any of these steps can be harmful to oral comprehension. Many facts can interfere in oral literacy, such as, accent, local slangs and dialects, body language and speech intensity and variation.

Santos, Nathalia
Poster

*The Effects of P.G. 600 on Follicle Growth and Ovulation Following Controlled Internal Drug Release Device Removal in Ewes*

Research Collaborator(s): Shelby Springman, Kristina Boss, Kayla Kruckenberg, Morgan Randall, Jenna Newman

Faculty Mentor(s): Dr. Justin Luther, Animal and Food Science

Estrous synchronization is a useful technique for timed artificial insemination in sheep. Protocols have traditionally used gonadotropins to ensure ovulation and improve fertilization at CIDR removal. The purpose of this study was to determine the effects of P.G. 600 on follicle growth and ovulation in ewes. Dorset (n=13) and Hampshire (n=5) ewes were used. Ewes were blocked into three groups of six. Each group contained three P.G. 600 ewes and three control ewes. All ewes received a CIDR device that was removed 14 days later. Upon CIDR removal, control ewes were injected IM with 2 ml of sterile saline solution, and P.G. 600 ewes were injected IM with 2 ml of P.G. 600 (400
IU PMSG and 200 IU hCG). All ewes underwent transrectal ultrasonography starting at 36 h post CIDR removal. Ewes were ultrasounded every eight hours until ovulation occurred. Ovulation was defined as the disappearance of a dominant follicle (>4 mm in diameter) that was present on the ovary during the previous ultrasound. Two Dorset ewes were removed from the study. One being removed due to the loss of a CIDR prior to the 14 day removal date, and the other being removed due to excessive scar tissue buildup in the reproductive tract making access difficult. One of the removed ewes was from the control group and the other from the P.G. 600 group. Treatment with P.G. 600 did not affect (P > 0.05) the time from CIDR removal to the first observed ovulation (C, 58.0 ± 2.00 h and P.G. 600, 59.0 ± 3.38 h), and among all ewes the first ovulation occurred between 48 h and 80 h after CIDR removal. In ewes with multiple ovulations, treatment with P.G. 600 did not influence (P > 0.05) the interval between the first and last observed ovulation (P.G. 600, 4.8 ± 3.20 h and C, 4.0 ± 1.73 h). When compared to control ewes, treatment with P.G. 600 did not affect (P > 0.05) ovulation rate (C, 2.0 ± 0.27 ovulations per ewe and P.G. 600, 2.4 ± 0.38 ovulations per ewe). More ewes ovulated on both ovaries (n=12) versus the right ovary only (n=4), while none of the ewes had ovulation(s) restricted to the left ovary only. Mean follicle diameter at ovulation was similar (P > 0.05) between groups (C, 5.8 ± 0.24 mm and P.G. 600, 5.3 ± 0.36 mm). Control ewes had a greater mean follicle diameter when compared to P.G. 600 ewes at 44 h (5.5 ± 0.26 vs. 4.4 ± 0.27 mm, P < 0.005, respectively) and 52 hours (5.9 ± 0.25 vs. 5.2 ± 0.32 mm, P < 0.05, respectively) after CIDR removal. However, follicular diameter between 52 h and 62 h increased (P < 0.02) in P.G. 600 (0.56 ± 0.26) versus control ewes (-0.13 ± 0.22). In conclusion, Dorset and Hampshire ewes will ovulate 58 to 59 hours after CIDR removal, and this observation is not influenced by P.G. 600 treatment. Although treatment with P.G. 600 may influence follicular growth it does not impact ovulation rate. Although further studies are needed, the additional cost associated with using P.G. 600 at CIDR removal does not appear to offer any beneficial outcomes.

Schattner, April
Poster

The Distribution of Bacteria from Hand Dryers on Campus
In order to determine which environmentally sustainable hand dryer is the best fit for the UWRF campus, we conducted this experiment to compare the distribution of introduced bacteria on the Mitsubishi, the Toto, and the American Dryer: Extreme Air. We introduced a known bacteria in an enclosed environment around the three different hand dryers and counted the colonies that grew on plates. We then compared the data using a series of Mann-Whitney tests.

**Schopper, Kimberly**

*Poster*

**Equine Feed Ration Balancing Program**

Faculty Mentor(s): Dr. Ahmad Abuhejleh, Computer Science and Information Systems

My project combines three major interests of mine: animal science, computer science, and mathematics. I researched equine diets and learned how to build a feed ration balancing program. The program is implemented using database theory with the aid of Oracle and MySQL. The program is user friendly and accurately balances a feeds ration, which improves efficiency and technology for equine nutritionists. During my presentation, I will show how this program makes calculating balanced equine rations much quicker and therefore improves efficiency for nutritionists. In the industry, the current method for balancing an equine diet is to calculate the ration formulas by hand to balance the diet on paper. This process is lengthy, tedious and leaves many places for human error or calculation errors to occur. I will show how my computer program eliminates the possibility for human errors to occur as well as calculation errors. My program has a very rigid set of equations and scenarios it has to follow, therefore there can be no mistakes made. This system of calculating the ration will provide more accurate numbers for all calculations necessary in determining the balanced feed ration. I used publications from the National Research Council (NRC) as a main source of research for this program. The formulas used to perform the balancing in my program are built from
the latest publication for equine from the NRC. Since the NRC is the number one resource for nutrition guidelines in the animal science industry it is a highly credited source that was used for basis of my program. Another aspect I will talk about is why I chose to implement this technology. Simply stated it is because there currently is no technology available to the public for balancing equine rations. The only technology that exists today, are programs that check to see if the ration is balanced. One currently exists through the NRC website; you can plug in the specifics about the horse and what feeds will be in the ration, and then telling you what is sufficient, deficient, and proficient in the diet. The way to use the checking program as a balancing tool, is by using a guess and check method. My program I will present on takes the frustration out of calculating feed rations and decreases the time spent on them.

