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## 2014 Program for Celebrating Scholarship & Creativity Day

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*Clemen's Library A129, CSB*

### **Sustainability**

Malia E. Carson (Adam Konczewski, Sustainability) How to Promote Sustainability to the 21st Century World

Through videos, posters, events and campaigns the Office of Sustainability has to be constantly thinking of new ways to entice students in trying out the sustainable lifestyle. Living on less, reducing waste, and conserving the surrounding planet are very difficult concepts for our non-stop material world. Here is a behind the scenes look into the efforts of the CSB Office of Sustainability by student worker Malia Carson.

*Clemen's Library Clemens Main Lobby, CSB*

### **Media Services**

Kathy Larrea (Adam Konczewski, Media Services) Making the World a Wilder Place

As an anthropology minor, the study of other cultures has always been of great interest to me. When I enrolled in Cultural Anthropology in the fall of 2013, we were asked to create an ethnographic documentary - a documentary that follows and exhibits another culture. Coincidentally, a previous anthropology class in which I conducted research gave me the opportunity to travel to Spain in October 2013 with two fellow Bennies and my professor, Jessica O'Reilly. I immediately knew what would be the subject of my documentary - the culture of an international wilderness conservation congress. The World Wilderness Congress is a forum for people interested in wilderness protection, from policymakers to indigenous groups, and is noted as "the world's longest running conservation project." In addition, the Congress holds an academic conference to promote the sharing of knowledge and research regarding wild land conservation from a multitude of representatives from different countries and organizations. As we participated in the Congress both as observers and presenters, I realized the word "wilderness" meant something different to everyone who was present. Through asking Congress attendees to define wilderness, I attempt to showcase how one's cultural background and personal histories impact their view on a word many would see as objective. The subjectivity of the term, as well as the general atmosphere at the Congress, are presented in my ethnographic documentary, "Making the World A Wilder Place."

**Center for Global Education**

Joseph J. Dick (Paula Ramaley, Center for Global Education) Biology Research in China

Biology Research in China.

My poster details my experience as a fellow in Center for Global Education - sponsored Summer Research Exchange Program between Southwest University (China) and CSBSJU, which allowed me to spend the summer in China doing research on the effects of Three Gorges Dam on the ecosystem. As part of this experience, I was able to work with graduate students at Southwest University on their projects. I was able to learn new laboratory skills and gain experience doing field work. I had the opportunity to help the graduate students in preparing their work for publication in English-language journals. Through this process I was able to learn much about scientific paper writing and the publication processes. Lastly, I was able to learn about and experience Chinese culture through my daily work with the research team and in a special two-week regional cultural/travel program provided by SWU.

Gretchen L. Hughes (Paula Ramaley, Center for Global Education) Working and Living In Shanghai

Life as an International Intern (Shanghai, China).

As a marketing intern for Forcome Co., LTD. representing CSB|SJU through the Summer Global Internship Program, I spent the summer of 2013 living in Shanghai, China.

In this intensely independent experience I received hands-on international business training while working as the only foreigner in my company. My main responsibilities included market research of the outdoor equipment industry, American culture lessons, as well as revision of all the company's website materials and product descriptions.

Intense ambiguity was the norm as I navigated daily life in the city with a population of 24 million. Travel both in the city itself and around the country empowered and motivated me to absorb as much of the culture as possible. I gained a great deal both personally and professionally. I found China to be an incredibly humbling experience, which has allowed me to appreciate the educational opportunities and privileges I have had thus far in my life.

After my return to CSB|SJU and through coursework in Social Entrepreneurship, I have been exploring the opportunities and advantages a

reflection-based debriefing program could offer students returning from all varieties of international travel experiences. As a final goal, this program would engage individuals to delve and dig into their experiences abroad in efforts to expand cultural competence and understanding. Looking towards the future, I strive to continue my own cultural experiences to further grow the skills and cultural acceptance I began in China.

Katherina Larrea, Jared Berg (Joy Ruis, Center for Global Education) The Missionvale Care Centre

In 1988, Sister Ethel Normoyle came to the Missionvale Township, located just outside of Port Elizabeth, South Africa, and set up a school and a basic clinic under a tree. Twenty-five years later, the Missionvale Care Centre, an interdenominational, non-profit organization, has grown into an institution committed to providing quality care and support to improve the lives of the people of Missionvale through love, compassion, consultation, participation and self-development. One of the projects undertaken by the Centre's gardeners was to dig and plant fifty gardens in the community, hoping to not only provide a source of food for the community members but also give them the tools to be sustainable and decrease their dependence on the government. When five students from the College of St. Benedict and St. John's University who were studying abroad in Port Elizabeth were asked to help with this project, we jumped at the opportunity. For four months, we spent four hours a week digging and planting and as our time came to a close, we had completed 47 gardens, many of which had already starting bearing vegetables. The other four hours a week at the Care Centre were spent in the nutrition center, packaging food parcels for those too sick to come in to the Centre and distributing loaves of bread and soup to the individuals waiting in line for their only source of food. This project will focus on the volunteer experience of these Bennies and Johnnies, the Missionvale Care Centre, the personal relationships we made with the employees and the way in which our volunteer time changed our study abroad experience.

Rui Morisakai (Mallory Smith, Center for Global Education) The voice of victims and survivors of sex trafficking

Abstract

Even today, human trafficking is a serious world issue. Among the many forms of trafficking, I have focused on sex trafficking and what/who is the key to the solution. I will introduce some sex trafficking survivor's organizations: Breaking Free (in MN) and Shakuti Samuha (in Nepal).

Recently, women who have suffered from sex trafficking are becoming more empowered. Some have established their own organizations to help other victims, advocate policies, prevent sex trafficking and prostitution, increase awareness, and many other things. Empowered victims are not just victims anymore. Instead, they are survivors who have the most powerful voice to change society.

So, who is responsible for sex trafficking? Who can change it? The answer is our society and you. But what can I do? I can share facts and information with people. However, it is so hard to explain to others who especially don't understand that the issue is a form of violence against women because I haven't experienced it in my life. Then, I found such innovative and inspired NGOs in the world, which I can't see in my country, Japan. I can be one to help spread their voices. I hope my research through my study abroad here and the field work in Nepal will help people to understand and help victims. Ultimately, I want to bring it back to Japan and spread the word there.

Brigide Mulholland (Mallory Smith, Center for Global Education) The challenges and rewards of (an individual) study abroad.

Imagine being offered the chance to study in a State that you had never heard of before (except in passing reference in *The Mighty Ducks*), by yourself and the nearest person from home would be over 300 miles away. Sounds challenging right? However, it also sounds rewarding. In this presentation, I hope to explain why an individual study abroad; or any type of study abroad for that matter, is so beneficial and why it has been one of the best decisions I've ever made. The Centre for Global Education has five learning outcomes they hope Bennies and Johnnies will achieve through studying abroad: an increased knowledge of the host society; recognition of cultural values and culturally appropriate behaviours; a willingness to independently seek out and learn from new intercultural situations; a deepened awareness of your own culture and how it has influenced you; and to integrate your experience to your studies when you return home, your future vocation and into lifelong patterns of learning. I hope to explain how I feel I have achieved these goals over the past year and how studying abroad can be one of the most enjoyable periods of your life.

Rachel E. Mullin (Paula Ramaley, Center for Global Education) Bosnia: Beyond the Classroom

My project focuses on two major aspects of my time in Bosnia Herzegovina during the summer of 2013 as an fellow in the Center for Global

Education's Global Internship Program. I explore what I learned in terms of tangible skills and job experience, as well as about the country and its people, during my internship at KULT, a Sarajevo-based NGO focusing on civic engagement and reconciliation.

I also provide an overview of my experience conducting field research for my honors thesis on the rise of nationalism in Bosnia & Herzegovina. It includes an examination of the process of conducting field research as well as my educational take aways from the experience.

Hannah M. Peine (Paula Ramaley, Center for Global Education) Organization Sunce Mostar

During this presentation, I will be discussing the professional, cultural, and personal growth that I experienced while living and working in Bosnia and Herzegovina last summer through the Center for Global Education's Summer Global Internship Program. My internship at Organization Sunce-Mostar, a Non-Profit Organization working towards better life-quality for people with mental and physical disabilities, allowed me to utilize my nursing skills by designing and engaging in therapeutic communication, Art Therapy, Music Therapy, Recreational Therapy and Work Therapy with the children. I was also able to make lasting friendships with individuals in Mostar, exposing myself to cultural experiences that occur in the daily life of a Bosnian, including the effects that the recent war has had on its citizens. Overall, living and working with the Bosnian people has help to define my leadership and critical thinking skills, forced me to become fiercely proactive, increased my global awareness, and boosted my sense of independence -- skills that are sometimes best learned outside of a classroom.

Rie C. Tateno (Mallory Smith, Center for Global Education) What I learned by coming here to Minnesota

I will share with everyone what I learned/what I achieved while staying here in Minnesota. I want to express through my arts how the things I learned and how my experience helped me become a new me.

Amberly E. Warner, Ariel S. Klein (Joy Ruis, Center for Global Education) Cultura Chilena

As study abroad ambassadors from the 2013 Chile program, we would like to present about how the cultural differences we encountered during our

time abroad were both challenging and enchanting. Some of the topics we found most compelling when reflecting on these differences include general lack of punctuality, living in tight-knit family structures rather than a college community, the significance of meals (particularly “almuerzo”), linguistics, gender roles, perceptions of poverty, political attitudes (especially intriguing considering Chile’s relatively recent return to democracy after general Pinochet’s seventeen year long dictatorship), spheres for art and expression, impressions of youth culture, and the stories and struggles of indigenous peoples. Although wide ranging, a lot of overlap can be found between these subjects, and we intend to present them in a way that is informative, comprehensive, interesting and fun for both us and our audience. We believe experiencing cultural differences in Chile and having awareness of how they impacted us then and continue to impact us now that we have returned to our native culture has broadened and bettered our liberal arts experience at CSB/SJU, and we are excited to have this opportunity to showcase that. ¡Viva la vida Chilena!

Chendan Yan, Mai Choua Yang Yang (Paula Ramaley, Center for Global Education) 2013 Summer Global Internship Bosnia and Herzegovina-Eco Center Blagaj

We will present our incredible experience as interns at the Eco Center, Blagaj in Bosnia and Herzegovina in summer 2013 with a poster presentation. We will provide information about our internship, cultural, and travel experiences and also the entire application, orientation, and fellowship experience made possible through the Center for Global Education.

Peggy M. Yang (Paula Ramaley, Center for Global Education) Summer intern in Dongguan, China

I will be presenting about my experience in Dongguan, China as a sales marketing intern at the company: Wellmei. My poster will include photos and summaries of learning goals I obtained after interning, culture differences I encountered, and the work that I did at Wellmei.

*Henrita Academic Building 102, CSB*

### **English**

Kaitlin F. Knapp, Vanessa Hird, Hannah Anderson, Kate McDermott (Michael Opitz, English) Papers in Critical Theory and Criticism

Each member of the group has written a paper about a critical subject. My paper critically analyzes the social media of Facebook through the lenses multiple theorists. In today's world, it is impossible to ignore the growing power of social media, specifically sites such as Facebook. Despite their reputation as a website full of connections, I argue that sites such as Facebook are not a viable way to stay connected. On Facebook, users create profiles that seemingly provide an accurate representation of their lives; however this profile is nothing like the actual user. External forces shape the creation of the profile in ways that the user cannot control, which causes the user to be alienated from his or her profile. This alienation leads to a loss of power in the physical world.

*Henrita Academic Building 121, CSB*

### **English**

Gretchen Sitzer, Connor Klausing (Madhuchhanda Mitra, English) Handcuffed to History: Literature, Agency, and the Post-national Citizen

Presenters will focus on contemporary novels by Indian writers that investigate what it means to be a citizen of a modern nation, especially at a time when supra-national forces are increasingly making the nation state irrelevant.

*Henrita Academic Building Gorecki, CSB*

### **Center for Global Education**

Xang Yang, Joshua Jenson (Joy Ruis, Center for Global Education) Daily Life in China

China dominates the news with its economic and political problems; however, the people of China are often forgotten. This presentation offers a glimpse into the daily life of a Chinese student, businessman, and grandparent to capture the many activities and games the Chinese people take part in. Compared to the United States, Chinese activities may seem to be few and far between. On the other hand, the Chinese entertainment often contains cultural and spiritual aspects that are not found in the United States. Xang Yang and Joshua Jenson will share some of the activities they participated in while in China and explain the differences between Chinese and American entertainment.

*Main Academic & Administrative Building 323, CSB*



## **Economics**

David L. Rademacher (John Olson, Economics) OPEC's Market Power

OPEC's Market Power

*Art Building 120, SJU*

## **Art**

Laura K. Knecht (Andrea Shaker, Art) The Natural, The Emotional, The Female, and The Divine: A Brief Anthology

This exhibition serves as both a review of the work I've accumulated over my time here at CSBSJU and as a public display of the culmination of my ILP titled "The Natural, The Emotional, The Female, and The Divine."

In said ILP, I sought to better understand how my existence as a woman in a patriarchal society has shaped my emotional being as well as how I approach art--specifically, in how I relate to other women with regard to the issues that matter most to me, how I relate to the natural world that surrounds me, how I relate to my religion as a woman, and how I tend to express the emotions tied to the difficulties I face as a woman. These issues include, but are not limited to: oppression, trauma, perfectionism, abuse, discrimination, double standards, fighting back against an established, subversive culture, etc.

I also sought to try and answer two questions:

What realities have shaped me to bring about the strong emotive sense I bring into my artwork?

How can I best express the thoughts and internal discussions that accompany these realities through my art?

I have found that most if not all of my art up to this point has dealt with the aforementioned issues in one form or another, and so I thought it fitting to include them in my final self-reflection and projection of my work. The pieces I bring from my earlier college years include charcoal and graphite drawings, paintings, photographs of past installations, sculpture, collage, and prints.

My final project--the culmination of my ILP--consists of four large charcoal drawings depicting four female archetypes (MOTHER, VIRGIN, SLUT, and BITCH) and the turmoil each label carries.

*Art Building Galleries, SJU*

## **Art**

Ali Biber, Kelsey Dagen, Meredith Grivna, Sam Hentges, Pa Dee Her, Melissa Pinkowski (Simon-Hoa Phan, Art) Senior Art Thesis Show

Senior art majors will speak about their work in the exhibition, which includes paintings, drawings, computer art, video, and installation.

*Great Hall 1, SJU*

## **Environmental Studies**

Hannah L. Anema (Troy Knight, Environmental Studies) Reviving Rivers: The Benefits of Small Dam Removal on Fish Populations

The extensive construction of dams over the last 100 years has led to the degradation of fisheries in streams and rivers due to separating fish populations above and below the structure as well as altering fish habitat. The removal of small dams could be beneficial not only to fishery health, but also health of the entire ecosystem and economic sustainability for local communities. In order to address whether or not to remove a small dam in the interest of fishery health, I weigh the environmental benefits against the economic and social costs of removal. To determine when removing a small dam is most beneficial, I examine case studies of dams in the upper Midwest comparing aspects such as cost of dam removal versus dam repair, potential environmental issues due to removal, economic and social importance of dam operations, and, most importantly, the effect of the dam on fish populations. Due to the old age and outdated operational purpose of most small dams, their removal would be most beneficial in the interest of fisheries and the economic and social sustainability of the surrounding community.

Tasha M. Arignamath (Troy Knight, Environmental Studies) Slow the Flow and Save Water

Water is an essential part of life, economic well-being, and environmental integrity. Inefficient use of this precious resource and population growth will place an estimated 1.8 billion people in water stressed regions

by 2025. In the United States, college campuses represent a significant user of water. Implementing water conservation on college campuses would not only save water, but could also influence the opinions and lifestyles of college students regarding water use. This research asks which water conservation method is most effective for college campuses. This research will use scholarly journals, articles, books and case studies on Minnesota colleges and examine how colleges have overcome the obstacles of cost, personal behavior and attitudes on water conservation. Education, low flow fixtures, and alternative landscaping are methods that can slow the flow and conserve water on college campuses.

Josie M. Belter (Troy Knight, Environmental Studies) When the Single Species Approach is Not Enough: Using Buckthorn as Target Species for an Ecosystem Approach to Combat Invasive Species

Invasive species are non-native species that have negative effects on the ecosystems in which they invade; these negative effects are not only significant within natural systems, but also within our economic system. Generally, invasive species are most often combatted and controlled using a single species approach. The single species approach focuses on one target invasive species without taking into consideration any interacting species. An ecosystem approach, though, draws attention to not only the target invasive species but also to the web of interacting species. Sometimes those interactions may involve co-occurring invasive species that share various types of relationships. Through a case study focusing on two invasive agricultural pests, oat crown rust and the Asian soybean aphid, I argue that an ecosystem approach would be much more efficient than other control methods. By reviewing species interactions and identifying the invasive shrub buckthorn as the overwintering host for both agricultural pests, an ecosystem approach to eradicate and manage invasive species is found to be more successful and less likely to cause detrimental effects by targeting on sole species.

Gabriella R. Brune (Jean Lavigne, Environmental Studies) Plastic Packaging

Approximately 280 million tons of plastic are produced worldwide every year for uses that include but are not limited to creating goods, building and architecture, agriculture, and especially packaging. Plastic by nature is considered not to be biodegradable as well as toxic, and thus provides a significant problem for the environment as well as for consumers. The most prevalent use of plastic by far is in packaging goods. I will discuss the problem of plastic packaging in detail, as well as discuss some solutions to

the problem such as bioplastics and biopolymers that I have gleaned through reading material from researcher in these fields. I will also discuss the better methods of disposal for both plastics and bioplastics, that include composting and incineration as well as the creation of biofuels. I can conclude that the best option for packaging goods in the future is biopolymers, specifically chitosan, a biopolymer found in the shells of crustaceans, that can be derived renewably from fungi. I can also conclude that the best method for disposal of these materials is composting.

Sarah G. Calhoun (Troy Knight, Environmental Studies) Cruising into a Greener Industry: Reducing the Environmental Impacts of Cruise Lines on Host Countries

The idea of palm trees, crystal clear waters, and pristine white beaches of tropical destinations draw millions of tourists to cruise lines annually. However, these characteristics, as well as the social and economic success of host countries, are being heavily impacted by the cruise industry. Harmful air emissions, introduction of non-native species, waste discharge, and destruction of coral reefs are all side effects of the cruise industry that degrade ecosystems and consequently impact human well-being in host countries. Balancing economic activity brought by the cruise industry with these negative impacts continues to challenge local communities. Through analysis and review of case studies I show that there are three key pathways to decreasing the negative environmental impact on host countries by the cruise industry. These include the cruise industry implementing better technologies to have less of an environmental impact, local governments creating stronger regulations, and collaboration between cruise lines and local governments to ensure compliance of new regulations.

Timothy M. Carlin (Jean Lavigne, Environmental Studies) Tiny Homes: Improving American Housing and Reducing Carbon Emissions.

Since the year 1950, the size of the average American house has increased by two and one half times, from 1,000 Square Feet to 2,400 Square Feet. The drastic growth in housing size has led to increased spending and usage of utilities (natural gas, electricity, etc.), resulting in surges in the American carbon footprint. This research explores the potential for tiny homes to serve as a solution to the elusive idea of sustainable housing that is available to the average American homeowner, aiding in the size reduction of the American carbon footprint. Utilizing existing literature on the topic of tiny homes, this analysis explores the benefits and challenges of downsizing ones living space. Benefits include: reduced spending on household utilities, increased awareness in consumer purchases due to space limitations, greatly

reduced or nonexistent payments, a greater social connection among families and a reduction in household carbon footprint. Although there are many benefits, issues with zoning law, families with children, and expense of construction and development still need to be solved. Assuming that the homeowner can solve these problems, tiny homes appear to be an excellent answer to affordable, sustainable homes available to the average American family.

Briana Daniels (Troy Knight, Environmental Studies) Alternatives to the American Lawn: A Central Minnesota Homeowners Options

Lawns are one of the largest manmade landscapes in the United States, taking up about 25 million acres. The typical American lawn consists of a monocultured turfgrass that requires maintenance with chemicals and natural resources such as water. This maintenance can have negative impacts on the surrounding environment and human health. In central Minnesota, homeowner's have several potential alternatives to the conventional turfgrass lawns. These would include low mow grass, prairie like restorations, rain gardens and vegetable gardens. Laws and regulations of cities in Minnesota dictate how a lawn should be maintained, including what types of plants can be grown, which can make it difficult to implement lawn alternatives. Each alternative would improve the local environment and reduce the amount of labor and resources used in the lawn. The alternative used is based on homeowner preference, size of yard, and the local rules and regulations pertaining to residential landscaping.

Joe K. Gallogly (Jean Lavigne, Environmental Studies) Men and the Media: The Issue of Body Image

This paper looks to analyze the effects that media has on men's body image. Specifically it will scrutinize the impossibly high expectations that our consumerist culture has come to expect from men and their appearance. This is an important topic because it affects every male in the country in one-way or another. The questions we are trying to answer is how does the media create the impossible standard that men feel they need to achieve, specifically through their consumerism and consumer standards, and how can we combat this issue and change the way men react to consumer culture? In this paper, I look at how media affects men, and on what level. I also look at the scope of this issue, and who all is affected. In this paper I propose solutions to this problem which includes: an increase in education on the issue of body image and media's role, a push for the official

recognition of male body image issues in the medical world, and to increase public awareness of this crisis.

Nathan L. Geislinger (Troy Knight, Environmental Studies) Decreasing Baseball's Environmental Footprint: The Best Implementations For MiLB Parks

Minor League Baseball (MiLB) draws over 45 million fans a year. Excessive energy use and waste production in MiLB result from unsustainable technologies and wasteful operations currently used. These result in negative impacts on the environment. To find feasible solutions to this waste in MiLB, I critically analyzed case studies from MiLB, Major League Baseball, and other professional sports teams that have successfully installed sustainable technologies in stadiums. The benefits of the new sustainable technologies and practices were compared to the costs, with special consideration of the lower revenue of MiLB teams. Case studies suggest that changes as simple as new light bulbs can make a large environmental and economic difference. Several practices or modifications cost nearly nothing, or cost the same as the less environmentally friendly technology. The larger modifications cost more, but saved in energy cost for the teams in the long run. However, to make necessary changes to be sustainable, MiLB teams will have to manage their capital and make renovations slowly as funds become available.

Junior Joassin (Troy Knight, Jean Lavigne, Environmental Studies) After Death: The most sustainable way of dealing with the dead in the United States

Approximately 2.5 million persons die within the United States each year, which leads to an environmental impact that is not often examined. This project focuses on changes within the death care industry that could be implemented within the U.S. to curb pollution and consumption of resources associated with the two main funerary practices: traditional burial and cremation. These practices pose issues such as contamination of the water table through the leaching of embalming fluid, the use of resources and energy for casket construction and the burning of the body, and the need for cemetery space. In order to determine the most sustainable alternatives, peer-reviewed research of the current funeral technologies was examined, and the environmental impact of each alternative method assessed. Preliminary findings indicate that, with a few exceptions, natural burial is the most sustainable practical and culturally acceptable option to replace traditional cremation and burial within United States.

Erin M. Medvecz (Jean Lavigne, Environmental Studies) Content Analysis of Hybrid and Electric Car Advertising

The rise of hybrid and electric vehicles has been heralded as a major step in reducing harmful carbon dioxide emissions. Despite being introduced in the late 1990s, consumers have not widely embraced them, which may be partially due how they are advertised. My objective was to determine which advertising approaches are being used to market hybrid and electric vehicles and if they differ from advertising approaches traditionally used to market conventional vehicles. I also wanted to see if a relationship exists between advertising type and car sales. I performed a content analysis of advertisements of two comparable vehicles (one a hybrid or electric and the other a conventional vehicle) from three different car companies, for a total of six vehicles. In my analysis, I categorized the advertisements as either industrial/technological, natural, or emblematic of the green movement. Further analysis was used to distinguish between the different forms of green advertising. After my analysis, I proposed which method of advertising seemed to be correlated to better overall sales. I found that although a given method of advertising may be more successful at promoting the sales of hybrid and electric vehicles, there may be more effective means of increasing sales than advertising.

Lucas M. Menden (Troy Knight, Environmental Studies) Green Energy in Minnesota Homes

The current forms of energy production used in the residential sector, such as coal and natural gas, are exhaustible and harmful to the environment. Therefore, switching to green sources of energy will benefit the natural world and future energy consumers. This paper analyzes how pre-existing homes in Minnesota can become energy independent by producing their own electricity. Solar and wind power are both potential options in creating a home's electricity while underground geothermal piping can help regulate a home's temperature. My research compares these methods by their effectiveness to help a home meet its energy needs as well as the time needed to payback installations. Based on these criteria, the method that proved to be the best solution was a combination between roof mounted solar and wind systems.

Reed E. Osell (Troy Knight, Environmental Studies) Repeat Photography as a Means of Understanding Land Use History

Repeat photography, is an important tool to assess land use history that utilizes a combination of historical and present data. The method, used frequently by the United States Geological Survey, is a visual way to represent changes in the land, and the impact of human activities. This thesis will be using repeat photography as a tool for observing changes in the land and local ecology in St John's Arboretum in central Minnesota, and discussing what variables are responsible for those changes. The methods used in repeat photography include gathering past photographs, scouting the location of the photos, and re-taking them. By administering this method of data collection at The St. John's Arboretum, we can gather evidence towards the variables that shape our land and our attitudes towards it over time.

Emily M. Reimer (Troy Knight, Environmental Studies) Sustainable Sex: A Hot Topic for a Warming Planet

Sex takes place anywhere from 100 million to 215 million times per day, worldwide. Many Americans recognize birth control as a solution to an overpopulated planet and unwanted pregnancies. Often overlooked, however, are the environmental costs of contraception. This thesis explores the production, use, and disposal of condoms, oral contraceptives, and intrauterine devices; it also considers the use of natural family planning. This research ultimately determines the greenest option for the average consumer. In order to gauge interest in sustainable contraceptive options, a survey of contraceptive use at CSB/SJU was developed. The survey shows the frequency of birth control methods used, as well as the percentage of students that are interested in the environmental sustainability of birth control. Peer-reviewed publications show natural family planning as the most environmentally sustainable birth control method. Even so, the survey shows that only a small percentage of CSB/SJU students are using natural family planning.

Katie L. Spoden (Troy Knight, Environmental Studies) Farm to Fork For All: Farmers Markets, SNAP and Food Privilege

There are significant economic and social barriers that restrict individuals' access to eating a nutritionally and environmentally healthy diet. Low-income families working within a tighter budget are constrained to buy cheaper foods, which are often pre-processed and nutritiously void. This limitation leads to higher rates of obesity-related disease and increases the physically, mentally and economically taxing consequences of food insecurity. One successful strategy for increasing access to local, healthy



foods is providing opportunities for farmers markets to accept Electronic Benefit Transfer (EBT), the means of payment for individuals participating in the Supplemental Nutrition Assistance Program (SNAP). To evaluate the success of this strategy, I have produced an individualized plan that incorporates the proper payment structure, transportation opportunities, public outreach to the community and education for vendors to implement at the St. Joseph Farmers Market. By providing greater access to the local food economy, the Market makes healthy eating an option for the entire community, regardless of income.

Jamie L. Swanson (Troy Knight, Environmental Studies) Paint it Green: Examining Eco-Friendly Paint

Human and environmental health hazards are embedded in paint's production, use, and disposal. Since the discovery of lead as a poisonous additive in paint, manufacturers have begun to alter the chemistry of their paint products. Today's market now offers a wide variety of green products, but it is challenging to sift through the advertising to find who is actually environmentally sustainable. Consumers and residential painters are also having a difficult time finding the balance between cost, quality, and environmental friendliness in paint. This research investigates the sustainability claims that paint manufacturers are making about their products, while also considering their prices and quality based on customer reviews. The results are applied to determine which paints are best in each category – price, quality, and eco-friendliness – and which are best overall. This study then applies these findings to the small Minnesotan business, Two Guys Painting, enabling them to make better decisions about how to evaluate the newest paints.

Mai Cua Yang (Troy Knight, Environmental Studies) Killer Whales: the captivity of orcas for human entertainment

Killer whales (orca) are the top predators in the ocean, the largest carnivores on earth today, and the most intelligent of sea mammals. The captivity of orcas began in 1961 for human entertainment. Today, orcas are kept in captivity for several reasons: (1) entertainment, (2) education, (3) research, and (4) rehabilitation from injury. Articles, books and documentaries were studied to conclude that captivity of orcas is unethical, and should be returned to their native habitat. In captivity, orcas develop signs of high stress, and exhibit loneliness and aggressive behaviors. This causes harm to the individual orca, the family pod from which it was removed, and to oceanic ecosystems by removing a top predator. Captive orcas lose their

wildlife skills, thus immediate return into the sea is not an option. One possible solution is exposing captive orcas to their natural habitat in a ‘bay pen,’ a small enclosure connected to the ocean.

*Peter Engel Science Center 212, SJU*

### **Computer Science**

Tyler W. Olson (Yu Zhang, Computer Science) Reward-Selective Propagation Cascade Model

In the field of network diffusion, the traditional Independent Cascade Model and Linear Threshold Model give activated nodes the opportunity to influence and potentially activate each of its neighboring inactive nodes, regardless of the level of influential weight or probability of activation. This paper extends the Independent Cascade Model to be selective in terms of influencing neighboring nodes. We introduce the Reward-Selective Propagation Cascade Model, a diffusion model that allows active nodes to select neighbors based on the potential payoff from the existing relationship between the two nodes. We provide a polynomial algorithm for calculating the payoff value for any arbitrary relationship between two neighboring nodes in a network graph, and a function to calculate the weight of each edge in an arbitrary graphical setting. Finally, we perform an analysis of the RSPCM under different network settings. This research makes contributions to the domain of informational diffusion and sociological propagation.

### **MapCores**

Emily A. Furst, Hamrawit G. Tebeka (Yu Zhang, MapCores) A Distributed Multi-Agent Vacuum World

Multi-Agent systems are an area of artificial intelligence research. We sought to program a model in which agents also referred to as vacuum cleaners would clean a collection of rooms, acting based on observations of their surroundings. Next, after conducting some research into distributed systems and associated algorithms, we implemented the K-D (k-dimensional) tree algorithm. This algorithm allowed us to partition our environment or collection of rooms into equal sized pieces. After this, we looked into load balancing algorithms, mainly the Comet algorithm, for distributing the system to multiple computers in order to run the simulation in parallel.

Sydney L. Hughes (Yu Zhang, MapCores) Follow The White Brick Road

The Lego robots are simple robots that move about on two tracks and have a light sensor. They can also produce sounds. The user creates a program on the computer using a Graphical User Interface where they can drag and drop instructions to form a program. The programmer can then modify the instructions by specifying which motors, duration or revolutions or distance, power, and other modifications to the base instruction. The user can use loops to create repetitive motions, such as scanning for a white line. The sensors can be used like sentinel flags to tell the robot when to stop moving by taking the input from the sensor and if the value is within the range specified, it will break the loop. Using the loops and the sensor as a flag, you can make the robot trace a white line of tape on the floor continually.

*Peter Engel Science Center 369, SJU*

### **Biology**

Mackenzie G. Kelley, Hannah L. Anema, Bradley J. Chatfield, Yan Chuen Lai, Joshua R. Oestreich, Qian Xu, Matthew M. Blaine, Yee Kei Zheng (James Poff, Biology) Biological Illustration Exhibition

This is an exhibition of the artwork and illustrations created by the members of the Biological Illustration Class. A variety of illustration and rendering techniques will be shown, illustrating a wide array of biological subjects.

*Quadrangle 170, SJU*

### **Biology**

Jeffrey J. Anderson, Anna J. Baumgartner (Nicholas Deacon, Biology) Effect of Australian Pine (*Casuarina equisetifolia*) Canopy Density on the Understory Plant Community on San Salvador, Bahamas

*Casuarina equisetifolia*, or Australian Pine, is an invasive angiosperm species on the island of San Salvador, The Bahamas. It has been established that this tree contributes to the increased erosion of sediment on the dunes of San Salvador. This study investigated several possible factors contributing to differences in the understory plant community which may contribute to this erosion including shading, increased acidity, and ground cover. High and low density 100m<sup>2</sup> plots of *Casuarina equisetifolia* were analyzed for tree density and diameter, leaf litter ground cover density, leaf litter pH, and light levels. Understory growth was counted and identified. The study

was replicated at another location on San Salvador and statistical analyses were performed on the collected data. The results gathered are consistent with our hypothesis that high density *Casuarina equisetifolia* stands contribute to decreased understory species richness and diversity.

Jeffrey J. Anderson (Robert Page, Biology) High Throughput Sequencing of the Red-Backed Salamander (*Plethodon cinereus*) Enables Microsatellite Discovery and Comparative Genomic Analyses

The Red-backed Salamander is known for its wide range and large populations, making *Plethodon cinereus* an ideal candidate for population genetic studies. As of yet, very few microsatellites have been found to be universally informative across this salamander's geographic range. We used 454 pyrosequencing to generate > 0.11 Gb of sequence across 283,830 reads with an average read size of 400.7 bp. These data were then analyzed for simple sequence repeats (SSRs). In total we identified 5430 reads containing SSRs (di-hex nucleotide repeats), of which 1790 had sufficient flanking regions to facilitate primer design. We are in the process of mining and analyzing our shotgun sequence library and will present more detailed summaries of the library as well as comparative analyses. Ultimately, the designed primers will be screened after the spring thaw in order to determine the utility of these new genetic resources in Minnesota populations of *P. cinereus*.

Brittany R. Ayers (Barbara May, Biology) Antimicrobial effects of natural and chemically-derived skin care products against skin normal flora

The normal flora of the skin substantially impacts the well-being of the host and can even protect the host from potential pathogens. The composition of the normal flora of the skin varies depending on location. Gram-positive bacteria predominates the microbiome of the skin. These include *Staphylococcus epidermidis*, *Staphylococcus aureus*, *Micrococcus luteus*, and *Propionibacterium acnes*. Only a small portion of the skin flora is made up of Gram-negative bacteria<sup>1</sup>. *P. acnes* has been found to be a key contributor to the development of acne<sup>2</sup>. Therefore, to treat acne, chemically-derived products have been developed to fight the acne—causing bacteria on skin through prevention or treatment purposes. However, natural compounds have also been shown to be effective antimicrobial products and have been recommended as skin cleansers<sup>3</sup>. This research wanted to compare the effectiveness of different natural and chemically-derived skin cleansers against a variety of skin bacteria. Chemically-derived cleansers included Yes to Tomatoes Cleanser, Burt's

Bees Acne Cleanser, Clean and Clear Cleanser, Simple Facial Wash and Cetaphil Facial Cleanser, while natural products included essential oils like tea tree, cinnamon leaf, lemon, clover bud, lavender, and grapefruit oil. Kirby Bauer assays and minimal inhibitory concentration assays were used to analyze the antibacterial activities of the products against common normal flora of the skin.

Michael J. Culshaw-Maurer (William Lamberts, Biology) General Survey of Shallow Lakes and Wetlands on the St. John's University Campus

The Saint John's University campus is home to several beautiful lakes, and while the large Lake Sagatagan gets most of the attention, the shallow lakes and wetlands on campus also play important local ecological roles. Our study began as a broad survey of the shallow lakes on campus, but became slightly more focused on the campus wetland, which exhibits qualities of a river, a shallow lake, and a marsh. Watershed reports conducted on campus have focused mainly on the water quality and strategies to maximize it, whereas our study looked at a broader range of characteristics of the lakes and wetlands. We did extensive field work, collecting water samples, testing water on site, and placing temperature dataloggers, as well as laboratory testing with water samples. Tracking the changes in water quality, temperature, and stratification through the lakes on campus gave results that have yielded multiple specific areas for future research.

Mary Catherine M. Decker (Jennifer Schaefer, Biology) Development of a system for analysis of muscle contraction pattern during *Drosophila melanogaster* crawling behavior

The aim of this study was to attain footage of the crawling *Drosophila* larva from 360° angles in order to visualize the pattern of individual muscle contractions. A GAL4-UAS system was used to drive homozygous GCAMP expression, causing the muscles of the *Drosophila* larva to fluoresce when contracting. A stand was designed in order to place a live, crawling larva in a glass capillary tube under a fluorescent microscope and then rotate the tube completely for 360° video footage. Through the combination of the GCAMP expression and the rotatable stand, video of the individual muscle contraction pattern of a crawling *Drosophila* larva can be successfully attained and analyzed from all angles. Future research will identify the roles of specific interneuron populations in crawling through visualization of changes in the pattern of muscle contractions during crawling following interneuron knockout.

Nichole E. DeWeese, Qian Xu (Stephen Saupe, Biology) Effects of Temperature on Photosynthesis Rate of C<sub>3</sub> and C<sub>4</sub> Plants

The purpose of this experiment is to test the effect of temperature on the photosynthetic rates of C<sub>3</sub> and C<sub>4</sub> plants. This is important for improving agriculture practices, by knowing the optimal temperatures for photosynthesis. We measured the photosynthesis rate via the LiCor 6400 instrument and manipulated the temperature. The results will be discussed.

Cody J. Groen (William Lamberts, Biology) ANALYSIS OF CHANGES IN DAPHNIA HEART RATE IN RESPONSE TO ENVIRONMENTAL STIMULI USING VIDEO RECORDINGS

The microcrustacean *Daphnia* is a cladoceran zooplankton common in pelagic and littoral zones of fresh water bodies around the world, including the lakes on and around the campuses of the College of Saint Benedict & Saint John's University. Many studies have been conducted on this common zooplankton in regards to *Daphnia* morphology and physiology to find information about the survivorship of *Daphnia* in various conditions and resource levels (Luecke & O'Brein, 1983, Siebeck, 1978). Previous observations by CSB|SJU students indicate that *Daphnia* exhibit a physiological response – an increased heart rate – in the presence of its predator larvae of *Chaoborus*, the phantom midge. It is thought that *Chaoborus* gives off kairomone signals that *Daphnia* can receive, since even water from which *Chaoborus* have been removed can stimulate *Daphnia* heart rate. While it can be qualitatively observed that an increase in heart rate occurs, data collection by direct observation is difficult due to the *Daphnia* heart rate easily exceeding 300 beats per minute. Because accurate measurements are not possible to procure under 'real-time' conditions, capturing High-Quality video of *Daphnia* heart rate through compound microscopy and subsequently slowing playback allows time for accurate analysis of this small organism's heart rate. The goal of this study was to develop a system of data collection that could be used to determine heart rate increases in the water flea, *Daphnia*, and to quantitatively analyze the physiological changes described above and then procure data sets that would allow further investigation of the properties of the suspected kairomone(s).

Jeremy M. Hill (Barbara May, Biology) Microorganisms Found in Smokeless Tobacco

Recent research has determined that Smokeless Tobacco (ST) contains several additives that can lead to diseases such as cancer, cavity development, heart disease, diabetes, and reproductive problems. Despite evidence indicating that ST negatively impacts the user's health, ST consumption has continued to increase over the last several years. In 2005, Americans spent \$2.6 billion dollars on ST, and from 2002-2008 there was a 47% increase in the number of users. (1)

ST can be purchased in two forms; chewing tobacco, which is chewed like chewing gum, and dipping tobacco, which is placed in the mouth between the gums and lips. While being processed, tobacco leaves are air or fire-cured, cut, and then packaged. Some ST products contain additional flavor additives such as sugar and licorice. Loose-leaf chewing tobacco products like Red Man have high average sugar content with approximately 35% (2). ST products vary in moisture content (27.5-59%) and pH (5.39-7.99) (3). The growth of tobacco plants in an agricultural environment makes it susceptible to contamination of various microorganisms. The high moisture content of some smokeless tobacco products as well as high sugar content creates an environment that could promote the growth of microorganisms. One recent experiment identified multiple *Bacillus* bacteria in Skoal ST; *B. megaterium*, which was determined to be responsible for producing toxins that damage the oral mucosa, and could possibly exasperate gingival recession in ST users who already have gingivitis (4); *B. pumilus* and *B. subtilis*, which are believed to possess probiotic characteristics and are safe for human use (5). *B. pumilus* and *B. subtilis* are also commonly used fungicides that prevent of fungal growth on tobacco products (6).

This experiment looked at the microorganisms found in dipping tobacco (Copenhagen Long Cut, Copenhagen pouches, Skoal Long Cut, Skoal pouches) and chewing tobacco (Red Man). It was hypothesized that not only would probiotics like bacterial fungicides be identified but also potentially pathogenic bacteria in the ST products due to the lack of sterilization during processing. With the use of high-throughput processing during the identification process, comparisons of microbial populations between the different ST products could also be completed. DNA was extracted from microorganisms in the ST products and processed with high throughput 16S metagenomic analysis.

Benjamin J. Hillesheim, Chendan Yan (David Brown, Biology) A Geological Study of the History of Terra Rosa Paleosol on San Salvador Island, The Bahamas

Growth and shrinkage of continental glaciers has produced great variation in ocean level. On the Bahamian platform, this has produced aeolian

dunes, abandoned beaches, and abandoned reefs. Since dunes were available for colonization by plants earlier than either abandoned beaches or dunes, we predicted that terra rosa paleosols would be thicker on dune substrates than on either beaches or corals. We sampled paleosols from dune, beach, coral substrates associated with three fossil reef locations on San Salvador Island, The Bahamas to test this prediction. We found that the thickness of paleosol was highest on sand dunes (6.125 mm) and lesser on beach (4.869 mm) and coral deposits (5.966 mm). These results indicate that the pattern of thicknesses across substrate types follows the predicted pattern of paleosol distribution as predicted by patterns of glaciation.

Molly J. Horton, Hayley J. Van Gelder (Stephen Saupe, Biology) Photosynthetic Rates of Full Circle Greenhouse Greens

Using the LICor 6400, we will measure the photosynthetic rates of three varieties of lettuce. The plants will be grown in the Full Circle greenhouse at CSB under their normal growing conditions (which are variable). These data will help the Full Circle Greenhouse to get a better understanding of what varieties are thriving in the greenhouse conditions.

Paul E. Lundberg, Jennifer A. Husen (Stephen Saupe, Biology) Recovery of photosynthesis rate in dark exposed plants

The purpose of this project is to determine if there is a change in the photosynthetic rate between plants under normal conditions and plants placed in dark environment for an extended period of time. We hypothesize that the rate of photosynthesis in the dark exposed plant will be faster to over compensate for lack of nutrients. We will measure this by using the LiCor 6400 to determine how much photosynthesis is occurring between the two plants.

William A. Mattes, Nicholas A. Mans (Stephen Saupe, Biology) Differences in Photosynthetic Rates of Cotyledons and Mature Leaves in *Helianthus annuus*

The purpose of our experiment is to determine whether the cotyledons have a higher photosynthetic rate than the mature leaves of a *Helianthus annuus* (sunflower). The significance of the experiment is to gain insight into the reason why sunflowers lose their cotyledons at an early stage. We measured the photosynthetic rates of cotyledon and mature leaves using the LiCor6400. Results to be discussed.