Schrock, Benjamin
Poster

Black and White Male Earnings Difference

Research Collaborator(s): James Duggan, Emily Grosskopf, Michael Schuenke

Faculty Mentor(s): Dr. John Walker, Economics

This study examines the determinants of black and white male earnings differences in the years 2000 and 2010. OLS regressions, estimated on the pooled sample and separately on blacks and whites, indicate the human capital variables education, experience, and usual hours worked have a positive influence on earnings. The results on the pooled sample suggest that, all else equal, white males earn 16.4% more than blacks in 2000 and 17.5% more in 2010. Oaxaca decomposition results suggest that human capital variables are important determinants of earnings for both black and white males. The decomposition also reveals that in 2010 usual hours worked play a more significant role in explaining the lower earnings of black males. Overall our results suggest human capital is important in explaining earnings differences between black and white males. Our results, however, suggest discrimination may also be a factor in explaining the lower earnings of black males. This is indicated by the positive effect for race in the pooled estimates. In addition
discrimination is suggested by the unexplained variation of earnings in the Oaxaca decompositions in both 2000 and 2010.

Schuenke, Michael
Poster

**Black and White Male Earnings Difference**

Research Collaborator(s): James Duggan, Benjamin Schrock, Emily Grosskopf

Faculty Mentor(s): Dr. John Walker, Economics

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Schultz, Jeremy
Poster

**Synthesis of Furanokurzin: A biologically active molecule.**

Faculty Mentor(s): Dr. Stacey Stoffregen, Chemistry

Furanokurzin is a recently discovered compound that was found to inhibit acetylcholinesterase enzymes in vitro. Acetylcholinesterase
Inhibitors are commonly used for treating people with Alzheimer's disease. When furanokurzin was first discovered, it was extracted from the dry leaves of Macaranga kurzii, a tropical plant found exclusively in Southern Asia. Only nine milligrams of purified furanokurzin was obtained from the extract. In order to confirm that furanokurzin can be used to treat Alzheimer's or other ailments, ample quantities of the compound must be obtained. The most efficient way to produce furanokurzin would be to synthesize the compound in a laboratory, since furanokurzin only exists in a small concentration (~90ppm) from its natural source. The purpose of this research project is to synthesize ample quantities of furanokurzin in the laboratory so that more testing can be done on the compound.

**Scoqui Guimaraes, Mariana**  
Poster

**Ice cream with rice syrup**

Research Collaborator(s): Brielle Hauge  
Faculty Mentor(s): Michelle Farner, Animal and Food Science

The goal of this project is to research the substitution of sugar with rice syrup in vanilla ice cream using sensory analysis, consumer preference and physiochemical analysis compared with a simple ice cream recipe.

**Scoqui Guimaraes, Mariana**  
Poster

**Health Cookie**

Research Collaborator(s): Erika Ferreira, Joaquim Vitor da Paz Neto, Lucas Aparecido Teixeira da Silva, Magregor Oliveira  
Faculty Mentor(s): Dr. Bonnie Walters, Animal and Food Science

The main purpose of this project was to create a health cookie through the addition and replacement of certain ingredients found in a traditional cookie recipe. Cookie is a common product in American
market and by offering a health option will help consumers to have a good health.

The first part of this project was to define the best cookie recipe that could meet either nutritional or technologic functions. Thus, the final ingredients include: oat, all purpose flour, wheat flour, brown sugar, apple sauce, egg, baking soda, cinnamon, vanilla essence, coconut oil, salt, dried cranberries, and hazelnut. Once finalized, this step, we could move on to the second part, which included all the necessary analysis to characterize all product: protein, fiber, moisture, ash etc. The third part was to set up sensorial analysis panel to find out whether our product meets consumers perspectives or not. Finally, the last step was to scale-up the cookie production to an industrial level.

Scoqui Guimaraes, Mariana
Poster

*Comparison between salting, coloring and pressuring in Muenster-Style Cheese*

Research Collaborator(s): Magregor Damiao De Oliveira, Katrina Nunes

Faculty Mentor(s): Michelle Farner, Animal and Food Science

The goal of this project is to make successfully Muenster-Style cheese comparing salting, coloring and pressuring. Historians credit that Muenster was created in Alsace, France, despite some of them believing that its origin was German. The name Muenster comes from the word monasterium or monastery because monks originally made it. The procedures during fabrication of the cheese included standard steps in cheese making as adding starter, cheese coloring, cutting, cooking and draining. However we used two different methods in three attempts while making our cheese and obtained different results from each. On our first attempt we failed to make cheese because the milk was too hot and the starter did not work. After that we made adjustments for our next trial and were able to successfully make cheese. In our second attempt with the first method we used self-pressure, a 23% brine solution and brevibacterium. Our cheese turned out very hard and dry with an unpleasantly salty flavor. It was still creamy white in color and
lumpy on the outside. We learned that the vertical pressure method is more effective than the self-pressure method. We also learned that the brevibacterium was supposed to create an orange colored film on the outside of the cheese and add extra flavor to it but ours did not. In the second method we used vertical pressure, added salt to the curds, and coloring to the surface. This cheese turned out soft and moist inside with a pleasant mild flavor. It had a smooth bright orange outside with a creamy white colored center. We attested that the different procedures of coloring, salting and pressure affect the texture, appearance and flavor of the outcome.

**Silva, Ariane**

Poster

*Modeling Breast Cancer Metastasis using MCF-7 Hanging Drop Spheroid Cultures.*

Research Collaborator(s): Alyssa Timmers (Ikeri)

Faculty Mentor(s): Dr. Timothy Lyden, Biology

Since 2004, our laboratory has been focused on using 3D modeling techniques to examine and explore the behavior of cells engaged in normal and pathological histogenesis. Until recently, the majority of this work has been focused on the application of natural 3D matrix materials to develop artificial tissues. In 2008, our work shifted onto a strongly defined pathway of modeling several types of cancer in 3D and generating long-term artificial tissues from both primary patient samples and standard tumor cell lines. These studies identified an interesting aspect of 3D tumor modeling, in that as the tissue became established and developed it also began to produce significant numbers of potentially metastatic cells and nodules or spheroids. This effect was particularly seen in breast cancer models and is the focus of this report. One limitation for the intricate study of these tumor products (spheroids) has been the relatively pleomorphic distributions observed in these cultures. In order to address this short coming, and to study the actual metastatic potential of such shed nodules, we have begun to employ a new hanging-drop technology to produce large numbers of very consistently sized spheroids using the breast adenocarcinoma cell line, MCF-7. In this report, we present the initial results of both labeling
studies and morphometric analysis of the spheroids generated from an initial 5000 cells and cultured for up to 5 days. The results of this work have already provided significant evidence that these spheres are reasonable models for metastatic nodules and/or micro-tumors in-vivo. Continuing studies are working to evaluate the invasive capacities of these and the “natural” spheres from each respective time point and relative morphology.

Simms, Kimberly
Poster

_The Perceptions of Family Members Influencing Placement for their Relatives into Memory Care Units_

Faculty Mentor(s): Jennifer Gervais, Social Work; Tammy Kincaid, Social Work; Dr. Ogden Rogers, Social Work

This study evaluates the perceptions of family members influencing the placement of their relatives into memory care units. The introduction presents the explanation and necessity of long term care services. The hypothesis for this study is perceptions are influenced by the reputation of quality of care their relative receives from the staff in a memory care unit. This literature review explores the history, functionality, quality of care recommended for, and future demands for nursing homes. The methodology of this study presents the use of a satisfaction survey to determine the possible influences of placement that a family member makes for their relative with dementia. Due to the small amount of data collected through a satisfaction survey, a statistical test was not able to be completed. The results did reveal multiple outliers and similarities. Based on the results from the surveys it can be concluded through a recommendation to present a more homelike environment at the Woodbury Health Care Center in the memory care unit.

Slavik, Amy
Poster

_Structural Activity Relationship of the A11 Skin-lightening Compound Family_

Faculty Mentor(s): Dr. Cheng-Chen Huang, Biology
This project was designed to test the ability of a family of chemicals derived from A11 on lightening the pigmentation of zebrafish embryos. Those that were shown to have a positive effect on skin lightening were then further tested to see if they inhibited tyrosinase, an enzyme that is key in melanin synthesis. The goal is to determine the relationship between the structure of the chemicals and their activity in skin lightening.

**Snyder, Geoffrey**
Poster

*Ice Cream Ingredient Substitute*

Research Collaborator(s): Magregor Damião de Oliveira

Faculty Mentor(s): Michelle Farner, Animal and Food Science

The goal of the project is to develop an ice cream by adding whey protein concentrate into a basic vanilla recipe. We will analyze differences in consumer acceptability for flavor, texture, and nutritional value, as well as physiological differences between the two products.

**Snyder, Geoffrey**
Poster

*Manufacturing of Ice Cream with Whey Protein Concentrate*

Research Collaborator(s): Magregor Damião de Oliveira

Faculty Mentor(s): Michelle Farner, Animal and Food Science

The goal of the project is to develop an ice cream by adding whey protein concentrate into a basic vanilla recipe. We will analyse differences in consumer acceptability for flavor, texture, and nutritional value, as well as physiological differences between the two products.

**Solum, Sierra**
Poster
Vanilla Ice Cream Made with Molasses

Research Collaborator(s): Allison Nohre, Jordan Steinhorst

Faculty Mentor(s): Michelle Farner, Animal and Food Science

This research project consists of creating a batch of Vanilla Ice Cream, substituting one cup of granulated sugar with one cup of molasses. The product is to be made in the UW-River Falls Dairy Pilot Plant. The resulting ice cream will be evaluated with a sensory evaluation and a melt-ability test. The results of these tests will be compared and contrasted with the control vanilla ice cream, which is made with granulated sugar.

Sontag, Bobby
Poster

Ice cream with dried buttermilk

Research Collaborator(s): Samara De Vasconcelos Vieira

Faculty Mentor(s): Michelle Farner, Animal and Food Science

Taking out cream and adding dried buttermilk. We changed ingredients to make an alternative product.

Sorge, Erin
Poster

The microbiology behind pre-dip and post-dip procedures in the dairy cow industry.

Faculty Mentor(s): Dr. Kim Mogen, Biology

Pre-dip and post-dip solutions use microbiology principles to safely and efficiently kill bacteria on dairy cow udder's. The pre-dip and post-dip procedures are important for the dairy industry to help keep cows healthy and prevent high bacterial counts in milk. There are several different chemicals that are commonly used in pre-dip and post-dip
solutions that each have a different mode of action on how they work to kill bacteria.

**Sousa Araujo, Nathalia**  
Poster

*Introduction of Brazilian Candy in the American Market*

Research Collaborator(s): Fernanda Franca e Souza, Atalita dos Santos Devaud, Matheus Garutti, Luiz Felipe Suzuki

Faculty Mentor(s): Dr. Bonnie Walters, Animal and Food Science

According to Brazil (1978), Brigadeiro is a cooked product prepared on the basis of condensed milk and chocolate, can be added other substances such as butter, walnuts, Brazil-Pará, brown-de-cashew and raisins and wrapped in chocolate granulated or colored sprinkles. The purpose of this study was to analyze the introduction of Brigadeiro in the American market, developing the product and adapting it to the American ingredients. In addition, this study will question the acceptance of the product by the Americans students at the University of Wisconsin in River Falls, evaluating its nutritional facts and the economic feasibility of the production in America. The introduction of a product from another culture into the market is always interesting since it can enrich the personal knowledge about other cultures and increase the options of food in the marketplace, stimulating the economy around the sector in question.

**Souza, Leandro**  
Poster

*The impact that different classroom experiences and grades have on students’ attitudes towards Chemistry*

Research Collaborator(s): Camila Moreira

Faculty Mentor(s): Dr. Jamie Schneider, Chemistry
This quantitative research’s main goal was to study students’ attitude toward chemistry pre- and post-taking General Chemistry I at a small mid-western public university. Data was collected using a 8-item semantic differential survey that could be analyzed into two factors, emotional satisfaction (ES) and intellectual accessibility (IA). In addition, students were asked an open response question that assess whether this course influenced their major degree choice. These same surveys were taken during two different fall semesters. Both semesters were taught by the same instructor using the same instructional strategies (active learning with group work) but one term was taught in a tiered lecture hall (population 1) and one term was taught in an active learning classroom (population 2). Changes in their attitude in both classrooms were analyzed in order to identify patterns related to student grades and response to major change question. The data showed that high-grade students tend to have more positive attitudes whereas low-grade students tend to have less positive attitudes. However, this pattern in the lecture hall was not as clear as it was in the active learning classroom.