Erin M. Medvecz, Timothy M. Carlin (Stephen Saupe, Biology)  
PHOTOSYNTHETIC RATES OF *Pinus strobus* AND *Pinus resinosa* AS  
MEASURED IN THE SAINT JOHN'S ABBEY ARBORETUM

The purpose of this experiment is to compare the photosynthetic rates of two species of pine trees: *Pinus resinosa* (red pine) and *Pinus strobus* (white pine). We hypothesize that the photosynthetic rates of the *P. strobus* will be greater than those of the *P. resinosa* based upon a study of the relationship between photosynthetic rates and average heights of both species as performed at the University of Georgia. We measured the photosynthetic rate of multiple mature specimens from each species in the field using the LiCOR 6400. Our results and their implications for the management of these pine species will be discussed.

Timothy I. Miller, Hiwote T. Bekele (Stephen Saupe, Biology) Comparing  
Respiration Rates in Button (*Agaricus bisporus*) and Shiitake (*Lentinula edodes*)  
Mushrooms

The purpose of this experiment is to measure and compare the respiration rates of button and shiitake mushrooms. This will give us insight on whether these two species of mushroom have differing respiration rates, which in turn can help people determine the shelf life of mushrooms, as well as develop new methods of preserving mushrooms. We measured the CO<sub>2</sub> output of button and shiitake mushrooms using the LiCor 6400 system and compared the resulting data to see if any differences were of statistical significance. Results of our experiment will be discussed.

James T. Pathoulas, Nicole E. Noyes (Carol Jansky, Biology) Sink or Ecological  
Trap for Tree Swallows in Central Minnesota?

An ecological trap is typically defined as a low-quality habitat, incapable of sustaining a population, which is preferred over a high quality habitat. Ecological traps may lead to species extinction in populations with 1) strict habitat requirements 2) minimal information about the habitat, and 3) low population size. Tree Swallows (*Tachycineta bicolor*) meet the former two of these criteria.

We monitored Tree Swallow (TS) nest boxes (n=90) at two ecologically similar sites A and B with similar occupancy rates. Site B has lower reproductive fitness — suggestive of an ecological trap. Binary logistic regression was used to identify whether TS in better condition preferred site A or B and what environmental characteristics predicted nest box occupancy.

Site A's Tree Swallows were in significantly better condition and laid eggs earlier than site B's TS. Significant predictors of nest box occupancy include distance from nearest box ( $p=0.000$ ), DBH of largest stem in adjacent wooded area ( $p=0.026$ ).

Tree Swallows seemingly recognized site A to be a superior breeding habitat over site B, suggesting that site B is a sink rather than an ecological trap. Distance from an adjacent box was an important predictor of occupancy, possibly to reduce extra-pair mating or depredation. TS favored nest boxes adjacent to an edge with smaller stems which may lessen competition by birds nesting in naturally occurring cavities along hardwood edges. Although not a significant predictor of occupation, the average distance from the edge was greater at Site A ( $p = 0.012$ ). It is possible that distance from the edge is a habitat cue utilized by Tree Swallows, independent of whether hetero- or conspecifics might be nesting in nearby natural cavities.

Ryan M. Peters, Elliott P. Olsen (Stephen Saupe, Biology) Growth of Temperate Plants under Tropical Conditions

The purpose of our experiment is to investigate the growth of plants native to the temperate grassland and desert biomes under conditions typical of a tropical environment. We will use the Licor 6400 to take photosynthetic measurements of our plants in simulated temperate and tropical environments.

Shannon L. Stein, Megan E. Bollin, Olivia C. Kalkman, Chase A. Keimig (Jennifer Schaefer, Lisa Lindgren, Biology) Mayo Innovation Scholars Program

This will be a poster-session aimed at spreading awareness of the Mayo Innovation Scholars Program (MISP). It will include a general summary of our project (no specifics due to confidentiality). It will also include our process of research throughout the project and our reactions along the way. It will finally include what we got out of this project

Martha L. Wilkes, Nathan L. Geislinger, Sarah J. Wachter (David Brown, Biology) Food and Habitat Preferences in Rock Boring Urchins, (*Echinometra lucunter*)

Sea Urchins are important herbivores in shallow marine systems, so understanding their feeding and sheltering behavior can help discern how these creatures affect their ecosystems. We collected individuals of *Echinometra lucunter*, the rock-boring urchin, from rocky tide pools on San Salvador, Bahamas. In the first experiments we offered urchins a choice

between three possible foods in fresh seawater tanks. While the majority of the urchins preferred turtle grass (*Thalassia testudinum*) to the other options, food choice was quite variable. In the second experiments, we offered urchins a choice of sheltering locations and found that the majority of the urchins preferred to remain at the deepest point of the tank, specifically the corner locations. Our results suggested that the availability of suitable sheltering sites was a more critical factor than food options in determining how urchins would affect their ecosystems.

### **Entrepreneurship**

Ryan G. Wojciechowski (Wendy Klepetar, Entrepreneurship) Entrepreneurship and Moral Imagination

The power of storytelling has long been a means to teach ethical lessons. In modern days, stories come through the forms of oral narrations, movie watching, novel reading, as well as many other mediums. It could be said that stories are more than just a plot that is received by a person; rather, stories are an experience that causes an emotional interaction with the receiver. Science has shown that mirror neurons in the brain respond empathetically to the characters of these fictional stories. Empathy and perspective-taking are two of the defining features of Moral Imagination, an ethical theory first developed by David Hume.

It has been discovered that entrepreneurs naturally display a tendency to apply the principles of Moral Imagination to their decision-making practices. Because of the personal aspect of being in charge of their own company, entrepreneurs display an inclination to be very emotionally invested in business decisions. This is exemplified by a moral imagination-based study of entrepreneurs done by John McVea (2009), which showed “entrepreneurs were more likely to react emotionally (to a hypothetical test), as well as take a more personal (as opposed to professional) point of view on [business making decisions]”. It is hypothesized that a correlation exists between stories, entrepreneurs, and moral imagination principles. This research has been conducted to prove that entrepreneurs who experience more stories about certain groups of people will exemplify higher levels of Moral Imagination in their business decisions with regards to those types of people.

### **Environmental Studies**

Katie L. Spoden (David Brown, Environmental Studies) Analysis of a 15-Meter Sediment Core From Lake Hilary

Lake sediments preserve many clues about local environments and vegetation. Lake Hilary on the SJU campus yielded a 15-meter core that likely covers a span of 12,000-14,000 years. Using standard gravimetric techniques, we estimated sediment bulk density, organic matter content, and carbonate content. The sediment record showed substantial variability, but the organic and carbonate fractions generally increased as the lake became shallower, suggesting an increase in lake productivity. The sediment record also contains evidence of prolonged drought and lake shallowing. Documenting past climate fluctuations may help provide a context for our responses to anticipated future climate change in our region.

### **Experiential Learning & Community Engagement**

Victoria Adofoli (Marah Jacobson-Schulte, Experiential Learning & Community Engagement) Jackson Fellows Summer Internship Experience-Working as a Sexual Assault Advocate

Come and learn what it is like to be a Jackson Fellow. Presenter will share internship experience of working as an advocate for victims of sexual assault. The processes of doing a crisis intervention, responding to local hospitals, working with law enforcement, medical officials, legislators and other disciplines concerning sexual violence. Presenter will discuss utilizing opportunities to work in other fields related to other interests.

Jared W. Berg (Marah Jacobson-Schulte, Experiential Learning & Community Engagement) Experiences within the LGBT Community: Interning at OutFront Minnesota

Fellow had the opportunity to intern at OutFront Minnesota with the support of the Marie and Robert Jackson Fellow Program. OutFront Minnesota is a lesbian, gay, bisexual, and trans\* (LGBT) advocacy organization. Poster depicts tasks completed this summer, such as recruiting for the Twin Cities Pride Festival and planning OutFront's annual gala. More importantly, poster shares intern's experiences working with incredibly diverse coworkers, volunteers, and community members throughout the state of Minnesota and the impact they have on intern and their community.

Thomas J. Brossart (Marah Jacobson-Schulte, Experiential Learning & Community Engagement) Open Arms Jackson Fellowship

"It's a simple notion: people who are sick should not be without food. Yet it happens every day that people in our community with life-threatening

illnesses find themselves unable to shop or cook — and, often, without the support network to help. That's where we come in. Open Arms is the only nonprofit organization in Minnesota that cooks and delivers free meals specifically tailored to meet the nutrition needs of individuals living with HIV/AIDS, MS, ALS, breast cancer and more than 60 other diseases."

During the Summer of 2013 student served as the Social Media and Community Outreach Intern at Open Arms of Minnesota. Intern will present experience at Open Arms, including how he learned a variety of tangible skills that have proved immediately beneficial, how he gained a great deal of self confidence and expanded his network of connections throughout Minnesota.

Kevin Curwick, Allison Fischbach (Adia Zeman, Experiential Learning & Community Engagement) ELCE - Sustainable Serving

Two student workers will be presenting the efforts by the Office of Experiential Learning and Community Engagement (ELCE) to improve sustainability over the past academic year. These efforts include establishing the ELCE as the first on-campus composting program between the two campuses as well as developing ways to cut down on energy, paper, and ink use. On top of that, statistics will be included about the improvements on energy consumption in the office as well as information on alternative means of sustainability used in the office over the past academic year. All of these efforts will be continued in the office and the information provided will hopefully be used to promote the student worker sustainability network set up by the College of St. Benedict's Office of Sustainability.

Samantha L. Exsted (Marah Jacobson-Schulte, Experiential Learning & Community Engagement) Anna Marie's Alliance-Jackson Fellowship

Intern spent last summer at Anna Marie's Alliance in St. Cloud working specifically in the Children's Program with children ages newborn-16 years of age. Anna Marie's mission is "to provide a safe place for victims of domestic abuse and to achieve systems change that reduces violence." Intern provided support, understanding, and served as a positive role model for children and adolescents who have been exposed to violence and traumatic experiences, facilitated children's support groups and assisted childcare staff with children's programming, and gained intervention techniques in addressing children with emotional and behavioral disorders.

Theresa J. Farrell, Jacqueline M. Liska (Adia Zeman, Experiential Learning & Community Engagement) Kid Packs

This presentation will focus on the Kid Packs program, which was started by CSB alumnae and Bonner Leader Meghan Helmbrecht in fall 2011. Kid Packs provide students from Discovery Elementary School with healthy snacks to bring home over winter break. Students from CSB/SJU can use their flex money on campus to purchase nut-free, nutritious, non-perishable food items and donate them to the program. In fall 2013, Jackie Liska and Theresa Farrell, along with support from the Bonner Program, helped raise approximately 1,500 food items for the students and the local food shelf. The goal of the program is to integrate the needs of the community with the resources of the CSB/SJU campus.

Alexander H. Forster (Laura Hammond, Experiential Learning & Community Engagement) MPR News/Gary Eichten Fellowship

This poster details my summer fellowship with MPR News from June-August 2013. The fellowship provided me with an opportunity to learn the fast-paced world of broadcast journalism and motivated me to find a career in radio after college. I learned how to write clearly and concisely for an audience beyond the classroom which has helped me land other internship opportunities at CSB/SJU. I consider the fellowship essential to my development as a student, and I want to share my experience with other students who may want to pursue a career in journalism.

Ty R. Heimerl (Adia Zeman, Experiential Learning & Community Engagement) St. Raphael Retirement Center

This presentation will highlight the Bonner work study at the St. Raphael Retirement Center. The presenter will be describing his work there and what a typical day looks like for the residents.

Pearce R. Jensen (Adia Zeman, Experiential Learning & Community Engagement) America Reads Tutor at Discovery Elementary

This presentation will explain the different roles that an America Reads Tutor plays while volunteering in a Kindergarten classroom at Discovery Elementary. Some topics that will be discussed include strategies used to help Kindergarten students learn a number of math and reading skills as well as the many rewards that this role has to offer.

Emily M. Johnson (Marah Jacobson-Schulte, Experiential Learning & Community Engagement) Jackson Fellows Community Engagement Internship

Student will share experience interning at two connected sites, Neighborhood Youth Services and Woodland Hills, through the Jackson Fellows Program. Intern spent summer creating and facilitating programming for local youth ages 6-17 at NYS. At Woodland Hills, intern assisted staff with supervising and mentoring of residential and day treatment clients in mental health girls' groups ages 12-16. "Woodland Hills provides unwavering hope and opportunity for youth, families and communities. A place for hope, belonging, and opportunity"

Connor W. Klausung (Marah Jacobson-Schulte, Experiential Learning & Community Engagement) Witness for Peace - Jackson Fellows

Student will be presenting about his internship at Witness for Peace this summer, made possible through the Jackson Fellows Program. WFP strives to support peace, justice and sustainable economies in the Americas by changing U.S. policies and corporate practices that contribute to poverty and oppression in Latin America and the Caribbean. With WFP, fellow helped to recruit for international delegations, lobby congress, conduct research, managed communications, and, most notably, hand-made buttons.

Janna LaFontaine (Adia Zeman, Experiential Learning & Community Engagement) Teaching Sport Ethics Concepts through Service Learning

1. Background/Purpose

The goal of the service learning component within a collegiate Sport Ethics course was to use physical play as a basis for talking about ethical concepts. Through review of the journal entries submitted by each college student, a snapshot of their experience and application of ethical concepts can be found.

2. Method

Twenty college students enrolled in a Sport Ethics course were required to spend 20 hours in a service learning experience within the local community. They were to journal after each experience, apply course concepts (specifically ethical frameworks), and respond to specific prompts. The ethical questions were: what is fair, who decides what is fair, what is cheating, is it acceptable sometimes, what is fun, who decides if an activity is fun, and what is the role of authority figures? The students were placed in

afterschool activity programs, YMCA sport settings, and with local Boys & Girls clubs. The journal entries were then reviewed, and coded into themes.

### 3. Analysis/Results

After reviewing journal entries, four themes emerged: cheating, win at all cost mentality, moral education and authority figures. Responses indicated that the win at all cost mentality starts young, and cheating is constant and reduces the enjoyment of physical activities. They found that many of the children involved in sport practice psychological egoism through selfish play or outright cheating. However, moral education can be emphasized through teamwork, where individuals find ways to maximize happiness for the larger group or Utilitarian thinking. As authority figures, the students learned that keeping drills and activities simple increased the chance of success, and thus overall pleasure, a hedonistic concept. The college students believe that emphasizing social values is not enough to foster moral values, but can help lead participants in that direction. Finally, they stated that learning good moral behavior is more important than teaching sport skills.

### 4. Conclusions

Service learning can potentially enhance understanding and appreciation of moral concepts and behavior related to sport activities. It can help bring abstract ethical concepts to life and foster further exploration of personal morality. The college students, as future fans, coaches, parents and athletes have learned that sport without moral values decreases the enjoyment, and thus will hopefully be a resource for continual discussion and exploration of moral behavior within the sporting world and beyond. This experience also emphasizes the need for continual ethical education and discussion among sport participants and leaders.

Katherina Larrea (Marah Jacobson-Schulte, Experiential Learning & Community Engagement) The Children's Museum of South Dakota

Through the College of St. Benedict Marie and Robert Jackson Fellows Program, I was given the opportunity to intern at the Children's Museum of South Dakota during the summer of '13. The Museum, whose mission statement is to promote learning for children of all ages and abilities through interactive, informal, hands-on exhibits and demonstrations, does just that. By combining entertainment with learning, the Museum does a fabulous job of engaging everyone that walks through doors, children and adults alike! During my summer, I was able to teach classes like Grossology 101, design displays for the gift shop, engage with the visitors in order to enhance their experience and lead various weekly activities like Storybook Tuesdays and Fit for Life Fridays. My internship taught me the value of



learning through participation - the children were so engaged and intrigued by the exhibits in the museum that they were more likely to learn and even enjoy that process. I encourage anyone passing through Brookings to stop in to the museum and JOIN THE FUN!

Allysa L. Larson (Adia Zeman, Experiential Learning & Community Engagement)  
Central Minnesota Youth Symphonies

This poster would showcase the presenters service-learning experience with the Central Minnesota Youth Symphonies. The presentation will look at the participants and find out their education backgrounds and the number of years they have been playing their instrument. The presenter will also be highlighting what was learned from the service-learning experience and how it promoted learning within the Education 111 class.

Kaitlyn E. Lauer (Marah Jacobson-Schulte, Experiential Learning & Community Engagement) A Summer of Civic Engagement: My Experience at Children's Dental Services

Through the Robert and Marie Jackson Fellowship Program I had the opportunity to intern at a Children's Dental Services (CDS). CDS is a non-profit dental clinic that provides affordable and culturally competent dental care to underserved and underinsured patients. My experiences at CDS altered my perspectives and strengthened my skills as a leader and civically engaged individual.

Cullen T. McAnally, Amy J. Eiden (Adia Zeman, Experiential Learning & Community Engagement) Students Today Leaders Forever

This presentation will demonstrate the core concepts and details pertaining to the organization Students Today Leaders Forever. Presentors will showcase a poster board with relevant information, and verbally discuss the organizational objectives to members of the CSB/SJU community.

Meg Schrafft, Christine Palmer (Adia Zeman, Experiential Learning & Community Engagement) Global Health Issues

The Global Health Affairs in conjunction with the Bonner Leader Program, has put together a week long campaign to raise awareness about global health issues. Global Health Week brought awareness to issues that include Vector-Borne diseases, child malnutrition, HIV/AIDS, and water sanitation. Presenters will discuss these issues in a global context, how

CSB/SJU students plan to raise awareness, and how CSB/SJU students can make a difference now.

Sabrina M. Schultz (Adia Zeman, Experiential Learning & Community Engagement) La Fiesta

This project will show how the presenter has been able to help grow La Fiesta as a business. The presentation will show how the business has grown over the last couple of years and where it is headed along with future goals for the business. Lastly, it will give a brief description of what La Fiesta is all about and how it has impacted the community.

Shannon Skelly, Hannah Houts, Cody Hanson (Adia Zeman, Experiential Learning & Community Engagement) Community Kitchen

This poster will express the goal and purpose of CSB Community Kitchen. It will share information on food insecurity in the US with a focus on how CSB Community Kitchen is striving to resolve those issues. This presentation will include statistics describing how many meals have been served since CSB Community Kitchen's first meal delivery in October.

Kathryn J. Smith, Kathryn A. Stelzner (Adia Zeman, Experiential Learning & Community Engagement) Sex Trafficking in Minnesota - Breaking Free

This presentation will focus on the issue of sex trafficking, particularly in Minnesota. The presenters participated on an Alternative Break Experience to work with Breaking Free in St. Paul. Breaking Free is a non-profit organization dedicated to helping women out of sex trafficking and addressing the systematic and societal flaws that contribute to a culture of violence against women. The project will give an overview of the issue of sex trafficking in Minnesota, the work Breaking Free is doing to combat it, and how students, faculty and staff, and community members can get involved to take a stand against sex trafficking.

Robert M. Stocker (Janna LaFountaine, Experiential Learning & Community Engagement) Frozen Ethics: The Struggle for Perspective in Hockey Crazed Minnesota

This semester I volunteer coached a youth hockey team in Saint Cloud. I observed the behaviors of players, parents, coaches, and referees throughout the state of Minnesota. I will present my findings through an examination of these key areas:

- what is fair
- who decides what is fair
- what is cheating, is it acceptable sometimes
- what is fun, who decides if an activity is fun
- what is the role of authority figures
- what are you learning about yourself
- what gender dynamics come into play in sports?
- How does sports bridge barriers between people who are different

I'll wrap up my presentation with a discussion of course concepts by applying varying ethical perspectives that were used throughout this volunteering.

Jamie L. Swanson (Adia Zeman, Experiential Learning & Community Engagement) The Green Team at Southside Boys & Girls Club

"The Green Team" was developed in Spring 2014 by Bonner Leader and Senior Environmental Studies major, Jamie Swanson, in an effort to educate K-6th graders about the natural world they live in. In place at Southside Boys & Girls Club, this venture is part of the Learning Center's programming. The program is based around students' input and interests, but focuses specifically on nature's intersect with their lives in central Minnesota. Specific topics have included: Minnesotan Mammals, Dangerous Insects, and Sustainable Waste Options.

Sara B. Tiemens (Marah Jacobson-Schulte, Experiential Learning & Community Engagement) Jackson Fellows

As a 2013-14 Jackson Fellow, student interned in the Child Development Center at the United Living Community in Brookings, South Dakota. ULC is a combined nursing home, daycare and preschool. They pride themselves on promoting intergenerational activities that provide benefits to both the children and elders involved

Upon graduation, presenter hopes to become a teacher. All experiences at ULC were very relevant to the field of education and career goals. Intern had the opportunity to write and apply for a grant, create lesson plans for the classrooms, construct a parent survey and tally results, assist in leading teacher and parent meetings, supervise children during activities and on field trips, plan fundraising events, implement an open house, organize the children's library, and attend many intergenerational events.

Kimberly J. Vipond (Marah Jacobson-Schulte, Experiential Learning & Community Engagement) Jackson Fellows Program - Children's Law Center of Minnesota

Intern served at the Children's Law Center of Minnesota as part of the Jackson Fellows Program. Intern gained many valuable experiences and developed a better understanding of the issues faced by youth in foster care and that are wards of the state. Intern will share these experiences in hopes of promoting a better understanding of these issues as well as being an advocate for the Jackson Fellows Program.

### **Mathematics**

Jon C. Blomquist, Samuel J. Broback, Thomas R. Budd, Elizabeth L. Cassidy, Megan M. Daly, Grant M. Daniel, Jimmy S. Garcia, Genesis Gastelum Lopez, Chamani M. Gunasekera, Adam J. Hey, Maria Jimenez, Aaron Li, Ho Yeon Park, Julia F. Silvnik, Reese D. Thoen, Yuquan Yu, Peter C. Zasmeta (Bret Benesh, Mathematics) Semester Linear Algebra Projects for Math 239

Students in Math 239 were asked to do a linear algebra project for the semester. Students will present on their solutions to open-ended linear algebra questions.

### **NATS**

Alice Kuoc (David Mitchell, NATS) Growth Rate of Penicillin-Resistant Bacteria

Penicillin was one of the first and the most commonly administered antibiotics since it was introduced the 1940s. Over time, many bacteria became resistant to penicillin. The purpose of this experiment was to evaluate the growth rate of antibiotic-resistant bacteria from wetlands at St John's University in the presence and absence of penicillin. Twelve bacteria were found and isolated on dilution broth agar plates. All isolated bacteria were then incubated on dilution broth agar plates containing penicillin at a clinical concentration for 48 hours to identify antibiotic-resistant organisms. One selected bacteria was tested and identified as a gram negative bacteria. The growth rate of the selected bacteria with and without penicillin was determined by the measurements of optical density. The experiment affirmed previous studies which suggested penicillin was less effective limiting the growth rate of gram negative bacteria.

### **Political Science**

Kurt M. Baldwin (Christi Siver, Political Science) Why do female leaders reduce political violence?

Why do female leaders reduce political violence? I plan to test two possible explanations. First, women may be inherently more peaceful than men. Second, women may be more willing to negotiate differences rather than use violence. I will examine these variables in several cases.

Christopher D. Beranek (Whitney Court, Political Science) Influence of Political and Economic Factors on R&D Spending in the United States

Scientific research and development (R&D) is a key component in the advancement and the prosperity of the world. This R&D requires funding, and the federal government provides a significant amount in its annual budget allocations to agencies such as the National Science Foundation and the National Institutes of Health. The level of funding provided to these scientific agencies varies from year to year, possibly due to various political and economic factors. This begs the question, how do political and economic factors affect the level of funding for scientific R&D? An understanding of this question can help predict which situations will most likely cause meaningful increases in scientific R&D funding, leading to important advancements in the field. Previous work on spending patterns suggests that political factors, such as party control and ideology, have direct effects on spending levels and manners. Another branch of research suggests that economic factors, such as deficits or surpluses, alter the way money is spent. Statistical analysis will be utilized to find potential relationships between budget allocations, political factors, and economic factors.

april bondhus (Whitney Court, Political Science) The Effects of Foreign Policy on Elections

I analyze whether or not foreign policy affects elections. Based on my research, I aim to understand how this fits into the circumstances of the 1960 election and how my theory can be generalized to help predict how foreign policy will affect future elections. Previous research, finds a significant amount of support that foreign policy does affect the outcomes of elections, especially in times of war or heightened international conflict. Based on the context of the 1960 election, I argue that foreign affairs considerably affected the election of President John F. Kennedy.

Tyler C. Bright (Seth Greenfest, Political Science) Public Mood and the Supreme Court

This presentation questions how public mood affects the liberalism of the Supreme Court. Looking into cases like *United States v. Windsor* (2013) and *Hollingsworth v. Perry* (2013) I will analyze how public mood can influence the Supreme Court. I propose that the Court has to find ways for it to continue to be a strong force within the government and it does so by adjusting to the liberal attitudes of the public.

Madeline K. Carey (Whitney Court, Political Science) The Effects of Media and the Portrayal of Female Politicians

In this article, the author analyzes the media coverage of female candidates and compares them to their male counterparts. This research is important because it will help us examine how this coverage affects their campaign strategies and the image of the powerful female. Content analysis and comparison of media coverage from Hilary Clinton and Sarah Palin's 2008 campaigns will show how the media covers women. As a comparison, I will analyze media coverage of their male candidate counterparts. I expect to find that there is less political coverage of the females and more appearance coverage. I hope to further investigate potential effects on campaigns, whether they be positive or negative, and effects on the image of the powerful female as a role model in modern society.

Ian F. Cochran (Christi Siver, Political Science) Why do some countries give preferential treatment to multinational corporations that operate in their country?

For past few decades, our world has seen a sharp increase in the presence of Multinational Corporations (MNC's). Many of these companies hold a large number of assets in foreign countries and can even sway the social and economic development of the countries they operate in. With that in mind, why do countries give preferential treatment to MNCs that operate in their borders? In our globalizing world this puzzle sheds light on the ethical dilemma companies' face when trying to balance the desire to make more money while adhering to developing global standards for human rights. Countries may give preferential treatment to MNCs because they invigorate socio-economic growth, or because they are too large a part of their economy that without them they would fail. Countries may do so because MNCs pay kickbacks and other forms of political patronage. By looking at both wealthy and poor countries that are highly involved with Multinational corporations, I hope to find strong correlation between certain variables and the level of involvement. These correlations are to be supported with quantitative and qualitative measures of socio-economic and political strength in a few country setting.

Jake P. Collins (Christi Siver, Political Science) The Future of Organized Crime

Today, organized crime has become deeply rooted in our society. Many in the world are frustrated with organized crime and the disruption these groups cause. Despite the substantial obstacles placed on these groups, why does organized crime continue to elude state regulation? Tourism and weak state institutions could explain why states are having a difficult time controlling these illegal groups. My research will look at these explanations through the few countries method. I will conduct surveys and interviews with citizens, government officials, and former organized crime members. My research may provide both policymakers and citizens the tools required to eradicate criminal organizations and their illegal activities.

Anna M. Cron (Christi Siver, Political Science) States Promotion of Youth Civic Engagement

Why do states promote youth civic engagement? Promoting youth political participation is an investment in preserving and enhancing the political institutions across the globe. What causes some states to encourage youth civic involvement more than others? I plan to test three explanations. Legitimate democracies may want to integrate service-learning programs into their curriculum in order to civically engage the younger generation. Youth living in high economic inequality nations may be motivated to improve their surrounding conditions. The international community may encourage adolescents to express their opinions and ideas. I will analyze the recent events in Ukraine and Venezuela, evaluating the different factors involved to explain why states promote or depress youth civic engagement. My research and findings will offer an updated perspective on the reasons for why and how states promote youth civic engagement within the last two decades.

Andrew J. Dahlke (Whitney Court, Political Science) Midwestern Air Pollution Policy Regarding Standard and Cap and Trade Restrictions

Now more than ever we are reminded of the disastrous effects of global climate change. Whether it is the United Nations ICPP assessment of the environment or the media discussing ever worsening natural disasters, the evidence is abundant and there is a growing demand for a policy response. Recently, cap and trade initiatives have been gaining momentum as the leading alternative to the outdated and ineffective carbon tax laws. Over the past decade we have seen regional cap and trade operations both on the

east, the Regional Greenhouse Gas Initiative, and west coast. The Midwest region is in prime position to follow the lead of these two regions and update its environmental policy. The Midwest would benefit most from a regional cap and trade organization within the electrical market that returned the assets gained to the producers. Using the Haiku Electricity Market Model, we can conclude that replacing the obsolete carbon tax model currently used with a market like system involving the electrical sector will reduce carbon emissions at a much faster rate.

Danyal D. Dawson (Whitney Court, Political Science) Do we vote for Presidents based on the economy?

How does the state of the economy influence voters in presidential elections? Existing research claims that the state of the election year economy influences presidential election results. In this project, I will examine how voter's opinions on the economy effect their voting decisions in presidential elections. I look at this issue through presidential voting because it is a very important one that plays a significant role in determining who will be president. I use survey results from past elections that ask the opinions of voters on the economy. I will look at the two most recent elections, 2008 & 2012. I will expect to see support for the economy will lead to them voting again for the same candidate or to keep the same party in office if a president has served two terms already.

Tyler Delwiche T. Delwiche (Seth Greenfest, Political Science) Public Opinion and Supreme Court Decision Making

This study examines how and if public opinion influences Supreme Court decision making. This study is made to compare the Justices' decision making on salient cases and non salient cases. This will be an extension of Barnum's examination of whether or not the Supreme Court is influenced by the public. I will compare the findings to the strategic and attitudinal models. In my findings I conclude the Supreme Court takes the public's opinion into consideration in non-salient cases and not in salient cases.

Peter C. Diliberti (Seth Greenfest, Political Science) The Effect of Public Opinion on Judicial Decision Making

This project examines the ways in which public opinion impacts judicial decision making. This project extends existing research that has shown that public opinion impacts judicial decision making by measuring public opinion and looking at several cases to see the impact of public opinion on



those cases. I measure public opinion by taking into consideration several polls as well as media sources and recording the results. Using this measurement of public opinion, I then examine several court cases to see the impact that public opinion had on the decision made. I will attempt to show that public opinion does impact judicial decision making.

McKensie A. Diver (Christi Siver, Political Science) Post-Soviet Hybrid Regime Survival

The collapse of the Soviet Union in 1991 gave birth to many new independent states. Many of these states have developed regimes with both democratic and authoritarian elements. But they are not transitional democracies or traditional authoritarian regimes. Why do post-Soviet hybrid-regimes survive? I would examine the internal and external effectiveness of the system of governance and the economic prosperity of each country in question. Using a “few country study” approach, I would evaluate the level of stability and the probability of continued existence of five hybrid regimes without holding them up to the standard of autocracy or democracy, as is the usual practice in most research in the field of political science. This study would develop a new framework on which to base stability within hybrid regimes using internal structures as the basis. Finally, it would provide the world with the most important aspects and behavior of these “new” regimes so that countries would know how to interact with them.

Peter G. Fagrelus (Christi Siver, Political Science) Economic Factors in the Arab Spring and Other Recent Uprisings

Why do popular uprisings arise to challenge the government? In light of several recent revolutions and uprisings, this is an important question as many nations seek to develop their own democracies. One theory I will test is the effect that unemployment has on young people in developing nations, which might provide insight into the amount of time the younger generation can use in contributing to popular uprising. Another theory I will test is whether corruption can cause an uprising without the presence of a poor economy. In my research design, I will examine the independent factors that affect the public's willingness to rise up against an established government. My data will look in-depth at the socio-economic characteristics of unemployment and corruption, and how their role in revolution and popular uprising.

Matthew J. Fink (Whitney Court, Political Science) Sexual Assault Policy

Does the threat of severe punishment lead to fewer cases of sexual assault? This is a question that colleges and universities are struggling with across America. With the rise of sexual assault reports, many have called for tougher consequences for known offenders. But will this really be an effective way to combat the growing problem? I will investigate the relationship between crime and punishment and apply the research on how the crime of murder reacts to unforgiving laws to the heinous crime of sexual assault. Current research indicates that harsh punishments are not a deterrent for irrational, violent crimes. I hypothesize that severe punishments, like colleges and universities have been implementing, do not deter sexual assault.

Billy J. Gagliardi (Seth Greenfest, Political Science) Judicial System and the Role of Gender

#### Judicial System and the Role of Gender

This paper examines under what conditions gender has an impact on judges' decision making in the federal and state judiciary. I will examine where gender may matter and whether gender has an effect on ambition and decision making. One area is the ambition judges have to move up in the judiciary. The other is how women make their decisions as opposed to men. This study will attempt to demonstrate that there are indeed significant differences between men and women in the judicial system.

Brayan J. Garibay (Seth Greenfest, Political Science) Civil Liberties for Undocumented Citizens in The United States

U.S. immigration policy reform has been a hallmark of political debate among politicians throughout the decade. The ongoing debate is a result of policymaker's hesitancy to take affirmative action on the matter. While the courts recognize the importance to maintain and encourage foreign entrepreneurship, they also have to consider the threat that being too lenient may jeopardize national security. My inquiry will evaluate the effect that immigration policy and previous cases have on the civil liberties for undocumented citizens. In this research, I examine past and current immigration policies as well as cases. By examining previous cases and policies, violations on undocumented citizens civil liberties are brought to light. The results will attempt to show that national security may be an explanation on why violations against the civil liberties of undocumented citizens transpire.

Daniel N. George (Whitney Court, Political Science) NAFTA's impacts on U.S Environmental Policy

The purpose of this research is to see whether or not the North American Free Trade Agreement has had an effect on the development of U.S environmental policy since its creation in 1994. The paper will examine the relationship between NAFTA and a decrease in U.S environmental policy. The research will take an in depth look at the environmental policy implemented in the decade before the creation of NAFTA and compare it to the policies that have been created since the implementation of NAFTA. The purpose of this research is to see if there has an increase or decrease in environmental policy, especially in the fields of agriculture, pollution, and transportation. These topics have been picked because they are the main policies that are directly affected by the implementation of NAFTA. This research will provide relevant information on how a major trade policy has caused U.S environmental policy to decrease in order to meet the high demand of trade that has been created by NAFTA.

Jacob Glynn S. Glynn (Christi Siver, Political Science) Post-Colonial economies of the Caribbean

Abstract: Why are some island-nations of the Caribbean, who share a common climate and geographical location, are economically advanced and have developed infrastructure and other nations within close proximity are not? Haiti remains the poorest country in the Western hemisphere, yet it lies in the same area as Cuba and the Bahamas which are highly successful in development. Why do some countries remain undeveloped and poor yet others reap the benefits of foreign investment and free trade? Some of the factors may include which European empire colonized the nation, the manner in which independence was achieved, the physical features of the land and natural resources, and the policies that were carried out in the post-colonialism era. By looking at each one of these aspects, there may lie a possible explanation to why some island nations prospered and others had failed. Analyzing the factors and what decisions were made by the leaders of each nation may provide a reasonable explanation to my puzzle. I propose a plan to test these explanations gathering qualitative information about the each individual country's past, geographic features, and current political & economic events, as well as observing the culture of each country and what "old" world influences remain.

Michael S. Hartz (Whitney Court, Political Science) Minnesota vs. Wisconsin

Economic policy has long been a subject of intense partisan debate. In recent years, Minnesota and Wisconsin, two states that are almost identical in terms of demographics, diverged to opposite ends of the political spectrum. How has the difference in policy affected the economic growth in these two states? This is an ideal opportunity to study the phenomenon as we have a naturally occurring experiment that will shed light on what constitutes good economic policy. These topics shall be explored by examining the divergence in economic growth statistics and population growth rates, as well as an examination of the various policies implemented over the course of the past two years.

Sachal D. Jacob (Christi Siver, Political Science) Why have communist regimes persisted?

The most influential communist state in current time is China. This is the regime that has grown greatly both economically and politically over the last decade. My paper seeks to explain this growth and juxtapose it against the failings of past Communist states. I explore three potential reasons for China's growth and persistence. One explanation may be the greater economic privileges afforded to the Chinese people, i.e. being able to own private property. Another explanation could be the geopolitical environment around China, which would be its alliances and trade agreements. And lastly I look at the devolution that the Chinese government has implemented to appease its people.

Nathaniel J. Kennedy (Seth Greenfest, Political Science) A Cue Theorist's Guide for Granted Certiorari

The purpose of this project examines research that has shown Chief Justices to look for certain cues in appeals written to the Supreme Court for certiorari. This research conducted will show the cues that are more likely to be granted and will determine if cue theory is still relevant in today's judicial system by observing the Chief Justice's ideology and political affiliation, public opinion, and different cues presented.

Kory A. Kleven (Whitney Court, Political Science) The Democratic Impact of Judicial Elections

The judicial branch is different from the more political branches in fundamental ways. One such way is elections. Judicial candidates, in contrast to elected officials, are not representatives and do not have "constituents" in the same sense. They are supposed to be impartial. The

U.S. States have put in place a number of judicial selection methods, with no real consensus on which is most appropriate. The purpose of this article is to answer this question: Do judicial elections provide quality democracy without compromising the independence of the courts? The article dives into possible methods of judicial selection: competitive elections (partisan and nonpartisan) or noncompetitive elections and appointment (retention and merit). Voter's perspectives on the two competitive elections are examined. The inevitable conflict between democracy and independence of the courts will be examined empirically to expose realities in competitive elections. Although there is a lack of literature on this particular topic, this study aims to bridge the gap between the balance of democracy and independence of the courts.

Paul T. Knaak (Christi Siver, Political Science) Success and Failure in Commodity Nationalization

Why do some countries thrive after nationalizing their natural resources, while other countries nationalize only to find themselves the victims of corruption and authoritarian governments? Understanding why some countries are successful in nationalization while others fall into corruption and poverty will help to guide the policy decisions of resource-wealthy countries and provide a deeper understanding of the issues of the developing world. Some researchers feel that nationalization issues lie in continuing exploitation by Westerners and elites. Others look to political and social institutions in nationalizing countries for explanations, feeling that success or failure is almost pre-determined by institutions. The methods which I use to explore this issue include a quantitative analysis of data relating to foreign investment and civil participation, and well as a qualitative historical analysis of conditions in different countries at the time of nationalization.

Makenzie L. Krause (Seth Greenfest, Political Science) Gender does NOT affect judgment

My research project examines the relationship between the gender of federal judges and their rulings made in the federal courts. This project extends current research that argues that gender does not affect federal judges' decisions. I explore existing research that attempts to identify a correlation between federal judges' decisions and their gender. I then apply this research to my own study and construct a research design that examines the decisions made by federal judges and compares these decisions between male and female judges. This research will scrutinize the decisions made by

federal judges and it will search to find a correlation between these decisions and the genders of the judges who made them. The results will attempt to demonstrate that there is no notable correlation found between the gender of a judge and the type of decision he or she will make, thus demonstrating that gender does not affect federal judges' decisions.

Chris T. Lesch (Christi Siver, Political Science) The Loyalty of Military's During Revolutions

During popular revolutions why do some militaries remain loyal to the ruling government while others stay neutral? This is an interesting question because in a popular revolution the military plays a key role in the outcome of the revolution. Political scientists have put forward three explanations that I will examine. The first explanation is the level of benefit that the military gains from the ruling regime's policies before the resistance movement will increase or decrease the amount of loyalty towards the regime by a significant amount. The second explanation is that whichever side of the revolution the military shares ethnic and religious composition can lead to a feeling of a mutual bond and therefore loyalty to that side. The third explanation is that the actions and strategies taken by the resistance movement will decide the military's loyalty. I will use the few countries comparison method to investigate this puzzle;. I will examine Iran, Ukraine, and the states from the Arab Spring that experienced non-violent resistance movements.

Caitlin Lieser (Seth Greenfest, Political Science) How Does a Judge Determine Sentence Length?

My research will examine what factors, if any, will influence a judge on the decision-making process of determining sentence length in criminal cases. I begin my research by first looking at already existing research on judicial decision-making. The first step to my process was to establish state guidelines referring to minimum and maximum sentences allotted for specific cases. I then gather factors that will influence a judge on his or her decision such as race of either the judge or defendant, political ideology of the judge, and whether or not the defendant has already received punishment for other crimes. I construct a dataset that looks at specific cases that have been made by the same judge and also other judges to determine whether there are any factors that could possibly influence the judge in making their decision.

Isaac L. Lindstrom (Seth Greenfest, Political Science) Voter Identification Laws:  
The Cost of Voting and Voter Participation

What is the effect of voter identification laws on voter participation? I examine how an increase in the cost of voting, in terms of time and money spent by both individuals and the U.S. states, will decrease voter participation. To study the impact, I propose to examine voter turnout in two states, one with higher participation, Minnesota, and one with strict voter identification laws, Texas. The difference in the states will allow me to examine how Texas' laws impact voter participation by comparing voter turnout in Texas to Minnesota's laws and turnout rates. The results will attempt to demonstrate the impact of voter identification on future elections.

Matthew C. McCormack (Whitney Court, Political Science) Who Controls  
Congress? A look at Congressional activity and the influences that lead to action.

An expectation of any congressman or woman is that they set their legislative agenda to fit the needs and desires of the constituents that elected them. Evidence suggests that representatives in Congress receive benefits for forwarding the party agenda. These rewards come in the form of committee membership and campaign funding. The campaign funding and experience gained through committees have contributed the high incumbency rate existing in the house today. Examining the 2010 voting on the Affordable Care Act, we will examine the influence of constituents and political parties to answer the question of who controls Congress in the increasingly polarized American politics.

Megan M. McGuire (Whitney Court, Political Science) The Gender Gap in Politics

This study takes a closer look at how women's political ambitions affect the gender gap in political representation. Still today, women are greatly underrepresented in United States elected political positions. Women typically have lower political ambitions compared to men who are equally qualified as them. It is important for women to take steps to close this gap because the gap is relatively high when compared to gender inequalities in other fields. Past studies have blamed the gender gap on social norms and a male nature to the political system; young girls have not seen many female political role models in the past. Other studies look at the supply and demand of women in politics: women are often less encouraged to run for office, and when they do, they are less likely to receive financial support than a male who is equally qualified. Studies show that women are less

likely to consider themselves qualified to run for political office and this assumption is the starting point of this gender gap. This study examines survey results that point to great differences in men and women's answers to considering running for office and considering themselves qualified to run for a political office.