**Springman, Shelby**

**Poster**

*The Effects of P.G. 600 on Follicle Growth and Ovulation Following Controlled Internal Drug Release Device Removal in Ewes*

Research Collaborator(s): Kristina Boss, Kayla Kruckenberg, Morgan Randall, Jenna Newman, Nathalia Santos

Faculty Mentor(s): Dr. Justin Luther, Animal and Food Science

Estrous synchronization is a useful technique for timed artificial insemination in sheep. Protocols have traditionally used gonadotropins to ensure ovulation and improve fertilization at CIDR removal. The purpose of this study was to determine the effects of P.G. 600 on follicle growth and ovulation in ewes. Dorset (n=13) and Hampshire (n=5) ewes were used. Ewes were blocked into three groups of six. Each group contained three P.G. 600 ewes and three control ewes. All ewes received a CIDR device that was removed 14 days later. Upon CIDR removal, control ewes were injected IM with 2 ml of sterile saline.
solution, and P.G. 600 ewes were injected IM with 2 ml of P.G. 600 (400 IU PMSG and 200 IU hCG). All ewes underwent transrectal ultrasonography starting at 36 h post CIDR removal. Ewes were ultrasounded every eight hours until ovulation occurred. Ovulation was defined as the disappearance of a dominant follicle (>4 mm in diameter) that was present on the ovary during the previous ultrasound. Two Dorset ewes were removed from the study. One being removed due to the loss of a CIDR prior to the 14 day removal date, and the other being removed due to excessive scar tissue buildup in the reproductive tract making access difficult. One of the removed ewes was from the control group and the other from the P.G. 600 group. Treatment with P.G. 600 did not affect (P > 0.05) the time from CIDR removal to the first observed ovulation (C, 58.0 ± 2.00 h and P.G. 600, 59.0 ± 3.38 h), and among all ewes the first ovulation occurred between 48 h and 80 h after CIDR removal. In ewes with multiple ovulations, treatment with P.G. 600 did not influence (P > 0.05) the interval between the first and last observed ovulation (P.G. 600, 4.8 ± 3.20 h and C, 4.0 ± 1.73 h). When compared to control ewes, treatment with P.G. 600 did not affect (P > 0.05) ovulation rate (C, 2.0 ± 0.27 ovulations per ewe and P.G. 600, 2.4 ± 0.38 ovulations per ewe). More ewes ovulated on both ovaries (n=12) versus the right ovary only (n=4), while none of the ewes had ovulation(s) restricted to the left ovary only. Mean follicle diameter at ovulation was similar (P > 0.05) between groups (C, 5.8 ± 0.24 mm and P.G. 600, 5.3 ± 0.36 mm). Control ewes had a greater mean follicle diameter when compared to P.G. 600 ewes at 44 h (5.5 ± 0.26 vs. 4.4 ± 0.27 mm, P < 0.005, respectively) and 52 hours (5.9 ± 0.25 vs. 5.2 ± 0.32 mm, P < 0.05, respectively) after CIDR removal. However, follicular diameter between 52 h and 62 h increased (P < 0.02) in P.G. 600 (0.56 ± 0.26) versus control ewes (-0.13 ± 0.22). In conclusion, Dorset and Hampshire ewes will ovulate 58 to 59 hours after CIDR removal, and this observation is not influenced by P.G. 600 treatment. Although treatment with P.G. 600 may influence follicular growth it does not impact ovulation rate. Although further studies are needed, the additional cost associated with using P.G. 600 at CIDR removal does not appear to offer any beneficial outcomes.

Steinhorst, Jordan
Poster

Vanilla Ice Cream Made with Molasses
Research Collaborator(s): Sierra Solum, Allison Nohre

Faculty Mentor(s): Michelle Farner, Animal and Food Science

This research project consists of creating a batch of Vanilla Ice Cream, substituting one cup of granulated sugar with one cup of molasses. The product is to be made in the UW-River Falls Dairy Pilot Plant. The resulting ice cream will be evaluated with a sensory evaluation and a melt-ability test. The results of these tests will be compared and contrasted with the control vanilla ice cream, which is made with granulated sugar.

Stevens, Morgan
Dance Performance

Bereavement

Research Collaborator(s): Salvatore D'Agostino, Samantha Anderson, Jenna Cook, Sor Her, Dallas Nicolai, Marcus Dryer

Faculty Mentor(s): Mari Kline-Kluck, Communication Studies and Theatre Arts

This dance piece is about the 5 stage of grief. It explores various views/perspectives on the grieving process. The creative process used to construct the project was very collaborative. The overall vision certainly came from the choreographer (Mari Kline-Kluck), but the dancers had a very large roll in the creation of the movement and the characters in the dance. Jenna Cook researched various arrangements of the song "Ne Me Quitte Pas" that she sings during a portion of the piece. Sor Her actually wrote/transposed the version of the piano accompaniment he performs during the piece. The dancers all brought their own acting and expression into the piece and contributed in the collaborative process to create the work.

Stoneburg, Sarah
Poster
Mapping Resilience as a Compound Personality Construct Using Big 5 Traits and Facets

Research Collaborator(s): Julia Chous, Alison Miotke

Faculty Mentor(s): Dr. Travis Tubre, Psychology

Resilience has been described as an adaptive, developmental construct representing the ability to persist and recover from adversity and stress (Reivich & Shatté, 2002). Researchers have studied resilience with a focus on improving outcomes in various settings (e.g., clinical, developmental) where people deal with adversity. Conceptualizing resilience as ability-based implies a coping process (Lazarus & Folkman, 1984) that can be acquired over time. In this view, resilience is a specific construct representing unusual responses to extreme stressors. An alternative is to study resilience as a personality trait. In this view, resilience represents general behavioral tendencies toward broader environmental challenges (Waaktaar & Torgersen, 2010). Individuals with tendencies toward maladaptive responses could be identified through personality testing and could be assisted prior to experiencing specific life stressors. A number of trait-level resilience measures have been developed to guide such efforts. We are comparing several of these measures with Big 5 personality traits to assess convergent, construct-related validity. We are interested both in the intercorrelation of various resilience scales and with how they correlate with different Big 5 traits and facets. Approximately three hundred undergraduate students will participate in the study for extra credit. We have already collected data for over two hundred cases. Participants will provide demographic data, complete the International Personality Item Pool (IPIP; Goldberg, 1999) to measure Big 5 scales and facets, and complete several measures of trait resilience: the Connor-Davidson Resilience Scale (CD-RISC; Connor & Davidson, 2003), the Ego-Resiliency 89 (ER-89; Block & Kremen, 1996), and the Ego-Resiliency Scale (ER; Klohnen, 1996). We will use zero-order correlations and regression analyses to map the relationships between the resilience measures and corresponding Big 5 traits and facets. Our goal is to align the construct of resilience with the current hierarchical view of the FFM. Our hope is to represent resilience as an example of what Hough and Ones (2001) call a compound personality trait, or a trait that consists of various facets of different traits. In contrast to thinking of it as an ability that is
developed, we believe our results will indicate that it may represent adaptive elements of general personality traits, expressed at the facet level.