Katherine A. Miller (Seth Greenfest, Political Science) The Impact of 9/11 on Privacy Rights

This project examines whether there were changes in Supreme Court decisions regarding privacy laws in the aftermath of the 9/11 terrorist attacks. It contrasts similar issues addressed in court cases, and how the rulings differ before and after the attack. I hypothesize that the Supreme Court would allow the government more freedom in collecting surveillance if the reason for their action is to protect national security against terrorism. I measured "national security" by examining the argument of the government in multiple Supreme Court cases. Whether or not the court upheld the action as constitutional or unconstitutional was the dependent variable. I will attempt to determine if the Supreme Court ruled more government actions regarding an alleged invasion of privacy as constitutional after the attacks of 9/11 as compared to before the attacks.

Andrew J. Morley (Seth Greenfest, Political Science) Research Design: Minnesota Sentencing Guidelines Commission

Abstract:

This article observes the success of the Minnesota Sentencing Guidelines Commission by observing the consistency of prison sentences and rate of prison population growth. There are two separate entities of government under examination: The Minnesota Department of Corrections and the Minnesota Sentencing Guidelines Commission. I hypothesize that the Guidelines Commission allows for fairer sentences and manageable prison capacities. Prior research has shown the success of the Commission, and this paper will demonstrate the political climate behind guideline policy. The research begins in 1979 with the Commission's conception. The results of research will attempt to demonstrate that the Guidelines do in fact achieve consistency in sentencing and accommodating prison capacities.

Tou C. Moua (Seth Greenfest, Political Science) Race and Judicial Decision-Making



This research proposal is to study the extent of the effect that race has on judicial decision-making. This proposal extends existing research on various ethnicities and various judicial characteristics as well (i.e. gender). I expand the types of cases that have previously been studied to offer a deeper discussion into the correlations between race and judicial decision-making. I also consider the effect of party-affiliation of the judges on the case outcomes. By doing this, I attempt to determine out of the two variables, race and party-affiliation, which one offers a stronger predictor for judicial decision-making.

Julia N. Odima (Seth Greenfest, Political Science) States With and Without the Death Penalty

My research examines the conditions under which U.S. states decide whether or not to use the death penalty as a form of punishment. This project extends existing research that has found that certain states legalized the death penalty and others have not by examining the atmosphere of specific states. I will consider the effect of the political and social environments in specific states. The results will attempt to demonstrate that the social and political environments can influence the presence of the death penalty in certain states.

Emily P. Olinger (Christi Siver, Political Science) Why Nongovernmental Groups Use Terrorist Tactics

Why do nongovernmental groups choose to use terrorist tactics? This question has never been so relevant as terrorism takes place at far greater rates than ever before. For my research, I will test the three competing explanations of terrorism that are emphasized in existing literature on this topic. The first explanation is that institutional causes, such as poverty, lead groups to partake in terroristic activities. The second explanation is that individual factors lead to terrorism, such as with Ted Gurr's theory of relative deprivation, which states that an individual's perception that they deserve more than what they have leads to terroristic acts. Finally, the last explanation for terrorism is ideological factors, such as religion, which serve as the basis for why groups use terrorist tactics. I propose research that will fill in the gaps that exist on the subject and attempt to determine why these groups partake in terrorism. I will do this by using the few countries method of comparison.

Leanne S. Otto (Seth Greenfest, Political Science) Defensive Medicine and Physician Speciality: Exploring the Relationship to Medical Malpractice

My research will examine a state's legal environment with respect to its medical malpractice laws and how it would affect the type of medicine a physician practices. I will explore existing studies that measure a physician's use of defensive medicine, the amount of litigation brought against "high liability" specialties, and the amount that physicians pay for liability insurance. I will then construct a research design that looks into specific states where the most defensive medicine is practiced and relate it back to the physician specialty. In addition, I attempt to find the relationship between "high liability" professions and what makes them so prone to litigation.

Tiffany L. Peplinski (Seth Greenfest, Political Science) Free Speech on the Internet

This project examines the differences between First Amendment speech rights in internet content and broadcast communication. This connects research on both topics compared to traditional forms of speech. I create a research design to conduct a qualitative examination of how the internet has challenged the Supreme Court's precedent regarding the First Amendment and free speech rights by examining cases of similar forms of speech through the two types of technology. I propose that speech is more regulated in broadcast technology than internet technology.

Bethany R. Purkapile (Whitney Court, Political Science) A Look at The Affordable Care Act and Mental Illness: Does it Need to be Changed?

The knowledge present today about mental illness is often based off of fears and stereotypes. Different from substance abuse, mental illness is defined as those suffering from psychological disorders that affect your mood, behavior and thinking. Often people refer to those with mental illnesses as crazy, psychotic, stupid, and socially awkward. However, the mental health field is growing more prominent as the diagnosis of mental illness increases. As society becomes more aware of how these illnesses affect an individual's life, treatment becomes a larger role. With the recent passing of the Affordable Care Act (ACA), it's time that we look at past initiatives and incorporate treatment into this Act in order to ensure the effectiveness of the ACA. In the past, mental health has been overlooked and pushed to the side. However, with the increasing prevalence of mental health in our children and society, specific attributes need to be specifically looked at within the Affordable care Act to ensure effective treatment and help for those suffering from mental illness in the future. By looking at the success of past health initiatives and public programs, we are able to make changes

and sculpt the ACA to ensure that all sides of healthcare are equally productive and helpful.

Beth M. Richmond (Christi Siver, Political Science) Child Marriage

Across the globe, child marriage is a huge problem for young girls and boys. Every year children are thrust into adult roles as they become wives and husbands and parents. This phenomenon is found especially in underdeveloped countries like sub-Saharan Africa and South Asia. Although many of these countries explicitly denounce child marriage in their laws, constitutions, or international activity, they have struggled to curb child marriage rates. Why do some states have high levels of child marriage in spite of their legislation against it? I plan to test several explanations for this, including a culture that accepts and encourages child marriage, families' need for economic security, and a desire to secure physical security for the young girl. I examine these proposed explanations for high child marriage rates by studying the culture, economic situation, and physical violence rates of India, Nepal, and Niger.

Jacob R. Saffert (Matthew Lindstrom, Political Science) Analyzing Connections between Bicycle Transportation and Public Health:

Minneapolis has frequently been named one of the most bike-friendly cities in the country. The city has made increasing its bikeability a priority. There are a wide variety of environmental, economic, and health benefits associated with higher bikeability. For a community to see these benefits, they need to provide proper infrastructure, education, and encouragement in order to get more people out of their cars and onto bicycles. In Minneapolis, the investments made for this purpose have not been distributed evenly across the city. Certain communities have seen a much more dramatic increase in bikeability as a result of the expansion infrastructure and bike programs. Two adjacent communities, Calhoun-Isles and Near North, have drastically different bicycle commuter rates. Far more people elect to bicycle in Calhoun-Isles than in Near North. For this reason, additional investments should be made to more equitably distribute the benefits of bikeability. This research identified six improvements which should be made to increase bikeability in Near North. Three of the projects are related to improving infrastructure and the other three involve education and creating a culture of bicycling in the area.

Benjamin A. Sandkamp (Christi Siver, Political Science) Why do resource rich countries fail to develop economically?

Why do countries that have large resource endowments fail to develop? I am going to test the following explanations. Potentially, the institutional quality of nations are influenced by their resource wealth due to minimal incentives for market competition. Another possible explanation for this curse is the lack of accountability by the governments of these nations to lead their political institutions. Furthermore, it may be possible that civil conflict over natural resource control in these resource rich countries potentially undermines development. I am going to utilize a case studies approach using a most similar systems design to these explanations.

John L. Schweich (Seth Greenfest, Political Science) Search and Seizure and Supreme Court Justices

My research examines the characteristics of Supreme Court Justices and how they tend to rule when deciding cases involving search and seizure. First I examine research on how political party affiliation of the president whom appointed the justice affects the rulings of cases. I then relate this to existing research on search and seizure rulings. I construct a research design that looks at significant rulings and search and seizure cases that set and changed precedent. This research will look over the rulings of Supreme Court rulings where the constitutional issue of search and seizure. In addition, it will investigate the characteristics of the justices that have an affect on their vote for the decision of the case.

Nicholas A. Smoger (Christi Siver, Political Science) Variations in Levels of Sexual Violence during War

Why are there high proportions of sexual violence in some wars and not in others? Historically, sexual violence has been a frequent byproduct of war, and contemporary wars are no exception. Serbian forces during the Bosnian war of the 1990s, for instance, systematically and repeatedly detained and raped Muslim women as a form of ethnic cleansing. However, in comparison to the civil war in Bosnia, the civil war in Sri Lanka contained much lower instances of sexual violence. Put simply, despite substantial evidence that sexual violence is a frequent byproduct of war, argument that it is an inevitable byproduct of war is inconclusive. I test two explanations for sexual violence during war. I plan to test my explanations by integrating case study research into an original case study model. As cases, I will use wars that broke out within the past twenty years with varied levels of sexual violence. The first explanation to be put under test is that perpetrators of sexual violence may be motivated by traditions and socialization of

masculinity within armed groups. The second explanation to be put under test is that heavy rates of grievance and breakdown of security could also lead to sexual violence. I will use empirical evidence to test correlation between sexual violence and breakdown in security with variables such as rates of displacement during war and rates of insurgency. In addition, I will also use qualitative secondary sources and interviews to look for evidence of causation between sexual violence and breakdown in security.

Katherine A. Stelzner (Christi Siver, Political Science) The Vitality of Arab Monarchies

How did monarchies in the Middle East resist the Arab Spring? Do Arab monarchies have some inherent quality which make them able to resist revolution? Monarchy is considered by many to be outdated in the 21st century. But the idea of a monarch's right to rule still exists in the Middle East, as was shown through their ability to resist the Arab Spring. This indicates that monarchies can, and will, survive into the 21st century. They will remain a powerful and viable type of government, challenging notions about the place of monarchy in today's world. Existent literature proposes three theories. One is the cultural approach. The second is the institutional approach. The third theory used to explain monarchial resistance to the Arab Spring is a combination of the two previous theories; it is called the political culture approach. There are also theories which do not fit into the three approaches I already described, although they contain aspects of all three. First is the theory advanced by Yom and Gause: "what makes these regimes persist . . . is a set of three overlapping factors—cross-cutting coalitions, hydrocarbon rents, and foreign patronage." Second is the theory that was proposed by Tétreault, a monarch retains his or her power by pacifying the people through things such as hydrocarbon rents. I propose that the resilience of Arab monarchies is due to the ability of the Arab monarchs to pacify their people and the positive influence of having powerful allies, like the United States and Saudi Arabia, or a combination of the two. I have chosen to follow the few countries method of comparison. It is a case-oriented approach which is exactly what my puzzle requires since it is focused on a single event which only lasted a few years.

Edwin M. Torres (Christi Siver, Political Science) Why do States Give Up Their Monetary Sovereignty and Join Monetary Unions?

Why do states give up their monetary sovereignty and join monetary unions? Traditionally states have established their own monetary policy to develop economic stability, however, in recent years states have sought out

monetary unification. First I will test if beneficial trade policies influences states to unify, as it has shown that monetary unification decrease transaction costs. Second, if institutional similarities between countries allows the union of two monetary currencies to occur. Third, if global economic environment plays an important role in determining the likelihood of unification. Lastly if domestic politics of the state determines if unification is ideal, as it has shown that there is a negative correlation of newly developed countries who join monetary unions and the level of state nationalism. My method of research is to examine two countries, El Salvador and New Zealand. El Salvador has adopted the US dollar as their own currency and I will examine why they decided to do so, since the state has not greatly benefited from the monetary unification. In the case of New Zealand I will examine why they have not join the currency with Australia although they seem an ideal candidate for monetary union.

Daniel L. Webb (Whitney Court, Political Science) Policy on the Move: Policy Diffusion Theory and the Environment

What factors influence states to adopt environmental policy? One explanation is that environmental catastrophes and issues pressure legislators to take action. However, there is ample research on policy diffusion theory. Policy diffusion is the theory that policy will move from a city to city, from city to state, across state lines, or up to the national level based on its success. This research shows how policies such as anti-smoking legislation can diffuse across state lines. When one state implements successful legislation it prompts another to follow in a similar path. We can use policy diffusion theory to explain environmental policy as well. This research seeks to determine to what extent political ideology and regional environmental needs influence states to pass legislation related to environmental protection through an analysis of environmental legislation's path to passage.

Jeffrey A. Weinlagen (Christi Siver, Political Science) The Persistence of Authoritarianism

Why do authoritarian regimes in Latin America continually persist despite the pressures of democratization? The topic of authoritarianism is very important because there are many mysteries on why authoritarian regimes are so successful. The persistence of these regimes is a constant threat to democratization, we need to understand why they are so influential. There are three possible explanations on why authoritarian regimes are so persistent. First, the economic policies implemented by the leaders of the

regimes may lead to greater economic growth. Secondly, elite manipulation and patronage used by these authoritarian leaders may help their government stay in power. Lastly, the control of the military benefits the dictators by helping them stay in control. I will test these explanations of authoritarian persistence in the case studies of Chile and Argentina.

Drew N. Wilfahrt (Christi Siver, Political Science) Social Media and Government Media Strategies

Why do governments utilize various media strategies to limit or allow the flow of media in their state? Much research has been done on the different reasons for different media strategies. One proposed explanation is citizen protection, in which the government is trying to protect its constituents by limiting or allowing media freedom. Another explanation is that certain strategies bolster national unity. Yet another explanation is the economic outcome of a certain media strategy and how that will affect the state as a whole. In this study, I seek to dive deeper into the reasons behind a government selecting a specific media strategy for social media in particular. Using data collected in surveys from 12 nations of varying media freedom, I will examine how different media strategies produce trust and confidence in the citizens of that nation. Ultimately, this will give insight into why governments select a particular media strategy. Since this study focuses primarily on social media, it gives a unique, and more updated perspective on why governments limit or allow the flow of the media in their state.

Kelly S. Winsor (Christi Siver, Political Science) Policy Implementation Among Diverse Regions

Although states create innovative policies throughout the world to address contemporary political issues, implementation often fails to affect diverse regions in the same way. To address this difference, I ask why diverse regions vary in their capacity to implement policies? My research attempts explain that factors such as the varying levels of state capacity, political will, and social capital explain the variation of policy implementation. These factors look into how different networks can affect implementation, and also how those networks' partisanship, interests, and incentives will affect the implementation of policies. This area of research is complicated due to the vast differences among regions that central policy cannot account for. Implementation scholars have failed to formulate theories that apply to diverse policy areas, creating a gap in literature. Also, throughout the past decade, policy implementation literature has slowed and is, therefore,

desperate for new exploration. To test my puzzle, I will use qualitative methods to compare different case studies.

Angela B. Yamoah (Whitney Court, Political Science) The Immigration Debate :  
Contemporary Voter Opinion In The United States

Since 1993, surveys conducted showed that Americans grew less tolerant of immigrants entering the United States. What factors were influential then and are they still the same now? What party is most supportive of more tolerant immigration policies? This article will aim to fill in the gaps of previous research and provide present data to capture current times. This study will examine an individual level survey to see the relationship between party affiliation and voter opinion on immigration from 1993 to 2014. Based on previous research, I hypothesize that Democratic voters are more likely to support immigration policy whereas Republican voters will not due to different opinions on job competition, national security, and government benefits.

Mychie Yang (Seth Greenfest, Political Science) Deportation Ruling in the Courts

This paper examines the conditions under which lower court federal judges rule to deport an immigrant defendant. I first explore existing research on how judges of lower courts make decisions and the restrictions that they face within the judicial system, such public opinion and Congress. I constructed a research design that looks at the number of deportations given by lower court federal judges based on the type of criminal offenses and the legal or illegal status of the immigrants. Also, I will investigate how the ideology of the judge affects the decision to deport or not deport an immigrant defendant.

Mai Tong Yang (Christi Siver, Political Science) Why does genocide occur in some countries but not others?

The 20th Century has proven to be an era of mass genocide for many countries and regions. Why do states decide to commit genocide? Why does genocide occur in some countries but not others? The three leading explanations from literature reviews show that genocide occurs due to ethnic conflict/tension, economic disparities, and social-class. Ethnic conflict builds up over time between who has more power than the other which decides which policies within the state are implemented. Economic disparities within the state may lead state to enforce policies through the use of genocide. The higher class has a higher mobility to work alongside the



government in making policies that would be to their benefit which enables the government to justify the use of genocide. I will use the few countries method to find similarities among the countries chosen that show the correlation that leads to genocide. Using a few countries method will allow me to infer with greater detail and evidence to compare the data such as variety of ethnicities living within the country, the differences in economic disparities, and the differences in social classes.

Sarah K. Young (Whitney Court, Political Science) Women in the Republican Party and Their Changing Roles

In recent years, the role of women in politics has changed the American political scene. The roles that women play have gained a great amount of media attention in our society. In this project, I will examine the role of women in the Republican Party and ask whether or not they are holding more elected positions. In order to see if women holding elected office from the Republican Party has changed, I look I examine several contributing factors. One factor is the way female politicians are viewed in the media and society. The other major factor is the way the Republican Party is perceived by the American People. I will ultimately examine election results involving female Republican candidates and compare the amounts of elected female Republicans today, to past terms and elections involving female Republicans. By looking at various election results, I will gain a better understanding of how the role of women in the Republican Party is changing.

## **Psychology**

Katrina J. Christian (Stephen Stelzner, Psychology) Demystifying the Developmental Stages of Sigmund Freud

In this project, an honors option for my Introduction to Psychology course, I will explain the psychosexual stages proposed by Sigmund Freud, debunk some of the modern myths and stereotypes surrounding the stages, and investigate how these theories are applicable in a modern context.

Emma J. Fering, Hannah R. Carlson, Heather M. Grosso (Robert Kachelski, Psychology) The Relationship Between Personality Characteristics and Conformity

The purpose of this study was to test the relationship between personality and conformity. The task used to measure conformity was a quiz that included items of varying difficulty about subjects such as grammar and math. Participants were told that the purpose of the study was to assess

students' general knowledge. As students took the quiz, they were able to see a list of other students' responses to the questions (which were actually created by the experimenters). The students being tested answered the questions out loud. Students were divided into two groups. In one group, the previous students' answers to a few of the easy questions were all the same incorrect response. In the other group, the previous students' answers to those questions were all the same incorrect response except for one response that was different. We measured conformity by recording the number of times each participant gave the same incorrect answer as the previous responses. After students took the quiz, they were given a personality assessment. We predicted that certain personality characteristics would be associated with more conformity, and that students would conform more to the incorrect responses when the previous answers were unanimously incorrect than when they were not unanimous.

Daniel A. Flesher, Jacob R. Peterson, Austin R. Bassett (Robert Kachelski, Psychology) The Effect of Ironic Processing on a Physical Task

Ironic processing refers to the idea that, in some circumstances, when people try hard NOT to do something, they may actually be more likely to do it. We tested this idea in our experiment. Participants were instructed to toss an object into a group of target baskets arranged in a circle, with one basket in the center. For one set of trials, the participants simply tried to toss the object into any of the baskets. For the other set of trials, the participants were instructed to avoid tossing the object into the center basket. Based on the idea of ironic processing, we predicted that participants would toss more objects into the center basket when they were trying NOT to do so than in the other set of trials.

Andrea L. Houck, Samantha F. VanErp, Dona R. Marthaler (Robert Kachelski, Psychology) The Effect of a Mnemonic Device on Face-Name Memory

The purpose of our experiment was to test whether a mnemonic strategy improved face-name memory, and to see whether it worked equally well with photos of real faces and with caricatures. A control group was used to establish a baseline for face-name memory without any mnemonic strategy, and the experimental group was taught a specific strategy to link the names with the faces. Within each group, half of the participants were shown photos of faces with the names and half were shown caricatures with the names. We predicted that the participants who were taught the mnemonic strategy would remember the face-name pairs better than the control group. We also predicted that caricatures would be easier to remember overall than

real faces, and that the mnemonic strategy might work better with the caricatures because they have exaggerated features to use when generating associations between the names and faces.

Emily M. Johnson (Stephen Stelzner, Psychology) Psychological Sense of Community in High School Students: How is it affected by college preparatory programming?

I will be presenting a poster about my ongoing research project examining the perception of Psychological Sense of Community in area high school students participating in college preparation programming compared with students outside of programming. I will discuss my inspiration for researching this topic, the process for conducting research in the community, my hypotheses, and preliminary results if available.

Megan Machesky, Tim Baebenroth, Connor Piechota, Taylor Ramler, Anh Doan, Joe Trenzeluk, Bayert Salverda, Rebecca Gudknecht, Anne Kampa (Abraham Immelman, Psychology) The Personality Profile of Russian President Vladimir Putin

Biographical and life history data concerning Russian president Vladimir Putin will be collected from media reports and synthesized into a personality profile using the third edition of the Millon Inventory of Diagnostic Criteria (MIDC), which yields 34 normal and maladaptive personality classifications congruent with Axis II of DSM-IV. The poster will describe Putin's personality profile and outline its implications for leadership and international conflict.

Stephen D. Nelson Juneau, Joseph V. Trenzeluk, Anna T. Raeker-Rebek (Robert Kachelski, Psychology) The Effects of Interruption on Encoding Information into Memory

The purpose of our study was to measure the effect that interruptions have on encoding information into memory. Participants were given standard contact information for three people (including name, profession, phone number, and email) that was listed on a computer screen. In the baseline condition, they were given 4 minutes without interruptions to try to memorize all of this information, and then they were asked to write down everything they remembered. In the experimental conditions, they were asked to do the same task, but with several interruptions (either 2 or 4) during their study time. Participants were tested in all conditions, and counterbalancing was used to control for order effects. We hypothesized

that memory retention would be worse in the conditions with interruptions, even when total study time was held constant.

Taylor R. Ramler (Linda Tennison, Psychology) Mindfulness and the College Transition: The Efficacy of a Mindfulness-Based Stress Reduction Intervention in Fostering Adjustment among First-Year Students

Within recent years, there has been a marked proliferation in the interest in and relevant literature pertaining to the practice of mindfulness. This study sought to augment this knowledge base through an examination of the efficacy of a Mindfulness-Based Stress Reduction (MBSR) intervention in fostering adjustment among first-year college students. Fifty-six (N=56) participants from two Midwestern liberal arts institutions partook in the study. Experimental participants (n=29) included two sections of students enrolled in a common curriculum First Year Seminar course who completed an eight-week MBSR intervention conducted by a qualified instructor. Control participants (n=27) were drawn from an Introductory Psychology course and did not receive mindfulness instruction. Adjustment indices were gathered using the Student Adjustment to College Questionnaire (SACQ), providing individual scores on one primary Full Scale and four subscales: 1) Academic Adjustment; 2) Social Adjustment; 3) Personal-Emotional Adjustment; and 4) Attachment. Experimental participants further completed a Five Factor Model (FFM) mindfulness questionnaire consisting of five facets: 1) Nonreactivity; 2) Observing/Attending; 3) Acting with Awareness; 4) Describing/Labeling; and 5) Nonjudgmentalism. This questionnaire was completed during both pre- and post-intervention assessment periods. Statistical analyses indicated significant gender differences among the Full Scale and Social Adjustment and Attachment subscales, with males scoring higher. Additionally, experimental participants scored higher on the Personal-Emotional Adjustment subscale relative to the control condition. Apart from statistical significance, however, the experimental condition scored higher relative to the control on all five SACQ scales. Further analyses indicated that post-intervention scores on the Nonreactivity, Observing/Attending, and Describing/Labeling facets were significantly higher among experimental participants when compared to the pre-intervention assessments. This study suggests that mindfulness, as part of a MBSR intervention, serves as a beneficial practice in contributing to first-year student adjustment and acclimation to the college environment.

Elizabeth A. Shelerud, Amy K. Maslowski, Demetre G. Koukouves (Robert Kachelski, Psychology) Examining Students' Perceptions of Gender-Stereotyped Occupations

The purpose of this study was to test whether students' perceptions of certain gender-stereotyped occupations would be affected by exposure to specific cases in which occupational gender stereotypes had been violated. In the study, participants were first presented with several descriptions of individuals and their jobs, and they were asked questions about each, such as whether or not the job seemed interesting and what the best and worst aspects of the job would be. For some participants, these descriptions contained examples in which gender stereotypes were violated, such as a woman performing a job traditionally dominated by men or a man performing a job traditionally dominated by women. For other participants, the descriptions did not contain such violations of gender stereotypes. Later, all participants rated several other occupations on a number of characteristics, including how "masculine" and "feminine" each was. Some of the occupations they rated have traditionally been dominated by either men or women. We hypothesized that participants who had been exposed to examples of gender-stereotype violations in the first part of the study would rate these occupations in less gender-stereotypical ways than participants who had not been exposed to such violations.

Molly L. Sullivan (Pamela Bacon, Psychology) Gendered Perceptions of Worst College Professors

Research has shown that students have gendered expectations when it comes to their professors. The evidence suggests that men and women are held to different standards by their students. The present study was done to investigate the ways in which CSB/SJU students describe the characteristics and behaviors common of their professors.

Lindsay M. Tholen (Benjamin Faber, Psychology) (Im)Personally Meaningful: Individual Differences that Affect Details of Memories

The purpose of this study it to examine how individual differences among people, such as intelligence and certain other tendencies, can affect the richness and detail given when recalling memories. In particular, this study is seeking to find if these differences have different effects on personal and impersonal memories as well as traumatic memories.

## Sociology

Nicole R. Cornell (Christopher Scheitle, Sociology) For Country because of God?: Examining the Influence of Religious Background on Choice to Enroll in Army ROTC among Cadets at St. John's University

Peace not War. For God and Country. Pacifism versus Militarism. All these phrases bring to light the interwoven relationship between religion and the United States military throughout history. Previous studies have examined such things as economic status or educational attainment levels in relation to the likelihood an individual enlists in the military as this often correlates with the likelihood an individual sees military enlistment as a more viable option than college. However, few have considered the religious backgrounds of individuals being a factor in attraction to military service in the first place, especially in the lives of future officers. This research aims to look at the different avenues through which religion can influence an individual's choice to enroll in Army ROTC. This qualitative study specifically draws connections between an individual's religious background (i.e. religious upbringing, affiliation, and involvement) and their decision to enroll in Army ROTC through research interviews with ROTC cadets at Saint John's University. This study found two primary routes of relationship: indirect and none. Under the category of indirect relationship, key findings included three distinct modes: sharing commonality between religious morals and Army values; vocation and self-validation of choice to serve in the military; and justification for decision to join ROTC by religious means. For others, even those with a religious affiliation, religion had no influence on their decision-making process.

Michelle Hansmann (James Makepeace, Sociology) National Organization for Women: Comparative Case Analysis of a Local and a State Chapter

Alexis deTocqueville viewed a large extent of formation of voluntary associations as a distinctive way in which Americans have characteristically sought to solve their problems and bring about desired social change (1835; 1840). The National Organization for Women (NOW), is one more recent organization which women have formed to advocate for the advancement of women. NOW is today the largest organization of feminist activists in the United States (<http://www.now.org/organization/info.html>). There are currently six chapters of NOW in Minnesota. This pilot study will consist of a comparative case analysis of two chapters of NOW. One chapter is Minnesota NOW (state level) and the other is Sherburne Wright NOW (local/county level). The unit of analysis is, thus, the NOW chapter meeting. The focus of the study is the variant/s of feminism expressed or

invoked in these meetings by such possible indicators as personal expressive styles, explicit feminist expressions, and issues and goals advocated. Attention will be paid to similarities and differences between the state and local level chapters. The methodologies employed are ethnographic observation (thematic analysis for expressions of the foregoing foci) and interviewing (to “flesh out” key informants’ thoughts about these identified themes).

Kia Her, Jake Rawlings, Aaron J. Picukonis (M. Nelson, Sociology) Rebuilding New Orleans

Since Hurricane Katrina, the city of New Orleans has faced an on-going struggle to rebuild its infrastructure. In our poster presentation, we will discuss the role that history and demography play in New Orleans' effort to rebuild after the storm. We share our evaluation of these efforts and make recommendations.

Kate M. Kennealy, Vang Lee, Kreuser Alex (M. Nelson, Sociology) The Transportation System in Boston

Transportation has always been key to the well-being and potential of the urban environment. We focus on the growing problems caused by an aging and inadequate transportation system in Boston, tracing its history from the 1990s to the present. We examine causes and consequences, focusing special attention on the Big Dig and its impact on the city of Boston. This will also include ways in which Boston can improve living situations and decrease transportation congestion for the citizens. Many citizens, who work in the cities often cannot afford the prices of housing in the cities and have to live in the outskirts of the city. We will look into ways that can help and provide a more sustainable and convenient way for the citizens of Boston to travel.

Thomas Lano, Kia Her, Sara Kircher (Christopher Scheitle, Sociology) Crimes on Congregational Property in 2012: A Newspaper Analysis

Religious congregations are potential victims of crimes ranging from simple street crime to ethnically- or religiously-motivated hate crime. Unfortunately, data examining crimes involving religious congregations is sparse and limited. We systematically examine newspaper reports across the United States to provide an estimate of the frequency and patterns of crime taking place on congregational property.

Erin O'Neil (James Makepeace, Sociology) Competitive Ranch Sorting: Toward An Etic Understanding of Rider-Horse Relationships

Emic awareness of the functionality of human-animal social relations is undoubtedly widespread in America and in other societies. Obvious examples include the use of animals for food, clothing, transportation, entertainment, recreation, and companionship. However, within the society there are specialized human-animal applications and functional relationships about which most members of society are largely unaware, their understanding constituting etic knowledge which is shared primarily among specialized participants. Furthermore, even such etic understandings may contain gaps, biases, and errors. A fuller and more accurate understanding of such specific applications of human-animal social relationships may augment their societal functionality by increasing their social visibility and status, increasing rates of participation in enjoyable activity, and mastery of skills which are functional in other sectors of society. Exploration may also reveal dysfunctional features, the remedying of which could yield social benefits on both sides of the relationship equation—human and animal. In this pilot study, equine competitive ranch sorting is explored using methodologies of field observation and interviewing to gain understanding of the processes and the nature of human-human and human-animal interactive relationships involved.

Katherine M. Pearce, Caitlin J. Swanson, Erin G. Ryan-Mosley (M. Nelson, Sociology) Education in Seattle

The quality of a city's educational system has a major impact on that city's strength and viability. Seattle, a vibrant progressive city, is currently concerned about an unequal distribution of educational opportunities within the School districts of Seattle Washington. Why is this? And what is the city Seattle doing to solve this problem? We will provide information on the “preschool for all” initiative that Seattle has enacted.

Jessica Raboin, Shane Fennell, Sheng Xiong (M. Nelson, Sociology) Diversity Concerns in St. Cloud

While large cities have long struggled with diversity issues, recent immigration has forced smaller communities to confront issues of racial, cultural, and religious difference. The St. Cloud metropolitan area is currently learning to deal with tensions which have accompanied the arrival of a sizeable Somali refugee population. We examine in particular the mosque building project controversy as an example of how smaller



communities are learning to deal with tensions accompanying increased diversity.

Jessica Raboin (James Makepeace, Sociology) Hmong Student Club's Effect on Hmong Student Success at CSB|SJU

Since Thomas and Znaniecki's (1920) landmark study of Polish immigrants in Chicago, the adjustment difficulties experienced by immigrants to America have been among the richest veins of sociological thought. Today, new groups are entering American society and re-experiencing perennial problems of adjustment. In the researcher's home state, Minnesota, for example, substantial communities of persons of Somali, Latin, and Hmong origin are now present. The current research extends this rich tradition of research to "Hmong Americans Involving Students" (HAIS), a Hmong-American student club created as a support system to aid them in adjustments to college and to American society. The research involves ethnographic description gained through club observation, enhanced understanding via interviews of key informants, and further refinement obtained via focus group. The study identifies particular social problems which these students indicate experiencing, the emic definitions of the situation with which they frame these issues, and an etic sociological interpretation utilizing the interactionist perspective. Participants' perceptions of the functionality of their club involvement is also considered.

Sean D. Raible, Julia A. Eckart, Kyle E. Rossow (M. Nelson, Sociology) Tourism in Moab, Utah

This project is a case study of the city of Moab, Utah. Moab is a small city in a scenic part of Utah that has become a major tourist spot for the outdoor enthusiast. Although the economy benefits from this increased tourism, there are issues related to it. We will look specifically at how tourism has positively and negatively affected the city through its rapid growth and transformation.

*Quadrangle 252, SJU*

**Philosophy**

Hannah Christensen (Dennis Beach, Philosophy) Mood and Compassion: Making Room for Mood in Martha Nussbaum's Theory of Emotions

I plan to examine Nussbaum's conception of moods. Nussbaum and other philosophers rightly agree that moods are objectless, although on a practical level they appear to exist on a continuum with background emotions. Because moods are at least theoretically objectless, Nussbaum neglects to consider the role they play in emotional life. She does, however, leave room for mood to complement her theory of emotion and I will argue that moods must be considered as an essential or at least inseparable aspect of emotional life. I will then reexamine Nussbaum's discussion of appropriate compassion as discussed in her Chapter 8, explaining the how mood can become a barrier or a motivator of compassion and therefore of ethical behavior.

#### Dakota Huseth (Dennis Beach, Philosophy) The Gift of Anger

Martha Nussbaum's "neo-Stoic" perspective gives insight into the cognitive nature of emotions. Anger has traditionally been viewed as one of the most destructive emotions because of the passion associated with it and how easy it is for one to be carried away by it. I will explore the nature of anger, compile what previous thinkers have written about anger, define it myself, explain the obvious problems, but in the end find that anger, when controlled, can be an incredibly useful survival mechanism with implications in civilized discussion about the values of liberal democracy. I will explore works by Aristotle, Seneca, Nussbaum, and other contemporary writers to gain insight into the problems with anger but also of its advantages.

#### Joseph E. Nelson (Dennis Beach, Philosophy) Barriers to Americans' Compassion for Non-U.S. Americans

Martha Nussbaum, modifying Aristotle's analysis of the factors necessary for compassion, argues that compassion is a response to the serious pain or suffering experienced by an other, a pain or suffering that is undeserved, and that concerns something the compassionate person understands as important to eudaimonia or his/her own sense of well-being. In addition to these requirements, Nussbaum identifies disgust, among other factors, as a barrier to developing the compassion necessary in a liberal democracy. Disgust is highly cultivated in U.S. culture and its laws and institutions, especially against non-U.S. Americans and their plights. Furthermore, ideology may actually be disguised disgust and thus an intellectual barrier to the cognitions necessary for compassion. Nussbaum provides the tools for discerning potential moral limitations in contemporary U.S. society.

Lukas Ramsey (Dennis Beach, Philosophy) Morality in the Maze: Utilizing Film and Emotion in Ethical Thought

This project consists of an exploration of emotion and its relationship in helping develop ethical thought in regard to the 1981 Maze prison hunger strike in Northern Ireland, juxtaposing the Steve McQueen film *Hunger* to various philosophical and ethical works regarding the morality of the strike, as well as Martha Nussbaum's *Upheavals of Thought*. This project explores Nussbaum's assertion that disgust is unable to positively affect proper emotional thought, deciding whether or not disgust can be harnessed to forward a compassionate response, or whether the usefulness of such a film is in its ability to evoke both disgust and compassion. Looking at the effects watching such a film can have on a viewer, I wish to show a positive development in the viewer towards compassion and a healthy emotional response towards cases in which disgust and compassion are as closely linked as they are in this situation. This may even show the ability of film to help compassion overcome disgust for those who have developed disgust responses early in their lives.

Ben Schwamberger (Dennis Beach, Philosophy) A Song of Compassion and Politics: An Examination of Character in *Game of Thrones*

In this project, I intend to further Martha Nussbaum's discussion of emotions in literature, specifically compassion as discussed in Chapter 8, "Compassion and Public Life." I will examine this by turning to the work of fiction, *Game of Thrones*, and examine why it is important for politics to contain elements of compassion. I hope to show that Nussbaum is correct in her statements about compassion and politics and propose that we can cultivate this emotion of compassion by reading novels such as *Game of Thrones*. Daenerys Targaryen represents a compassionate and charismatic leader, one who I argue is in line with Nussbaum's discussion of political leaders whose compassion is interwoven into politics and political decisions. In the beginning of the novels, she is portrayed as a rather meek and weak character but as the novels progress she eventually becomes very powerful, charismatic, and an unusually compassionate character. She incorporates her experiences as essentially a slave into her "reign" and one of her titles actually becomes the "Breaker of Shackles/Chains."

*Quadrangle 346, SJU*

**Communication**

Anastasia M. Pauluk (Emily Paup, Communication) "Frozen": Disney Women Left Out in the Cold

The shared opinion of "Frozen" audiences is that "Frozen" is the most feminist movie that Disney has ever made. Also, that Disney has finally stopped marginalizing women in their movies. Critics around the country are claiming "Frozen" to be an ice breaking step for Disney. In this paper, I will look at Disney's newest film and compare the story and characters to those of older Disney movies such as "The Little Mermaid" and "Beauty and the Beast." I will compare story lines and how the two main female roles in "Frozen" do not in fact defy Disney's usual pattern for female characters. In order to prove that "Frozen" is not a new story line for a Disney movie, I will first touch on the history of the film, from its creation to the Oscar winning scenes. Then I will perform a literary analysis of the film which will begin by examining the movie's two main female characters Elsa and Anna. I will compare my analysis of Elsa and Ana to the patterns set for female characters in the older Disney films up to Disney's second most recent "Brave." Lastly, I will discuss why I do not find "Frozen" to be an ice shattering, feminist, Disney Film.

Elizabeth Severson (Karyl Daughters, Communication) Gender construction through adolescent sexting

It is very clear that sexting among adolescents is occurring, but it is important to explore why they are engaging in this behavior. A gender analysis of the issue yields helpful insights. With the recent increase of technology use among adolescents, sexting has become a common way they explore their sexuality. The pressure to adopt culturally constructed gender roles is an important factor behind sexting behaviors of boys and girls. For adolescent boys, receiving a sext from a girl is an accomplishment which reinforces his masculine identity. For adolescent girls sending a sext to a boy is a way for them to receive feedback on their appearance and establish relationships. Education on the connection between gender stereotypes and sexting, whether it comes from parents or schools, is recommended to help reduce adolescent sexting behaviors.

*Quadrangle 347, SJU*

### **Communication**

Cassie Cavello, Abbey Klassen, Shelby Spinner, Lori Klapperich, Erin Szabo (Erin Szabo, Communication) Standing By or Standing Up? Bystander Intervention-- From Theory to Practice

Have you ever wondered how you would react if you saw a high risk or problematic situation playing out before you? What if you heard people talking in derogatory terms about others because of their race, culture, sexual identity or gender? What factors would influence if, and how, you would respond? Are you more likely to stand up or stand by? People tend to make decisions and to continue, or discontinue, behaviors based on the reactions of others. What message are you sending by what you say or don't say; do or don't do? This session will take a look at bystander intervention – from theory to practice, and hopefully motivate you to “see things differently” in the process.

## Fine Arts Presentations:

### Music

#### Schedule

*11:00 - 12:00 PM*

*BAC A135*

Michelle M. Isaac (Brian Campbell, Music) Honors  
Thesis: A Composition for Wind Ensemble

#### Abstracts

**Isaac:** My project is an original musical composition for the CSB/SJU Wind Ensemble. The nearly ten minute long piece of programmatic music takes the listener on a musical journey: the bittersweet reminiscence in the opening is abruptly interrupted by the rhythmic maelstrom of the middle section, whose driving ostinato is finally overtaken by the triumphant return of the first theme and its epic conclusion. Completing this project entailed applying all of the knowledge I gained in my music theory, composition, orchestration, and counterpoint classes, as well as my own personal study of standard wind ensemble scores and recordings. I will present an overview of my creative process, a brief analysis of the piece, including its basic form and its thematic cohesion, and finally a recording of the CSB/SJU Wind Ensemble performing my composition.

## Humanities Presentations:

### Communication

#### Schedule

*8:30 - 8:50 AM*

*Quad 349*

Shelby S. Groen, Lillia K. Khelif, Elizabeth M. Roering, Brennan R. Hall (Karyl Daughters, Communication) Organizational Culture in a Residential Healthcare Organization

*8:30 - 8:45 AM*

*Quad 353*

Shawn M. Yoakum (Aric Putnam, Communication) What to the slave is the Fourth of July

*8:45 - 8:55 AM*

*Quad 353*

Taylor R. Berry (Emily Paup, Communication) Lady Gaga at SXSW

*8:50 - 9:10 AM*

*Quad 349*

Molly Reger, Ben Precourt, Erin Noel, Dan Larson, Abbey Klassen, Kelsey LeClaire (Karyl Daughters, Communication) Study of Sexual Communication

*9:00 - 9:15 AM*

*Quad 353*

Hannah E. Klinnert (Aric Putnam, Communication) Rock from a Prison Cell

*9:10 - 9:20 AM*

*Quad 349*

Camry Martinez (Karyl Daughters, Communication) A Systems Approach to Decision-Making in Organizations

*10:00 - 10:15 AM*

*Quad 346*

Erica L. Skarohlid (Emily Paup, Communication) Depictions of Hillary Rodham Clinton in Political Cartoons

*10:00 - 10:10 AM*

*Quad 344*

Paige B. Saatzer (Terence Check, Communication) The Imagination of Nature: Ideology in Chevy's "Find New Roads" Advertisement

*10:15 - 10:30 AM*

*Quad 344*

Molly C. Flaig (Terence Check, Communication) On Innuendo and Intertextuality: An Analysis of Diet Coke's "Gardener" Advertisement.

*10:30 - 10:45 AM*

*Quad 344*

Jack M. Ghizoni (Terence Check, Communication) Identification and the 2013 Hyundai Team Superbowl Commercial

*10:45 - 11:00 AM*

*Quad 346*

Laura L. Rhude (Emily Paup, Communication) Hillary Clinton vs. Michele Bachmann: The Voice behind Their Primary Election Speeches

*10:45 - 11:00 AM*

*Quad 344*

Cody J. Lynch (Terence Check, Communication) Lifestyles Aisle 20: An Analysis of Target's Advertising Through the Lens of Justin Timberlake's 2013 Album Campaign

*11:00 - 11:15 AM*

*Quad 344*

Camry Martinez (Terence Check, Communication) The Constitutive Nature of Non-Profit Advertising and its Effect on Agency: An analysis of the campaigns of ChildFund International and (RED)

## **Abstracts**

**Groen, Khelif, Roering, Hall:** This organizational case study is the culmination of a group service learning experience in Fall 2013. The service-learning component required a minimum 20 hours of service at Fairview Senior Community (FSC) throughout the semester which included on-site service as well as the completion of special group projects for the organization. The semester was filled with much learning in and out of the classroom, as we often find ourselves incorporating organizational communication theories into our daily volunteer experiences. This case study serves as an insightful reflection that will lay out the organizational structure of FSC, discuss the communication between employees, residents and volunteers, and the predetermined culture established at FSC that affects the organization's daily functioning. Additionally, we provide two recommendations on how FSC can further incorporate the Benedictine Values into the organizational mission of providing a safe and sustainable environment for all.



**Yoakum:** Fredrick Douglass's "Fourth of July" Speech is by far one of the most famous and compelling pieces of rhetorical work delivered by the abolitionist and civil rights advocate. He was invited to speak in front of 500 attendees, each paying twelve and a half cents to see him speak. Douglass's speech addresses the President of the Anti-Slavery Society, fellow citizens, and friends. His goal of the speech is to communicate what Fourth of July means for America's black population and yet his speech soon develops into a condemnation of the America's attitude toward slavery. On the surface, it is easy to mistake Douglass's speech as a simple celebration of the Fourth of July for Black Americans. However, Douglass's words divulge America's overwhelming hypocrisy in relation to tyranny and oppression that Black Americans face. This presentation plans to explore the rhetoric of Douglass's text. Frederick Douglass' "What to the Slave is the Fourth of July" establishes a difference between himself and White America, his view on the present, and his vision of hope.

**Berry:** For Scholarship and Creativity Day, I will perform a rhetorical analysis on Lady Gaga's live performance of her song "Swine" at South by Southwest (SXSW). I will be analyzing the lyrics of the song itself as well as the actions and staging of this particular performance using metaphor, metonymy and synecdoche. By specifically looking at these tropes, I will explain the context of this event and illustrate why it is an important piece to analyze in relation to the current culture surrounding pop music and the music industry as a whole.

**Reger, Precourt, Noel, Larson, Klassen, LeClaire:** Karyl Daughters' Love, Sex and Commitment class conducted a study at CSB/SJU regarding the study of sexual communication. The project is an exploration of the connections between communication about sex-related topics, sexual well-being, and relationship outcomes in a young-adult population. Most previous research has focused on sexual communication between romantic partners and the current study sought to expand knowledge of sexual communication by looking at conversations about sex-related topics in other interpersonal contexts such as with friends and family. Results suggest implications for productive communication about sex-related topics based on outcomes such as sexual regret, assertiveness during sexual communication, and personal sexual well-being.

**Klinnert:** The rise of Christian pop culture has created a 'home' for Christians within the secular world. The purpose of Christian music may be to evangelize, however profits remain an important concern. As a result lyrics have been 'watered down' in order to appeal to a wider audience. A common metaphor in much contemporary Christian music is the Prison. In this essay I analyze the rhetorical function of the prison metaphor in Christian popular music. I argue the

incorporation of 'prison' within Christian music has isolated Christians confining them to a stereotypical mold which halts their purpose to evangelize.

**Martinez:** Communication scholars have examined the way that organizations make decisions for decades. However, new scholarship is always emerging in this area, and there are new situations in which this scholarship can be applied. The review of literature examines past and current scholarship regarding three different decision-making processes, Functional Decision-Making, Centralized and De-centralized Decision-Making, and Strategic Decision-Making. These processes are then identified and analyzed through a case study of a healthcare organization. Results of the analysis indicate that functional decision-making is key in service-focused organizations. Decentralized decision-making is most useful in large corporations, and strategic decision-making may be most effective in smaller organizations.

**Skarohlid:** Hillary Rodham Clinton has been a public figure for more than two decades. The media coverage surrounding her various positions have focused on different qualifications. Political cartoons have dramatized her roles and changed significantly over these years. Political cartoons are an important medium through which to analyze the popular opinion/reception of public figures. This analysis will show how the cartoonists communicate her roles as First Lady, Senator, Presidential Candidate, and Secretary of State. Comparing how each position was depicted will show the progression and true reactions surrounding a woman in the political sphere.

**Saatzer:** The presentation will examine the rhetorical strategies used in a Chevy advertisement and the implications of the strategies and the ad. Using the rhetorical strategies of transformational advertisement, pathos, and music, Chevrolet created an advertisement and marketing strategy that appeals to a variety of audiences, but has implications toward the relationship between imagination, modern technology, and nature.

**Flaig:** An in-depth analysis of Diet Coke's "Gardener" commercial created in 2013 reveals multiple sexual innuendos and intertextual references. This commercial was a remake of Diet Coke's 1994 "Hunk" commercial, but "Gardener" entices viewers with its sexual connotations, and consequently sells sex along with Diet Coke. This essay examines the implications of this more aggressive sexualization of fantasy as compared to commercial narratives from two decades ago.

**Ghizoni:** This paper utilizes rhetorical theory to explain how Hyundai persuaded audience members to form a positive attitude about their brand and product in a prominent 2013 Superbowl commercial. This essay describes the rhetorical context

of Hyundai and explains the different strategies prominent in this commercial and how they shape audience perceptions.

**Rhude:** The United States still has yet to have a female president, but two women have made substantial progress to get there: Democrat Hillary Clinton in 2008 and Republican Michele Bachmann in 2012. In this paper I will discuss the political history and biographical background of both women leading them to their presidential bids. I then analyze the speeches they gave during their campaigns. I find themes and draw parallels from their rhetoric to discover what the rhetoric of a female presidential candidate looks like today. Finally, I compare and contrast the voice of these two women, determining the differences and similarities between two females of different political parties. My project seeks to make claims about the expectations and assumptions associated with the political voice of two comparable female presidential candidates.

**Lynch:** This essay examines the rhetorical strategies and implications of Target's marketing campaign for Justin Timberlake's album, "The 20/20 Experience." Through the commodification of music, Target succeeds in selling a lifestyle. However, the paper examines the effects of this commodification on society and consumer culture.

**Martinez:** Many rhetorical scholars choose to study the persuasive effectiveness of an ad instead of the meaning that the ad creates. While this is a beneficial endeavor, in the case of non-profit advertisements it allows for the meaning the advertisements create to be passed over. The meaning is assumed to be positive because the effect of the successful persuasion of the ad results in a positive outcome, helping others. The theory section examines rhetoric as constitutive, or capable of making meaning surrounding the audience, and how through this constitutive nature an advertisement can affect the agency of the audience. This theory is illustrated through a critical analysis of an ad from ChildFund International, and an ad from (RED). Through the constitutive nature of these ads the meaning of the audience is formed in a way that limits their agency. The audience is no longer able to determine on their own how to handle the humanitarian issues presented to them.

## English

### Schedule

*10:45 - 12:00 PM*

*Quad 341*

Guillermo Blanco, Alexander Forster, Robert Goetzke,  
Consuelo Gutierrez, John Heinze, Molly Horton, Allison  
Jurik, Luke Muyskens, Anastasia Pauluk, Emily

Schoenbeck, Thomas Schultz, Amberly Warner, Woods Kevyn, Wright Tanner (Jessica Harkins, English) Poetry Reading

## Abstracts

**Blanco, Forster, Goetzke, Gutierrez, Heinze, Horton, Jurik, Muyskens, Pauluk, Schoenbeck, Schultz, Warner, Kevyn, Tanner:** Our group project is a Poetry Reading presented by the students in ENGLISH 313, Advanced Poetry Workshop. The students will read works that demonstrate how they are developing as original writers within these traditions and histories of craft. Each student will read 2 - 3 poems from his or her work this semester. These selected poems illustrate the students' achievements in the craft of writing poetry: the featured poems display careful construction of line, strophe, and stanza, honest inquiry, and balance between narrative and lyric impulses. The result of these efforts is a developed portrayal of subject and feeling through contemporary verse and engagement with traditional forms.

## Gender & Women's Studies

### Schedule

*10:00 - 10:20 AM*

*HAB 115*

Lynessa R. Caron (Patricia Bolanos-Fabres, Gender & Women's Studies) Socialization and Poverty in the Dominican Republic

### Abstracts

**Caron:** An analysis of the intersection between socialization and poverty among girls in the Dominican Republic based on research data from the World Bank, UN, and other organizations. The data points to a connection between poverty and socialization, but particularly to the social pressures by a patriarchal social system.

## History

### Schedule

*9:00 - 9:30 AM*

*HAB 120*

Michael Johnson (Gregory Schroeder, History) Michael Collins: The Man or the Myth

*9:00 - 9:30 AM*

- HAB 120* Tyler J. Cornwell (Gregory Schroeder, History)  
Crossroads: The Development of Blues and Jazz in the  
African American Culture
- 9:00 - 9:30 AM*  
*HAB 120* Dominic R. Devine (Gregory Schroeder, History)  
Northern Ireland Youth Football: Analysis of Segregation
- 9:00 - 9:30 AM*  
*HAB 120* Dillon L. Hager (Gregory Schroeder, History) Fort Pillow  
Massacre
- 9:00 - 9:30 AM*  
*HAB 118* Samuel J. Mahowald (Gregory Schroeder, History) An  
Absent Shepherded, and a Flock Gone Astray: the role of  
the papacy during the Fourth Crusade
- 9:00 - 9:30 AM*  
*HAB 118* Nicholas R. Praus (Gregory Schroeder, History) The  
English Home Guard and World War II
- 9:00 - 9:30 AM*  
*HAB 118* John R. Subialka (Gregory Schroeder, History)  
Conspiracy , Morality, and Justice in Medici Florence
- 9:00 - 9:30 AM*  
*HAB 118* Seyfu B. Adam (Gregory Schroeder, History) Weimar  
Germany: The Representation of Women Modernity
- 9:00 - 9:30 AM*  
*HAB 118* Kathryn G. Gaydos (Gregory Schroeder, History) From  
“Holocaust” to “Schindler’s List”: The Increase in  
Holocaust Education and National Awareness from  
1978-1993
- 9:00 - 9:30 AM*  
*HAB 118* Dana R. Hicks (Gregory Schroeder, History) Much More  
than Longing: Nostalgia for Fin de Siècle Vienna
- 9:00 - 9:30 AM*

*HAB 120*

Kathleen Burns (Gregory Schroeder, Shannon Smith, History) It's All Lies: Lowell Mill Girls and Public Opinion, 1826-1849

*9:00 - 9:30 AM*

*HAB 120*

Michael E. Sandager (Gregory Schroeder, History) Conservation: A Northern Minnesotan Tradition

## Abstracts

**Johnson:** My project takes a look at the myth of Michael Collins, the Irish Revolutionary Republican leader who was responsible for getting the British to leave Ireland in 1921. I examine the romanticized myth that portrays him as a faultless man and a brilliant military leader which was constructed by him and kept alive after his death by his comrades and friends. By using primary sources such as letters and speeches written by Collins himself, biographies written by his friends that he worked with for years, and newspaper articles about his actions I show what Collins actually did during this time and how the myth that he started about himself was quickly accepted by the Irish population and taken over by friends after his death. My use of secondary sources shows that the truth of what Collins did is still covered up by the myth that has been kept alive during the 70 years since Collins' death.

**Cornwell:** The development of African American music originated in the crossroads between creativity and resilience; that is it evolved with the African American culture, it portrayed the injustices of second class citizenship while giving opportunities for creative catharsis. As Burton Peretti, a history professor and author, has pointed out, "Black music bears witness to the horrors of slavery, the first years of emancipation, the burden of segregation, second class citizenship, the striving for civil rights, and efforts of the black middle class to pursue prosperity and security". The persistent saturation of African musical stylings and idioms in black American popular music from 1890 to 1940 especially shows the resiliency of this culture. The forces of political, economic, and social inequalities that pervaded this time along with the fortitude of the black community to retain a self-view of equal standings to whites created the context for the birth and development of Blues and Jazz. This creation and evolution is marked by frequent use of African musical motifs and instrumentation, the expression either personally (blues) or as a collective (jazz).

**Devine:** The Troubles produced illimitable violence, instability and animosity that impacted all aspects of society, consequently dividing the people of Northern Ireland. This study attempts to demonstrate the extent of this segregation of Catholics and Protestants in youth football (soccer) rosters from the onset of the

Troubles, in 1969, through the 1980s. Specifically this study focuses on 10 teams from Omagh and County Tyrone, one team from Belfast, three years of the Northern Ireland National Youth Team and three teams from the Republic of Ireland. In total this study compiled 362 players in 36 rosters from 14 teams during a span of 20 years. The youth footballers were mostly extracted from various articles published in the Ulster Herald. Once rosters were constructed, the surnames were phonetically analyzed and then statistically evaluated in respects to religious affiliation. This ultimately determined to what extent segregation was present in Northern Ireland youth football. Previous studies, by various disciplines, have predominantly examined segregation of professional teams/rosters. Furthermore, historians have primarily focused on segregation in other sectors of Northern Ireland society. Therefore this study provides an analysis of youth football segregation, an otherwise ignored facet of Northern Ireland society.

**Hager:** My project takes a look at a specific event that happen during the Civil War, the Fort Pillow massacre. The Fort Pillow massacre was the massacre of the Union troops inside of Fort Pillow. This was a massacre because it is claimed that the Union troops once over ran, and lost the fort, surrendered to the Confederates. However the Confederate troops showed no mercy and ended up killing over half the African American troops and some of the White troops. I look at Nathan Bedford Forrest and his role in the massacre. Forrest was the commanding officer in charge of the attack on Fort Pillow. By looking at primary sources such as letters from soldiers, newspaper articles, official documents, and biographies about what happened at the battle and what were the causes of the killing of the Union soldiers. I explain the reason for the massacre was actually Forrest inability to keep control of his soldiers, his threat of “no quarter”, and the Confederates racism was the reason for the massacre. I use secondary sources to help back up my information on what happened, and who was the real cause of the massacre.

**Mahowald:** Taking place during the years 1202-1204, the Fourth Crusade was an event sounded with controversy. Unlike the other Crusades, it involved attacks on Christian cities. This completely contradicted the purpose of the Crusades, which were papal sanctioned wars against enemies of the Christian faith. It began as a military expedition against the Ayyubid Dynasty in Egypt. However, the Crusade famously deviated to and sacked the Christian cities of Zara and Constantinople. After the attack on Zara the reigning Pope, Innocent III, excommunicated the Crusaders. Despite the excommunication, the Crusade would also launch two assaults on Constantinople. The attack on Constantinople would further escalate the schism between the Greek and Roman Churches. Scholars have focused on various perspectives involved in the Fourth Crusade. Yet there has not been a major study on the role of the papacy during the Crusade. This project will argue that despite

strong initial preparations, the papacy failed to be a major influence during the Fourth Crusade.

**Praus:** The year was 1940 and fear of a German invasion was at an all-time high throughout England. Rumors of spies and paratroops filled the land and something had to be done to calm the people and relieve their fears. The call went out, for any men between the ages of 17-65 to volunteer to take up arms and defend their homes against possible invaders. The response, was overwhelming as in the 24 hours after the call went out, over 250,000 men had rushed to their local police stations to volunteer their services and do whatever they could to protect their land. Historians have often looked at the Home Guard through a military lens, wondering if these average civilians could seriously have put back an invasion by the Germans. An area not as often studied however, is the effect the Home Guard had on the social and cultural sides of England. What impact did the Home Guard have on the morale of the people, and what types of members were really serving within its ranks? These are the questions often overlooked and overshadowed by the military aspect of the war, yet they remain crucial to our understanding of how England did not succumb to German pressure in this war.

**Subialka:** The Medici ruled Florence in the 15th-16th centuries without holding any true political power. In 1478 Lorenzo de Medici was the de facto head of the family who was known for his love of the arts, political skill, and being the "Godfather" of Florence. However the Pazzi were a rival family that sought their own power and control by attempting to kill Lorenzo and his brother Guiliano. The plot was unsuccessful but its consequences rippled long after its conclusion. The conspiracy gave Lorenzo power and revealed the reality of a New Medici period in which Florence was no longer a republic which signaled that values of morality and justice had been changed. My project will examine the plot that led to the execution of hundreds of alleged conspirators and try to find out why a plot to kill the Medici only enhanced their grip on Florence as Godfathers of the city.

**Adam:** After the fall of German imperial government in 1918s, Weimar Germany was dominated by the imagination of women modernity. Therefore, this research explores the representation of women modernity during the Weimar Republic a great social and cultural changes. By concentrating on visual and textual representation of women modernity, I reveal that the significant roles women played changing the Weimar culture from sexuality, sports working women, and new women perspective. I argue that Weimar Germany provided an opportunity for women independence to express their rights from modernity standpoint better than any other previous Germans civilization. This allows women to become an important role model in terms of creating a modern and more civilized society during the Weimar period. Therefore, Weimar Republic was able to implement



effective policies on the representation of women modernity in the early 20th century. The Weimar Republic establishes an important period for the representation of women modernity and the recognition of an equal rights among it is citizens. As result, the roles of women's and place in the society changed during the Weimar years for instance, new women emerged as sexually liberated, economically independent, self-reliant and modern oriented perception. Exploring the representation of women modernity during the Weimar era allows me to understand how the roles of women changes during Weimar years.

**Gaydos:** Knowledge about the Holocaust has become widespread in the United States, but this was not always the case. For thirty years after the Holocaust occurred, the non-Jewish American public rarely discussed this event. This paper examines how the Holocaust was thrust into the national consciousness between 1978 and 1993. Awareness and education about this event arose as a result of the films Holocaust and Schindler's List, which were released in 1978 and 1993, respectively, and sparked discussion and debate about how to present the Holocaust in media. The school curriculum Facing History was released in 1982 and was a successful classroom tool because it combined the transmission of historical events and general moral development. Finally, the U.S. Holocaust Memorial Museum in Washington, D.C., was first proposed in 1978 and opened its doors in 1993, establishing Holocaust memory in the national consciousness. All of these categories were fraught with controversy about how to properly portray, remember, and disseminate information about the Holocaust to the American public.

**Hicks:** This project seeks to expand the understanding of nostalgia for Fin de Siècle Vienna. For many nostalgics this was the golden age of Viennese culture running from about 1889 until 1913. Nostalgia, particularly for turn-of-the century Vienna, is a vastly under studied subject. This means that there has been little formal study of nostalgia which includes the reminisces of two exiled generations: being those who lived in Vienna during the Fin de Siècle period and their children. Additionally there has been little consideration of nostalgia's role in academic study of Fin de Siècle Vienna and the inspiration of nostalgia amongst those who could have never had the firsthand experience. Nostalgia's long arm extends to today with modern Vienna's attempt to invoke its Fin de Siècle past in the tourist industry. This study analyzes a selection of memoirs and uses an updated twenty-first century definition of nostalgia to expand our understanding of Fin de Siècle Vienna and better see what sets this city and time apart in memory.

**Burns:** American industrialization took off in the 19th century as mill towns began to dot the landscape. Around this time New England developed a prosperous textile industry that relied upon a largely female workforce concentrated in towns such as Lowell, MA. While female factory operatives were building their own communities

there was opposition from the general public on the respectability of women who found work in mills. This essay explores how outside perceptions of mill operatives compare to those projected by Lowell female operatives themselves. Utilizing a variety of primary sources including newspaper articles, letters written by mill girls, as well as essays published in the Lowell Offering a strong argument can be made around this topic. It is clear that in Lowell the workforce was predominantly made up of highly moral young women from respectable families who found protection of their virtue extremely important. At the same time public sentiment often worked against mill workers and characterized them as the dregs of society. These perceptions often changed, however, when one came in direct contact with mill communities. In many ways public sentiment contrasted with how the Lowell women saw themselves and their respectability, but this was not always the case.

**Sandager:** The Quetico-Superior Area of Northern Minnesota is home to one of the larger wilderness areas in the continental United States. This area, best known for the Boundary Water Canoe Area, has a tradition dating to 1900 of protection. This however, has not been without conflict. The late 1940s and early 1950s were one such time; post-war United States sought to live the American dream with heavy consumption and an assumption that technology would fix all problems. This time also saw heavy exploitation of parks as Americans flocked to the countryside ruing the natural beauty of many places. However, the Superior National Forest in Minnesota was an exemption to this pattern. This paper will focus on the Friends of the Wilderness, a coalition of individuals and organizations that sought to limit the intrusion of humans on the wilderness area. This group led the fight against fly-in visitors who wanted to avoid the work required to paddle into the area and get straight to fishing the untouched wakes. The questions that I will seek to answer is why did the Friends of the Wilderness go against the accepted history of the time and how they fit into the national picture of the time period.

## Languages & Cultures

### Schedule

*9:00 - 9:10 AM*

*HAB 117*

Justin S. Brooks (Masami Limpert, Languages & Cultures) Tsukiji, Japan

*9:00 - 9:10 AM*

*HAB 106*

William G. Harren (Limei Danzeisen, Languages & Cultures) The History of Silk and China

*9:00 - 10:00 AM*

- HAB 107* Austin J. Eighan (Anna Ohm, Languages & Cultures)  
Deutschlands Kulturerbe: The Resiliency of the German Economy
- 9:10 - 9:20 AM*  
*HAB 106* Aaron J. Piecukonis (Limei Danzeisen, Languages & Cultures) The Forbidden City
- 9:10 - 9:20 AM*  
*HAB 117* Kablia Lee (Masami Limpert, Languages & Cultures)  
Kyoto City, Japan
- 9:20 - 9:30 AM*  
*HAB 106* Jake M. Anderson (Limei Danzeisen, Languages & Cultures) World Cup
- 9:20 - 9:30 AM*  
*HAB 117* Beth V. Vang (Masami Limpert, Languages & Cultures)  
Matusumoto City, Japan
- 9:30 - 9:40 AM*  
*HAB 117* Linda Vang (Masami Limpert, Languages & Cultures)  
Mito City, Ibaraki, Japan: A Closer Look
- 9:30 - 9:40 AM*  
*HAB 106* Johnathan D. Nguyen (Limei Danzeisen, Languages & Cultures) Musical Instruments
- 9:40 - 9:50 AM*  
*HAB 106* Collin J. Joyce (Limei Danzeisen, Languages & Cultures)  
The Great Wall
- 9:40 - 9:50 AM*  
*HAB 117* Manke Wang (Masami Limpert, Languages & Cultures)  
Naha City Okinawa, Japan
- 9:50 - 10:00 AM*  
*HAB 106* Minh B. Ho (Limei Danzeisen, Languages & Cultures)  
The Mid-Autumn Festival
- 9:50 - 10:00 AM*

*HAB 117* Wan Dee Xiong (Masami Limpert, Languages & Cultures) Akihabara, Japan - The Culture of Moe

*10:00 - 10:10 AM*  
*HAB 117* Shoua Yang (Masami Limpert, Languages & Cultures) Takasaki City, Japan

*10:00 - 10:20 AM*  
*HAB 107* Daniel T. Schmit (Wendy Sterba, Languages & Cultures) The CSB/SJU All-Sky Camera

*10:00 - 10:20 AM*  
*HAB 101* Julie M. Zaborowski (Karen Erickson, Languages & Cultures) Trobairitz and Fin' Amor

*10:00 - 10:10 AM*  
*HAB 106* Christopher T. Lesch (Limei Danzeisen, Languages & Cultures) About China

*10:10 - 10:20 AM*  
*HAB 106* Dylan C. Cartwright (Limei Danzeisen, Languages & Cultures) Chinese Cuisine

*10:20 - 10:40 AM*  
*HAB 101* Jesse S. Dykhoff (Karen Erickson, Languages & Cultures) Breaking the Norms: The PACS and a Changing Familial Landscape in France

*10:20 - 10:30 AM*  
*HAB 106* Grekeem S. Cartwright (Limei Danzeisen, Languages & Cultures) Sports

*10:20 - 10:40 AM*  
*HAB 107* Per J. Lundmark (Wendy Sterba, Languages & Cultures) Dualism

*10:35 - 10:50 AM*  
*HAB 117* Bao Lao (Masami Limpert, Languages & Cultures) Essence of Aikido Martial Arts

*10:40 - 11:00 AM*

- HAB 101* Annie K. Hansen (Charles Villette, Languages & Cultures) Translating Victor Hugo
- 10:40 - 10:50 AM*  
*HAB 106* Victoria E. Tormanen (Limei Danzeisen, Languages & Cultures) Tigers in Chinese Art
- 10:50 - 11:00 AM*  
*HAB 106* Paige M. Merwin (Limei Danzeisen, Languages & Cultures) My Ravels in Beijing
- 10:50 - 11:10 AM*  
*HAB 107* Carl A. Colosky (Scott Richardson, Languages & Cultures) The Miniature Odyssey: Oddly Coming of Age
- 10:50 - 11:05 AM*  
*HAB 117* Kaileigh B. Nicklas (Masami Limpert, Languages & Cultures) Japanese Kawaii かわいい Culture
- 11:00 - 11:20 AM*  
*HAB 101* Taylor J. Nauman (Charles Villette, Languages & Cultures) Absurdism and Revolt Chez Camus
- 11:00 - 11:10 AM*  
*HAB 106* Myder Yang (Limei Danzeisen, Languages & Cultures) Why Study Chinese
- 11:05 - 11:20 AM*  
*HAB 117* Kevyn F. Woods (Masami Limpert, Languages & Cultures) History of Nintendo
- 11:10 - 11:20 AM*  
*HAB 106* Yue Pheng Lee (Limei Danzeisen, Languages & Cultures) Food in BeiBei Area
- 11:10 - 11:30 AM*  
*HAB 101* Joseph W. Miller (Andreas Kiryakakis, Languages & Cultures) Five Analyses of Goethe's "Mignon"
- 11:20 - 11:35 AM*  
*HAB 117* Samantha M. Muldoon (Masami Limpert, Languages & Cultures) Ukiyoe- Pictures of The Floating World

*11:35 - 11:50 AM*

*HAB 117*

Alexander J. Baxa (Masami Limpert, Languages & Cultures) The Tradition of Japanese Cuisines

*11:40 - 11:50 AM*

*HAB 106*

Bao Thao (Limei Danzeisen, Languages & Cultures) An Ancient Chinese Legend

*11:50 - 12:00 PM*

*HAB 106*

Youlim Kim (Limei Danzeisen, Languages & Cultures) Korea

### **Abstracts**

**Brooks:** An oral report in the Japanese language on Tsukiji (city) Japan focused on the Tsukiji fish market.

**Harren:** About the history of silk and China

**Eighan:** This project aims at identifying the key components of Germany's Kulturerbe, a type of cultural heritage that strengthens its ability to overcome economic crises. I examine how the political and economic measures that Germany uses to overcome financial crises and sustain economic growth result organically from the socio-cultural aspects of German society that help mold a national identity centered on balancing prosperity with social equality.

The Kulturerbe is a socio-historical factor encompassing such elements as work ethic and frugality bred from adversity. Germany's fundamental preparation for a sustainable plan for economic stability began with the nation's unification over 140 years ago. Through my research, I uncover some of the major causes, outcomes, and methods used to shape the German economy from its unification until today and the role the Kulturerbe plays.

The ultimate goal of my research is to determine the building blocks of a successful economy. By examining why an economy like Germany's seems better suited to withstand crises than others, I conclude with a recommendation as to whether the German model is one from which struggling or developing markets can learn and upon which they can base future social, political, and economic policies.

**Piecukonis:** About the Forbidden city in Beijing

**Lee:** This is a presentation about Kyoto, Japan. In my presentation the history of Kyoto and its old tradition, as well as the three main places to visit and the festival are discussed.

**Anderson:** About US football

**Vang:** This will be an informational presentation on Matsumoto city; which will include a lot of places that are located there, and will highlight the reasons as to why it should be put onto your list of sight-seeing places if you ever travel to Japan.

**Vang:** An overview of Mito city with a look into specific places, the history behind the places, and the events that occur within them. There will be a particular focus on Kairakuen, a famous Japanese garden.

**Nguyen:** About Musical instruments

**Joyce:** About the history of the Great Wall in China

**Wang:** This presentation is an introduction of Naha, the Japanese Hawaii, and it's significance.

**Ho:** About Chinese Mid-Autumn Festival in August

**Xiong:** This will be a presentation about Manga and Anime culture in Akihabara, Japan, focusing on an interesting culture called "Moe" in Japan.

**Yang:** My project is a description of Takasaki City located in Gunma prefecture Japan. I will be talking about famous places in Takasaki.

**Schmit:** This project discusses the "Fireball" network of All-Sky cameras in Germany and their effective use in meteorite triangulation and compares it to current research involving the CSB/SJU All-Sky camera. Recent physics research at CSB/SJU has developed a method to calculate the altitude of meteorites observed over SJU. Traditionally meteorite triangulation has involved 3 or more observations. Because a network of cameras in Minnesota is not yet fully developed; it has been necessary to develop a 2 observer method of meteorite triangulation using the CSB/SJU and Morris All-Sky cameras. This paper presents this method and the development of the IDL computer program which uses this triangulation method to calculate the altitude of observed meteorites, along with an analysis of Germany's Fireball network as a potential example for a future network of cameras in Minnesota that would more accurately and effectively track meteorite flight paths.

**Zaborowski:** A historical and literary analysis of the Fin'Amor and courtly love, with a focus on the trobairitz (female troubadours from the twelfth and thirteenth centuries).

**Lesch:** About China

**Cartwright:** About the famous Chinese food

**Dykhoff:** Over a decade has passed since the beginnings of the Le pacte civil de solidarité (PACS) in France. The idea of a civil union independent of marriage, while originally opposed as the end of the traditional family in France, has become increasingly popular. Through an analysis of the history of the PACS and the past and current demographics of those taking part in the unions, we can better understand the impact of the PACS in France's ideological identity.

**Cartwright:** About Sports in China

**Lundmark:** In my time at St. John's, my German major has provided balance to what would have been a totally science based curriculum. By combining the ideas of contemporary environmentalism and German texts from both ancient and modern sources, I have truly engaged the liberal arts. This presentation concerns my senior project, a portfolio combining a series of essays from my experiences in the CSB/ SJU German department which illustrate my development not only in the German language, but also the personal exploration of my major. Influences of CSB/ SJU will also be explored, in terms of, for example, the peculiar dualities of the culture that have frustrated me as well as taught me the importance of the omnipresent Benedictine Values. Finally my fascination with the German Romantic Movement has motivated me to look at my life, as well as the contemporary environmental movement, with a new perspective. My works from my German career are collected and will be accompanied by narration in order for all to share in the self-exploration and development.

**Lao:** I will be giving a presentation about the Origins of Aikido, the founder of Aikido Morihei Ueshiba, and my experience at Hombu Dojo, the headquarters of Aikido Martial Arts as well as training at the International Aikido Dojo in Japan and Aikido Society of Minnesota.

**Hansen:** An analysis of the process of poetic translation looking specifically at two of Victor Hugo's poems, "Demain dès l'aube" and "Le poète s'en va dans les champs." To what extent is the translator responsible for taking into account the period in



which the author worked? How do we best express the ideas of French Romanticism to modern readers?

**Tormanen:** About tigers in Chinese art

**Merwin:** About my traveling in Beijing, China

**Colosky:** Telemachus, the son of Odysseus, grows up right before our eyes in the Odyssey. His upbringing is anything but normal though since that would require his dad to be there and help rear, educate, and introduce him to society before ultimately dying. Odysseus deals with his son exactly opposite of this, and because of the inversion, Telemachus' ultimate goal is to become a great son. Yet, since Telemachus is the only character in Homeric epic to grow up, his template is the only one we can use to see a hero come into being.

**Nicklas:** I will discuss the impact and creation of "cute culture" in Japan while providing examples of this phenomenon not only culturally but in the global market setting.

**Nauman:** A study of existentialism, absurdism, and revolt within the works of French writer and philosopher Albert Camus.

**Yang:** The reasons to study Chinese language

**Woods:** I will be going over the start and worldwide expansion of pokemon and its importance relating to Japan

**Lee:** About the hot Sichuan food

**Miller:** In my presentation I will be looking at five different analyses on the poem Mignon by Johann Wolfgang von Goethe. The analyses range from the psychoanalytical, the mythological, and the practical. I will then add my own analysis of the poem and justify my reasoning with the help of the analyses and my own interpretation. I hope by the end of the paper, those who do not have knowledge of this work will have a better understanding of it, know more about the context of the poem, and why scholars believe this poem to be relevant in German literature.

**Muldoon:** This is a brief oral presentation about the history of woodblock prints in Edo Period Japan. (In Japanese)

**Baxa:** The Japanese cuisine has a deep and ever-evolving tradition extending further than 2,000 years. The purpose of this project will be to educate viewers on the original tradition surrounding food in Japan as compared to the contemporary traditions. In addition, there will be a slight focus on table manners and the modernization of the culture surrounding cuisines in Japan.

**Thao:** 愚公移山--About an ancient Chinese legend

**Kim:** About Korean history, food, culture, etc.

## Philosophy

### Schedule

*11:00 - 11:30 AM*

*Quad 252*

Mark D. Greci (Dennis Beach, Philosophy)  
Disapprobation: Moral Development through Reading  
Iris Murdoch's *The Sea, The Sea*

### Abstracts

**Greci:** Martha Nussbaum discusses the power of the literary narrative to enlighten and deepen moral awareness through literature's ability to inspire compassion in the "intended reader." To her, the imaginative leap made by the reader to grapple with the vulnerability and fragility of being human is important—literature can do this in a special way. I want to argue that in Iris Murdoch's *The Sea, The Sea* the "intended reader" has a powerful emotional response towards the main character, Charles. This emotional response is not "compassion", but rather another kinetic, visceral emotion that – much like compassion does for Nussbaum – moves the intended reader to realize the urgency of human fragility and vulnerability. Moreover, following Nussbaum's lead on compassion, I would like to argue that this emotional response to *The Sea, The Sea* may further moral development and thinking in a desirable way. During my argument, I will attempt to pin-down what this emotional response should be called and shed light on Murdoch's moral philosophy as she illustrates it in the intended reader's emotional response towards Charles Arrowby.

## Theology

### Schedule

*9:00 - 12:00 PM*

*Gorec 204 A & 204 B*

Cristian M. Angang, Troy D. Bauer, Kathryn A. Cleary,  
Taylor M. DeMets, Thomas P. Dierberger, April L.

Donovan, Alison E. Dudek, Chidi D. Ezeanioma, Mitchell B. Fader, Devon A. Fleck, Lindsay A. Gelling, Brennan R. Hall, Victoria J. Hernandez, Mary K. Jenkins, John M. Kelly, Anna E. Klonowski, Tia R. Marthaler, Cullen T. McAnally, Eva M. McGuire, Molly M. Minnerath, Ravin K. Scott, Jammie N. Tutol, Mariah K. Valiant, Eleanor M. Vanasse, Luke J. Wittman (Jeffrey Kaster, Theology) Festival of Faith

*9:30 - 10:00 AM*

*BAC 104A*

Maria Jagodinski (Kari-Shane Zimmerman, Theology)  
Understanding and Responding to Child Poverty in the Mississippi Delta through Solidarity and Love

*10:00 - 10:30 AM*

*BAC 104A*

Erin C. Brown (Kari-Shane Zimmerman, Theology)  
Inculturation: A Universal Church in a Multicultural World

*10:30 - 11:00 AM*

*BAC 104A*

Jordan W. Berns (Kari-Shane Zimmerman, Theology)  
The Influence of Protestant Hymnody on Post-Vatican II U.S. Catholic Hymnals from 1964-1971: Ecumenism in Action.

*11:00 - 11:30 AM*

*BAC 104A*

Brian r. Vander Heiden (Kari-Shane Zimmerman, Theology) Female Sexual Violence and the Church's Response: An Examination and Critique of Two Common Response Efforts

*11:30 - 12:00 PM*

*BAC 104A*

William A. Mattes (Kari-Shane Zimmerman, Theology)  
God, Dios, Thiên Chúa: Teaching Catholic Theology to Ethnically Diverse High School Students

*11:55 - 12:25 PM*

*BAC 104A*

Chris J. Armstrong (Kari-Shane Zimmerman, Theology)  
Applying Catholic Social Teaching to the Rest of Creation

## Abstracts

**Angang, Bauer, Cleary, DeMets, Dierberger, Donovan, Dudek, Ezeanioma, Fader, Fleck, Gelling, Hall, Hernandez, Jenkins, Kelly, Klonowski, Marthaler, McAnally, McGuire, Minnerath, Scott, Tutol, Valiant, Vanasse, Wittman:** As part of the THEO 381 Youth Ministry class we have been practicing giving faith sharing talks with high school youth. We want to share these talks with the CSB/SJU community. We are calling the talks at Scholarship and Creativity Day from all the class members a "Festival of Faith." Please come and here stories of life and faith from our class. Who knows? It may inspire you to think more deeply about your own faith journey.

**Jagodinski:** In this project I demonstrate that, in the Mississippi Delta, faith inspires community members to serve under-resourced children, acknowledge the fullness of their human dignity, and respond with solidarity and love, and thus embrace a more holistic understanding of poverty that goes beyond simple income statistics.

**Brown:** In this essay, I will explore how religious experiences of inculturation prepare individuals for encounters with the Christian God, such that individuals are able to fully act as members of a universal Church.

**Berns:** In the spirit of working toward greater ecumenism, this paper seeks to investigate the influence of Protestant hymnody on post-Vatican II U.S. Catholic hymnals from 1964-1971; I argue that this unabashed use of non-Catholic hymns serves as a model for ecumenical endeavors in the global church and points to the truth contained in both other faiths' similarities and their differences to Catholicism.

**Vander Heiden:** I will critique and analyze two common, Christian theological responses to female sexual violence and will then argue for a more middle ground response that seeks to help women transform their experience of sexual violence and maintain a relationship with the Triune God.

**Mattes:** I argue that a variety of pedagogical styles, including best learning practices, are necessary to employ in a theology classroom in order to motivate American high school males with different ethnic backgrounds.

**Armstrong:** In this presentation I argue that we should apply the teachings of Catholic Social Teaching to rest of creation in light of John Paul II's 1990 speech, "The Ecological Crisis: A Common Responsibility." The presentation looks into the various Catholic responses to how we should fulfill this calling from John Paul II. An additional focus is how we should respond to this calling on a local level as college students.



## Natural Sciences Presentations:

### Biology

#### Schedule

*9:45 - 10:05 AM*

*PEngl 373*

Emily K. Kiolbasa (David Brown, Biology) Vegetation and climate history of the St. John's Abbey Arboretum (Collegetown, Minnesota) based upon lacustrine fossil pollen

*10:25 - 10:45 AM*

*PEngl 373*

Cody J. Groen (Stephen Saupe, Biology) CREATING TIME-LAPSE MOVIES OF PLANT GROWTH AND DEVELOPMENT

#### Abstracts

**Kiolbasa:** When planning an ecological restoration project, knowledge of regional ecological history can augment restoration and stewardship efforts, and is essential so the restoration project indeed returns the land to its previous state. At St. John's University [Stearns Co., MN], we are attempting to provide managers of the St. John's Abbey Arboretum a vegetation history of our region using fossil pollen from Lake Hilary, a small ( 2 Ha) kettle lake located in the St. John's Abbey Arboretum. The managers can use this information when developing educational outreach and enrichment opportunities, and when developing their preservation plans for the land. A 15.75 m sediment sample was extracted from the lake on 16 February 2002 using a 5 cm diameter Livingstone sediment corer. 1 ml sediment samples were extracted at 20 cm intervals and processed using standard pollen preparation techniques. This pollen has been examined by numerous undergraduate research students, of which I am the most recent. Pollen is identified and counted using traverses 1mm apart on slides prepared from processed sediment. To better understand the past vegetation and climate, pollen samples are compared to a database of modern pollen patterns to look for modern analogs for the past ecosystems using the North American Surface Sample Dataset. Modern analogs were identified using the squared chord distance method. Through a combination of pollen counting and modern analog analysis, preliminary hypotheses have been made regarding the vegetation history of the region. The oldest layers of sediment represent an ecosystem that has no modern analog. This pollen represents boreal barrens with mesic elements. Around 12,500 years ago, the boreal population decreased dramatically, and the land became covered in a pine-pioneer-mesic mix of vegetation. As the land continued to transition, the predominant ecosystem became

an oak woodland savanna/prairie. Most recently, mixed oaks and Big Woods-type (maple, basswood, elm) trees have combined with extensive wetland fringe to form the ecosystem found in the Collegeville, Minnesota region today. Models of Minnesota's future climate predict warmer and drier conditions to come. Drawing on knowledge of how the ecosystem has responded to similar conditions in the past will be essential for the managers of the St. John's Arboretum when they formulate their management plans and will give them insight into the history of the land that will add valuable information for educational purposes. Additionally, the knowledge will allow them to set goals for the land, and will contribute greatly to their success in preserving the St. John's Abbey Arboretum for years to come.

**Groen:** Time-lapse photography is the process by which events that take hours, weeks, months or years to unfold are captured and manipulated to a viewable amount of time. Plants are especially amenable to this technique because they lead a "slow" lifestyle that many people consider uninteresting. During the past year, I have learned various techniques to create time lapse movies of plant growth and development. This presentation will describe how to make time lapse movies using a variety of equipment such as inexpensive webcams and 35 mm cameras. Sample movie clips showing flower opening, seed germination, mushroom growth, and tropic responses will be shown to illustrate the products of different methods of capture. This presentation is designed to inform others on the various ways of setting up, capturing, and utilizing time-lapse photography in biological settings.