**Stueven, Noah**  
Poster  

*It’s a Small World: Analysis of a New Cluster of Arthrobacter Phage*

Research Collaborator(s): Brenna Heiskari  
Faculty Mentor(s): Dr. Karen Klyczek, Biology; Dr. Fred Bonilla, Biology

The UWRF phagehunters courses isolated several new phages infecting Arthrobacter sp. The DNA of two of these phages, Toulouse and TymAbreu, was submitted for sequencing. The genomes of these phages are small, with Toulouse at only 15,319 bp, and TymAbreu at 15,556 bp. Only one Siphoviridae phage with a smaller genome has been reported, Rhodococcus phage RRH1 at 14,270 bp. Interestingly, phage isolated at Lehigh University (Maggie) and Bucknell University (Sandman) were similar to the two phages isolated at UWRF. All four phages share extensive nucleotide homology, with TymAbreu and Maggie differing by only 8 bp. The gene products of the four ‘little’ phage have very low homology with sequences in the NCBI database. Ongoing studies demonstrate Toulouse and TymAbreu replicate optimally at 25-30°C and at a pH range of 5-11. The addition of CaCl2 to the Arthrobacter host is not strictly required for phage replication, but did enhance efficiency as measured by plaque titer. We also examined the host range of these phage among other members of the Actinomycetales. Toulouse and TymAbreu did not lyse Mycobacterium smegmatis, Corynebacterium xerosis, or Rhodococcus globerulus in any of the culture conditions tested. However, one of the other phage isolated in the class, Lola, was able to lyse R. globerulus. Another ongoing study suggests that the forward and reverse genes, that are in the same relative spot, and called by Glimmer and GeneMark, are both real genes, due to having similar amount of cDNA after RT-PCR.

**Suzuki, Luiz Felipe**
Poster

**Introduction of Brazilian Candy in the American Market**

Research Collaborator(s): Fernanda Franca e Souza, Nathalia Sousa Araujo, Atalita dos Santos Devaud, Matheus Garutti

Faculty Mentor(s): Dr. Bonnie Walters, Animal and Food Science

According to Brazil (1978), Brigadeiro is a cooked product prepared on the basis of condensed milk and chocolate, can be added other substances such as butter, walnuts, Brazil-Pará, brown-de-cashew and raisins and wrapped in chocolate granulated or colored sprinkles. The purpose of this study was to analyze the introduction of Brigadeiro in the American market, developing the product and adapting it to the American ingredients. In addition, this study will question the acceptance of the product by the Americans students at the University of Wisconsin in River Falls, evaluating its nutritional facts and the economic feasibility of the production in America. The introduction of a product from another culture into the market is always interesting since it can enrich the personal knowledge about other cultures and increase the options of food in the marketplace, stimulating the economy around the sector in question.

**Tammes, William**

Poster

**An estimation of the money demand curve from 1981-2010**

Research Collaborator(s): Stephen Middlemiss, Adon Brown, Darren Ward

Faculty Mentor(s): Dr. John Walker, Economics

Our research questioned if there is a stable non zero relationship between money and economic activity. Our hypotheses tested if there are statistically significant relationships between money demand and money supply as measured by M2 and MZM, price level in terms of CPI, income in terms of real GDP, interest in terms of the Federal Funds rate
and MZM own rate, and housing wealth as measured by the Real Residential Property index. The results indicate a high correlation be the independent and dependent variables as measured by an ordinary least squares.

**Teresinski, Karriann**

Poster

*The Impact of State Provided Family Planning Services and Dependence on Public Assistance Programs.*

Faculty Mentor(s): Dr. Paige Miller, Sociology, Anthropology and Criminal Justice

Trying to assess whether government funded programs like Planned Parenthood being accessible are influential to an individuals need for addition assistance programs, I will be presenting research findings on whether or not a correlation exists between state who provide family planning services and participation in public assistance programs, specifically the Supplemental Nutrition Assistance Program (S.N.A.P.) and the Special Supplemental Nutrition Program for Women, Infants, and Children (W.I.C.). Without access to basic reproductive services, state governments who deny individuals of basic social programs could consequently be fueling a population unprepared to raise a family.

**Terra Vieira, Maria Luiza**

Prezi presentation

*Oral History Project*

Faculty Mentor(s): Rhonda Petree, English

Students in ESL 311: Research Writing conducted an Oral History Project in which they interviewed one person from their home country and one person from River Falls.

Students created a timeline of their interviewees’ lives where they showed the events in their personal lives and other historical, political, economic, cultural, and social events that occurred during their lives.
Finally, students integrated the timeline and highlights from the interviews into visual presentations using Prezi and PowerPoint.

**Thomas, Cassandra**  
*Poster*  

*Investigating Occupancy Limits*

Faculty Mentor(s): Dr. Kathy Tomlinson, Mathematics

A mathematical modeling project that explores how legal room occupancy limits are decided, based on factors such as how quickly individuals can exit a given room.

**Tilson, Adam**  
*Short Film*  

*Student Support Services Promotional Video*

Faculty Mentor(s): Erik Johnson, Communication Studies and Theatre Arts

This short video highlights the services that SSS offers to students.

**Trapp, Andrew**  
*Poster*  

*UW-RF Women and Development Survey 2014-2015*

Research Collaborator(s): Arianna Pajtash, Shannon McNamara, Reven McGee

Faculty Mentor(s): Erick Highum, Political Science

The UW-RF Women and Development survey is designed to determine the level of support that UW-RF students have for domestic and international policies of the United States on issues regarding women and development. There was a variety of questions asked spanning controversial topics about gender equality, family planning programs, and sexual assault in the military. The following demographic
information collected will be used as a basis of comparison on views of the issues of women and development: age, sex, year in school, registered voter, political party affiliation, political leaning, and military experience. The total number of surveys collected was 335. Student researchers administered the surveys to fellow students in classes in which the instructor gave prior consent as well as randomly collected responses from students on campus. This survey was confidential and anonymous. Participation in the survey was voluntary, and the subject could have withdrawn from participation at any time. Information was gathered on hard copy questionnaires and then recorded into SurveyMonkey for data analysis. Overall survey findings will be posted on the UW-RF Political Science website when the analysis has been completed.

Trickey, Samantha
Poster

*Demographic Differences in Consumption Patterns*

Faculty Mentor(s): Dr. Paige Miller, Sociology, Anthropology and Criminal Justice

Sociologists previously thought that conspicuous consumption was a behavior of the rich, but newer studies are showing that it is a socioeconomic behavior common to people in lower classes who display wealth to combat the impression of poverty. I am researching differences between age, gender, and social class.

Twedten, Rachel
Poster

*Friendships: How do children choose principal friendships in early school years?*

Faculty Mentor(s): Dr. Paige Miller, Sociology, Anthropology and Criminal Justice

I will be studying how children choose friends and what characteristics seem to be positive or negative when making friends
Udeh, Emmanuel  
Poster  

*A Modern Estimation of the Phillips Curve*  

Research Collaborator(s): Greg Ridley, Joseph Eggimann  

Faculty Mentor(s): Dr. John Walker, Economics  

This study looks at the inverse relationship between inflation and unemployment suggested by the Phillips Curve. Two models are estimated. The first using the traditional backward-looking version of expected inflation. The new Keynesian forward-looking version of expected inflation was used for the second model. Both models suggest oil prices are positively related to current inflation, while the unemployment gap is inversely related. The first model suggests that expectations play the largest role in determining current inflation. The second model suggests expected inflation is not significant in determining current inflation.

Vang, Julie  
Poster  

*Hmong Women’s attitude towards rape: a qualitative study*  

Faculty Mentor(s): Dr. Paige Miller, Sociology, Anthropology and Criminal Justice  

In March of 2012, the StarTribune, a Minneapolis/St. Paul paper, published a story about a twelve-year-old Hmong girl who had been raped by a gang of Hmong boys. Following the rape, rather than call law enforcement to report the crime or turning to her parents for support, the young girl called one of her attackers asking if he would marry her. This story, while tragic, is all too common among the Hmong community. Due in part to the patrilineal nature of the Hmong community it is considered embarrassing and stigmatizing for a girl to be raped. My research examines first and second-generation Hmong American women’s attitudes towards sex and sexual violence. This research addresses the cultural influences shaping Hmong Women’s attitudes towards these issues. By focusing on both first and second
generation women, I am able to speak to the cultural conflict facing second generation women who grow up in two worlds: the more traditional world of the home and the more modern world experienced through American media, schools, and among their peers.

Vitor da Paz Neto, Joaquim
Poster

*Health Cookie*

Research Collaborator(s): Erika Ferreira, Lucas Aparecido Teixeira da Silva, Magregor Oliveira, Mariana Scoqui Guimaraes

Faculty Mentor(s): Dr. Bonnie Walters, Animal and Food Science

The main purpose of this project was to create a health cookie through the addition and replacement of certain ingredients found in a traditional cookie recipe. Cookie is a common product in American market and by offering a health option will help consumers to have a good health.

The first part of this project was to define the best cookie recipe that could meet either nutritional or technologic functions. Thus, the final ingredients include: oat, all purpose flour, wheat flour, brown sugar, apple sauce, egg, baking soda, cinnamon, vanilla essence, coconut oil, salt, dried cranberries, and hazelnut. Once finalized, this step, we could move on to the second part, which included all the necessary analysis to characterize all product: protein, fiber, moisture, ash etc. The third part was to set up sensorial analysis panel to find out whether our product meets consumers perspectives or not. Finally, the last step was to scale-up the cookie production to an industrial level.

Wahlquist, Victoria
Poster

*Acoustic Levitation Using Ultrasonic Transducers*

Research Collaborator(s): Kelly McFarland
Acoustic levitation was studied using piezoelectric transducers to create a standing pressure wave in air. Multiple polystyrene balls were simultaneously levitated at a frequency of $63.348 \pm 0.005$ kHz. The polystyrene balls were more stable when using a concave reflector versus a flat reflector.

**Walker, John**

*Poster*

*Do Compensating Differences Add to the Explanation of the Gender Earnings Gap in Self-Employment? The Case of St. Croix County, Wisconsin.*

This study uses data collected on self-employed women and men in a single county to analyze the influence of compensating differences on the gender-based earnings gap. Stepwise regression on the pooled sample reduces eleven measures of compensating differences to challenge of competition, make a lot of money, job security, and close to extended family. An earnings regression for self-employed women indicates a positive effect of preference for job security and a negative effect of close to extended family on earnings. For self-employed men positive effects are found for challenge of competition and make a lot of money. A Oaxaca decomposition indicates the stronger preference of self-employed men in the sample towards make a lot of money explains between 6.80 to 9.34 percent of the earnings gap.

**Wang, Shuyan**

*Prezi presentation*

*On the road: Oral History Project*

Faculty Mentor(s): Rhonda Petree, English

Students in ESL 311: Research Writing conducted an Oral History Project in which they interviewed one person from their home country and one person from River Falls.
Students created a timeline of their interviewees’ lives where they showed the events in their personal lives and other historical, political, economic, cultural, and social events that occurred during their lives. Finally, students integrated the timeline and highlights from the interviews into visual presentations using Prezi and PowerPoint.