## Chemistry

### Schedule

*9:00 - 9:20 AM*

*ASC 104*

Graci M. Gorman (Alicia Peterson, Chemistry) The Effect of Seasonal Changes in Water Composition and Inorganic Salt Buffers on the Degradation of Trichloroethylene

*9:00 - 9:20 AM*

*ASC 107*

Michael T. Humbert (Md Fazal, Chemistry) Separation of free Amino Acids using reverse phase HPLC

*9:00 - 9:20 AM*

*ASC 105*

Jay W. Zachman (Edward McIntee, Chemistry) Synthesis of Novel Inhibitors For Low Molecular Weight Protein-Tyrosine Phosphatase

- 9:30 - 9:50 AM*  
*ASC 105* Harry J. Gerdes (Edward McIntee, Chemistry) Synthesis of phosphonate analogs of pyridoxamine as potential inhibitors of LMW-PTP
- 9:30 - 9:50 AM*  
*ASC 107* Charles C. Dudek (Md Fazal, Chemistry) Observing Protein-Nanoparticle Interactions using Dynamic Light Scattering (DLS) technique
- 9:30 - 9:50 AM*  
*ASC 104* Sara B. Matthews (Alicia Peterson, Chemistry) Analysis of the Photodegradation of Pharmaceuticals in Aqueous Solutions using HPLC
- 10:00 - 10:20 AM*  
*ASC 105* Blake P. Belland (Edward McIntee, Chemistry) Synthesis and in vitro assays of benzimidazole analogues as potential inhibitors of LMW-PTP
- 10:00 - 10:20 AM*  
*ASC 104* Kaitlyn E. Lauer (Alicia Peterson, Chemistry) The effect of pH on the hydrodechlorination rate of trichloroethylene by Rh/Al<sub>2</sub>O<sub>3</sub> catalysis
- 10:00 - 10:20 AM*  
*ASC 107* David R. Crotteau (Md Fazal, Chemistry) A paper based device for colorimetric quantification of free amino acids in biofluids
- 10:30 - 10:50 AM*  
*ASC 107* Erin O. Wissler (Chris Schaller, Chemistry) Polymerization: Lab Development
- 10:30 - 10:50 AM*  
*ASC 104* Brett L. Anderson (Alicia Peterson, Chemistry) Synthesis and Study of Silver Nanoparticles
- 10:30 - 10:50 AM*  
*ASC 105* Miguel D. Mendoza (Christen Strollo Gordon, Chemistry) Effect of Sulfuric Acid Coating on Common Mineral Dusts



*11:00 - 12:00 PM*

*CLEML A129*

Meghan M. Glasgow, Asha D. Kopp (Henry Jakubowski, Chemistry) Chemistry Tutorial Videos

*11:00 - 11:20 AM*

*ASC 107*

Sean T. Pickthorn (Chris Schaller, Chemistry)  
Characterization of Poly(lactide-b-butadiene-b-lactide)  
Multiblock Copolymers

*11:00 - 11:20 AM*

*ASC 105*

Ellen M. Dean (Christen Strollo Gordon, Chemistry)  
Optimization of Variables in Trinitroresorcinol  
Production

*11:00 - 11:15 AM*

*ASC 104*

Carla M. Saunders (Thomas Jones, Chemistry)  
MacMillan-Type Reactions Using Dendrimer-Bound  
Catalyst

*11:30 - 11:50 AM*

*ASC 105*

Yuan Huang (Anna McKenna, Chemistry) Metal  
complexes-- Efficient Catalysts for Light-driven water  
oxidation

## Abstracts

**Gorman:** The purpose of the research was to explore how seasonal changes in water composition affect the degradation rates of the known water contaminant and carcinogen, trichloroethylene (TCE). This was done by monitoring the degradation of TCE in natural water and by running the degradation reactions with added inorganic salts or in buffered water and comparing those results to the rate of TCE degradation in just DI water. TCE was reduced to ethane via a rhodium on alumina catalyst under a hydrogen atmosphere. Gas Chromatography headspace analysis was used to analyze the kinetics of the reaction, more specifically, the rate of TCE degradation. The degradation rates proved to be relatively similar between the seasons, while the inorganic salts and buffers had a greater impact on reaction kinetics. The phosphate buffer had the most significant accelerating effect relative to the deionized water reaction, while the nitrite, sulfite, and phosphite buffer halted the reaction. These results indicate the importance of considering water composition when implementing this degradation method in a large-scale environment.

**Humbert:** Analysis of free amino acids is a promising approach for targeted metabolomics and many pathological conditions. HPLC offers the separation and quantification of multiple amino acids simultaneously. An isocratic method was developed for separation of aspartic acid, alanine, glutamic acid, tyrosine, glycine, leucine, isoleucine, and phenylalanine using reverse phase HPLC. The amino acids were derivatized with ortho-phthalaldehyde and detected at 190 and 338 nm. A separate gradient method was also developed for separation and detection of oxidized boc-tryptophan from its non-oxidized form.

**Zachman:** Protein tyrosine phosphatases (PTPs) are a group of enzymes that remove phosphate groups from phosphorylated tyrosine residues on proteins. A specific PTP, Low molecular weight protein tyrosine phosphatase (LMW-PTP), impacts processes such as embryonic development and tumor dispersion. Its over expression in the cell also leads to increased cellular motility as well as invasiveness. The effects of LMW-PTP on various biological processes make it a target for a diverse set of small molecule inhibitors.

A known natural product inhibitor of LMW-PTP is pyridoxal-5'-phosphate (PLP). PLP displays tight binding to LMW-PTP with a docking score of -7.266 and a  $K_{is} = 7.6 \mu\text{M}$  (pH 5.0), but lacks the specificity required to be an effective inhibitor. The scope of this research is to model inhibitors of LMW-PTP human isoform II after the natural product PLP, specifically carboxylic acid derivatives of the structure. These analogues will be tested in vitro using a biological assay.

**Gerdes:** Low molecular weight protein tyrosine phosphatases (LMW-PTPs) are enzymes that have been linked to cellular transformation. In addition, the overexpression of LMW-PTP in tumor cells has been recently shown to induce neoplasticity in nontransformed cells. Furthermore, LMW-PTP human isoform B has been demonstrated to be oncogenic. The docking of pyridoxal 5'-phosphate (PLP), a strong competitive inhibitor of LMW-PTP, with LMW-PTP isoform B was examined. Phosphonate analogs of pyridoxamine, where the aminomethyl group is modified with different aromatic groups and the 5'-position converted to a phosphonic acid group, were screened virtually. These analogs were then synthesized and tested via an in vitro kinetic assay with LMW-PTP isoform B. The data from this study will be presented.

**Dudek:** Nanotechnology has grown tremendously over the last two decades in the fields of medicine, cosmetics, and electronics. Despite huge development in the

production of nanoparticles, little is known about their interactions with biomolecules within organisms. Protein-nanoparticle interactions is a new area of study that focuses on the structural and functional changes of proteins when they are introduced to nanoparticles. Spectroscopic and calorimetric methods have been used comprehensively to describe these interactions. Specifically, this paper discusses the applications of Dynamic Light Scattering (DLS) compared to other techniques available in monitoring protein-nanoparticle interactions.

**Matthews:** The photodegradation of pharmaceuticals is of environmental concern, as the disposal of these drugs is not well-regulated, and compounds for human consumption can accumulate in the environment, especially in lakes from wastewater runoff. Six pharmaceuticals; acetaminophen, phenylephrine HCl, chlorpheniramine maleate, aspirin, amitriptyline HCl, and nortriptyline HCl, were analyzed to see if these compounds will degrade when exposed to sunlight. This was done in aqueous solutions of differing pH (3, 5, and 9) using a photoreactor. The degradation and product formation was monitored using an HPLC to observe if any stable decomposition product formed, and to determine the half-life of these compounds in sunlight. The effect of pH on the degradation of these pharmaceuticals and their resulting half-lives was also explored. Of the six compounds, amitriptyline HCl had the fastest degradation while phenylephrine HCl had the slowest.

**Belland:** Human low molecular weight protein tyrosine phosphatases function in the control of cell growth. Over expression of LMW-PTPs has shown to cause tumor growth. Using virtual and in vitro screening processes, 9H-purine-2,8-diamine ( $K_i$  31.7±8.2  $\mu$ M) was shown to be an effective inhibitor of LMW-PTP isoform B. Benzimidazole analogues of 9H-purine-2,8-diamine, 1,4-Benzimidazole-2,6-diamine and 6-aminobenzimidazole, were synthesized and tested using an in vitro assay. These analogs were chosen in order to observe the change in inhibition as the hydrogen bonding changed from the original compound. Molecular modeling of their structures was performed to determine their docking scores. Kinetic assays were used to determine the inhibition constants of these compounds and therefore determine their effectiveness as an inhibitor of LMW-PTP isoform B.

**Lauer:** Trichloroethylene (TCE) is an anthropogenic chlorinated hydrocarbon compound that has become an increasingly abundant groundwater contaminant. The heavy metal catalyzed hydrodechlorination of TCE to ethane is an established method of detoxification. This study compares the effect of acidic, basic and neutral phosphate buffers on the Rh/Al<sub>2</sub>O<sub>3</sub> catalyzed hydrodechlorination of TCE in deionized water under a hydrogen atmosphere. The degradation rate of TCE was determined using gas chromatography headspace analysis. The purpose of this study

was to determine how the pH affects the rate of the hydrodechlorination reaction. The reaction was run at pH 2, pH 7 and pH 11; all other parameters were held constant. The influence of pH on the hydrodechlorination reaction rate may have important implications for large-scale groundwater treatment mechanisms.

**Crotteau:** Paper-based bioassays provide a convenient, low-cost alternative for many applications such as clinical diagnosis, food quality control, and environmental monitoring. In this study, we have developed and optimized a paper-based colorimetric assay for the detection of free amino acids in biological samples. The new method takes advantage of the redox properties of cerium (IV) oxide nanoparticles along with the enzymatic specificity of l-amino acid oxidase, and was applied to the determination of free amino acid concentrations in simulated saliva samples.

**Wissler:** Not only are polymers the backbone of a plethora of everyday products, but they also have a multitude of fascinating chemical properties that make them wonderful tools for learning important fundamentals of organic chemistry. This project analyzed the ring opening chemistry of D, L- lactide,  $\gamma$ - butyrolactone, valerolactone, dodecalactone and caprolactone. Starting with each of the above monomers, Sn(Oct)<sub>2</sub>, SnCl<sub>2</sub>, Zn(acac)<sub>2</sub>, ZnCl<sub>2</sub>, and AlCl<sub>3</sub> were used as catalysts in the polymerization process. Initiators included benzyl alcohol, 2-phenylethanol and 1-butanol. The results of each reaction were analyzed by <sup>1</sup>H-NMR and IR spectroscopy and dynamic light scattering (DLS). The results were collated to determine the most promising candidates for a student project in the teaching laboratory.

**Anderson:** The goal of this experiment was to determine the best method to synthesize silver nanoparticles for use as a potential experiment in the synthesis lab. The nanoprisms synthesized vary from 10-70 nm in width depending on the concentration of potassium bromide and will remain stable at these small sizes. These nanomaterials have optical properties different from larger particles. The nanomaterials need to be made precisely to stabilize the nanoparticles size. The nanoparticles form three distinct colors at different sizes. From 10-30nm the nanoprisms are yellow/orange, from 30-50nm the nanoprisms are purple, and from 50-70 the particles are blue. The varying sized particles are put through a UV-Vis spectrometer to determine at what wavelength of light they absorb. It can be understood by this process how size of the particles can affect the wavelength a particle absorbs and understand why the particles appear different colors with varying size.

**Mendoza:** Mineral dust has a large effect on cloud formation and ultimately the climate. Several studies have shown the addition of acid to these mineral dust

particles decreases their ability to nucleate ice. This study explores what chemistry occurs between common components of mineral dust particles and sulfuric acid. Hematite ( $\text{Fe}_2\text{O}_3$ ), calcite ( $\text{CaCO}_3$ ), and quartz ( $\text{SiO}_2$ ) were exposed to sulfuric acid, and then analyzed using a combination of Attenuated Total Reflectance-FTIR, Diffuse Reflectance-FTIR Spectroscopy, X-Ray Diffraction, and Inductively Coupled Plasma Atomic Emission Spectroscopy to identify functional groups, mineral species, and aqueous phase elements. Quartz did not react with sulfuric acid. Calcite and hematite react readily with sulfuric acid to produce bassanite ( $\text{CaSO}_4 \cdot 1/2\text{H}_2\text{O}$ ) and rhomboclase ( $\text{H}_3\text{O}^+$ )  $\text{Fe}(\text{SO}_4)_2 \cdot (\text{H}_2\text{O})_3$  respectively. Knowing how sulfuric acid affects these common mineral dust particles helps us understand how they age in the atmosphere and the effect on climate from this aging. Future experiments will explore other mineral dust components and eventually relate what chemical changes affected ice nucleation abilities.

**Glasgow, Kopp:** We produced tutorial videos for Chem labs 201, 202 and 203 over the summer and have made them available for the students in the lab classes to use them as a reference. We worked with a variety of materials and technologies including instruments in the chemistry lab, audio and video editing.

In our presentation we will talk specifically about the manner in which we produced these videos and our overall goals for this project.

**Pickthorn:** Recent advances in polymer production sciences have led to an increase in research in sustainable practices. Our efforts intended to produce a toughened biorenewable multiblock copolymer. Polylactide has been noted to be produced by sustainable practices but is limited because of the fragile structure. To improve the brittle behavior of polylactide, preparation of polylactide-b-polybutadiene-b-polylactide multiblock copolymers were synthesized with a fixed weight of dihydroxyl polybutadiene ( $\sim 3000$  and  $\sim 2000\text{g/mole}$  series) and variable volume percent (50-90%) of both semicrystalline poly(L-lactide) and amorphous poly(D,L-lactide). Producing a multiblock copolymer was intended to strengthen the mechanical properties by bridging and gapping over several domains. Initially, triblock polymers were catalyzed with a ring opening polymerization and characterized. Toluene diisocyanate (TDI) and terephthaloyl chloride (TCL) were used to couple the triblock copolymers to form multiblock structures. Characterization of these products was accomplished by differential scanning calorimetry, small angle X-ray scattering,  $^1\text{H-NMR}$  spectroscopy, size exclusion chromatography, dynamic mechanical analysis, and tensile testing, leading to an extensive set of thermal and mechanical properties of both the triblock and multiblock copolymers. The data collected indicated a controlled product with a clear enhancement of mechanical properties of polylactide. Trends associated with the weight percent of polylactide can be used to guide future work as we explore

other aspects of this material. [This research was supported by funding from the NSF, awarded to the Center for Sustainable Polymers, University of Minnesota, Minneapolis, MN]

**Dean:** Federal Premium Ammunition produces cartridges that contain a bullet, case and primer. The bullet is a solid metal tip that is propelled by the fuel in the case and the explosives found in the primer. The primer is a small capsule in the back of the cartridge that is filled with explosives to propel the cartridge out a gun barrel and ignite the gunpowder in the case. This research focused on improving the production process of trinitroresorcinol (TNR), one of the explosives used in primers, by optimizing variables from the current standard operating procedures. The production of TNR is a two-step process including sulfonation and nitration of the starting material, resorcinol. Manipulated variables include run time, acid ratios, different starting materials and temperature ranges. All samples were analyzed by an explosive test, melting point and crystal size analysis. Results showed higher concentrations of nitric acid and higher temperatures ranges created TNR with bigger, more pure crystals.

**Saunders:** Dendrimers present an attractive option for use as catalytic framework. In particular, terminally functionalized dendrimers present the possibility of increased catalytic utility and recovery. Generations two, three, and four PAMAM dendrimers have been functionalized with MacMillan's (2S, 5S)-5-benzyl-2-tert-butyl-3-methyl-imidazolidin-4-one catalyst sites. These functionalized PAMAM dendrimers were characterized by NMR and MALDI-TOF analysis. We are now investigating these dendrimers for their effectiveness as catalysts in MacMillan-type organo-catalytic reactions including an Aniline addition reaction and a Diels Alder reaction done by the MacMillan group.

**Huang:** Hydrogen will be one of the most important fuels of the future. The ideal way to obtain hydrogen is by splitting water rather than obtaining it from petroleum. Water oxidation forms oxygen, protons, and electrons (equation 1),  
$$2\text{H}_2\text{O} \rightarrow \text{O}_2 (\text{g}) + 4\text{H}^+ + 4\text{e}^- \quad (1)$$
and hydrogen is produced when the water oxidation process is coupled with proton reduction. Therefore water oxidation is seen as one of the most promising methods of storing energy from the sun, producing hydrogen as a green fuel. Traditionally, water oxidation has been accomplished thermodynamically. In order to avoid using fossil fuels, researchers have investigated light-driven water oxidation with energy from the sun providing the energy for oxidation. Since overpotential is the main concern during the water oxidation process, an efficient catalyst is needed. The catalyst is used to activate an oxidant, which oxidizes the water. There are two types of catalysts that can be used in water oxidation: homogeneous metal complexes and heterogeneous metal complexes. Precious metals such as ruthenium

and iridium were first used as catalysts since those metals are often more active and can be sustainable when recycled. Because of economic concerns, common metals such as manganese, iron, and copper have also been used as catalysts. In this presentation, light-driven water oxidation mechanisms will be discussed for both homogeneous and heterogeneous metal complexes. Additionally, the potential future for light-driven water oxidation will be discussed.

## Computer Science

### Schedule

*11:55 - 1:55 PM*

*PEngl 212*

Pa W. Vang (James Schnepf, Computer Science)  
Exploring Alternative Clustering for PIY Source Code  
Detection

### Abstracts

**Vang:** Clustering is a powerful tool because it distributes data into meaningful groups based on the information found in data sets. Given a set of data points, each defined by a set of attributes, we find clusters such that points in one cluster are more similar to one another and less similar to points in other clusters. These groups of clusters are crucial to how data is analyzed. It helps us easily identify and give meaning to certain data according to their traits. Previous work done by Anthony Ohmann and Professor Imad Rahal propose a scalable system called PIY (Program It Yourself) that can detect source code plagiarism over a large repository of submissions where new submissions are compared to current ones. By using clusters, one can compare a new submission to a subset of the data. Accuracy and time are both important factors for PIY. Therefore, we base efficiency of clustering on accuracy and time. In this presentation, we perform an analysis of K-Harmonic Means (KHM) against one of PIY's current clustering algorithms called K-Medoid. Developed by Dr. Bin Zhang, the KHM algorithm is derived from the K-Means and Harmonic Average algorithm. It is known to be more "robust" than the K-Means algorithm. Our goal is to find which algorithm gives us the most favorable results.

## NATS

### Schedule

*10:05 - 10:25 AM*

*PEngl 373*

Kaitlyn M. Rolando (Stephen Saupe, NATS) Redefining Your Core: Understanding the Importance of Muscular Asymmetries

*10:45 - 11:05 AM*

*PEngl 373*

Nichole E. DeWeese (Stephen Saupe, NATS) Climate change impact on the expansion and growth of *Rhamnus cathartica* in Central Minnesota

## Abstracts

**Rolando:** The core musculature is important in stabilizing extremities during movement and is crucial in posture and respiration. Traditional core strengthening does not take into account the asymmetrical nature of our bodies. Many individuals, including athletes, suffer from muscular and mechanical asymmetries that can lead to various pathologies including hip and shoulder impingement and low back pain. Athletes who suffer from asymmetrical muscular deficiencies may have increased cardiovascular endurance due to a decrease in the efficiency of their breathing mechanisms. Understanding postural and muscular asymmetries can help strength and conditioning coaches, as well as athletes, redefine their approach to core training to reduce the risk of various overuse injuries. Postural restoration therapy offers exercises that help to combat asymmetry and help us to rethink the way we train athletes in an elite setting.

**DeWeese:** This project is for the Natural Science Capstone. The purpose of this project is to predict how the range and growth of Common buckthorn (*Rhamnus cathartica*) will be affected by the warming climate. This project will include a literature review of climate predictions and Common buckthorn adaptations to its invaded habitat. This project will also include a proposed study to measure Common buckthorn growth in response to temperature and precipitation variations.

## Nursing

### Schedule

*9:00 - 9:30 AM*

*BAC A106*

Megan L. Sigrist, Rebeka J. Schwendemann, Brooke D. Brodeur, Alisha L. Voigt, Cameron K. Atkinson (Georgia Hogenson, Rachelle Larsen, Nursing) Improving Nurse-Physician Communication Using SBAR



<i>9:00 - 9:30 AM</i> <i>BAC A109</i>	Suzy Xiong (Carrie Hoover, Nursing) Analysis of Healthcare Provider's Barriers to Telehealth Monitor Use
<i>9:00 - 9:30 AM</i> <i>BAC A108</i>	Samantha Allen (Kathleen Twohy, Nursing) Implementing PDSA into Long Term Care
<i>9:30 - 10:00 AM</i> <i>BAC A109</i>	Amy K. Kiminski, Kayla L. Anderson (Gary Gillitzer, Nursing) Caregiver Hygiene and the Potential Impact on Patient Infection Rates
<i>9:30 - 10:00 AM</i> <i>BAC A107</i>	Megan E. Jagger (Rachelle Larsen, Nursing) Improving Medication Education in a Pediatric Hospital
<i>9:30 - 10:00 AM</i> <i>BAC A108</i>	Erik A. Rima (Kathleen Twohy, Nursing) Nursing Presence as an Intervention in ICU
<i>10:00 - 10:30 AM</i> <i>BAC A108</i>	Janelle J. Hodorff (Kathleen Twohy, Nursing) Home-Care Role in Reducing Re-hospitalizations for patients with CHF and Pneumonia within 30 days of Discharge
<i>10:00 - 10:30 AM</i> <i>BAC A107</i>	Lisa M. Ritzer (Rachelle Larsen, Nursing) Improving Interprofessional Communication
<i>10:00 - 10:30 AM</i> <i>BAC A106</i>	Shelby A. Kitterman (Georgia Hogenson, Nursing) Influenza Vaccine Compliancy Among Healthcare Workers
<i>10:30 - 11:00 AM</i> <i>BAC A106</i>	Paula Kearns (Carrie Hoover, Nursing) Preventing Falls on an Oncology/Hospice/Medical and Surgical Unit Through Weekly Email Reminders
<i>10:30 - 11:00 AM</i>	

- BAC A109* Brianna M. Meyer (Gary Gillitzer, Nursing)  
Complementary Medicine for Chronic Pain Management
- 10:30 - 11:00 AM*  
*BAC A108* Catherine M. Bowe, Justin R. Juan (Kathleen Twohy,  
Nursing) Preventing and Managing Alarm Fatigue
- 11:00 - 11:30 AM*  
*BAC A108* Kimberly K. Kohorst (Kathleen Twohy, Nursing) Will  
Consistent Education Reduce Dehydration-Related  
Emergency Visits in Oncology Patients?
- 11:00 - 11:30 AM*  
*BAC A107* Lisa R. Kranz (Carrie Hoover, Nursing) The Effects of  
Bedside Registration and Bedside Triage in Emergency  
Departments
- 11:00 - 11:30 AM*  
*BAC A106* Tyler J. Greguson (Georgia Hogenson, Nursing)  
Improving the Nursing Staff's Perceptions and Attitudes  
Towards Patient Isolation in a Rural Hospital
- 11:30 - 12:00 PM*  
*BAC A107* Jena V. Stommess, Bethany L. Carlson, Elizabeth M.  
Benson, Andrea N. Eberhard, Marissa J. Hanenburg,  
Meghan T. Battista (Carrie Hoover, Nursing)  
Implementation of Nicotine Withdrawal Protocols
- 11:30 - 12:00 PM*  
*BAC A109* Elizabeth S. Neitzke, Hannah M. Peine (Gary Gillitzer,  
Nursing) Nursing Education Initiative: CAM for Quality  
of Life

## Abstracts

**Sigrist, Schwendemann, Brodeur, Voigt, Atkinson:** Communication between nurses and physicians was recognized as an area of need in a mid-sized hospital in Minnesota. Following literature review, and healthcare professional interviews, communication barrier themes were identified. The themes included time, discrepancies/disagreements about importance of the issues, hierarchy and fear, tailoring information, decreased understanding of professional roles, and electronic communication. Education on SBAR (Situation, Background, Assessment,

Recommendation) communication was identified as the main intervention to decrease communication barriers and improve communication between physicians and nurses. This project will focus on improving effectiveness and awareness of the SBAR communication tool through educational video vignettes used in orientation and continuing education settings.

**Xiong:** Technology has advanced greatly over the last few years. It has made a great impact especially in the healthcare field. Telehealth monitors are one example. This machine allows healthcare providers to monitor clients at home and provide care as necessary. Studies have shown some benefits to the use of telehealth monitors for the patients and healthcare providers such as patient empowerment and prevention of rehospitalization. However, there are also unintended consequences and barriers to the use of telehealth monitors. Therefore, the focus of this project is to examine the use of telehealth monitors in the home care setting and the impact on healthcare providers; including how it affects practice and care, and barriers to use. The project aims are to recommend strategies and define possible protocols to overcome these barriers.

**Allen:** As healthcare begins to improve, new methods are developing to provide better and more efficient care to patient populations. As a means to improve, the PDSA cycle (which stands for Plan Do Study Act) is a method to help improve care. This practice improvement project, pilots the PDSA cycle to improve care and prevent problems within the geriatric population. The purpose of this method is to test changes in healthcare policies before implementing them in practice. It is hypothesized that this method will improve patient safety, reduce care costs and improve efficiency.

**Kiminski, Anderson:** There has been considerable discussion among caregivers as to whether the personal hygiene of caregivers may have an impact on infection rates for patients. Many hospitals have enacted dress codes addressing fingernails and their role in patient infections. Does the condition of the fingernails (presence of nail polish, artificial nails, length, cut) impact infection rates as evidenced by current research? The study will involve a comprehensive review of current infection control as well as nursing literature to answer these questions.

**Jagger:** The National Research Corporation (NRC) conducts surveys for discharged patients to find areas of strengths and weaknesses of different hospitals. Based on information from NRC, the Orthopedic/Surgery Floor at a Twins Cities Hospital identified a need to improve patient and family education on medications. This project will focus on improving patient knowledge of medication names and side effects. Magnetic information cards will be posted in patient rooms; these cards will contain other names for the medication as well as uses and side effects. The overall

goal for this project will be increased patient/family knowledge once a patient is discharged from the inpatient facility.

**Rima:** Critically ill patients in the intensive care unit (ICU) require a high level of nursing attention with emphasis on technical skills such as ventilator management, multiple medication infusions, hemodynamic monitoring, etc. Research has shown that improving the outcomes of critically ill patients often times requires more than technical skills. Nursing Presence as an intervention shows improved outcomes for patients and improved patient perceptions of the care they receive. This project investigates Best Practices for the use of nursing presence in the care of critically ill or injured patients and makes care improvement recommendations for a particular ICU setting.

**Hodorff:** Problem: Re-admission to the hospital within 30 days of discharge for patients with Congestive Heart Failure (CHF) and pneumonia creates a significant burden for the patient's health as well as a financial burden for the hospital and Medicare systems. Successful Home Care programs for chronic disease management must focus on the critical measures that will decrease or prevent re-hospitalization. Purpose: The purpose of this practice improvement project is to examine what Home Care Services can do to decrease the re-hospitalization rates within 30 days of discharge from the hospital. A Minnesota home care facility conducted a review of patients with a primary diagnosis of CHF and/or Pneumonia who were admitted to the hospital January 1st through January 31st 2014. Patients seen by a transitional coach in the hospital and coach, and home care nurse one to two days after discharge from the hospital did not seek re-admission to the hospital within 30 days of discharge. The transitional coach role, plays a big part in keeping patients from reentering the hospital within the 30-day post-discharge window. The transitional coaching program seems also to support treatment compliance. Hospital staff should encourage patients to accept a consultation with a transitional coach and allow the coach and a Home Care nurse to make home visits. Both roles play an equally important part in high quality care for patients and for keeping re-hospitalizations within 30 days to a minimum.

**Ritzer:** Effective communication between all members of the healthcare team is one of the most important factors in providing excellent patient care. Current evidence suggests that when there are flaws or gaps in the communication between healthcare providers, medical mistakes are more likely to occur and patient outcomes and satisfaction decreases. This project will seek to define best practices in communication between healthcare providers and to provide a communication tool that can be implemented to improve all staff communication. Additionally, this project will explore potential implications or barriers of effective communication and to the successful implementation of the communication tool. Increased

knowledge of this information will encourage nurses and all other members of the healthcare team to provide adequate communication to help eliminate medical errors and to improve patient satisfaction and outcomes.

**Kitterman:** Free standing surgical centers are required to increase the number of employees who receive the annual influenza vaccine to greater than 90% because of a new policy from Medicare that states it will pull 2% of funding if they do not report the facility's percentage vaccinated. The 90% is the facilities overall goal. The staff vaccination has hovered at 81%, but according to Dr. Music, initiatives can increase coverage, including education, easy access to free vaccines, and the use of formal declination forms. By assessing current ideations of the flu vaccine and making a tailored education presentation for the facility, patient safety and employee attendance will improve by implementing an evidence-based plan to increase the flu vaccination percentage by next fall.

**Kearns:** Falls are a key concern for the patient population on an oncology/hospice/medical and surgical unit in a metropolitan hospital. In general, falls result in poorer patient outcomes and can lead to broken bones, head trauma, and increase the risk for premature death among older adults. In most cases, falls can be attributed to one or more of three main causes: patient factors, technology factors, and environmental factors. While it is difficult to change certain inherent falls risk factors (like patient age or weakness), there are many factors that can be modified to lessen patients' risk for falls. To combat falls on this unit, I will be sending a series of emails to the staff over a month-long period reminding them of the current strategies that they should be using in addition to introducing a new intervention each week for them to utilize. Although eliminating falls altogether is unrealistic, the goal is for this project to cause at least a small reduction in falls and an improvement in overall patient safety.

**Meyer:** Recently there have been an increasing number of veterans who are coming into the hospital with chronic pain and have been abusing their pain control narcotics therefore having an increasing tolerance to their medication. How does complementary medicine such as; acupressure, acupuncture, massage, natural oils and guided imagery, alleviate chronic pain in hospitalized veterans compared to traditional pain medication such as narcotics. For my practice improvement project I will be researching the topic of complementary medicine as it pertains to chronic pain management. I will also be educating nursing staff on the different areas of complementary medicine and implementing strategies to decrease narcotic use.

**Bowe, Juan:** Medical devices, each with its own alarm, have become increasingly present in the acute and critical care environments. The purpose of alarms is to alert the health care team of potential problems, but these alarms can compromise patient

safety if not managed properly. With hundreds of alarms ringing, beeping, and chirping on a daily basis it is easy to understand how nurses and other clinicians could easily develop alarm fatigue and delay their response or ignore alarms altogether. Alarm fatigue is a significant patient safety issue as delayed or non-responses have, resulted in patient harm. Alarm fatigue is a national problem and the number one medical device hazard identified for 2014 by the Emergency Care Research Institute (ECRI) (2013), an independent, nonprofit patient-care research organization. In an effort to make clinical alarm systems safer, the Joint Commission issued a new National Patient Safety Goal (2014), which requires accredited hospitals and critical access hospitals to address the issue in order to “reduce the harm associated with clinical alarm systems” (p.7). This new goal came about after a number of reported patient deaths attributed to alarm fatigue. The purpose of this practice improvement project is to bring awareness to nursing staff about the safety risks of alarm fatigue and and make recommendations for the management of clinical alarm systems. Once healthcare staff understands alarm fatigue and the negative effects it poses, they can implement measures to reduce the overabundance of monitor alarms and negate the negative outcomes that often come with them.

**Kohorst:** The Coborn Cancer Center evaluated the number of oncology patients receiving active chemotherapy who went to an Emergency Trauma Center (ETC) from October to December of 2013. Twenty-six percent of the patients went to an ETC because of dehydration related to nausea, vomiting, and diarrhea, which are common side effects of chemotherapy. The Coborn Cancer Center currently has no patient education materials related to why dehydration occurs or how to prevent it in this population. Thus, the nurses currently provide inconsistent and incomplete education to patients regarding dehydration. This project investigates the most effective way to educate oncology patients about dehydration and implements a strategy intended to decrease dehydration related emergency care.

**Kranz:** Emergency Departments (ED) across the U.S. continually strive to improve patient satisfaction through decreasing ED patient length of stay and provider wait time. One promising practice change to decrease patient length of stay and provider wait time and to increase patient satisfaction is bedside registration and bedside triage in the ED. The aims of this project are to review the literature on bedside registration and triage in support of a small, suburban ED looking to improve patient satisfaction. In this presentation, bedside registration and bedside triage will be defined and the effects of these actions on patient length of stay, provider wait time, and patients satisfaction will be discussed.

**Greguson:** Patient isolation is a precaution to assist hospitals in prevention of transmission of infectious diseases. Analyzing the staff's perceptions and attitudes

about the current precautions may assist in improving the effectiveness of these precautions. A systematic review of the literature regarding methods proven most effective would provide direction on increasing adherence. Using this data, education of staff and implementation of a refreshed system of precautions was provided. A follow up survey regarding the staff's perceptions and attitudes towards the new system offers input for the hospital infection control department. Improved adherence to these precautions by improving the staff's perception and understanding of them, ultimately minimizes the transmission of infectious diseases within the hospital.

**Stommes, Carlson, Benson, Eberhard, Hanenburg, Battista:** Nicotine withdrawal is one of the top three causes of patient aggression. Current evidence shows that patient aggression may result from inconsistent implementation of an evidenced based nicotine dependent protocol. Through identification of the pathophysiologic stages of withdrawal and the most effective pharmacological and behavioral interventions, nurses will be able to more efficiently recognize the need for nicotine replacement. This project will seek to define best practices to support patients who are nicotine dependent and to increase staff awareness and increase utilization of protocols to prevent withdrawal. Additionally, potential implications or barriers to implementation of nicotine dependence treatment will be established. Increased knowledge of this information will encourage nurses to initiate intervention measures in a more timely and effective manner.

**Neitzke, Peine:** On the Spinal Cord Injury/Disorder floor any patients are suffering from chronic pain and anxiety related to their spinal cord injuries. Most are treated with conventional treatments and medications. Recently, in an effort to provide further pain relief to the patients on their unit, the SCI/D unit added an integrative therapist to implement complementary and alternative medicine (CAM) to the patients. These therapies have been researched and proven to improve patients' pain levels- especially back, neck, and joint pain, decrease nausea and anxiety, and to help to meet the patients' spiritual needs, which can also lead to an increase in the patients' quality of life. But recent observation of the floor has shown the nursing staff on the unit has not been fully utilizing the resources the integrative therapist is offering. This projects aims to educate the nursing staff on the unit about the benefits of CAM and, partnering with the integrative therapist, to create a protocol for which the nurses can follow when deciding if CAM is a positive resource for their patients. We hope to establish more consults for the integrative therapist, and create a more positive quality of life for the patients on the unit.

## **Nutrition**

### **Schedule**

*7:45 - 8:05 AM*  
*ASC 142*

Maria K. Anderson (Jayne Byrne, Nutrition) EATING ATTITUDES AND BEHAVIORS IN STUDENTS CHOOSING TO MAJOR IN NUTRITION VERSUS NURSING.

*8:10 - 8:30 AM*  
*ASC 142*

Kayla L. Steffen (Jayne Byrne, Nutrition) Dietary intake patterns and eating competence in male and female collegiate swimmers

*8:35 - 8:55 AM*  
*ASC 142*

Anne-Marie M. Milbert (Amy Olson, Nutrition) THE EFFECT OF NUTRIENT LABELING ON FOOD SELECTION IN FEMALE COLLEGE STUDENTS AT A CAMPUS DINING CENTER

*9:00 - 9:20 AM*  
*ASC 142*

maoxinyu wu (Jayne Byrne, Nutrition) Comparing dietary patterns of college students when eating in America versus eating in China: Impact on nutrition intake, body weight and waist circumference

*9:25 - 9:45 AM*  
*ASC 142*

Hannah S. Maxbauer (Amy Olson, Nutrition) Conquering Anemia in Haiti Using Local Foods

*9:50 - 10:10 AM*  
*ASC 142*

Nicole Kirkvold (Bernadette Elhard, Nutrition) Re-Thermalization of Individually Packaged Meals

*10:15 - 10:35 AM*  
*ASC 142*

Kristina A. Burk (Amy Olson, Nutrition) HYDRATION STATUS AND PERFORMANCE DURING TWO-A-DAY SUMMER SOCCER TRAINING SESSIONS WITH FEMALE ATHLETES

*10:40 - 11:00 AM*  
*ASC 142*

Anna E. Krieger (Amy Olson, Nutrition) SERUM 25-HYDROXYVITAMIN D STATUS AND ANAEROBIC



PERFORMANCE IN FEMALE COLLEGIATE  
BASKETBALL PLAYERS

11:00 - 11:20 AM  
ASC 142

Kelsie E. Larson (Amy Olson, Nutrition) ENERGY  
AVAILABILITY, LEAN BODY MASS AND RESTING  
METABOLIC RATE IN FEMALE COLLEGIATE  
DISTANCE RUNNERS

**Abstracts**

**Anderson:** Congruency between personal beliefs and attitudes and messages conveyed by nutrition counselors is essential for effective communication between counselor and client. Competent eaters are individuals who are relaxed and flexible with food choices and are confident in their ability to nourish their bodies. The Ellyn Satter Eating Competency Inventory (ecSI), a 16 item validated and reliable questionnaire, is designed to assess competent eating by measuring attitudes towards food and eating behaviors. **PURPOSE:** To assess the differences in eating attitudes and behaviors of nutrition and nursing majors in both first year and senior students who were surveyed. **METHODS:** The ecSatter Institute granted permission to use the ecSI and Institutional Review Board approval was received. All first year and senior nursing and nutrition majors were invited to participate via email. Informed consent was obtained from 59 students (Gender = 8 males, 51 females; Major = 28 nutrition, 31 nursing; Year = 28 First-years, 31 seniors) who completed the ecSatter Inventory. Height and weight measurements were recorded using a scale and stadiometer. Data was analyzed with an Independent T-Test using SPSS. **RESULTS:** The mean±sd of the BMI within the population was  $22.37 \pm 2.03$ . The analysis indicated that 69% of all participants scored as “eating competent” a ( $\geq 32$ ). Nutrition majors scored ( $p=.013$ ) higher on the ecSI (mean  $\pm$  sd=  $37.35 \pm 6.9$ ) than nursing majors (mean  $\pm$  sd= $32.23 \pm 8.34$ ). There were no statistical differences between first-years and seniors in each cohort in this survey ( $p=.69$ ). **CONCLUSION:** Nutrition students had higher eating competence than nursing students. A limited male population size hindered our ability to draw any conclusions about gender. A lack of significant changes between first-year and senior students may indicate the need to discuss how nutrition curriculum could more strongly influence the promotion of positive attitudes and behaviors towards food and eating.

**Steffen:** Eating disorders among female collegiate swimmers is reported at 6.7% and subclinical eating disorders at 20.9%. Swimmers can experience pressure to be lean to look their best in a tight fitting swimsuit; however, leanness might be accomplished at the expense of adequate nutrition (Anderson and Petrie, 2012).

Purpose: To compare eating attitudes, behaviors, diet records, and body composition of male and female collegiate swimmers at the beginning and the peak of the season. Methods: IRB approval was received; 12 female and 13 male collegiate swimmers were recruited to participate in the study, but complete data was only available for 10 females and 8 males. Three-day diet records, ecSatter Inventory (ecSI), height and weight measurements were completed in October and again in late January. The ecSI is 16 statements with a score of  $\geq 32$  being “eating competent” (Satter, 2007). The data was analyzed using paired t-tests. Results: The average number of total calories consumed in a day at the beginning of the season for men was  $3,459 \pm 750$  kcal and for women  $2,227 \pm 638$  kcal and calories at peak season did not change ( $3,169 \pm 700$  kcal and  $2,382 \pm 624$  kcal respectively). Swimmers were deficient in calcium (16%), potassium (80%), vitamin D (92%), magnesium (33% females, 23% males), choline (61% males, 66% females), and 25% of female swimmers had inadequate iron intake. ecSI scores between male and female swimmers were not statistically different with an average score of  $33.9 \pm 6.78$ ; 64% of the swimmers were eating competent at the beginning of the season compared with 67% during the peak season. BMI significantly declined in the swimmers during the season ( $p = .047$ ). Positive correlations occurred between weight satisfaction and eating competency scores ( $p = 0.000$ ) and between their weight satisfaction and calories consumed ( $p = 0.017$ ). Conclusion: Caloric intake did not increase as the season progressed. Energy needs for swimmers are estimated to be 4,000-5,000 calories in season (Hoogenboom, 2009). Females did not have a statistically significant change in weight ( $p = 0.081$ ), but on average experienced a 3.68 lbs weight loss. The time of season does not significantly affect swimmers eating competency scores. Eating competency was not related to the swimmers’ diet adequacy. Swimmers who feel comfortable with their body weight have a more positive relationship with food according to their ecSI scores. This indicates a lower risk for eating disorders in swimmers satisfied with their body weight.

**Milbert:** Introduction: Obesity rates have nearly tripled among children and adolescents over the past 30 years and almost 70% of adults living in the United States are overweight or obese. Mandatory calorie labeling in restaurants with more than 20 locations was included in the 2010 United States Health Reform Bill. The goal of this labeling effort is to provide nutrition information to influence more healthy food selections. Nutrient labeling in college foodservice could improve nutrition knowledge and promote healthier food choices.

Purpose: To evaluate how female college students use nutrition information and whether increased knowledge influenced food selections in a campus dining center. Methods: Approval from the Institutional Review Board and informed consents were obtained for six hundred female college students. The study was completed in three stages: baseline, treatment, and post-treatment. The treatment period

included use of a feature board displaying the nutrient content of three menu items at the entrance to the dining facility. Also nutrient labels were placed next to all menu items at the point-of-selection. Two hundred females completed short surveys and had their dinner meals photographed at each of the three treatments. Subjects were asked to estimate the content of three nutrients in their meal and accuracy of their estimate was assessed using digital photography and CompNutrition Nutrient Analysis software. Statistical significance was evaluated using analysis of variance.

Results: Average energy content of meals pre-treatment was significantly higher than post-treatment (653 and 497 calories, respectively,  $p$  value=0.0001). Subjects' ability to estimate the sodium content of their meal improved when the nutrition labels were displayed ( $p$  value=0.007) and persisted after the labels were removed ( $p$  value=0.001). No significant improvement of subject's ability to estimate the energy content or grams of fat in their meal was noted between the three treatments. Only 17% of surveyed subjects noticed the feature board at the entrance to the dining facility.

Conclusions: Menu labels were associated with a slight decrease in the average energy content of foods selected. Sodium estimations were the least accurate of the three nutrients initially and improved the most. Development of nutrient labels and feature boards is time consuming, but before abandoning this strategy more effective placement or incentives to read the feature board may enhance its effectiveness. Access to nutrition information in the food service could help college students choose healthier foods and develop dietary patterns that become lifelong habits, ultimately reducing obesity and chronic disease.

**wu:** Title: Comparing dietary patterns of college students when eating in America versus eating in China: Impact on nutrition intake, body weight and waist circumference.

Food acculturation is the process of changing and adapting food choices and eating behaviors when people move from one culture to another. Chinese women living in America have lower intakes of dairy, bread/cereal, fat, protein, sugar, and energy when compared to American counterparts. These differences reflect ethnic practices combined with changes made after adjusting to American culture and American food. Changes in the diet of Americans living in China have not been reported in the literature.

Purpose: 1) Compare dietary intake patterns of Chinese international students while living at an American college campus vs. while living at home in China. 2) Compare dietary intake patterns of American college students while living at an American college campus vs. while living in China. 3) Determine if dietary changes impact body weight, and waist circumference. Methods: Chinese international

students were contacted by email during the fall semester and asked to participate over spring in America and summer in China. American students planning to study in China over the summer were contacted by email during fall semester and asked to participate over spring in America and summer in China. A total of 20 participants returned informed consent forms (17 Chinese students, 3 American students). Both groups kept 7-day food records while in America and while in China. Body weight and waist circumference for all participants was obtained prior to leaving America and upon return to America. Paired t-test was used for data analysis. This study received IRB approval. Results: There was no statistically significant difference for Chinese or American students with regard to dietary intake and body measurements at the end of spring term in America vs. after the summer term in China. Protein intake (China:  $66\pm 19$  gram,  $79\pm 9$  gram, MN:  $63\pm 17$  gram,  $75\pm 21$  gram) both groups was higher in China, while energy intake (China:  $1128\pm 219$  gram,  $1187\pm 367$  gram, MN:  $1251\pm 262$  gram,  $1494\pm 382$  gram), carbohydrate (China:  $134\pm 33$  gram,  $140\pm 37$  gram, MN:  $147\pm 27$  gram,  $183\pm 41$  gram) and fat intake (China:  $31\pm 8$  gram,  $33\pm 13$  gram, MN:  $43\pm 13$  gram,  $47\pm 17$  gram ) was lower in China. These dietary changes did not result in changes in body weight or waist circumference. Conclusion: Differences in dietary pattern were found however the time period for the changes in dietary intake was not long enough to impact changes in body weight or waist circumference.