**Ward, Darren**

*Poster*

*An estimation of the money demand curve from 1981-2011*

Research Collaborator(s): Stephen Middlemiss, Adon Brown, William Tammes

Faculty Mentor(s): Dr. John Walker, Economics

Our research questioned if there is a stable non zero relationship between money and economic activity. Our hypotheses tested if there are statistically significant relationships between money demand and money supply as measured by M2 and MZM, price level in terms of CPI, income in terms of real GDP, interest in terms of the Federal Funds rate and MZM own rate, and housing wealth as measured by the Real Residential Property index. The results indicate a high correlation between the independent and dependent variables as measured by an ordinary least squares.

**Wiger, Chelsea**

*Poster*

*What is Causing the Decline of the Moose Population in Northern Minnesota?*

Faculty Mentor(s): Matthew Millett, Geography and Mapping Sciences; Dr. John Heppen, Geography and Mapping Sciences; Dr. Ruth Baker, Geography and Mapping Sciences; Dr. Charles Rader, Geography and Mapping Sciences

My project is about the decline of the moose population in northern Minnesota. It covers possible causes, moose research, why it is a problem, and what is being done to protect the moose.
Wilcoxson, Emily  
Poster  

*Gender and Climate Change*

Faculty Mentor(s): Dr. John Heppen, Geography and Mapping Sciences

My poster is about how gender and climate change are related at all levels of development.

Wilcoxson, Kaitlynn  
Poster  

*Geographic Distribution of Income Inequality Across the United States*

Faculty Mentor(s): Dr. John Heppen, Geography and Mapping Sciences

My research examines the geography of income inequality across the United States using the Gini Index. I mapped the progression of income inequality as well as the growth of income inequality.

Willfahrt, Kyle  
Poster  

*Small Scale Hops Thresher*

Research Collaborator(s): Paul Reberg, Taylor Ketterhagen

Faculty Mentor(s): Dr. Joseph Shakal, Agricultural Engineering Technology; Dr. Joel Peterson, Agricultural Engineering Technology; Dr. Veronica Justen, Plant and Earth Science

Engineering a Hops Cleaning Unit in Tandem with a Hops Thresher Kyle Willfahrt, Agricultural Engineering Technology (Class of 2015) With the big boom of craft breweries and micro-breweries popping up across the nation, the need arises for these organizations to get hops to craft their
brews. As engineering technology students we focus on getting our hands on in creating a solution to the brewer’s problems. A need for a hops thresher and cleaning unit is then formulated and manufactured. From there, testing is done on the prototype equipment and then modifications are described from the threshing efficiency that was tabulated by testing freshly harvested hops. Specifically, we made modifications to a hops threshing unit to ensure optimal threshing based on how many hops cones remained after a threshing. Also, fresh hops and aged hops were tested to define what type of hops threshes best. Moreover, we also went through the engineering design process to design, modify, and create a materials list for a new cleaner unit to work together with the hops thresher that was tested. This was all carried out after calculations concerning torque and horsepower for the powertrain that the project requires. We received 2 grants for our research, one each for the hops thresher and cleaner. Materials were then purchased and fabrication of a hops cleaning unit is now ongoing. When completed, the team wants to collaborate with the agricultural business department and test the validity of mass production of thresher and cleaning units. Patent research and price formulations are what the team will then research. From there, a feasibility study will then be conducted to determine if mass production is possible.

**Windsor, Dylan**

*Poster*

*Evaluation of Screen Printed Electrodes*

*Faculty Mentor(s): Dr. Jeff Rosenthal, Chemistry*

The purpose of the project was to consider the feasibility of determining the reaction rate of a chemical reaction following electrochemical oxidation by cyclic voltammetry using screen printed electrodes.

**Wolf, Steven**

*Poster*

*Impact of the Interstate Highway System on the Population Distribution of Dakota County, Minnesota 1980 to 2010*
Faculty Mentor(s): Dr. Charles Rader, Geography and Mapping Sciences

This study investigated the impact of interstates I-35 and I-494 on the population distribution of Dakota County, Minnesota from 1980 to 2010.

**Wolfe, Cody**

*Poster*

*Origins and Migrations of NFL Franchises*

Faculty Mentor(s): Dr. John Heppen, Geography and Mapping Sciences; Dr. Ruth Baker, Geography and Mapping Sciences

This show maps of the NFL broken into its NFC and AFC conferences, on where teams origins were and where they moved. There is also a brief history of the NFL.

**Zhou, Yaoyao**

*PowerPoint presentation*

*Case Study: Shopping behaviors of students at one Midwestern American university*

Research Collaborator(s): Hyobin Ji, Larissa Jahnel Rodrigues de Oliveira, Felipe Alarcon Peres

Faculty Mentor(s): Diane Jacobson, English Language Transition Program

Four international students collected data with the purpose of learning more about the shopping behaviors of students at one Midwestern American university. The central research question was to determine trends in shopping behavior in order to compare the results with the researchers' predictions. The researchers created a survey of ten content questions with quantifiable answers. The questions were related to three general themes: students’ level of addiction to shopping, shopping preferences, and behaviors before or after shopping. Forty students on campus were interviewed. Before
conducting interviews, the group members predicted the possible shopping behavior of the students based on their pre-conceived ideas of university students living in America. After gathering the information, the results were compiled and graphed based on the four demographic indicators: gender, age, domestic or international status, and location of residence. Finally, the data was compared with the researchers’ original predictions. Of the forty graphs created, four graphs that showed unexpected differences or results were chosen to evidence the students’ behavior. The researchers were surprised to find that the results demonstrated that (a) males are more likely to use cash while females are more likely to use debit cards; (b) no matter where the students live, they prefer to go shopping in the stores instead of online shopping; (c) regardless of age, most students prefer to shop for clothing; and (d) international students go shopping less often than domestic students. This research project involved non-native speakers of English systematically identifying stereotypes related to students’ shopping behaviors, gathering data to describe the true nature of those behaviors, and comparing/contrasting the results with their original predictions. This oral presentation will include the survey questions used, the reasoning for each question, the unexpected survey results, and the group members’ conclusions based on their findings.