**Maxbauer:** Title: Conquering Anemia in Haiti Using Local Foods

Introduction: Haiti is the poorest country in the Western hemisphere, and 60% of Haitian children living in Port Au Prince are anemic. Consequences of anemia are impaired learning, physical fatigue, and reduced work capacities which affects the national economy.

Purpose: to determine the hemoglobin status of students of Grace Village, a school for orphaned children, in Titanyen, Haiti.

Methods: permission to conduct this study was received from the CSB|SJU Institutional Review Board and the Healing Haiti Board, sponsors of Grace Village. Informed assent was received from all 39 participants. Kristina DeMuth, a CSB alum, is working with the Grace Village staff to implement dietary changes to improve nutritional quality, so this population was selected to study. There were 16 females, 23 males, from 6-18 years old. The average length of stay at Grace Village is 14 months, but the range is from 2-18 months. Blood samples, collected via finger stick, were analyzed using the HemoCue Hb 201 to determine hemoglobin values.

Results: anemia rates at Grace Village were 38.5% which is 36% lower than a comparable group of children from Port Au Prince, and 18% lower than the World Health Organization's worldwide anemia estimate. Highest rates of anemia were in the youngest groups and these children were also more often below normal for BMI, weight for age, and height for age.

Conclusions: the dietary changes at Grace Village include an increase in plant based protein, iron and vitamin C sources which likely support the higher hemoglobin levels measured. Most nutrition efforts to reduce anemia use supplements or fortified foods; this effort instead improved the diet by incorporating local sustainable foods. The diet changes were achieved without increasing food costs for the school making this a realistic and feasible approach to fight anemia. Additionally buying locally produced foods supports the local economy. Anemia is a complex problem with many contributing causes; diet changes take time to implement but small changes can significantly improve the nutritional intake.

**Kirkvold:** Abstract

CSB Community Kitchen is a new initiative at the College of St. Benedict to reduce food waste by distributing leftover food from campus culinary services to people in the area who face food insecurity. Food safety is an important concern to prevent food borne illness that can occur when food is not heated to the proper temperature. Investigating the proper re-thermalization of individually packaged food items included the development of a standardized re-thermalization method to collect data in microwave ovens with different wattages in order to ensure the safety of the food product. Project quantitative assessment methods include food time and temperature data collection and analysis. Qualitative assessments methods include standardized sensory evaluations that determine the acceptability of food in terms of aesthetic appeal, taste, and texture. Project outcomes include designing food package labels with written instructions for easy handling and preparation to be included during food distribution.

**Burk:** An estimated 9,000 high school athletes are annually treated for heat related illness. Dehydration is a major component of heat related illness and decreases a player's performance. A loss of just 2.5% of body mass can lead to a decrease in work output by 25% (Sawka, 2000). Purpose: To determine: 1) the hydration status of female soccer players, 2) whether a sports drink improves hydration status compared to water, and 3) the connection between hydration status and performance in female soccer players. Methods: IRB approval was received and informed consents were obtained from 15 members of a Division III soccer team. Participants were randomly assigned to groups receiving either water or Gatorade for one day, and the opposite for day two. Body weight, fluid consumption and urine osmolality were recorded before and after each practice session. All participants performed the Loughborough Soccer Passing Test (LSPT) (Ali, 2008) before the first practice session and after the second practice. Data was analyzed using t-test and Pearson's bivariate correlation test. Results: Dehydration leads to a significant increase in penalty time on the LSPT before the first practice (LSPT penalty scores were 19.7 sec for well-hydrated, 25.4 sec for minimally dehydrated, and 34.8 sec for significantly-dehydrated,  $p=0.046$ ). Participants tended to consume

more water (48.4 oz) than Gatorade (37.9 oz); urine osmolalities were 795 and 661 mOsm/kg, respectively. Conclusion: 86% of participants arrived for the first session dehydrated but only 39% were dehydrated at the beginning of second session. The greater intake of water, although not significant, was unexpected; however, participants consuming water started practice more dehydrated as reflected in the higher urine osmolalities. Dehydration was associated with an increase in errors, which increased of total time to complete the LSPT. Most participants believed they were well hydrated going into training sessions. Given the impact of dehydration on performance a greater awareness of optimal fluid intake prior to practices and competitions is recommended.

**Krieger:** Professional athletes with adequate vitamin D status jumped higher and sprinted faster than those with insufficient status [ $<50\text{nmol/L}$ ] (Close, 2012). The incidence of deficiency varies throughout the year, with rates increasing from 12% in the fall to 63% in the winter (Halliday 2011). This seasonal dip may adversely affect skeletal muscle function and performance. PURPOSE: To evaluate serum vitamin D [25(OH)D3] status and anaerobic performance in collegiate female basketball players and verify whether 2000 IU/daily vitamin D3 is sufficient to maintain optimal 25(OH)D3 levels during the winter months. METHODS: IRB approval was obtained prior to testing. Fifteen varsity female collegiate basketball players (age =  $19.7 \pm 1.4$  y) volunteered to participate in the double blind, placebo-controlled study. Subjects were randomly divided into two groups: 1) 2000 IU vitamin D3/daily or 2) 100 IU vitamin E/daily (i.e. placebo). Supplements were consumed for 60 days. Health questionnaires, T drill sprint tests, and vertical jump heights were completed pre- and post-supplementation. Serum vitamin D concentrations 25(OH)D3 were measured pre- and post-supplementation using a 25(OH)D3 ELISA assay. SPSS t-tests were used for statistical analysis of data. Vitamin D deficiency was defined in accordance with the Endocrine Society guideline for inadequacy ( $<75$  nmol/L). RESULTS: 79% of the subject population was vitamin D insufficient in October ( $67.4 \pm 24.4$  nmol/L). Serum 25(OH)D3 significantly increased in the vitamin D group following supplementation, with 72% of the subjects achieving levels greater than 75 nmol/L in December ( $67.9 \pm 24.2$  nmol/L to  $79.0 \pm 18.2$  nmol/L,  $p < 0.05$ ). In contrast, serum 25(OH)D3 decreased in the placebo group, but changes were not significant ( $66.9 \pm 26.5$  nmol/L to  $56.7 \pm 26.5$  nmol/L,  $p > 0.05$ ). The increase in serum 25(OH)D3 did not significantly effect vertical jump heights or T drill sprint times ( $p > 0.05$ ). CONCLUSIONS: Daily supplementation of 2000 IU vitamin D3 over a 60-day period increased serum 25(OH)D3, but the elevated vitamin D status did not improve our chosen measures of anaerobic performance in collegiate female basketball players. The lack of performance effects may indicate that a chronic deficiency of vitamin D or a more severe deficiency is necessary to adversely affect muscle function.

**Larson:** Female athlete triad occurs two to three times more often in sports that emphasize leanness, such as distance running. Athletes with female athlete triad experience low energy availability, amenorrhea, and loss of bone density (Javed, 2013). Low energy availability may be intentional to enhance performance, pathological (eating disorder), or unintentional when caloric intake fails to meet energy expenditure (Gibbs, 2013).

**Purpose:** To determine energy availability in female runners from pre-season, peak and post-season and measure changes in resting metabolic rate (RMR) and lean body mass (LBM). **Methods:** IRB approval and informed consents were obtained from 31 collegiate cross-country runners. Initial surveys of Eating Attitudes Test (Eat-26) were completed to determine risk for eating disorders. LBM (measured using bioelectrical impedance), resting metabolic rate (measured using Medgem), and three-day diet records were collected pre, peak, and post season. Participants tracked their exercise weekly. Diet records were analyzed using SuperTracker (choosemyplate.gov). Data was analyzed using paired t-test and Pearson's bivariate correlation test. **Results:** 30 runners scored less than 20 points on the EAT-26 survey, indicating low risk for an eating disorder. EAT-26 scores negatively correlated with both caloric intake ( $p=.021$ ) and calories/kg LBM ( $p=.032$ ). RMR significantly increased on average from pre-season (1159 Cals) to post-season (1443 Cals) ( $p<.001$ ). No significant change in caloric intake (2469-2420 Cals), LBM (100.6 kg) and calories/kg LBM (53.8-53.1) occurred from pre- to post season. However, calories/kg LBM (53.8-55.5) significantly increased from pre to peak season.

**Conclusions:** The incidence of eating disorders in cross-country runners has been reported as high as 19%; in this study only one (3%) had an EAT-26 score suggesting high risk (Thompson, 2007). This population appeared to be consuming sufficient calories to maintain energy balance as evidenced by increases in RMR over the course of the season.

## Physics

### Schedule

*8:00 - 8:30 AM*

*PEngl 167*

Daniel T. Schmit (James Crumley, Physics) The  
CSB/SJU All-Sky Camera

*8:30 - 9:00 AM*

*PEngl 167*

Alexandra M. Brancale (Adam Whitten, Physics)  
Measuring Ultrashort Laser Pulses using Frequency-

Resolved Optical Gating in Conjunction with Genetic and Iterative Algorithms

9:00 - 9:30 AM

*PEngl 167*

Matthew F. Thompson (Todd Johnson, Physics) Mode-Locked Ytterbium Fiber Laser

9:30 - 10:00 AM

*PEngl 167*

Stephen D. Katz (Todd Johnson, Physics) Mode-Locked Carbon Nanotube Fiber Lasers

10:00 - 10:30 AM

*PEngl 167*

Patrick J. Foley (Adam Whitten, Physics) Aerosol Optical Depth Calculations near Collegeville, MN

10:30 - 11:00 AM

*PEngl 167*

Tyler J. Anderson (Thomas Kirkman, Physics) Analyzing Vacuum Tube and Solid State Amplification

11:00 - 11:30 AM

*PEngl 167*

Yiqi Lu (Dean Langley, Physics) Holography

11:30 - 12:00 PM

*PEngl 167*

James M. Neddermeyer (Dean Langley, Todd Johnson, Physics) Utilizing Axicons to Generate and Observe Bessel Beams

## Abstracts

**Schmit:** Every night meteorites enter the Earth's atmosphere. The All-Sky camera at St. John's University observes meteorites in the atmosphere and records a continuous image of the night sky. This project developed a method to calculate the altitude of meteorites observed over SJU. Traditionally meteorite triangulation involves three or more observations. Because a network of cameras in Minnesota is not yet fully developed, it was necessary to develop a two observer method of meteorite triangulation to calculate the altitude using the CSB/SJU and a similar camera at the University of Minnesota Morris. This method and the development of the IDL computer program to perform the calculations will be presented. Additionally, future research areas and topics, as well as methods of improving the accuracy of these calculations will be discussed.



**Brancale:** Precise ultrashort light pulse measurements are critical in many physics experiments using ultrafast lasers. A Frequency-Resolved Optical Gating (FROG) system can efficiently and accurately record these desired measurements. FROGs split the input laser beam, delay half of the beam, and overlap both halves in a nonlinear medium. The resulting beam allows the retrieval of phase and duration information. A data file is created by the FROG software that includes beam intensity measurements. By using genetic and iterative algorithms, the intensity data can be manipulated in order to retrieve the pulse duration and phase information. One focus of this research was to align the FROG and crosscheck the measurements with a commercially built FROG. The other component of this research was to determine a way to interpret intensity data from the laser using genetic and iterative algorithms together.

**Thompson:** A Mode-Locked Laser is a laser that produces a train of ultra-short, high power pulses of light. Mode-Locked Lasers provide many opportunities in myriad fields of interest. From micro-machining to redefining the second, these lasers have been instrumental in many advances in applied optics in the 21st century. We have constructed and analyzed an Ytterbium fiber oscillator with an ~80 MHz repetition rate using passive mode locking techniques. Here, we offer a discussion of the physical theory behind this laser's operation as well as possible opportunities for its application in frequency combs.

**Katz:** Mode-locked lasers are rapidly pulsing lasers that have useful applications in spectroscopy and frequency metrology. A fiber mode-locked laser provides stability and functions without fine tuning. Carbon nanotubes (CNT) are a convenient saturable absorber, a critical component of a mode-locked laser, and can be deposited directly into the laser cavity by an optically driven deposition method. The purpose of this research was to explore the deposition process and construct a mode-locked laser in the 1550 nm near infrared region. This deposition process was attempted using two different wavelengths. Ideal deposition time varied based on wavelength and concentration of CNT in the application medium. Two laser cavities were constructed, exhibiting semi-stable mode-locking with pulse repetition rates of 66.2 MHz and 88.1 MHz.

**Foley:** Atmospheric optical depth is a measure of scattering and absorption of sunlight through the Earth's atmosphere. Clouds, ozone and aerosols all contribute to the atmospheric optical depth. In order to measure the aerosol optical depth, or the contribution due to aerosols, irradiance measurements were taken during the months of October and November. To avoid absorption from water vapor and ozone, measurements were taken at World Metrological Organization standard wavelengths: 368nm, 412nm, 500nm, 610nm, 675nm, 778nm, and 862nm and only on days with little cloud cover. Variations in the aerosol optical depth were

observed and compared to data taken in July and August of 2010. Overall, aerosols optical depths appear to be lower in late autumn than late summer, with summer values peaking around four times the autumn peak values. Due to the relatively low aerosol optical depth values, gathering data on days with little water vapor absorption becomes increasingly important in the autumn months.

**Anderson:** Vacuum tube amplifiers and solid state amplifiers are two devices created to increase the voltage output of an input signal. Although the end result is the same, to amplify the power of an input signal, these two methods produce slightly different results. When it comes to amplifying an audio signal, the method used can have several significant effects on the quality of the sound produced. The purpose here was to find out what these perceived differences are. To do this, a small tube amp was constructed and tested for unique output characteristics. A small solid state amp was also tested in a similar manner; the output waves were then compared side by side. It was shown that vacuum tube amplifiers produce extra harmonic content, while the solid state amplifiers produce a more even frequency response. Despite the fact that solid state amplifiers are clearly the cheaper, economic choice, vacuum tube amps are still the preferred method of amplification in several niche applications.

**Lu:** The Hungarian-British physicist Dennis Gabor won the Nobel Prize in Physics for his invention of holography. The traditional method of making a hologram uses a real object to reflect laser light onto film. In this experiment, I replace the real object with a spatial light modulator (SLM) from a projector, such that the modulator can provide the digital image to be projected onto the film. Before making the digital hologram, I made a transmission hologram that can be viewed using laser light, and a reflection hologram that can be viewed under white light. Through making different types of holograph, I estimate the range of proper exposure time for the digital hologram. The best exposure time for different types of hologram will be determined by the comparison of the holographic films with different holographic methods and exposure time. Moreover, further comments on the experiment will be discussed.

**Neddermeyer:** Abstract: Normal converging lenses focus incident light to a single focal point located on its optical axis; axicons are conical lenses that converge light over a spread of points in line along its optical axis. The intensity profile of a Gaussian beam resembles a bell and as this beam propagates through space it diffracts or spreads out radially. Illuminating an axicon with a Gaussian beam forms a locally nondiffracting wave packet along the axicon's optical axis; the intensity profile of the beam in this region closely approximates that of a Bessel beam which is a bright central spot surrounded by concentric circles that alternate between light and dark due to interference. Beyond the region of the axicon's line-focus, the beam's intensity cross-section is an annulus or ring; the diameter of this ring

increases proportionally with distance while its thickness remains constant. This presentation details my research into utilizing axicons to create a small region in which the beam approximates a Bessel beam. I discuss my attempts to observe Bessel beams and to measure the beam's ring shaped profile that propagates beyond the Bessel beam region. I also provide a brief description of a few optical applications that could benefit from employing axicons.

## Social Sciences Presentations:

### Accounting & Finance

#### Schedule

*8:30 - 8:50 AM*

*Simms 310*

Joseph T. Thompson (Warren Bostrom, Accounting & Finance) What are the effects of tobacco sin taxation on usage and United States tax revenue?

*8:45 - 9:00 AM*

*Simms 310*

Trevine N. Saunders (Warren Bostrom, Accounting & Finance) Drug Decriminalization vs. Drug Legalization: An Economic Examination

*9:00 - 9:15 AM*

*Simms 310*

Maxwell P. Judd (Warren Bostrom, Accounting & Finance) Financial Impact of Professional Sports Stadiums on the States, Cities, and Individuals

*9:15 - 9:30 AM*

*Simms 310*

Kevin R. Higgins (Warren Bostrom, Accounting & Finance) Financial Implications of Playing the Lottery

*9:30 - 9:45 AM*

*Simms 310*

Mark S. Heinen (Warren Bostrom, Accounting & Finance) Effects of Same-Sex Marriages on Minnesota Tax Revenue

*9:45 - 10:00 AM*

*Simms 310*

Noah D. Vannevel (Warren Bostrom, Accounting & Finance) Taxation of Retail Marijuana

*9:45 - 10:00 AM*

*Simms 310*

Christine A. Brodersen (Warren Bostrom, Accounting & Finance) The Financial Impact of Hosting the Olympics

*10:00 - 10:15 AM*

*Simms 340*

Anthony T. Wieneke (Warren Bostrom, Accounting & Finance) Moral Investing: Analyzing the financial impacts of investing in "moral" companies.

*10:15 - 10:30 AM*

*Simns 340*

Joseph J. Silhacek (Warren Bostrom, Accounting & Finance) Best method to use for valuing a company

*10:30 - 10:45 AM*

*Simns 340*

Heidi A. Mielke (Warren Bostrom, Accounting & Finance) Analyzing the Effect the U.S. Economy has on Merger and Acquisitions

*10:30 - 10:45 AM*

*Simns 310*

Letitia Thurston (Warren Bostrom, Accounting & Finance) Impact of Implementing Value Added Tax in the Bahamas

*10:45 - 11:00 AM*

*Simns 340*

Nicholas G. Meyer (Warren Bostrom, Accounting & Finance) The Decline in Defined Benefit Plans with a Shift Towards Defined Contribution Plans and the related impact on today's workforce

*10:45 - 11:00 AM*

*Simns 310*

William M. Starbird (Warren Bostrom, Accounting & Finance) The Effect of Minnesota Taxes on a Resident's Decision to Switch their Domicile

*11:00 - 11:15 AM*

*Simns 310*

Jason M. Porten (Warren Bostrom, Accounting & Finance) Is it worth repealing the Federal Estate/Gift Tax altogether?

*11:00 - 11:15 AM*

*Simns 340*

Thomas Q. Greenheck (Warren Bostrom, Accounting & Finance) Mergers & Acquisitions in Community Banks

*11:15 - 11:30 AM*

*Simns 310*

Andrew Long (Warren Bostrom, Accounting & Finance) The Capital Gains Tax and its Effect on Investment

*11:30 - 11:45 AM*

*Simns 310*

Luke J. Desouza (Warren Bostrom, Accounting & Finance) What is the connection between state tax rates and state GDP's?

## Abstracts

**Thompson:** Sin goods are used in people's everyday lives and endure what's called sin taxation. We believe they are negative externalities, which are derived by the name that is given. I am going to focus on the tobacco industry and its effects on usage and tax revenue. Would an increase in these taxes possibly curb some of the usage? How much might usage be reduced? My research digs deep into the states that have recently passed laws on tobacco taxes. From there, I analyzed what the effect on sales was in order to give a better understanding on usage and how much revenue was earned.

**Saunders:** Drug prohibition is an important policy that costs governments millions of dollars to enforce. Many believe drug decriminalization or legalization, will solve the budget crisis, reduce prison overcrowding, and cripple drug cartels. Still, others feel that the benefits of keeping illicit drugs illegal will outweigh the negative consequences of legitimizing these substances. Regardless of the social impact of sustaining, diminishing, or eliminating prohibition, what is often overlooked in this debate are the distinctions between decriminalization and legalization. Using the quasi-illegal marijuana industry as a basis, this research will analyze the economic differences of prohibition, decriminalization, and legalization mainly taking into account potential changes in government spending and tax revenue, and the potential creation of a legal drug industry.

**Judd:** Professional stadium financing has been a current topic in Minnesota for the last decade as many teams have or will be receiving a new stadium. These projects have a great effect across the states. Many believe that these stadiums provide a boost to the economy, while others disagree. My research will examine this issue by investigating the effect these stadiums have on the state, city, and individual levels.

**Higgins:** Winning the lottery can be an exciting thought. What could you do with all that money? One thing you do not want to do is overlook the tax implications of the additional income. There are many taxes, and ways to avoid paying some taxes, of which many people are not aware. I will take a few different hypothetical cases of lottery winners and show the tax implications. My research will also show how, if each winner properly utilizes the tax system, they will get the most out of their winnings.

**Heinen:** Laws have changed in Minnesota that allow Same-Sex Marriages to be legally recognized in our state. I will dive into the tax revenue implications resulting from this law change. Research will include the marriage tax penalty as well as sales tax revenue from the increase in weddings in the state. I will investigate effects of the

marriage tax penalty at different income levels and highlight which levels will be most affected.

**Vannevel:** Every business owner has to pay taxes. This year, in two states, retail marijuana is being sold and taxed. The research I have conducted looks into how this industry is being taxed and what systems are in place to ensure proper taxation and regulation. Additionally, I have looked into the financial differences in the taxation of businesses that sell retail marijuana and medical marijuana. My research will look at the financial impact of allowing retail marijuana in Minnesota and if this is something our state would financially benefit from.

**Brodersen:** Every two years, millions of viewers tune in to watch the Olympic Games, making it the world's biggest global sporting event. As a spectator, the Olympics appear to benefit the host city as it seems ideal for economic expansion and a strong investment opportunity. However, do cities actually benefit financially from hosting the Olympics? My research will explore this question by analyzing the cash investment of hosting the Olympics and comparing it to the cash generated.

**Wieneke:** How do morals impact choosing companies to invest in? With a movement spreading across the United States to divest in oil companies and invest in more sustainable companies, it is important to analyze the costs and benefits for the investors. My research focus will be to approach this topic from a financial viewpoint, providing examples of investment options and discussing the pros and cons of this investment strategy. I will examine stock price returns of investing in "moral" companies vs. investing in the overall stock market

**Silhacek:** Investing in a publicly traded company's stock is a common practice among individuals and financial institutions. The problem that investors face is understanding how to properly value companies in order to receive the largest return on their investment. My research will analyze multiple approaches to valuing companies to see if there is a positive relationship between the method and future stock price returns. The goal of my research results is to present the most reliable company valuation method for investors to use.

**Mielke:** Many companies elect to join forces for a greater chance at success. Worldwide, mergers and acquisitions occur once every 18 minutes. With the large number of occurrences, it is important to study factors that impact mergers and acquisitions. In my research, I will be studying how economic conditions effect the value of mergers and acquisitions. I will be specifically looking at how the premium paid during an economic expansion or contraction change with respect to GDP growth rates, stock prices, and interest rates. Additionally, I will be looking at

historic deals and estimating what the premiums would have been based on different economic factors.

**Thurston:** The Caribbean region is in a transition toward a liberalized trade environment with low tariffs. Since traditional sources of revenue, such as duties on imports, are declining, the primary solution to stimulate economic growth is a tax reformation. Thus, many Caribbean countries have been implementing Value Added Tax, which is a consumption tax charged on the value of goods and services. The purpose of my research is to explore the impact of Value Added Tax on the Caribbean region, specifically in The Bahamas. I will examine certain Caribbean countries that have implemented VAT, taking into account economic and tax considerations. Once the information is obtained, I will compare the economies of those countries to the economy of the Bahamas to see if it will be a beneficial or detrimental long-term concept.

**Meyer:** There has been a significant decrease in the amount of defined benefit (pension) plans offered by companies over the last few decades with a shift towards defined contribution plans as an alternative retirement option. This has happened for two primary reasons: falling long-term interest rates and increased life expectancy. This turn towards defined contribution plans has a significant impact on younger generations of workers and emphasizes the importance of saving early. My research will include background information on the falling interest rates and longevity of people as well as looking into savings options for workers today. I explored governmental pension plans as well as 401(k) matching contributions.

**Starbird:** Minnesota is currently known as one of the states with the highest tax burden. Specifically, the implementation of both estate and gift taxes have caused numerous citizens of Minnesota to switch their domiciles to one of the various states which does not impose individual income taxes. My research question will explore how large of a role these taxes play in the decision of Minnesotans, specifically retirees and business owners, moving to a more tax-friendly state. I plan to further my research on the current legislature regarding the possibility of eliminating and /or lowering the current Minnesota tax laws. In addition, I plan on interviewing people who have moved to more tax-friendly states and asking questions regarding their primary reasons of doing so. I will put together real-life situational examples addressing how switching domiciles can benefit a variety of people according to their financial status, as well as their stage in life.

**Porten:** The Federal Real estate/gift tax affects millions of people every year. It is important to understand these taxes so that people can spend or not spend their money accordingly. If these taxes were taken away, there would be significant consequences for individuals, and the government. I am going to weigh the pros and



cons of whether the government should get rid of these taxes or keep them as they are already implemented.

**Greenheck:** One industry of the United States that was significantly affected by the financial crisis of 2008 – 2009, was the community banking industry. Prior to the crisis, community banks were being acquired and merged at prices 2.5 times the value of their net assets. After the crisis, the banks began trading at a far lower premium, sometimes even at a discount. Factors that affect this price include, profitability, quality of assets, and branch value. My research will explore how these factors are weighted, now vs. before the crisis, when determining the price of community bank acquisitions.

**Long:** Why is it that Warren Buffet pays taxes at a lower rate than his secretary? The reason is that Buffet sees a majority of his income in the form of capital gains. Historically, the tax on long-term capital gains has been significantly lower than the tax on regular income. This tax has come under fire due to the possibility that it favors the wealthy. Opponents of this view believe that higher taxes may decrease investment. My research has taken me to the relationship between investment and tax rates, in an effort to shed light on the issue. This relationship will determine whether or not there is a strong correlation between tax rate and amount of investment, which may be beneficial to tax legislature.

**Desouza:** Is there a correlation between state tax rates and their respective GDPs? GDP is a measure of total economy output divided amounts total population. States have differing tax rates as well as differing GDPs. They also have many types of tax rates such as income tax or corporate tax. My research is exploring different state tax rates and their corresponding GDP's. I will also be evaluating if there is any correlation between levels of GDP and tax rates. To do this analysis will need to be done on many different types of tax including total tax, personal income tax, and corporate tax rates. These differing tax rates will be explored these along with the GDP of the corresponding year.

## Economics

### Schedule

*9:00 - 10:15 AM*

*Main 323*

Jordan T. Wachholz (John Olson, Economics) The Effectiveness of Universal Health Care

*9:00 - 10:15 AM*

<i>Main 324</i>	Molly J. Carey (John Olson, Economics) Economic and Ethical Effects of the Minimum Wage and the Earned Income Tax Credit
<i>9:00 - 10:15 AM Main 324</i>	Hoang X. Dao (John Olson, Economics) Beauty and Income
<i>9:00 - 10:15 AM Main 323</i>	Adam D. Gooley (John Olson, Economics) Infrastructure Investment and Pakistan's Economic Growth
<i>9:00 - 10:15 AM Main 323</i>	Connor P. Griffin (John Olson, Economics) Economic Growth and Infant Mortality Rates
<i>9:00 - 10:15 AM Main 323</i>	Tim J. Beddow (John Olson, Economics) The Efficiency of U.S. Coal-Fired Power Plants
<i>9:00 - 10:15 AM Main 322</i>	Axel Ramsgard (John Olson, Economics) The Consumption Effects of Higher Cigarette Taxes
<i>9:00 - 10:15 AM Main 322</i>	Stephen G. Jacobs (John Olson, Economics) The Effects of State and Local Income Taxes on Professional Baseball Salaries
<i>9:00 - 10:15 AM Main 320</i>	Cody E. Voll (John Olson, Economics) The Monopsony Labor Market in Major League Baseball
<i>9:00 - 10:15 AM Main 320</i>	Joseph A. Miller (John Olson, Economics) NCAA Regulation and Competitive Balance
<i>9:00 - 10:15 AM Main 320</i>	Kyle J. Bohm (John Olson, Economics) Economic Factors in Golf Participation Rates
<i>10:30 - 11:45 AM</i>	

- Main 324* Caitlin E. Summers (John Olson, Economics) An Economic Analysis of Educational Achievement
- 10:30 - 11:45 AM*  
*Main 324* Jake T. Orth (John Olson, Economics) An Economic Analysis of the Race-Based Wage Gap
- 10:30 - 11:45 AM*  
*Main 323* Jack H. Holmen (John Olson, Economics) Exchange Rate Effects on Tourism in South Africa, 2000-2013
- 10:30 - 11:45 AM*  
*Main 323* Nick P. DeWitt (John Olson, Economics) An Analysis of the Economic Union Membership Choices of European Countries
- 10:30 - 11:45 AM*  
*Main 322* Dominic J. Todora (John Olson, Economics) An Economic Analysis of U.S. Coffee Consumption
- 10:30 - 11:45 AM*  
*Main 322* Zach H. Einyck (John Olson, Economics) Recent Economic Developments in the U.S. Brewing Industry
- 10:30 - 11:45 AM*  
*Main 322* Hank A. Brown (John Olson, Economics) An Economic Analysis of Chinese Pork Production and Consumption Since 1978
- 10:30 - 11:45 AM*  
*Main 320* Fabricio J. Moncada (John Olson, Economics) Credit Default Swaps: The Effects of Transparency and Central Clearing
- 10:30 - 11:45 AM*  
*Main 320* Ethan J. Mustonen (John Olson, Economics) Federal Reserve “Quantitative Easing” and the Mortgage and Housing Markets
- 10:30 - 11:45 AM*  
*Main 320* Kevin P. Battis (John Olson, Economics) The Effectiveness of Monetary and Fiscal Policies Near the

Federal Funds Rate Zero Bound: An Application of the  
Anderson-Jordan St. Louis Equation

**Abstracts**

**Wachholz:** The Effectiveness of Universal Health Care

**Carey:** Economic and Ethical Effects of the Minimum Wage and the Earned  
Income Tax Credit

**Dao:** Beauty and Income

**Gooley:** Infrastructure Investment and Pakistan's Economic Growth

**Griffin:** Economic Growth and Infant Mortality Rates

**Beddow:** The Efficiency of U.S. Coal-Fired Power Plants

**Ramsgard:** The Consumption Effects of Higher Cigarette Taxes

**Jacobs:** The Effects of State and Local Income Taxes on Professional Baseball  
Salaries

**Voll:** The Monopsony Labor Market in Major League Baseball

**Miller:** NCAA Regulation and Competitive Balance

**Bohm:** Economic Factors in Golf Participation Rates

**Summers:** An Economic Analysis of Educational Achievement

**Orth:** An Economic Analysis of the Race-Based Wage Gap

**Holmen:** Exchange Rate Effects on Tourism in South Africa, 2000-2013

**DeWitt:** An Analysis of the Economic Union Membership Choices of European  
Countries

**Todora:** An Economic Analysis of U.S. Coffee Consumption

**Eijnck:** Recent Economic Developments in the U.S. Brewing Industry

**Brown:** An Economic Analysis of Chinese Pork Production and Consumption Since 1978

**Moncada:** Credit Default Swaps: The Effects of Transparency and Central Clearing

**Mustonen:** Federal Reserve “Quantitative Easing” and the Mortgage and Housing Markets

**Battis:** The Effectiveness of Monetary and Fiscal Policies Near the Federal Funds Rate Zero Bound: An Application of the Anderson-Jordan St. Louis Equation

## Entrepreneurship

### Schedule

*11:00 - 11:30 AM*

*Simms 310*

Teddy E. Kline, Andrew J. Mueller (Paul Marsnik, Entrepreneurship) SquareOne

### Abstracts

**Kline, Mueller:** SquareOne is a student run non-profit with the mission of creating lasting business ventures in the developing world. This past year we developed a 3 stage process to ensure success and sustainability of our projects. The three stages are discovery, implementation, and re-evaluation. We currently have a stage one project in Niarobi, Kenya where we are working with the Madodo Boys Center for homeless children and a stage three project at Hope Academy in rural Uganda.

## Global Business Leadership

### Schedule

*10:00 - 12:00 PM*

*BAC 121*

Matthew J. Berthiaume, Sarah K. Ries, Jenna M. Hanson-Johnson, Rebecca D. Bokinski (Deborah Pembleton, Global Business Leadership) Climbing the Wall of Talent Management within REI

*10:00 - 12:00 PM*

*BAC 121*

Pa Nhia Khang, John Schumer, Collin Blenker, Anthony Maher (Deborah Pembleton, Global Business Leadership) Whole Foods: Bring More Thank food to the Table

*10:00 - 12:00 PM*

*BAC 121*

Tyler Torborg, Alex Wagner, Lauren Hayes, Laura Brandes (Deborah Pembleton, Global Business Leadership) Staffing for Success at L.L. Bean

*11:00 - 11:30 AM*

*Simms 360*

Arianna M. Stotz, Brian W. Vargason, Allison M. Steen, Andrew C. Lynch, Andrew J. Mueller (Stephen Schwarz, Global Business Leadership) SAM 2014 Project

## Abstracts

**Berthiaume, Ries, Hanson-Johnson, Bokinski:** Throughout our presentation, we will be describing REI as a company and its position in the camping and outdoor industry. We will be defining and describing how REI implements talent management in relation to their strategic direction and organizational missions. We will also be discussing how REI responds globally on the international level. In addition, we will expand on how REI incorporates diversity within their organization, recruiting, and mentoring programs.

**Khang, Schumer, Blenker, Maher:** Whole Foods: Bringing More Than Food to the Table

A role that any company's or organization's human resource department plays is to maintain an effective and good relationship between the employers and employees. This responsibility within human resources is known as employee and labor relations. By maintaining a relationship among workers and employers, it allow an organization to thrive due to the motivation and job satisfaction that is created from it. This presentation and research focus specifically on Whole Foods Market human resource's strategy to create a motivating, effective, and engaging organization by utilizing its employees and labor relations. The following factors describe the aspects of employees and labor relations of Whole Foods that makes the company a great place to work: "self-responsibility, self-directed teams, open and timely information, incremental progress, and shared fate" (We Support...). There are also tangible items that help increase employees' motivations and engagement as well and this may include wages, benefits, etc... As stated by Whole Foods Market co-CEO, Walter Robb, "Whole Foods Market offers terrific benefits and a fun, friendly work atmosphere with open books, open doors, and open people. Our work culture is something that's truly special..." (We Support...).

"We Support Team Member Happiness and Excellence | Whole Foods Market."  
Whole Foods Market. N.p., n.d. Web. 31 Mar. 2014.

**Torborg, Wagner, Hayes, Brandes:** In this paper we will discuss how L.L. Bean has staffed their company for success since 1912. L.L. Bean's quality staffing has created a trusted image of quality apparel and reliable outdoor equipment for L.L. Bean. L.L. Bean has also been established as a very family-oriented company because of their employee loyalty and retention since its start in 1912. They have also established great staffing practices by encouraging a healthy lifestyle for their employees by emphasizing the importance of getting outside, staying active and taking initiative. The staffing program at L.L. Bean is focused on finding diverse, family-oriented, loyal employees who are willing to live out the vision, values, and goals of the L.L. Bean brand. In this paper we will examine all of these aspects of staffing at L.L. Bean and how their staffing practices have influenced the company as a whole.

**Stotz, Vargason, Steen, Lynch, Mueller:** The 2014 SAM Management case study focused on JCPenney. The presentation will cover an overview of the SAM program, the research techniques and processes utilized, our strategic recommendations for JCPenney, and personal reflections on being a competitive team member in SAM.

## Political Science

### Schedule

*9:30 - 9:40 AM*

*Sextn 200*

Joe Mahowald (James Read, Political Science) Solar Energy Production on Tohono O'odham Nation Land

*9:40 - 9:50 AM*

*Sextn 200*

Andrew Hovel (James Read, Political Science) Supporting Somali Entrepreneurs in St. Cloud

*9:50 - 10:00 AM*

*Sextn 200*

Kory Kleven (James Read, Political Science) Judicial Retention Elections for North Dakota

*10:00 - 11:30 AM*

*Quad 170*

Dilan A. Lyman (Seth Greenfest, Political Science) Effects of judges characteristics on case outcomes.

*10:00 - 10:10 AM*

*Sextn 200*

Tyler Brown (James Read, Political Science) Alternative Teacher Certification for Iowa Public Schools

*10:30 - 10:40 AM*

*Sextn 200*

Tyler Thompson (James Read, Political Science) Re-thinking the PolyMet Mine Proposal

*10:40 - 10:50 AM*

*Sextn 200*

Kyle Smith (James Read, Political Science) Changing How Minnesota Measures Student Learning

*11:15 - 11:25 AM*

*Sextn 200*

Angela Yamoah (James Read, Political Science) The Rights of Citizen Children with Undocumented Parents

### **Abstracts**

**Mahowald:** Solar Energy Production on Tohono O'odham Nation Land

**Hovel:** Supporting Somali Entrepreneurs in St. Cloud

**Kleven:** Judicial Retention Elections for North Dakota

**Lyman:** My research will examine the effects of race, gender and public opinion of the judge, over their final verdict in cases in different courts. Several studies have failed to identify the link between judges of different race, gender and public opinion as factors that influence judge verdicts. Many findings suggest that there is little to no correlation between these characteristics. However I aim to prove that wrong. I do this by first exploring existing research that demonstrates the relationship between race and the outcome that this has on their final verdict. After spending time researching the factors that affect a judge's verdict, race seems to be the most prevalent reason. I relate these findings to that of the scholars whose work I have looked over and have understood judge behavior. At the beginning, my research was targeting these factors affecting the judges verdict in cases of search and seizure, however because of the lack of research available in these type of cases, the conclusions would be too vague, therefore I present evidence which contains reasons to believe that even though the law is fixed, human verdicts can vary. How and why they vary is what will be discussed.

**Brown:** Alternative Teacher Certification for Iowa Public Schools

**Thompson:** Re-thinking the PolyMet Mine Proposal

**Smith:** Changing How Minnesota Measures Student Learning



**Yamoah:** Immigration: The Rights of Citizen Children with Undocumented Parents

**Psychology**

**Schedule**

*9:00 - 9:30 AM*

*NewSc 140*

Amanda R. Nusbaum (Benjamin Faber, Psychology) The Jury Process: Racial Bias, Extraversion, Leadership, Moral Reasoning, and Gender

*9:30 - 10:00 AM*

*NewSc 140*

Lydia B. Ricard (Lisa Platt, Psychology) Are We More Racist Than We Think?: Recognition of Racism and Racial Microaggressions

*10:00 - 10:30 AM*

*NewSc 140*

Hayley J. Van Gelder (Pamela Bacon, Psychology) Birds of a Feather: The Effect of Negatively and Positively Valenced Similarities on Compliance

*10:30 - 11:00 AM*

*NewSc 140*

Rose L. Gangl (Benjamin Faber, Psychology) Using the World as a Stage to Benefit Refugees

*11:00 - 11:30 AM*

*NewSc 140*

Marcelline Gangl (Michael Livingston, Psychology) Together Building Imagination, TBI Re-define: The effects of theater on people with a mild Traumatic Brain Injury

*11:30 - 12:00 PM*

*NewSc 140*

Elizabeth E. Peichel (Rodger Narloch, Psychology) The Interaction Effects of Aspects of the Self on Mental Health in College Students

**Abstracts**

**Nusbaum:** A. Area  
Psychology and Law

## B. Problem or Purpose

The controversy over the fairness of the jury deliberation process has been explored for years (Daftary-Kapur, Dumas, & Penrod, 2010; Lynch & Haney, 2011). Many extralegal factors have been taken into consideration, such as implicit racial bias (Walker, Hewstone, 2008; Lynch & Haney, 2011), explicit racial bias, (Greenwald, McGhee, & Schwartz, 1998), extraversion (Clark, Boccaccini, Caillouet, & Chaplin, 2007), leadership skills (Judge, Bono, Ilies, & Gerhardt, 2002), and gender (Guy & Edens, 2003; Cornwell & Hans, 2011; Salekin, Oglloff, McFarland, & Rogers, 1995) but how these interactions impact a jury verdict are still unclear. This study aims to examine how implicit biases affect explicit decisions, how mock jurors' personality traits interact with these biases to affect the jury verdict and satisfaction with this verdict, and how implicit biases affect post-jury satisfaction in a mock jury trial.

## C. Procedure

Each of 12-16 mock juries will consist of groups of 4 Caucasian college students who will fill out both a self-rated racial bias survey (Iyengar, Solomon, Hahn, Banaji, & Dial, 2011) and personality inventory measuring extraversion, adapted from the NEO-IPIP (John & Srivastava, 1999), as well as implicit measures (IAT) of racial bias and extraversion (Greenwald, 1998). Participants will read simulated testimony (Rotenberg, Hewlett, & Siegwart, 1998) and come to an individual reasoned decision about the guilt of an accused party, whose race will either be listed as Caucasian or Black. Their responses will be rated for depth of moral reasoning (Peterson, 1987). During a group deliberation process, each mock jury will come to a unanimous verdict, and each participant will be rated for leadership skills (Rotenberg et al., 1998). Finally, each participant will rate their satisfaction with the final verdict.

## D. Expected Results

Mixed design ANCOVAs will be used to analyze the effects of both implicit and explicit racial biases on each juror's initial decisions. The effects of extraversion, leadership abilities, and depth of moral reasoning on the jury verdict and individual satisfaction with the verdict will be further explored with Path Analyses to reveal how all of these factors interact to predict jury decisions.

## E. Conclusions and Implications

This study's findings will have many implications in the field of Psychology and Law. The results should illuminate the relationship amongst racial bias and personality in the jury process, which could prove influential in the juror selection process and in increasing fairness in the court system.

**Ricard:** Racism is discriminatory behavior rooted in history and fostered by institutional power. Current theory and research posits that different types of racism have developed over time, such as overt, implicit, symbolic, and aversive racism. Stemming from these theories is the concept of racial microaggressions. Microaggressions are defined by Sue (2010) as subtle and commonplace environmental, verbal, and behavioral indignities that convey negative, hostile, or derogative slights towards people of color. This study examines the ability to recognize racism, as well as relationships between the ability to recognize racism and factors of white privilege awareness, attitudes towards diversity, and ability to empathize. A sample of 208 participants were assigned to one of three conditions with varying levels of implicit or overt racism portrayed via a video scenario and were then asked to complete surveys designed to determine if participants labelled the events as offensive and as racist. Participants also completed surveys relating to white privilege awareness, attitudes toward diversity, and empathy. Findings indicate that participants were able to recognize racial microaggressions as offensive, and that the ability to empathize was partially related to ability to recognize racism in that it was related to participants' ability to label an event as racism. However, no relationship was found between a person's ability to recognize racism and white privilege awareness or attitudes toward diversity.