Zwiefelhofer, Jacob
Poster

Working to Achieve Drift Control for Emerging Dicamba Technologies

Faculty Mentor(s): Dr. Veronica Justen, Plant and Earth Sciences and Dr. William Anderson, Plant and Earth Sciences

The introduction of new dicamba technologies present a great opportunity for growers across our nation. It also poses a great threat to non-tolerant crops. Finding the correct drift retardant and nozzle type will be a key player in how widely accepted the increased use of dicamba technologies will be. Comparisons of drift retardants and nozzle types will be done both in field trials and a wind tunnel. The primary goals of this research is to maximize drift reduction to protect non-tolerant crops and improve efficacy on the spray target.
URSCA Mentors

We would like to acknowledge the efforts of Faculty and Staff Mentors, whose dedication allows our campus URSCA to thrive. We deeply appreciate their contributions in support of the university’s commitment to undergraduate research, scholarly and creative activity. Thank you!

Below is a comprehensive list, by college, of all of the URSCA Mentors who have students presenting projects at the 2015 Spring URSCA Day.

College of Agriculture, Food and Environmental Sciences

Dr. William Anderson, Plant and Earth Science
Dr. Larry Baumann, Animal and Food Science
Michelle Farner, Animal and Food Science
Dr. Terry Ferriss, Plant and Earth Science
Dr. Veronica Justen, Plant and Earth Science
Dr. Sylvia Kehoe, Animal and Food Science
Karalyn Littlefield, Animal and Food Science
Dr. Justin Luther, Animal and Food Science
Dr. Sonja Maki, Plant and Earth Science
Dr. Joel Peterson, Agricultural Engineering Technology
Dr. Joseph Shakal, Agricultural Engineering Technology
Dr. David Trechter, Agricultural Economics
Dr. Kurt Vogel, Animal and Food Science
Dr. Bonnie Walters, Animal and Food Science

College of Arts and Sciences

Dr. Davida Alperin, Political Science
Dr. Ruth Baker, Geography and Mapping Sciences
Joseph Blum, Communication Studies and Theatre Arts
Dr. Fred Bonilla, Biology
Dr. Jennifer Brantley, English
Eoin Breadon, Art
Dr. James Cortright, Psychology
Bernice Ficek-Swenson, Art
Dr. Greta Gaard, English
Dr. John Heppen, Geography and Mapping Sciences
Erick Highum, Political Science
Dr. Cheng-Chen Huang, Biology
Diane Jacobson, English Language Transition Program
Erik Johnson, Communication Studies and Theatre Arts
Randy Johnston, Art
Brett Kallusky, Art
Mari Kline-Kluck, Communication Studies and Theatre Arts
Dr. Karen Klyczek, Biology
Conan Kmiecik, English Language Transition Program
Dr. Steven Luebke, English
Dr. Timothy Lyden, Biology
Dr. Daniel Marchand, Chemistry
Dr. Lowell McCann, Physics
Dr. Paige Miller, Sociology, Anthropology and Criminal Justice
Matthew Millett, Geography and Mapping Sciences
Dr. Kim Mogen, Biology
Asako Nakauchi, Art
Dr. Michelle Parkinson, English
Dr. Karl Peterson, Chemistry
Rhonda Petree, English
Dr. Charles Rader, Geography and Mapping Sciences
Dr. Jeff Rosenthal, Chemistry
Dr. David Rusterholz, Chemistry
Dr. Jamie Schneider, Chemistry
Dr. Lissa Schneider-Rebozo, English
Dr. Kaylee Spencer, Art
Dr. Glenn Spiczak, Physics
Dr. Stacey Stoffregen, Chemistry  
Dr. Kathy Tomlinson, Mathematics  
Dr. Travis Tubre, Psychology  
Dr. Sergio Valverde, Political Science  
Rhonda Willers, Art  
Dr. Jennifer Willis-Rivera, Communication Studies and Theatre Arts

**College of Business and Economics**

Dr. Ahmad Abuhejleh, Computer Science and Information Systems  
Dr. Dawn Hukai, Accounting and Finance  
Dr. John Walker, Economics

**College of Education and Professional Studies**

Dr. Molly Gerrish, Teacher Education  
Jennifer Gervais, Social Work  
Dr. Jerry Halvorson, Communication Sciences and Disorders  
Tammy Kincaid, Social Work  
Dr. Ogden Rogers, Social Work  
Dr. Gay Ward, Teacher Education

**University Staff Mentors**

Kathy Helgeson, University Communications
Questions?

For additional information about upcoming events, grant funding, trainings, and presentation opportunities, visit the URSCA webpage at www.uwrf.edu/URSCA/ or contact the URSCA Office by phone at 715-425-3902 or email at ursca@uwrf.edu.

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Elizabeth Jordahl, URSCA Coordinator
160 Hagestad Hall
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Elizabeth.jordahl@uwrf.edu
Addendum

Cota, Adry
Artwork (2D)

Faculty Mentor(s): Unknown

Cota, Adry
Artwork (2D)

Faculty Mentor(s): Unknown

Cota, Adry
Artwork (3D)

Faculty Mentor(s): Unknown

Hotchkiss, Harley
Artwork (3D)

Horus

Faculty Mentor(s): Eoin Breadon, Art

Jorgenson, Henrik
Artwork (3D)

Honeycomb Goblets

Faculty Mentor(s): Eoin Breadon, Art

Pelton, Tyler
Artwork (3D)

Eggs

Faculty Mentor(s): Unknown
Pires Pinheiro, Kemilly Mara
Poster

Visual Literacy!

Faculty Mentor(s): Rhonda Petree, English Language Transition Program

Students in ESL 311: Research Writing conducted an Oral History Project in which they interviewed one person from their home country and one person from River Falls. Students created a timeline of their interviewees’ lives where they showed the events in their personal lives and other historical, political, economic, cultural, and social events that occurred during their lives. Finally, students integrated the timeline and highlights from the interviews into visual presentations using Prezi and PowerPoint.

Zhu, Wenjing
PowerPoint presentation

Oral History Project

Faculty Mentor(s): Rhonda Petree, English Language Transition Program

Students in ESL 311: Research Writing conducted an Oral History Project in which they interviewed one person from their home country and one person from River Falls. Students created a timeline of their interviewees’ lives where they showed the events in their personal lives and other historical, political, economic, cultural, and social events that occurred during their lives. Finally, students integrated the timeline and highlights from the interviews into visual presentations using Prezi and PowerPoint.