**Van Gelder:** A laboratory experiment was conducted to investigate if sharing a similarity with another person would lead participants to like a confederate more and be more likely to do a favor for the confederate. Additionally, the experiment tested whether or not the kind of similarity the pair shared—something positively or negatively viewed—affected the participants' response to the confederate. I hypothesized that individuals who believed that they shared a similarity with the confederate would (a) be more likely to indicate feelings of liking for the confederate and be more likely to comply with a request from the confederate, as well as (b) that individuals would exhibit stronger feelings of liking and an increased likelihood of compliance when the similarity was a positive one, rather than a negative one. The results did not support any of the hypotheses, which could have been due in large part to the small sample size, as well as the strong community orientation of the sample used.

**Gangl:** Theatre may act as an effective educational intervention because of its unique combination of structure and freedom (Grainger, 1990; Johnson, 2000). Through improvisational and written scripts, participants can work on skills of creativity. Theatre can also serve as an aid to learning a second language. Boal (1985) has argued that theatre is a literary tool that can improve language proficiency in oppressed groups. Theatre, as both a psychological well-being and literacy intervention, may serve a unique function in low English proficiency refugee populations. Refugees report difficulties with language learning as the most

important problem in a new country (Watkins, Razee, & Richters, 2012). Coupled with psychological challenges, such as self-esteem declines, alternative interventions that address both language and skills and psychological well-being may be an effective aid. This study serves as an initial evaluation of the effects of theatre on psychological and linguistic outcomes.

Sixteen Karen adult refugees from Burma and Thailand, who have been living in the United States for less than 2 years participated in this study. The Karen people are an ethnic group who fled their homeland after the Burmese military junta and other regional conflicts. All of the participants will be native Karen speakers.

Theatre workshops, based on Boal's Theatre of the Oppressed project (Boal, 1985), will constitute the intervention in this study. Participants will complete pre and post workshop measures of psychological well-being and language proficiency including Rosenberg Self-Esteem Scale (Schmitt & Allik, 2005), Positive and Negative Affect Scale (Boon & Platow, 2004), Creative Function Test (Smith & Carlsson, 1987), Bilingual Stroop test (Stroop, 1935), and language comprehension measures (Johnson & Newport, 1989).

T-tests explore the changes resulting from the theatre workshops in both psychological well-being and language proficiency. Overall well-being improved for most participants.

If these findings support the hypothesis, theatre can be viewed as a successful tool for language learning, cultural adaptation, and aiding adjustment.

**Gangl:** Together Building Imagination is an Honors Thesis that combines the areas of psychology and theater. It specifically looks at how theater can be used as a rehabilitation tool. This study was conducted using two middle-aged women from the St. Cloud Area who had suffered a mild traumatic brain injury at some point during their life time. One of the most common complaints from suffering a mild Traumatic Brain Injury is loss of socialization. Therefore, it is thought that theater can help build communication skills, build a community and increase self-awareness for the participants. Each week, the participants met to do theater exercises with the researcher and 3 other volunteers. The written tests did not yield any statistically significant results. However, participants wrote feedback that showed the workshops had a positive impact on their lives. The research will be used as a pilot study to further investigate the use of theater as a psychological therapy for adults with TBI.

**Peichel:** The purpose of this study was to examine the interaction effect of the personality and identity traits of shyness, social support, and identity style on the

mental health issues of rumination, anxiety, and identity distress. I distributed surveys to a convenience sample of 188 college-age students at a rural, Catholic school. Although there were no three-way interaction effects of the variables as they relate to rumination, anxiety, and identity distress, there was a two-way interaction effect of shyness and social support of friends as they relate to rumination. Low shy individuals with high social support demonstrate lower rumination than low shy individuals with low social support, but social support does not matter for high shy individuals. It would seem, then, that social support could potentially make a difference in rumination about social situations, but only if there is no amount of shyness or anxiety about the situation to begin with.

## Sociology

### Schedule

*11:00 - 11:20 AM*

*Simms G30*

Maria I. Jagodinski (M. Nelson, Sociology) Community Connecting with Children: An Effective Program in an Under-Resourced Community

*11:25 - 11:45 AM*

*Simms G30*

Christa M. Troup (M. Nelson, Sociology) Service: An Integral Part of the Bennie Identity?

*11:50 - 12:10 PM*

*Simms G30*

Caitlin J. Swanson (M. Nelson, Sociology) Childhood Poverty, the Urban Environment, and Education

### Abstracts

**Jagodinski:** Marvell is a small, diverse, under-resourced community in rural Arkansas. During a recent semester long internship, I worked and conducted research in an after-school program, Community Connecting with Children. The program seeks to support children and help them grow academically, socially, and spiritually. In this presentation I will share what I learned about this program's effectiveness and the role it plays in the lives of the children and their parents. A central finding is that attentiveness and consistency are contributing to transformation in the children's lives especially academically and regarding self-esteem.

**Troup:** As part of Saint Ben's Centennial year "A Century of Connection" students of Saint Ben's and Saint John's recently celebrated the first Bennie Day of Service; a

day to learn, do and reflect on service through our community. This project looks at the important connection between Bennies and service. By analyzing data from an original survey of Bennie Day of Service participants, and by interviewing a wide variety of respondents on the history of service on the CSB campus, I examined the relationship between service and the culture of our campus community. I attempt to identify and explain external factors contributing to the development of this central value.

**Swanson:** The United States has one of the worst child poverty rates out of all industrialized countries, second only to Romania, yet the largest Gross Domestic Product. Why is this? How can we explain such poverty in American, when it is considered one of the richest countries in the world? Childhood poverty rates are highest in urban centers. How are children further disadvantaged when living in areas of concentrated urban poverty? My presentation will attempt to answer these questions, using existing literature and census data. It will explore the negative effects of childhood poverty on the children themselves, as well as on the United States as a whole. I will argue from both a moral and economic standpoint, that the United States needs to begin investing in its citizens. Additionally, I will propose several practical policy solutions that address the needs of families in poverty, particularly single-parent households and households that experience long-term poverty.

## Interdisciplinary Presentations:

### Asian Studies

#### Schedule

*10:00 - 11:00 AM*

*HAB 121*

Terykina Ruka (Paul Bohr, Asian Studies) The History of Okinawa, the U.S. Military Bases Issue, and future cooperation with Asian Countries

#### Abstracts

**Ruka:** Okinawa was the victim of the largest land battle of the Pacific Ocean region in World War II. The U.S. Military Bases placed in Okinawa still remain and have impacted the Okinawan people in some negative ways. On the other hand, the Japanese government wants to keep the U.S. Forces in Okinawa as the “deterrence” against China. Currently, Japan and China face difficult challenges (Senkaku Island and the Nanjing massacre) with each other. In this globalization era, the future goal is to cooperate with other Asian countries, similar to the people who lived during the Ryukyu Kingdom era. This presentation will address the political and historical perspectives.

### Center for Global Education

#### Schedule

*10:00 - 12:00 PM*

*Gorec Fireside*

Elizabeth S. Neitzke (Paula Ramaley, Center for Global Education) Wisdom of The Balkans

#### Abstracts

**Neitzke:** Participating in the Summer Global Internship Program with The Center for Global Education in Bosnia and Herzegovina in 2013 took a lot of planning, guessing and hoping. For as much reading, speculating, and planning that went into my pre-travel semester, I received many more unexpected travel fiascos, friendships, and life lessons than I ever bargained for. During my time at the Non-Governmental Organization Zdravo da Ste, I learned about working with others and I discovered even more about myself. Specifically, how my demeanor is portrayed to others. This awareness has made me a more effective communicator. This presentation aims to compare the initial goals projected for my internship abroad with the actual outcomes gained. I also will explain how I plan to apply

what I have learned from my experience with the Summer Global Internship Program to my future practice as a registered nurse.

## Environmental Studies

### Schedule

*10:00 - 12:00 PM*

*GHall 1*

Lexi Bernstein (Jean Lavigne, Environmental Studies)  
Consumerism in the United States and its affect on  
Health of Humans and the Environment

### Abstracts

**Bernstein:** A discussion on how consumerism in the United States is not only affecting our personal health, but also the health of the world and the power consumers have in today's market.

## Experiential Learning & Community Engagement

### Schedule

*10:10 - 10:25 AM*

*HAB 117*

Bao Lao (Masami Limpert, Experiential Learning &  
Community Engagement) Benjamin A. Gilman  
International Scholarship: Anime Pilgrimage

### Abstracts

**Lao:** I will be giving a powerpoint presentation about the Gilman Scholarship and how it has helped me to study abroad in Japan 2013. I will also be presenting about my anime pilgrimage experience of places in animes and comparing it to the real life location that I visited during my independent excursions.

## Latino/Latin American Studies

### Schedule

*9:00 - 9:20 AM*

*Quad 254*

Daniel J. Cahill (Eleonora Bertranou, Bruce Campbell,  
Gary Prevost, Latino/Latin American Studies) La Sabana  
Ligera: a historical analysis of contemporary Mexico in  
Alfonso Cuarón's "Y Tu Mamá También"



## Abstracts

**Cahill:** This essay examines the construction of Mexican identity at the turn of the millennium through the lens of counter-epic narratives in Mexican cinema. Focusing on the film "Y Tu Mamá También" by Alfonso Cuarón, this essay initially analyzes the relational and sexual identities of the protagonists (Gael García Bernal and Diego Luna) within the confines of a coming-of-age genre film. The essay then attempts to contextualize the film's discourse on broader Mexican identity using the politics of the Partido Revolucionario Institucional (PRI) and the effects of the North American Free Trade Agreement (NAFTA). The goal of this research essay is to draw from multiple disciplines to create an analysis of contemporary Mexican identity in modern global contexts.

### **Communication**

Lillia K. Khelif (Aric Putnam, Communication) 1940s Animation & Race

This project seeks to analyze the effects and implications of these cartoons within the rhetorical situation of 40s labor movements, civil rights activism, and prescribed gender and race roles of society. Cartoons that will be analyzed include: Warner Brother's Censored 11, Dr. Suess' Flit advertisements, Dumbo, Tom & Jerry, and Scrub Me Mamma With a Boogie Beat. These cartoons create a damaging dialogue about race and reinforce the suppression of African Americans in labor movements and society through a specifically visual rhetoric.

### **Experiential Learning & Community Engagement**

Jared W. Berg, Kaitlyn E. Lauer, Emily M. Johnson, Connor W. Klausing, Kathy Larrea, Kimberly J. Vipond, Sara B. Tiemens, Samantha L. Exsted, Thomas J. Brossart, Victoria K. Adofoli (Aric Putnam, Experiential Learning & Community Engagement) Thought for Food: Promoting Conversations About Food Justice Among Minnesota Communities

"Thought for Food" is a publication of art submissions and personal stories that centers on food justice. This project, completed by the 2013 CSB Marie and Robert Jackson Fellows Program, asked community members from Minnesota to share their perceptions and experiences with food justice through multiple mediums-- including poems, personal stories, paintings, sculptures, and more. These submissions were combined into a magazine that will be distributed across the state with hopes that it will spur conversations that lead to a greater understanding of how food injustice impacts many people. For this session, the Jackson Fellows will describe the project and their experiences, along with having magazines on hand and large posters that showcase some of the art work.

### **Intercultural Directions Committee**

Luke J. Muyskens (Aric Putnam, Intercultural Directions Committee) Race and the Industrial Prison Complex

My proposal for the IDC entails a research paper on the state of the rapidly-developing prison industrial complex and racial implications of this shifting industry. I plan to research how the extent of prison and law enforcement privatization in the United States, racial makeup of US prisons, repeat offender rates, and arrest/crime rates have changed over the

past couple decades in an effort to determine the impact of the prison industrial complex on black and Latino communities.

### **Nursing**

Suzy Xiong (Aric Putnam, Nursing) "Minority Health Determines the Health of the Nation" - CDC

Racial health care disparities are a prevalent and ongoing issue of today. I have explored this topic through my various nursing courses, research, practice and my own personal experiences. I would like to present what I have found through an artistic piece. I created this piece with a canvas, medical equipment, and with scholarly research and statistics from the Centers for Disease and Control Prevention (CDC). Additionally, I have also included possible solutions for healthcare providers as well as the public to understand and utilize in order to combat the problem. It is very important to address this problem of racial health care inequality because the minority are about to become the majority by 2050. Overall, as stated by the CDC, "Minority health determines the health of the nation."

*Benedicta Arts Center Art Gallery, CSB*

### **Art**

Hannah Anderson, Nate Blenker, Keegan Crose, Mark Lenczewski, Meghan O'Brien, Jana Patka, Katlyn Sovada, Shirley Wang (Simon-Hoa Phan, Art) Senior Art Thesis Show

Senior art majors will speak about their work in the exhibition, which includes paintings, computer art, photography, ceramics, prints.

*Benedicta Arts Center Colman Theater, CSB*

### **Theater**

Sarah J. Berry, Alex T. Engelsjerd, Olivia D. Stewart, Elliot J. Drolet (Leigh Dillard, Theater) KCACTF

After attending the Kennedy Center American College Theater Festival (KCACTF) in January, Alex Engelsjerd, Elliot Drolet, Olivia Stewart and myself will be presenting our research of newly developed theater skills and insights that we collected from the theater workshops we attended as well as the feedback we received from professionals on our audition material.

Alex T. Engelsgjerd, Sarah J. Berry, Elliot J. Drolet, Olivia D. Stewart (Leigh Dillard, Theater) KCACTF

This project involves our trip to Lincoln, Nebraska to the KCACTF Theater festival earlier this January. There, we attended workshops where we learned new techniques of acting to master, what and what not to put on resumes and just creating a well written resume, as well as feedback on our scenes we presented on how to make them more clear and strong.

Olivia D. Stewart, Alex Engelsgjerd, Elliot Drolet, Sarah Berry (Leigh Dillard, Theater) KCACTF

KCACTF Irene Ryan Scholarship Auditions and Workshops

*Benedicta Arts Center Recital Hall, CSB*

### **Music**

Olivia Kalkman, Alex McIntosh (Carolyn Finley, Music) Relating Classical Music Influences to Modern Original Vocal Compositions

As music minors, both of us have participated in CSB/SJU ensembles and have taken applied voice lessons to gain skill in solo singing, regardless of style. Today's recital features original vocal compositions which are a synthesis of pop, folk, country, blues, R&B and classical styles. Classical music and training specifically have influenced our styles of both composition and performance in various ways. For example, vocal technique includes breath support, shape of lips and face while singing, body stance/posture, smooth transitions into different voice registers, and how to maintain/promote healthy voices and vocal habits. For composition, our theory classes taught us about chord structure and which chord progressions create the sound/feel that we aim for in our songs. Our ear training classes taught us about general aural skills and helped us to practice identifying the sounds that we are trying to achieve and the emotions that we are trying to provoke in audiences. Our experience as music minors will help us to continue to develop our musical skills and talent to further pursue our

*Benedicta Arts Center Student Gallery, CSB*

### **Art**

Samantha M. Muldoon (Carol Brash, Art) Continuum: An Exploration of Gender Identity

The theme of this art exhibition is gender identity. Work must explore gender and what it means to the artist. The show touches upon these questions: What does it mean to be a woman or a man? Are those the only options? Is it a choice? This show operates under the ideology that gender is socially constructed and a socially implicated performance. It aims to explore and present different interpretations of the masculine/feminine scale. What is gender? Who decides? How does one prove/portray their gender? What makes up gender? So, how do you know your gender?

The curator is an art history student at the College of Saint Benedict and this exhibit is part of her senior thesis. Her interests include museum aesthetics, curatorial work, and gallery management. The curator created this show to grow in knowledge through experience while exploring a personal interest in gender. This exhibition will be shown in the lower gallery of the Benedicta Arts Center at the College of Saint Benedict April 14- May 18, 2014.

(I will plan to be available to answer questions and speak to viewers for about two hours in the afternoon on scholarship and creativity day. I have no formal talk planned, and my show will remain open all day.)

*Clemen's Library A129, CSB*

### **Philosophy**

Haley A. Chatelaine (Adam Konczewski, Emily Esch, Philosophy) So Let Your Light Shine: Benedictine Values at CSB

This is a 23 minute documentary about Benedictine Values at St. Ben's. It starts with an explanation of the history behind St. Benedict, the values, and the development of the college. It then goes into how the sisters, Pres. Baenninger, Carol Howe-Veenstra, Dr. Tony Cunningham, and students see the values portrayed on campus.

*Clemen's Library Clemens Art Gallery, CSB*

### **Media Services**

Megan M. Daly (Adam Konczewski, Media Services) In Search of Wonder

Painting exhibit on imagination, courage, and happiness.

*Gorecki Center A, B & C, CSB*

## Biology

Jacob L. Helmer (Manuel Campos, Biology) An Internship in the Saint Cloud Hospital Emergency Trauma Center

An Internship in the Saint Cloud Hospital Emergency Trauma Center

Jake Helmer, Manuel Campos, Steve Jameson

I will present the primary objectives of Interns working as Emergency Trauma Center Assistants at Saint Cloud Hospital. Interns do a variety of tasks in the ETC. The main task is to shadow doctors in the ETC to gain more knowledge of the medical field. This includes meeting with patients and recording notes in order to write patient reports of each patient observed during each shift. One patient report/case study will be presented and discussed. Interns also gain knowledge on the business side of medicine by attending business meetings and completing business projects.

## Chemistry

Jane C. Keohen, Jasmine N. Tutol, Victoria C. Green (John Hoody, Chemistry)  
Synthesis of Anti-Cancer Molecules

We synthesized three different polyacetylene compounds that will be analyzed at the National Cancer Institute and will be tested in mice for anti-cancer properties. Our research focused on purifying the compounds to 95% purity or greater for biological testing and obtaining the correct stereochemistry because it has been shown to be important for biological activity. We decided to change the alcohol group to an amine and used this amine functionality to act as a nucleophile to produce two amides and a sulfonamide. We conducted amide and sulfonamide reactions, Cadiot-Chodkiewicz couplings, and esterifications. The compounds were purified by silica gel chromatography and analyzed by NMR and GC/MS to confirm the structures. Though it is in an early stage of testing, our research could have the potential to produce a drug that may target certain types of cancer.

Lorien E. Rusch (Henry Jakubowski, Chemistry) Synthesis and Purification of [(toluene) Fe (cyclopentadienyl)] PFG

The synthesis and purification of [(toluene) Fe (cyclopentadienyl)] PFG project was worked on during the 2013 Fall Semester under the direction of Dr. Brian Johnson. We wished to synthesize enough product to make a reliable and replicable characterization of it. Others have characterized [(toluene) Fe (cyclopentadienyl)] PFG through different methods, but not

extensively through NMR. My main objective was to perform the synthesis of [(toluene) Fe (cyclopentadienyl)] PFG which was to be followed by the substitution of toluene with different solvents in order to make a variety of other arenes. The products were each to be purified via column chromatography and characterized by NMR. Our motivation was to accurately characterize and determine [(toluene) Fe (cyclopentadienyl)] PFG and the other arene compounds synthesized via NMR in order to make it easier for others in the future to characterize their own compounds using NMR.

Lorien E. Rusch, Meghan M. Glasgow, Asha D. Kopp (Henry Jakubowski, Chemistry) Integrated Lab Development of Bacterial and RT-PCR Project

We developed a manual, real time polymerase chain reaction (RT-PCR) experiment, during the 2014 Spring Semester under the direction of Dr. Henry Jakubowski, to identify bacterial species. This would allow student use of two new and widely used instruments, a thermocycler and a fluorescent plate reader. We chose three bacterial strains, *Bacillus cereus*, *Pediococcus Damnosus*, and *Staphylococcus aureus*, successfully determined how to grow them, and isolated their DNA for use with the PCR. Next using bioinformatics, we determined optimal primers that would allow selective amplification of specific bacterial strain DNA to allow strain identification. On completion of this project, students in the Integrated lab will be able to utilize a very sensitive and powerful manual RT-PCR assay to differentiate bacterial strains.

Kirsten M. Sewall, Emmanuel DeLeon (Henry Jakubowski, Chemistry) DLS and LUVs

The main purpose of this research was to use Dynamic Light Scattering (DLS) to more fully characterize lipid vesicle sizes during a CHEM 203 Synthesis lab experiment. A problem that had arisen in the lab was that it was unclear if the final step in producing Large Unilamellar Vesicles (LUVs), using a mini extruder to force large multilamellar vesicles (MLVs) through membrane pores, was working. Students in the lab were not able to adequately answer the research question, because they did not have a way to determine if they were really making LUVs of a certain size. During the synthesis, we sampled “product” at various steps throughout, and used the DLS to give a measure of the efficacy of the steps to gain a better understanding of LUV production. The CHEM 203 Liposome lab procedure was performed, and the DLS was used to look at the size of the LUVs that were synthesized at three different steps, the initial step when

lipids were hydrated, after 4 cycles of freeze/thaw, and after extrusion. This research will help us learn more about the DLS instrument, and help students understand more about the chemical mechanism that are being performed on the LUVs in changing their sizes.

### **Exercise Science and Sport Study**

Laura C. Bailly (Donald Fischer, Exercise Science and Sport Study) Identifying anaerobic lactate threshold by visual inspection: A study of validity and reliability

**Purpose:** To examine the inter-rater reliability and concurrent criterion related validity of the visual inspection method of identifying anaerobic lactate threshold (LT2). **Methods:** Existing blood lactate data from 14 Division III female cross country runners were used for this study. Runners completed a graded treadmill test to volitional exhaustion with blood lactate measurements at the end of each 2-min stage. Each subject's blood lactate and treadmill velocity data were plotted in Excel. Using scatterplot graphs, two expert raters independently created trend lines, representing each subject's lactate curve. Using the visual inspection method, raters independently identified each subject's LT2, defined as the point at which blood lactate began to rise in a rapid, non-linear fashion. Reference LT2 values were identified, using the Dmax method, by objectively measuring the point on each subject's lactate curve that produced maximal perpendicular distance from a line connecting the two ends of the curve. Intraclass correlation coefficient analysis (ICC 3,1) was used to examine inter-rater reliability and a Pearson product-moment correlation was used to examine concurrent criterion related validity. **Results:** Inter-rater reliability of the visual inspection method of identifying LT2 was judged to be fair (ICC = .730, 95% CI = -.174 – .927). The validity coefficients for Rater 1 ( $r = .851$ ;  $P \leq .001$ ) and Rater 2 ( $r = .742$ ;  $P = .002$ ) in identifying LT2 were judged to be excellent and very good, respectively. **Conclusion:** Visual inspection may be a valid method of identifying of LT2. Future research should look to confirm this finding and compare the visual inspection method to other established methods. The fair inter-rater reliability and large confidence interval associated with the visual inspection method suggest caution should be used when comparing LT2 values derived from multiple raters.

Colleen E. Bouchard (Mary Stenson, Exercise Science and Sport Study) The Effects of Dynamic Versus Movement Prep Warm-up on Female High School Basketball Players



A dynamic warm-up routine performed prior to exercise is a common practice among athletes. Neuromuscular training programs are considered the gold standard for ACL injury prevention. A warm-up that includes aspects of both a dynamic warm-up and neuromuscular training would be most beneficial to an athlete. A movement prep warm-up encompasses aspects from both a dynamic warm up and a neuromuscular training program.

**PURPOSE:** to determine if movement prep improves jump landing mechanics and agility compared to a dynamic warm-up in 12 female high school basketball players.

**METHODS:** Athletes completed an initial testing session, 13 practices performing a dynamic warm-up, a second testing session, 13 practices performing movement prep, and third testing session. During each of the three testing sessions, athletes completed a drop box vertical jump off a 30 cm box and t- shuttle agility test. The drop box vertical jumps were videotaped and landings were scored using the Lower Extremity Scoring System (LESS). The dynamic warm-up consisted of jogging, sport specific movements, and stretching (quad stretch, side lunges, high knees, etc.). The movement prep routine consisted of activation exercises (movements performed with a resistance band), dynamic stretches, movement integration (marching and skipping patterns), and neural activation (quick feet drills).

**RESULTS:** One-way ANOVA revealed no significant difference in t-shuttle agility times between baseline, after dynamic warm-up, and after movement prep ( $F(2, 35) = 1.385, p = .264$ ). One-way ANOVA revealed no significant difference in LESS scores between baseline, after dynamic warm-up, and after movement prep for the left leg ( $F(2, 35) = .192, p = .826$ ) and right leg ( $F(2, 35) = .373, p = .691$ ).

**CONCLUSION:** Neither warm-up was superior. Performing movement prep did not produce the same results reported in studies using a full length neuromuscular training program. While more research is needed, results indicate a need for high quality movement pattern/injury prevention programs for female high school athletes rather than abridged versions.

Alex M. Hanson (Mary Stenson, Exercise Science and Sport Study) Using Exercise and Competitive Sport to Examine Determinants of Success in Western Culture

Both innate and cultivated characteristics contribute to athletic success, as well as perception of academic competence by coaches and scouts. Two major determinants of athletic success are innate ability and grit. Grit is defined as passion and perseverance for long-term goals. Other factors which contribute to success are type of passion (i.e., obsessive or

harmonious), inclination to participate in deliberate practice, and tendency to be perceived as competent by those who distribute tangible and intangible resources which facilitate athletic improvement. In order to assess the relative importance of these success-determining factors among athletes, surveys were distributed to both players and head coaches of several Division III athletic teams. The athletes' survey consisted of 21 questions, 8 of which comprised the previously validated Grit-S, and the remaining 13 were created to target non-grit factors. The coach survey consisted of four sections, which gathered information on which factors are believed to contribute most to success, and also which athletes are most successful on their respective teams. This allowed observations to be made regarding the relationship between athletes' success and success-related characteristics considered important by both athletes and coaches. 48 athletes and 5 coaches responded to the survey. It is hypothesized that coaches will assign higher ranks to athletes who consider the same traits important as the coach. It is also hypothesized that grit contributes more to athletic success than innate ability.

Samantha R. Imholte (Mary Stenson, Exercise Science and Sport Study) Validity and reliability of the pro-agility test for assessing ACL injury risk

The Landing Error Scoring System (LESS) was designed to assess the biomechanics of jump-landing techniques that are associated with risk of knee injury. Common movement patterns of an anterior cruciate ligament (ACL) injury are prevalent in cutting movements found in the pro-agility test. The reliability and validity of the pro-agility test in assessing injury risk is unknown. Purpose: To test the reliability and validity of the pro-agility test in assessing compensatory movement patterns associated with risk of knee injury. Methods: Thirty Division III female agility athletes (volleyball n = 7, basketball n = 9, soccer n = 14) performed three box drop vertical jump test trials (BDVJ) from a 30cm box and two trials of the pro-agility test. All BDVJ trials were videotaped and the trial with the greatest vertical displacement was analyzed. LESS scores were calculated for the right leg and the LESS injury risk classifications were determined. Subjects performed two trials of the pro-agility test. All trials were videotaped and the right leg analyzed for movement patterns characteristic of ACL injury risk. Participants completed a health history survey regarding serious musculoskeletal injuries occurring in the past four years. Statistical analysis: Paired samples t-tests compared the two trials of the right leg extremity pro-agility injury risk classifications. A Pearson Correlation Coefficient was used to find the relationship between LESS and pro-agility scores. Results: No significant difference was found between the two pro-agility trials (Trial 1

M = 2.27, SD = .785, Trial 2 M = 2.33, SD = .802). LESS and pro-agility risk classifications were not related ( $r(30) = .189$ ,  $p = .381$ ). Conclusion: The pro-agility test has high test-retest reliability in assessing compensatory movements. Compared to the LESS assessment, the pro-agility scoring criterion used in the current study is not a valid test of knee injury risk assessment.

Maren E. Iverson (Allison Seifert, Donald Fischer, Mary Stenson, Exercise Science and Sport Study) Monitoring dance performance intensity using rate of perceived exertion: A criterion validity study

Purpose: To examine the strength of the relationship between rate of perceived exertion (RPE) and physiological measures of exercise intensity, specifically heart rate (HR) and blood lactate (BLa) concentration. Methods: The 14 Division III female dance team members who volunteered to participate in the study consumed a standardized meal containing 1.5 g carbohydrate per kilogram of body weight two hours prior to testing. The subjects' urine was tested using Accutest URS Hydration Strips to ensure normal hydration (specific gravity  $\leq 1.020$ ). Subjects were familiarized with Borg's CR-10 overall exertion RPE scale prior to testing. The dance test protocol was conducted in the College of St. Benedict's aerobics studio and consisted of performing four progressively longer segments of the dancers' two minute competitive jazz dance routine (0 to 30 s, 0 to 60 s, 0 to 90 s, and 0 to 120 s). Subjects rested between dance segments until BLa concentrations returned to baseline. HR, BLa, and RPE were assessed immediately upon completion of each dance segment. Bivariate correlations were used to examine the relationships between RPE, HR, and BLa concentrations. Results: Significant positive relationships were found between RPE ( $4.5 \pm 1.8$ ) and BLa concentrations ( $6.7 \text{ mmol/L} \pm 2.6$ ) [ $r(56) = 0.634$ ,  $P < .001$ ] and between RPE and HR ( $183.4 \text{ bpm} \pm 0.7$ ) [ $r(56) = 0.480$ ,  $P < .001$ ] during the dance performance. Conclusion: Because of the significant and relatively strong correlations between RPE and both HR and BLa concentrations, RPE appears to be a valid method of monitoring exercise intensity during a competitive dance team practice and performance.

Janae L. Myers, Isabel E. Sim-Campos, Maren E. Iverson (Mary Stenson, Donald Fischer, Exercise Science and Sport Study) Dynamic Postural Stability Index: Test-Retest Reliability When Landing from Three Types of Jumps

Purpose: To help establish the test-retest reliability of the Dynamic Postural Stability Index (DPSI), a relatively new clinical measure of

dynamic postural stability. Methods: Forty-two healthy college students (19 men and 23 women) active in club or intramural change of direction sports participated in the study. Subjects completed three types of jumps (forward, lateral, and 90 degree mid-air rotational jump) on three occasions with 24- to 48- hours between test sessions. With hands on hips, subjects performed the three jumps, each equivalent to 50% of maximum jump distance, landing on the right lower extremity. Subjects were instructed to land onto the center of an AccuPower® force platform, stabilize as quickly as possible, and balance for three seconds. Ground reaction forces in the x-, y-, and z- directions were sampled at 400 Hz. Ground reaction forces were used to calculate the DPSI associated with landing from each of the three jumps performed on the three occasions (a total of nine jumps). Data were analyzed using an intraclass correlation coefficient (ICC 3,1) formula. Results: Test-retest reliability of the DPSI was judged to be good when landing from a forward jump (ICC = .807, 95% confidence interval [CI] = .678-.890), fair when landing from a rotational jump (ICC = .753, 95% CI = .588 -.859), and poor when landing from a lateral jump (ICC = .085, 95% CI = -.531-.478). Conclusion: The test-retest reliability of the DPSI is dependent on the type of jump performed prior to landing. Consistent with previous research, the DPSI was found to be a reliable measure of dynamic postural stability when the jump prior to landing emphasized anterior and vertical body movement. However, the current study suggests the test-retest reliability of the DPSI is reduced when a 90 degree mid-air rotation is performed prior to landing and is severely reduced when a lateral jump, challenging frontal plane stability, is performed prior to landing.

Katie J. Schwab (Donald Fischer, Exercise Science and Sport Study) A Periodized, 52-Week Training Program for a Women's Ice Hockey Team

The job of a strength and conditioning professional is to improve athletic performance. A periodized training program can enhance athletic performance while minimizing the risk of injuries. Designing training programs to maximize performance for ice hockey players can be difficult because ice hockey is one of the most physically demanding sports. All of the components of fitness are important in hockey: muscle endurance, strength, and power, and high oxidative and glycolytic capacities. The purpose of this project was to examine the muscular and cardiovascular demands of a women's ice hockey team and design a 52-week, periodized training program to facilitate advantageous physiological adaptations.

A review of the literature was conducted prior to the program design to determine the common muscular and cardiovascular demands. Research on

women's hockey is limited so men's hockey was analyzed when necessary. A needs analysis summarized the findings from the literature. The primary muscle groups for skating include: hip abductors and adductors, gluteus maximus and minimus, the quadriceps and the hamstrings. Explosive muscular power is the most important aspect for hockey performance, which requires a solid strength base. Muscular endurance is also necessary to maintain peak performance for an entire game. The primary energy systems used on-ice are the ATP-CP and the glycolytic systems. The oxidative system must also be trained to facilitate rapid recovery between on-ice shifts.

A 52-week, periodized training program was created to address the muscular and cardiovascular needs. The program is organized into three primary phases: preparation, competition, and transition. The mesocycles within the preparatory sub-phases gradually decrease in volume and increase in intensity and build off of the adaptations acquired in previous mesocycles. The emphasis during the competition phase is to maintain early strength and power gains. After peaking for the MIAC championships, a transition phase follows where no organized exercise is prescribed to facilitate full recovery. All training aspects of this periodized program were fully researched to ensure specific adaptations within the mesocycles.

### **Experiential Learning & Community Engagement**

Jared W. Berg, Thomas J. Brossart, Victoria K. Adofoli, Kaitlyn E. Laur, Emily M. Johnson, Connor W. Klausning, Kathy Larrea, Sara B. Tiemens, Samantha L. Exsted, Kimberly J. Vipond (Marah Jacobson-Schulte, Experiential Learning & Community Engagement) Thought for Food: Promoting Conversations About Food Justice in Minnesota Communities

"Thought for Food" is a publication of art submissions and personal stories that centers on food justice. This project, completed by the 2013 CSB Marie and Robert Jackson Fellows Program, asked community members from Minnesota to share their perceptions and experiences with food justice through multiple mediums-- including poems, personal stories, paintings, sculptures, and more. These submissions were combined into a magazine that will be distributed across the state with hopes that it will spur conversations that lead to a greater understanding of how food injustice impacts many people. For this session, the Jackson Fellows will describe the project and their experiences, along with having magazines on hand and large posters that showcase some of the art work.

## Hispanic Studies

Leslie Y. Jimenez (Roy Ketchum, Hispanic Studies) Nuevos Horizontes, Domestic Violence

This poster will present the primary objective of Nuevos Horizontes, a shelter that served women who suffered domestic violence in Quetzaltenango Guatemala. The presenter served as a part of the volunteer program and extended her research in domestic violence and the psychological outcomes. This Organization works directly with women and children and provides psychological, medical and social support to the victims. As a volunteer, the work provided to this organization included organizing occupational, group and family therapies, developing activities for children, teaching math, reading and writing, and assisting staff in general work in the shelter. Presentation in Spanish with discussion in English or Spanish.

## Mathematics

Peter J. Benson, Brooke M. Bitzan, Catherine T. Brine, Mikayla C. Curtis, Natalie A. Hager, Ashton L. Haider, Ksana A. Harrington, Anne J. Hart, Mattia J. Hendrickson, Alan J. Hergott, Amy E. Honek, Marisa M. Johnson, Maria C. Muellerleile, Jacob M. Ole, Katherine M. Reisdorf, Mariah K. Townsend, Jill E. Valerius, Mai Tong Vang, Elizabeth K. Walbrun, Jenna L. Weber (Bret Benesh, Mathematics) Semester Geometry Projects for Math 180

Students in Math 180 were asked to do a geometry project for the semester. Each project will be one of two types: the project will either be two design a week-long set of lessons to teach elementary education students about rotations, reflections, and translations, or the project will be to try to solve some mathematical problem in geometry.

## Nursing

Emily N. Christenson (Georgia Hogenson, Carrie Hoover, Nursing) Activity Effectiveness for Children and Adolescent Mental Health Patients

Are there enough effective activities to engage and improve the mental health of the children and adolescents on the mental health unit at hospital during weekends?

I will be focusing on a children's hospital behavioral health unit for young children and adolescents by comparing the activities during the week and during the weekends and comparing this with research on what types of activities are best for children and adolescents with a wide variety of mental

health concerns. I have been informed that weekends are not as structured and are harder for staff and patients than week days and would like to research whether this is true or not through the use of a non biased survey. Based on my findings I will either a). encourage the continuation of current activities on the weekends for the patients or b). recommend a change in activities for patients during weekend hours.

Kerrie A. Dingmann (Georgia Hogenson, Nursing) Catheter-Associated Urinary Tract Infections: Evidenced Based Interventions That Decrease Infection Rates in Acute Care Facilities

According to the Center of Disease Control (CDC), urinary tract infections are the most common type of healthcare-associated infection (CDC, 2012). Approximately 75% of UTIs acquired in the hospital are associated with a urinary catheter. Post-surgical patients on a Joint Replacement Unit who have indwelling catheters in place, this presents a concern that could cause further medical attention that is easily preventable. In acute care facilities, many factors such as lack of knowledge or education and time constraints of nursing staff contribute to an increase of these infections. This quality improvement project aim is to understand staff knowledge and reeducate on factors that contribute to the development of CAUTIs and provide evidence-based interventions that aid in the prevention of CAUTIs in post-surgical patients. Current policy indicates that there is a lack of communication between the registered nurses (RN) and the nursing assistants (NA) about the completion of some of these tasks. The goal is to increase communication between the RN and NA to ensure that proper documentation is completed.

Kelly C. Evans (Georgia Hogenson, Nursing) Fall Prevention: A Transdisciplinary Approach on Toileting Recommendations

Falls pose a significant risk to inpatients population. In 2012, a mid-western hospitals' harmful fall rate was 0.88, which was 10% above the goal of 0.80. For the year of 2013, the facility adopted new initiatives and successfully decreased their fall rate. This midwest hospital continues to maintain patient safety as a top priority and consciously makes efforts to decrease patient falls. The facility is trialing a trans-disciplinary fall prevention model involving Physical Therapy (PT), Occupational Therapy (OT), and nurses. The goal of this trial is to determine compliance, ease of use, and achieve a decrease in fall rates. The main components of this trail will include a toileting transfer assessment completed by PT/OT, active communication to nurse, documentation in Excellian of assessment

findings, and proper use of the toileting recommendation poster in the patient's room. The hospital is trying to maintain their goal of less than 0.76 for the 2014 year, hoping this new trans-disciplinary approach will further decrease patient falls and demonstrate to be a helpful tool.

Marit P. Fraune, Kelly M. Cass (Rachelle Larsen, Nursing) Removable Identification Bands

Identification wrist bands are used at hospitals for safety purposes. (e.g., medication administration, procedure identification, recognition). A large facility in the twin cities uses removable identification bands for their clients. These id bands are convenient (e.g., baths, dressings, comfort); however, they may compromise the safety of the clients because of the lack of compliance by health care staff and clients to keep them on at all times. This project describes how often the clients are wearing their wristbands on two units at a large hospital in the twin cities. This project will determine the impact of removable wristbands on patient safety.

Marit P. Fraune (Kathleen Twohy, Nursing) Marital Status, Education Level, and Alcohol Use Among Older Adult Male Clients at the St. Cloud Va.

This project aims to determine if marital status and/or education level affect alcohol use by older adult male clients at the VA Hospital in St. Cloud, MN. This knowledge can be used to increase awareness of causes of alcohol-related problems among older adult male clients at the VA. It can also be used to increase preventative services to patients at risk for alcohol-related problems.

Jordan M. Johnson (Carrie Hoover, Nursing) Peritoneal Dialysis

In order to improve the quality and safety of the peritoneal dialysis treatment on a medical unit it is essential to educate all nursing staff on the most updated evidence. When peritoneal dialysis is performed incorrectly or unsafely it can lead to severe complications such as infection and electrolyte imbalances. One urban hospital's medical unit has identified the lack of consistency among the training of the nursing staff on peritoneal dialysis. This inconsistency has led to a collective staff goal of training all nursing staff on the proper procedure in order to ensure each nurse can perform this intervention safely and independently. In effort to reach this goal I will be creating a "How to Guide on Peritoneal Dialysis" and presenting the information to the unit's staff.



Janeth F. Kamenge (Kathleen Twohy, Nursing) Patient Education on Pressure Ulcer Prevention

The main objective of this project is to educate patients on the preventive measures of pressure ulcers. It will define what pressure ulcers are, where they form, who is at risk and steps on preventing pressure ulcers. In addition, it will provide interventions that will help health care providers to ensure patients return home with adequate preventive measurements on pressure ulcers. Also, this education will hasten healing in those patients with skin ulcers and/or prevent skin breakdown in the first place.

Emily E. Kight (Kathleen Twohy, Nursing) What is the Best Structural Design for a Patient Care Unit

A pediatric outpatient care unit was designed a number of years ago but clinical needs have changed and the unit therefore needs to be re-designed. Working within the current floor plan, this project will identify the best design features for maintaining confidentiality at the nurse's station, efficiency and safety of patient care, best use of clinic space and resources, and comfort for patients and families.

Kathryn P. Kirchner, Charlene M. Pakeman (Rachelle Larsen, Nursing) Increasing Community Knowledge About Local Public Health

Two senior nursing students worked with a local public health agency for their senior immersion experience. The agency identified issues with care provider knowledge of the services offered from the agency. This project will identify key services offered by the local public health agency; benefits and effectiveness of these services. The overall outcome of this project will be increased understanding of local public health services, increased knowledge of the referral process, improved communication, and improved the efficiency of this process.

Brittany D. Mattson (Carrie Hoover, Nursing) Coming Home: Home Care of the Premature Infant

Premature infants often require monitoring and assessment following discharge from the neonatal intensive care unit. Many infants require careful watch of weight, oxygen monitoring, feeding schedule, and other factors, as a way to improve long term outcomes. Skilled nurse visits (SNV) by trained staff in premature infant care can provide this special monitoring to improve outcomes for these infants. The nurse visits the

infant, in the home ,1-2 times per week to monitor for appropriate growth improvement. Research also demonstrates SNV are successful in reducing complications with the premature infant and reduction in hospital and family cost. In order to achieve these outcomes, the institutions must employ best practice for assessment and monitoring of premature infants in the home. This project seeks to identify these factors through observation and the literature to recommend changes or reinforce existing policy.

Kelsey McQuillan (Kathleen Twohy, Nursing) The Use of Original Song Writing to Help Families Cope with Hospice Care

Music therapy has many different techniques that are used to help patients and family members cope with the end of life. One specific technique that has been shown to be effective for helping family members deal with the grief of the end of a loved one's life involves the writing of an original song. This song can be written by either the patient or the loved one and it can be an entire song or just part of a song. Research shows that this activity helps family members talk about their feelings and it opens the door of communication for all involved. This project will assess the current research on the use of original song writing to help family members cope with the dying and loss of their loved one. Recommendations for practice improvements will be provided.

Melissa E. Nathan (Rachelle Larsen, Nursing) Comparison of the Effectiveness of Manual vs Mechanical CPR in Saving Lives

Cardiopulmonary resuscitation is only effective in saving the life of patient's, roughly ten percent of the time. This life expectancy percentage could go up with the new technology of mechanical cardiopulmonary resuscitation. Current research has been done on use of mechanical chest compression devices in out-of-hospital emergencies as well as in hospital emergencies. The outcomes of this project is for nurses to learn the benefits and risks of using the mechanical chest compression devices, best practice for use, and the overall effectiveness of the mechanical devices. Following the presentation nurses will be able to analyze the appropriate use of the mechanical cardiopulmonary device.

Patrick P. Nguyen (Georgia Hogenson, Carrie Hoover, Nursing) Methods of reducing the risk of infection when accessing and deaccessing implanted central venous access ports

In patients that require repeated access to the vascular system, implanted central venous access ports are indicated. Implanted ports that undergo interventional acute, chronic, or cancer pain treatment require the short term infusion of medications and intravenous fluids. Some free standing pain centers currently use a clean technique in order to access and deaccess these implanted ports. However, there is uncertainty regarding the most effective methods in reducing the risk of infection during port access and deaccess. Evidence on prevention and management of catheter-related infections in patients who require implanted central venous port systems was reviewed and summarized. Recommendations will be made regarding the flushing of ports with heparinized saline versus normal saline, manually filled syringes versus prefilled syringes, the wearing of masks by registered nurses and patients, and sterile technique versus clean technique. Results fail to show significant differences between heparinized solutions and normal saline solutions. Prefilled syringes are more effective in reducing the risk of infection. Masks are required to be worn by staff but this is not followed in all medical facilities. Further recommendations are that patients should wear a mask only if they cannot turn their head away from the port during access and deaccess.

Stephanie M. Oczak (Kathleen Twohy, Carrie Hoover, Nursing) Reducing the Need for 1:1 "Sitters" in a Cardiovascular Nursing Unit

The cardiovascular unit at a Minnesota Hospital commonly reverts to the use of 1:1s in order to prevent falls before trying other interventions. This is costly for the hospital and the evidence indicates it is not beneficial for the patient. This project will identify best practices for preventing falls before resorting to a 1:1 intervention (also known as a 'patient sitter').

Elizabeth L. Olson (Georgia Hogenson, Nursing) Nurse-Patient Communication and its Impact on Patient Satisfaction

In order to support the implementation of better nurse-patient communication techniques, leadership on a Bone Marrow Transplant (BMT) desires to know whether improved nurse-patient communication increases patient satisfaction. The BMT unit is examining new methods to improve nurse-patient communication. The unit is encouraging nurses to utilize the care boards located in each patient's room. It is anticipated that updating and using these care boards will increase nurse-patient communication and therefore, increase patient satisfaction. Research as to whether increased and or improved communication increases patient satisfaction would provide support for this implementation.

Review and summary of the literature on whether improved nurse-patient communication improves patient satisfaction was conducted. Summary of the literature review to the unit director will assist with evidentiary support on utilization of the care boards and improved satisfaction.

Isabel A. Porter (Rachelle Larsen, Nursing) School Entry Immunization Requirements and Exemption Laws

Currently, each state has immunization requirements prior to enrollment for children entering elementary and secondary schools, both public and private. All of these state laws offer medical exemption for children who are unable to receive these vaccinations for varying medical reasons. Of these states, 48 offer religious exemptions and 20 offer philosophical exemption (Vaccine exemptions, 2014). Philosophical exemption “indicates that the statutory language does not restrict exemption to purely religious or spiritual beliefs” (States with religious, 2012). Thus, in 20 states, parents can object to their child being immunized for personal beliefs. According to Paul Offit, the percentage of unvaccinated children has more than doubled since 1991(2011). This trend is causing more and more students to be unvaccinated, leading to an increased risk of disease outbreaks, putting our children in unnecessary harm. This project will examine the current policies at a local school district related to conscientious objections of vaccinations and the practices that will enhance parent compliance with vaccine requirements.

Karly J. Queenan, Danielle C. Goetzke (Gary Gillitzer, Nursing) Insulin: Safe Administration and Storage

Due to the increasing rate of diabetes and the use of insulin nationwide, it is important to safely store and administer this medication properly. One of the care units has been experiencing a problem with safe, consistent insulin storage and administration. Therefore, the development of a protocol for insulin administration and storage in addition to an update in the current computer system is recommended for implementation on this unit. With this enhancement, the healthcare team and patients can work together to correctly manage blood sugar levels, administer insulin, and properly store medications in order to aid in patient and staffing safety on the unit.

Hailey M. Rajdl (Gary Gillitzer, Nursing) Multidisciplinary Communication: The Impact on Continuity and Quality of Care and Overall Team Cohesiveness and Efficacy

Child and adolescent behavioral health hospitals frequently provide care through a coordinated multidisciplinary team model. Members of the team often include physicians, nurses, assistive personnel, therapists, and social workers. This team is instrumental in the care each child receives because the members collaborate to identify objectives for each patient and the interventions each team member is responsible to perform. However, lapses in communication and lack of collaboration prevent a work environment where all team members feel “heard” and validated and where members agree with treatment goals and patient expectations. This causes discord between coworkers, interferes with the continuity of care for patients, and adversely impacts quality of care and the development of therapeutic relationships. This project will investigate staff perceptions about the multidisciplinary communication process as well as the actual tools utilized for communicating interventions, patient goals, and expectations. Strategies to improve this collaborative communication process will be identified and implemented, with a focus on nursing staff: Registered Nurses, Licensed Practical Nurses, and Health Service Technicians.

#### Amanda J. Roles (Georgia Hogenson, Carrie Hoover, Nursing) Licensed School Nurse-to-Student Ratio

Licensed School Nurses are a valuable member of children’s education. Promoting wellness and disease prevention, performing early intervention services to reduce barriers to learning, and addressing health disparities are common responsibilities for a school nurse. The National Association of School Nurses (NASN) has the position that schools should employ a professionally prepared Registered Nurse at the minimum school nurse-to-student ratio of 1:750, depending on the needs of the student population. In addition, Healthy People 2020, has a goal to increase the percentage of elementary, middle, and senior high schools that have a full time registered school nurse-to-student ration of at least 1:750 by ten percent by the year 2020. One Midwestern school currently does not meet the recommended, nurse-to-student ratio. Currently, this District has a ratio of 1:1012. Research indicates a lower school nurse-to-student ratio has positive impacts on students and staff. For example, schools with lower school nurse-to-student ratio have higher attendance rates of students, have students who are able to better focus on school work, and staff have an expanded capacity to devote their time and expertise to teaching and learning. Based on the student population, this District should employ an additional health care worker part time to decrease the current school nurse-to-student ratio.

Josh Santos (Rachelle Larsen, Nursing) Improving the Continuum of Care in the Bereavement Process

While working at a local hospice, the facility identified that families who had loved ones die, and the staff who took care of them were having trouble with the bereavement process. According to a recent review, the facility noted a lack of documentation regarding spiritual care, rites or ceremonies performed, and follow up with the families after death. The focus of this project is to create a professional flow sheet to improve the documentation of the bereavement process. This will allow staff and families at the facility to establish a deeper relationship and understanding of family needs, and subsequently allow the facility to continue their care by properly following up with families in regards to their priority expressed needs and concerns. The overall goal is to minimize the inconsistency between the families, staff, and providers in terms of bereavement care, and allow for a more personalized and holistic approach for all involved after end-of-life is reached.

Melissa L. Stoner (Gary Gillitzer, Nursing) Suicide Risk and Prevention in the Veteran Population

Suicide, especially in the veteran population, is a growing problem in the United States. The latest statistics from the 2010 census reports that 38,364 suicides were completed that year with up to 30% of those individuals being veterans. Many healthcare institutions/systems have launched nationwide programs and implemented protocols in response to the rising number of suicides taking place. In particular, my care site is required to have all staff members complete suicide-risk training every year in order to ensure up-to-date awareness. For my Practice Improvement Project, I will be researching the topic of Suicide-Risk and Assessment as it pertains to the mental health unit. I will also work towards promoting staff understanding and involvement in suicide prevention in order to potentially lower the rate of suicide occurrence.

Julie M. Thurmes (Gary Gillitzer, Nursing) Pain Management in Long Term Care

Pain management is a significant concern in the management of long term care patients. Multiple approaches are utilized in any given population. This project aims to explore if the older adult population (experiencing pain) in long term care has better pain management outcomes utilizing a variety of approaches after a formal quality improvement initiative is

implemented as compared to their status before these formal initiatives were attempted.

#### Jenny Vang (Carrie Hoover, Nursing) Environmental Cleaning in the Emergency Department

Emergency Departments (ED) have protocols in place for cleaning rooms vacated by patients in order to reduce the spread of infection. What is the health care staff's responsibility to ensure these protocols are being updated and implemented as part of infection control? The principle objective of this project is to re-educate healthcare staff on the importance of the environmental cleaning policy in the ED to decrease transmission of multi-drug resistant organisms (MDRO). Secondary objectives include, a review of the literature to provide evidence on the most effective disinfectant wipe to reduce MDROs, and best methods for evaluating cleanliness. Data will be collect from ED staff during the cleaning process and a survey conducted on cleaning practices and reported to the agency to improve practice.

#### **Nutrition**

##### Kristina A. Burk (Amy Olson, Nutrition) HYDRATION STATUS AND PERFORMANCE DURING TWO-A-DAY SUMMER SOCCER TRAINING SESSIONS WITH FEMALE ATHLETES

An estimated 9,000 high school athletes are annually treated for heat related illness. Dehydration is a major component of heat related illness and decreases a player's performance. A loss of just 2.5% of body mass can lead to a decrease in work output by 25% (Sawka, 2000). Purpose: To determine: 1) the hydration status of female soccer players, 2) whether a sports drink improves hydration status compared to water, and 3) the connection between hydration status and performance in female soccer players. Methods: IRB approval was received and informed consents were obtained from 15 members of a Division III soccer team. Participants were randomly assigned to groups receiving either water or Gatorade for one day, and the opposite for day two. Body weight, fluid consumption and urine osmolality were recorded before and after each practice session. All participants performed the Loughborough Soccer Passing Test (LSPT) (Ali, 2008) before the first practice session and after the second practice. Data was analyzed using t-test and Pearson's bivariate correlation test. Results: Dehydration leads to a significant increase in penalty time on the LSPT before the first practice (LSPT penalty scores were 19.7 sec for well-hydrated, 25.4 sec for minimally dehydrated, and 34.8 sec for significantly-

dehydrated,  $p=0.046$ ). Participants tended to consume more water (48.4 oz) than Gatorade (37.9 oz); urine osmolalities were 795 and 661 mOsm/kg, respectively. Conclusion: 86% of participants arrived for the first session dehydrated but only 39% were dehydrated at the beginning of second session. The greater intake of water, although not significant, was unexpected; however, participants consuming water started practice more dehydrated as reflected in the higher urine osmolalities. Dehydration was associated with an increase in errors, which increased of total time to complete the LSPT. Most participants believed they were well hydrated going into training sessions. Given the impact of dehydration on performance a greater awareness of optimal fluid intake prior to practices and competitions is recommended.

Bailey M. Drewes (Amy Olson, Nutrition) NUTRITIONAL INTAKE, MENSTRUAL FUNCTION, AND SERUM OSTEOPROTEGERIN IN FEMALE COLLEGIATE CROSS-COUNTRY RUNNERS

Approximately 44-46% of female distance runners demonstrate menstrual dysfunction versus 2-5% of the general population. Menstrual dysfunction can lead to the loss of bone mineral density and increased risk for stress fractures. Low energy availability predisposes female distance runners to the development of menstrual dysfunction (De Souza 2004). Thirty calories per kilogram of lean body mass (cals/kgLBM) is the lower limit of energy intake required to maintain normal menstrual function. Purpose: To determine whether menstrual status changes as a response to energy availability, and whether serum osteoprotegerin (OPG; a marker of bone turnover) levels reflect changes in these two variables. Methods: Subjects were recruited from a collegiate cross-country team. IRB approval and informed consents were obtained. Subjects completed a bone and menstrual health history survey at the beginning of the study. Subjects recorded weekly exercise totals and menstruation frequency over a three-month time period. Three-day diet records and serum samples were collected during early, peak, and late season. Serum 25-OH vitamin D was measured during November. ELISA assays were used to measure serum 25-OH vitamin D and OPG. Data was analyzed using multi-variable analysis of variance. Results: Two subjects were amenorrheic coming into the study and 6 subjects were oligomenorrheic. No changes in menstrual status occurred during the course of the study. There were no correlations between energy availability, menstrual status and serum OPG levels. The average cals/kgLBM was 52.7 and the lowest reported cal/kg LBM was 31.7. Twenty subjects consumed less than the recommended 15  $\mu$ g of vitamin D per day and 21 subjects consumed less than the recommended



1,500 mg of calcium per day at all three points during the season. Vitamin D deficiency ( $<75$  nmol/L) was observed in 26 subjects. Conclusions: Serum OPG and menstrual status do not appear to correlate with energy availability in this study. Energy availability may have been sufficient to prevent changes in menstrual status or OPG in this population. Inadequate dietary vitamin D and calcium intake was 64.5% and 67.7% respectively among the subjects. Female cross-country runners should be encouraged to increase their vitamin D and calcium intake to preserve bone mineral intensity.

Tori M. Grootwassink, Maren E. Iverson (Allison Seifert, Nutrition) Physiological demands of dance: A study of competitive DIII collegiate dancers

Purpose: To better understand the physiological demand of a collegiate dance team performance and inform evidence based exercise program design for dancers.

Methods: Fourteen Division III female dance team members participated in the study. A graded lactate treadmill test was completed to determine anaerobic lactate threshold for each subject. The dance test protocol consisted of performing four progressively longer segments of the dancers' two minute competitive jazz dance routine (0 to 30 s, 0 to 60 s, 0 to 90 s, and 0 to 120 s). Subjects rested between dance segments until blood lactate (BLa) concentrations returned to baseline. Heart rate (HR), BLa, and rate of perceived exertion (RPE) were assessed immediately upon completion of each dance segment. A descriptive analysis was used to characterize the subjects' physiological response to the dance routine performance.

Results: There was a progressive increase in mean RPE, BLa, and HR from 30 s ( $2.5 \pm 0.8$ ,  $3.7 \pm 1.0$  mM,  $176 \pm 8.7$  bpm) to 60 s ( $3.7 \pm 0.8$ ,  $5.9 \pm 1.2$  mM,  $185.7 \pm 5.4$  bpm) to 90 s ( $5.5 \pm 1.2$ ,  $8.4 \pm 2.1$  mM,  $187 \pm 10.6$  bpm) into the dance performance. At 120 s, mean HR decreased slightly [ $185 \pm 10.0$  bpm], while BLa and RPE continued to increase [ $8.7 \pm 1.9$  mM,  $6.4 \pm 1.3$ ]. Six subjects reached anaerobic lactate threshold by 60 s, and all subjects reached anaerobic lactate threshold by 90 s.

Conclusion: Competitive collegiate dance is a highly anaerobic activity as indicated by the rapid rise in BLa above anaerobic lactate threshold. Furthermore, dancers must maintain high intensity dance activity for 30-60 s after reaching anaerobic lactate threshold. These findings indicate that exercise programs designed for dancers should emphasize development of the anaerobic energy systems and enhance blood lactate clearance.

Anna E. Krieger (Amy Olson, Nutrition) SERUM 25-HYDROXYVITAMIN D STATUS AND ANAEROBIC PERFORMANCE IN FEMALE COLLEGIATE BASKETBALL PLAYERS

Professional athletes with adequate vitamin D status jumped higher and sprinted faster than those with insufficient status [ $<50\text{nmol/L}$ ] (Close, 2012). The incidence of deficiency varies throughout the year, with rates increasing from 12% in the fall to 63% in the winter (Halliday 2011). This seasonal dip may adversely affect skeletal muscle function and performance. PURPOSE: To evaluate serum vitamin D [25(OH)D<sub>3</sub>] status and anaerobic performance in collegiate female basketball players and verify whether 2000 IU/daily vitamin D<sub>3</sub> is sufficient to maintain optimal 25(OH)D<sub>3</sub> levels during the winter months. METHODS: IRB approval was obtained prior to testing. Fifteen varsity female collegiate basketball players (age =  $19.7 \pm 1.4$  y) volunteered to participate in the double blind, placebo-controlled study. Subjects were randomly divided into two groups: 1) 2000 IU vitamin D<sub>3</sub>/daily or 2) 100 IU vitamin E/daily (i.e. placebo). Supplements were consumed for 60 days. Health questionnaires, T drill sprint tests, and vertical jump heights were completed pre- and post-supplementation. Serum vitamin D concentrations 25(OH)D<sub>3</sub> were measured pre- and post-supplementation using a 25(OH)D<sub>3</sub> ELISA assay. SPSS t-tests were used for statistical analysis of data. Vitamin D deficiency was defined in accordance with the Endocrine Society guideline for inadequacy ( $<75$  nmol/L). RESULTS: 79% of the subject population was vitamin D insufficient in October ( $67.4 \pm 24.4$  nmol/L). Serum 25(OH)D<sub>3</sub> significantly increased in the vitamin D group following supplementation, with 72% of the subjects achieving levels greater than 75 nmol/L in December ( $67.9 \pm 24.2$  nmol/L to  $79.0 \pm 18.2$  nmol/L,  $p < 0.05$ ). In contrast, serum 25(OH)D<sub>3</sub> decreased in the placebo group, but changes were not significant ( $66.9 \pm 26.5$  nmol/L to  $56.7 \pm 26.5$  nmol/L,  $p > 0.05$ ). The increase in serum 25(OH)D<sub>3</sub> did not significantly effect vertical jump heights or T drill sprint times ( $p > 0.05$ ). CONCLUSIONS: Daily supplementation of 2000 IU vitamin D<sub>3</sub> over a 60-day period increased serum 25(OH)D<sub>3</sub>, but the elevated vitamin D status did not improve our chosen measures of anaerobic performance in collegiate female basketball players. The lack of performance effects may indicate that a chronic deficiency of vitamin D or a more severe deficiency is necessary to adversely affect muscle function.

Kelsie E. Larson (Amy Olson, Nutrition) ENERGY AVAILABILITY, LEAN BODY MASS AND RESTING METABOLIC RATE IN FEMALE COLLEGIATE DISTANCE RUNNERS

Female athlete triad occurs two to three times more often in sports that emphasize leanness, such as distance running. Athletes with female athlete triad experience low energy availability, amenorrhea, and loss of bone density (Javed, 2013). Low energy availability may be intentional to enhance performance, pathological (eating disorder), or unintentional when caloric intake fails to meet energy expenditure (Gibbs, 2013).

Purpose: To determine energy availability in female runners from pre-season, peak and post-season and measure changes in resting metabolic rate (RMR) and lean body mass (LBM). Methods: IRB approval and informed consents were obtained from 31 collegiate cross-country runners. Initial surveys of Eating Attitudes Test (Eat-26) were completed to determine risk for eating disorders. LBM (measured using bioelectrical impedance), resting metabolic rate (measured using Medgem), and three-day diet records were collected pre, peak, and post season. Participants tracked their exercise weekly. Diet records were analyzed using SuperTracker (chooseplate.gov). Data was analyzed using paired t-test and Pearson's bivariate correlation test. Results: 30 runners scored less than 20 points on the EAT-26 survey, indicating low risk for an eating disorder. EAT-26 scores negatively correlated with both caloric intake ( $p=.021$ ) and calories/kg LBM ( $p=.032$ ). RMR significantly increased on average from pre-season (1159 Cals) to post-season (1443 Cals) ( $p<.001$ ). No significant change in caloric intake (2469-2420 Cals), LBM (100.6 kg) and calories/kg LBM (53.8-53.1) occurred from pre- to post season. However, calories/kg LBM (53.8-55.5) significantly increased from pre to peak season.

Conclusions: The incidence of eating disorders in cross-country runners has been reported as high as 19%; in this study only one (3%) had an EAT-26 score suggesting high risk (Thompson, 2007). This population appeared to be consuming sufficient calories to maintain energy balance as evidenced by increases in RMR over the course of the season.

*Henrita Academic Building 121, CSB*

**Education**

Janet Tilstra, Kristina M. Albrecht, Samuel J. Broback, Erin E. Carey, Molly E. Cullen, Matthew A. Delfs, Philip A. Evans, Rachel E. Gott, Ksana A. Harrington, Mackenzie B. Heck, Grace C. Jacobs, James M. Jaeger, Corryn T. Lyons, Abby N. McKimm, Lisa J. Perunovich, Lisa M. Schneider, Melissa M. Schuler, Rachel C. Trout, Elizabeth K. Trudell (Janet Tilstra, Education) Developmental Fair

Developmental Psychology Fair. In this session, students enrolled in Dr. Tilstra's Human Development Class (EDUC 203, section 01A) will present interactive displays related to Developmental Psychology theory or practical application. Displays will demonstrate how individual and cohort factors affect biological processes, cognition, social development or personality. Many displays will emphasize the influence of these factors on educational outcomes. Presentations represent a consolidation of students' external experiences, independent readings, and information from course content.

### **Hispanic Studies**

Marissa J. Loch (Elena Sanchez Mora, Hispanic Studies) La situación del español y la cultura hispana en los Estados Unidos

As the evidence shows, there is no debate on whether Spanish has been increasing in the United States. It has. However, there is some disagreement as to whether this trend will continue. Many scholars have found proof that the Spanish language is being more valued in this country than ever before (among Hispanics and non-Hispanics), is more necessary than ever before (especially in the job market), and they predict that this trend will continue. Others believe that Spanish will follow the footsteps of other temporarily-popular, minority languages (like German) and will eventually die out in common use as the younger generations of Spanish speakers assimilate to English.

Both outcomes seem to be possible. What will determine the growth or decline in Spanish has much to do with future immigration and immigration policy (which is highly uncertain), how U.S. residents (Hispanic and non-Hispanic) value the language, and another major factor includes "attitudes" towards Spanish and bilingualism. Attitudes and receptiveness of the Hispanic language and culture is definitely going to play a major role. Therefore, this work will look at the status of the Spanish language in the United States today and attitudes toward the Spanish language and cultures that surround it. Presentation in Spanish with discussion in English or Spanish.

*Henrita Academic Building 128AB, CSB*

### **Education**

Stella J. Fredrickson (Terri Rodriguez, Education) Literacy Relationship Poster

For this project, I interviewed a teen about her literacy practices in order to learn more about her relationship with reading and writing. I then proposed strategies I had learned in my high school pedagogy class that could improve and enhance her reading and writing that I could use if I were her teacher.

Caitlin M. Krieg (Terri Rodriguez, Education) Keeping it Classic

This poster exposes and explores interactive, academic, and fun activities to utilize in the classroom while working with classic novels. Through both research and personal experiences, we were able to put together the benefits of keeping classic novels in the classroom as well as ways to keep them up-to-date with today's generation and future generations.

Bridget M. Mathiowetz, Alison Sandberg (Terri Rodriguez, Education) Spelling Assessments In Mid-Level Writing

This project's goal was to find creative ways to assess Mid-Level writing in an English language arts classroom. There are two creative lesson plan ideas for assessing student spelling in personal writing. The two lessons that are focused on revolved around word sort activities and an editing technique of reading one's writing in reverse.

Madeline O'Brien, Lauren Thoma (Terri Rodriguez, Education) Reasons Why... To Teach Banned Books

This poster was created in Terri Rodriguez's Communication Arts/Literature Pedagogy class. Inspired by the young adult novel, "Thirteen Reasons Why" by Jay Asher, this presentation advocates incorporating banned and challenged books in high school classrooms. We take into account various issues and controversies presented by parents, administration, etc. and provide a rationale for using contested books in classrooms to teach social justice, critical perspectives, and edgy topics in an appropriate, guided, and authentic context. Also included are implications and considerations for using banned books in the classroom.

## NATS

Alex Frost, Megan Grengs, Katherine Foy, Emily Boyle, Maria Kiminski, Caitlin McGoldrick, Liz Waugh, Olivia Musser, Meghan Harder, Nicole Kelly, Rebekah Meschke, Elise Molden, Shannon Murphy, Laura Meyer, Philip Adelman, Katie Monahan, Katie Jennissen, Anna Flynn, Pa Kou Thao, Mai Tong Vang, Maria Bredeck (Karen Bengtson, NATS) Integrative Science Projects

Students enrolled in the NATS 152: Integrative Science II Course were asked to research and develop an integrative science description of an important issue, question or topic. During the poster session, they will start by presenting the background of their particular project. Their presentation then explores the complexity of the issue, question or topic by highlighting research contributions from the four areas of biology, chemistry, physics and earth science, as well as what experts are suggesting should be researched or solved in the future. Each student ends with their suggestions of questions to be answered and issues that need to be addressed in order to fully understand or solve the issue, question or topic.

Alex Frost Does Strength Conditioning Prevent Sports Injuries?  
 Megan Grengs Fast Food's Relationship to Childhood Obesity  
 Katherine Foy The Importance of Nutrition for Athletes  
 Emily Boyle Understanding the True Effect of Caffeine On the Body  
 Maria Kiminski Barefoot Running vs. Tennis Shoe Running  
 Caitlin McGoldrick The Effects of Caffeine on Endurance Athletes  
 Liz Waugh POTS: The Impact on Athletes  
 Olivia Musser Heart Disease: Effectiveness of Preventative Measures

Meghan Harder Living High and Training Low: What are the True Effects of Altitude on Athletic Performance?  
 Nicole Kelly The Hazards of Indoor Pollution on the Human Body  
 Rebekah Meschke Lower Back Pain: Is It in the Floor?  
 Elise Molden How Does Multiple Sclerosis Affect the Body?  
 Shannon Murphy How Does Music Affect the Brain?  
 Laura Meyer Processed Beef vs. Organic Beef  
 Philip Adelman How Does Habitat Loss Affect Our Environment?  
 Katie Monahan The Effects of Milk Consumption Throughout Childhood  
 Katie Jennissen Childhood Obesity-Beginning with Conception  
 Anna Flynn Animals in Captivity  
 Pa Kou Thao The Relationship Between Breathing and Singing  
 Mai Tong Vang Our Relationship with Medical Radiation  
 Maria Bredeck The Relationship Between Physical Activity and Nutrients

*Main Academic & Administrative Building 320, CSB*

### **History**

Edwin M. Torres (David LaVigne, History) "Anti-Mexican Violence in the United States and Resistance from the Mexican People"

The wider audience is very much aware of the lynching that took place against African Americans. But mostly all are not aware of the dangers of lynching for a Mexican resident in the United States, which was nearly as great of those of African Americans. For decades, lynch mobs terrorized people of Mexican origin or decent without retaliation from the wider community in states like Texas, New Mexico, California, Arizona, Colorado, Nevada, Nebraska, Oklahoma, Oregon, Kentucky, Louisiana, Montana, and Wyoming. In this paper I will examine how lynching occurred to Mexicans living in the United States but most important explore how they reacted to these lynchings. I will show how, although the causes of lynching are relatively similar to African Americans, the difference is how they reacted to such inhumane acts. Mexican Americans in the United States resisted lynchings by uniting together in states like Arizona, California, and Texas and created agencies of defense. However, the Mexican-American experience is unique in the sense that there was also a transnational resistance to lynchings. The Mexican government sent consulates and ambassadors to investigate such lynchings and even committed violence against Americans in Mexico. Their stories, which consisted of struggle and the constant fear, must be told.

*Alcuin Library AV1, SJU*

#### **Center for Global Education**

Gretchen L. Hughes (Adam Konczewski, Paula Ramaley, Center for Global Education) A Shanghai Summer

A video presentation of my summer internship through CSB|SJU SGIP in Shanghai, China.

*Alcuin Library U12, SJU*

#### **First Year Seminar (FYS)**

Ruth E. Becker, Jacob J. Bellendir, Henry W. Dorgan, Mackenzie J. Jarocki, Jeffrey T. Johnson, Jamie A. Krallman, Lauren M. Lingenfelter, Hayley A. Nermoe, Samuel J. Newman, Thomas T. Nilles-Melchert, Michael J. Pettit, Megan A. Posusta, Erika A. Schlangen, Daniel J. Tripicchio (Julie Davis, First Year Seminar (FYS)) Conflict in Northern Ireland: Analysis, Synthesis, Visualization

These first-year seminar students have spent the semester analyzing the sources and persistence of conflict in Northern Ireland and synthesizing the results of their research. They will discuss their research experience and

demonstrate the digital visualizations they've created to share what they've learned.

*Simons Hall 360, SJU*

### **Political Science**

Lauren Currie (Gaynor Haeg, Political Science) Honors Thesis Panel

POLS honors thesis students will discuss the process of completing an honors thesis. Included will be timelines, highlights, difficulties.

POLS honors thesis: "Cracking the Marble Ceiling: The Partisan Gender Gap in Congress"

Hannah Deblauwe (Gary Prevost, Political Science) Honors Thesis Panel

POLS honors thesis students will discuss the process of completing an honors thesis. Included will be timelines, highlights and difficulties.

POLS honors thesis: "International Involvement in the State Consolidation in Bosnia-Herzegovina"

Melissa DeOrio (Christi Siver, Political Science) Honors Thesis Panel

POLS honors thesis students will discuss the process of completing an honors thesis. Included will be timelines, highlights and difficulties.

POLS honors thesis: "Civil-Military Relations in Emerging Democracies: A Case Study of Turkey."

Adam Ironside (Gaynor Haeg, Political Science) Honors Thesis Panel

POLS honors thesis students will discuss the process of completing an honors thesis. Included will be timelines, highlights, difficulties.

POLS honors thesis: "A Leap Toward the Poles: An Analysis of Political Polarization and its Influence on the Political Party"

John Malone (Gary Prevost, Political Science) Honors Thesis Panel

POLS honors thesis students will discuss the process of completing an honors thesis. Included will be timelines, highlights and difficulties.



POLS honors thesis: "Examining the Rise of Right Wing Populist Parties in Western Europe"

Rachel Mullin (Christi Siver, Political Science) Honors Thesis Panel

POLS honors thesis students will discuss the process of completing an honors thesis. Included will be timelines, highlights and difficulties.

POLS honors thesis: "Media Manipulation or Economic Decline? Explaining the Rise of Nationalism in Bosnia Herzegovina"

Stephanie Pinkalla (Gaynor Haeg, Political Science) Honors Thesis Panel

POLS honors thesis students will discuss the process of completing an honors thesis. Included will be timelines, highlights and difficulties.

POLS honors thesis: "Republicans in the Wild: Issue Realignment in the Republican Party on Public Land Policy"

## Fine Arts Presentations:

### Theater

#### Schedule

*2:30 - 2:50 PM*

*BAC Colman Theater* Alyssa D. Chromy (Leigh Dillard, Theater) Study Abroad Internship

*3:00 - 3:45 PM*

*BAC Colman Theater* Elliot J. Drolet (Adam Houghton, Kaarin Johnston, Mark Hennigs, Leigh Dillard, Theater) KCACTF Debriefing

#### Abstracts

**Chromy:** A presentation on the work that I accomplished and the experience that I had with my study abroad internship.

**Drolet:** I will be presenting information about what I learned from the various workshops I attended while competing at the Kennedy Center American College Theater Festival (KCACTF) in Lincoln, Nebraska, along with my fellow students, Alex Engelsjerd, Sarah Berry, and Olivia Stewart. The information will be presented orally with a PowerPoint slideshow. The intent is to inform fellow students, specifically fellow theater majors, about the various exercises, concepts, and ideas I learned at the festival and to strongly encourage them to attend the festival when it comes to Minneapolis/St. Paul for the years 2015 and 2016.

## Humanities Presentations:

### Communication

#### Schedule

*1:00 - 3:00 PM*

*BAC 130*

Duy H. Nguyen (Aric Putnam, Communication)  
Rhetorical Power: the Language of Violence and Non-Violence in the contemporary civil right movement

*1:00 - 3:00 PM*

*BAC 130*

Darran E. St.Ange (Aric Putnam, Communication) Life is Blinding

#### Abstracts

**Nguyen:** The contemporary African American civil right movement was marked by the movement of Dr. Martin Luther King with his philosophy of non-violence and practice of Christianity. In the other hand, another prominent civil right activist Malcom X encouraged using violence as a mean to demand for further social equality for Black people. Both of their methods complimented each other to accomplish profoundly social movement in the sixty. This research studies the relationship between violence and non-violence in the movement to create the progressive mechanism to move the movement upward.

**St.Ange:** This piece is a spoken word presentation that will include spoken word aswell as a live performance. This piece will tackle issues of race, class and the objectification of women.

### History

#### Schedule

*3:30 - 5:00 PM*

*Main 320*

ASHLEY M. BUKOWSKI (David LaVigne, History)  
The Miss America Pageant, 1933-1945: Keeping Traditional Values While Expanding the Roles of Women

#### Abstracts

**BUKOWSKI:** The 1930s and 1940s can often be seen as a time period in American society where women saw their traditional roles reinforced, but at the same time saw expansion in different opportunities in their lives. This paper examines how the Miss America pageant both expanded and limited women's gender roles in American society. I argue that between the years of 1933 and 1945 the Miss America pageant proved that traditional values still played a key role in the selection process by choosing women who often times had long hair and were very young in age. But, at the same time, it gave many women a chance to break out of traditional social norms and have the opportunity to appear in film and other professional opportunities once their reign as Miss America was over. To support my argument, I studied newspaper articles extensively from this time period to see what information they included and how they portrayed the contestants and the pageant winners. Over the course of the time period from 1933 to 1945, the role of Miss America saw significant changes. The pageant first chose its winners based on looks alone. However, by the mid-1940s, the pageant expanded its judging into scoring the talent and personality of the contestants as well. What started out as a pageant designed to promote the traditional values of what the ideal American women should strive for, soon also became a stepping-stone for women to obtain careers in acting, or simply as a way for winners to fund their college careers.

## Natural Sciences Presentations:

### Mathematics

#### Schedule

*12:30 - 1:00 PM*

*PEngl 212*

Preston G. Hardy (Robert Hesse, Mathematics)  
Bifurcation and Non-convergence in the Hansen-Patrick  
Root-Finding Method

#### Abstracts

**Hardy:** A study of the Hansen-Patrick Root-Finding Method and the dynamical systems that come from the spurious cycles the method can create. A look into the bifurcation patterns and cycle doubling that occurs with tiny changes of the Method that leads to chaos. The Mandelbrot Set is one such figure that shows through the chaos.

### Nutrition

#### Schedule

*1:30 - 1:50 PM*

*ASC 142*

Bailey M. Drewes (Amy Olson, Nutrition)  
NUTRITIONAL INTAKE, MENSTRUAL  
FUNCTION, AND SERUM OSTEOPROTEGERIN  
IN FEMALE COLLEGIATE CROSS-COUNTRY  
RUNNERS

#### Abstracts

**Drewes:** Approximately 44-46% of female distance runners demonstrate menstrual dysfunction versus 2-5% of the general population. Menstrual dysfunction can lead to the loss of bone mineral density and increased risk for stress fractures. Low energy availability predisposes female distance runners to the development of menstrual dysfunction (De Souza 2004). Thirty calories per kilogram of lean body mass (cals/kgLBM) is the lower limit of energy intake required to maintain normal menstrual function. Purpose: To determine whether menstrual status changes as a response to energy availability, and whether serum osteoprotegerin (OPG; a marker of bone turnover) levels reflect changes in these two variables. Methods: Subjects were recruited from a collegiate cross-country team. IRB approval and informed consents were obtained. Subjects completed a bone and menstrual health history

survey at the beginning of the study. Subjects recorded weekly exercise totals and menstruation frequency over a three-month time period. Three-day diet records and serum samples were collected during early, peak, and late season. Serum 25-OH vitamin D was measured during November. ELISA assays were used to measure serum 25-OH vitamin D and OPG. Data was analyzed using multi-variable analysis of variance. Results: Two subjects were amenorrheic coming into the study and 6 subjects were oligomenorrheic. No changes in menstrual status occurred during the course of the study. There were no correlations between energy availability, menstrual status and serum OPG levels. The average cal/kgLBM was 52.7 and the lowest reported cal/kg LBM was 31.7. Twenty subjects consumed less than the recommended 15 µg of vitamin D per day and 21 subjects consumed less than the recommended 1,500 mg of calcium per day at all three points during the season. Vitamin D deficiency (<75 nmol/L) was observed in 26 subjects. Conclusions: Serum OPG and menstrual status do not appear to correlate with energy availability in this study. Energy availability may have been sufficient to prevent changes in menstrual status or OPG in this population. Inadequate dietary vitamin D and calcium intake was 64.5% and 67.7% respectively among the subjects. Female cross-country runners should be encouraged to increase their vitamin D and calcium intake to preserve bone mineral intensity.

## Social Sciences Presentations:

### Accounting & Finance

#### Schedule

*12:15 - 12:30 PM*

*Simms 310*

Michael J. Zimmer (Warren Bostrom, Accounting & Finance) The Investing Environment for Multinational Companies in China

*12:30 - 12:45 PM*

*Simms 340*

Alyssa M. Sorenson (Warren Bostrom, Accounting & Finance) Personal Financial Impact of Using Credit Cards

*12:30 - 12:45 PM*

*Simms 310*

Benjamin R. Krebsbach (Warren Bostrom, Accounting & Finance) Tax consequences to employers when they send expatriates to different countries

*12:45 - 1:00 PM*

*Simms 310*

Travis D. Gohman (Warren Bostrom, Accounting & Finance) An Analysis of International Corporate Tax Reform

*12:45 - 1:00 PM*

*Simms 340*

Maxwell S. Salerno (Warren Bostrom, Accounting & Finance) Is College Worth It?

*1:00 - 1:15 PM*

*Simms 310*

Denneisha S. Dean (Warren Bostrom, Accounting & Finance) What will it take for the Bitcoin to succeed?

*1:00 - 1:15 PM*

*Simms 340*

Laura M. Kosch (Warren Bostrom, Accounting & Finance) Best Practices for Maintaining A Work-life Balance in Public Accounting

*1:15 - 1:30 PM*

*Simms 340*

Aaron T. Haworth (Warren Bostrom, Accounting & Finance) Analyzing the Future of the Small Accounting Firm Industry

*1:15 - 1:30 PM*

*Simns 310*

Perron N. Armaly (Warren Bostrom, Accounting & Finance) Feasibility of implementing value added tax in the Bahamas

*1:30 - 1:45 PM*

*Simns 340*

Ryan Dwyer (Warren Bostrom, Accounting & Finance) Are top executives worth the compensation they receive?

*1:45 - 2:00 PM*

*Simns 340*

Ngoc H. Bui (Warren Bostrom, Accounting & Finance) Career Advancement in Public Accounting

*2:00 - 2:15 PM*

*Simns 310*

Yee Kei Zheng (Warren Bostrom, Accounting & Finance) Personal financial impacts of online shopping

*2:15 - 2:30 PM*

*Simns 310*

Alexander J. Smisek (Warren Bostrom, Accounting & Finance) A Cost/Benefit Analysis on the Increased Use of Credit and Debit Cards

*2:30 - 2:45 PM*

*Simns 310*

Paul R. Schoenecker (Warren Bostrom, Accounting & Finance) Financial impacts of retiring at different ages

*2:45 - 3:00 PM*

*Simns 310*

Crystal M. Jacobson (Warren Bostrom, Accounting & Finance) Does Using a Personal Budget Affect Wealth Accumulation?

*3:00 - 3:15 PM*

*Simns 310*

Chrisitna L. Gast (Warren Bostrom, Accounting & Finance) Evaluating the Impacts of Working on Welfare Benefits

*3:00 - 3:15 PM*

*Simns 340*

Tyler Whiting (Warren Bostrom, Accounting & Finance) Audit and Nonaudit fees trends following the Sarbanes-Oxley Act.



*3:15 - 3:30 PM*

*Simns 340*

Alex S. Nicholas (Warren Bostrom, Accounting & Finance) Common Themes of Fraud and the impact of Sarbanes Oxley

*3:30 - 3:45 PM*

*Simns 340*

Alyssa Mason (Warren Bostrom, Accounting & Finance) Affordable Care Act's Effects on Small Businesses

*3:45 - 4:00 PM*

*Simns 340*

Kevin M. Jirik (Warren Bostrom, Accounting & Finance) What are the impacts of the new accounting standards Lease Convergence Project

*3:45 - 4:00 PM*

*Simns 310*

Jordan M. Otto (Warren Bostrom, Accounting & Finance) Quantitative Easing Effects on Capital Flows

*4:00 - 4:15 PM*

*Simns 310*

Steven G. Marquette (Warren Bostrom, Accounting & Finance) Analyzing segment reporting and how it impacts a company's stock price.

*4:00 - 4:15 PM*

*Simns 340*

Thomas M. Fadden (Warren Bostrom, Accounting & Finance) Has segment reporting improved since the passing of SFAS 131?

*4:15 - 4:30 PM*

*Simns 310*

Macaela T. Karnick (Warren Bostrom, Accounting & Finance) How will the health care reform financially impact small businesses?

*4:15 - 4:30 PM*

*Simns 340*

Forrest G. Anderson (Warren Bostrom, Accounting & Finance) What is the impact of the new revenue recognition standard?

*4:30 - 4:45 PM*

*Simns 310*

Minh B. Ho (Warren Bostrom, Accounting & Finance) The Financial Impact of the New Lease Accounting Rules

4:45 - 5:00 PM

*Simms 310*

Andrew H. Gajeski (Warren Bostrom, Accounting & Finance) Practical impacts of a nationwide poverty line

5:30 - 5:45 PM

*Simms 310*

Fabricio J. Moncada (Warren Bostrom, Accounting & Finance) Credit Default Swaps - The Effects of Transparency and Central Clearing

5:30 - 5:45 PM

*Simms 310*

Andrea L. Dylla (Warren Bostrom, Accounting & Finance) The Value of Business Acumen Training

5:30 - 5:45 PM

*Simms 310*

Miles P. Armitage (Warren Bostrom, Accounting & Finance) The costs of implementing XBRL

5:30 - 5:45 PM

*Simms 310*

Jenna M. Vogel (Warren Bostrom, Accounting & Finance) Cost-Benefit Analysis of Retirement in Florida & Arizona

5:30 - 5:45 PM

*Simms 310*

Mackinzie R. Wilson (Warren Bostrom, Accounting & Finance) Value of Graduate Degrees in Accounting

5:30 - 5:45 PM

*Simms 310*

Evan W. Miller (Warren Bostrom, Accounting & Finance) Impact of Foreign Direct Investment in Emerging Economies

## **Abstracts**

**Zimmer:** For several decades, companies have viewed China as an attractive investment opportunity due to the high supply of cheap labor. With GDP growth hovering around 10 percent and private consumption expenditures rapidly increasing, China still is in many respects the most exciting emerging market today. Why then have many large multinational companies such as Google and Revlon thrown in the towel in China with many more companies struggling to survive? My research examines the performance of multinational companies operating in China as well as the current state of the investment environment for foreign companies. In particular, I explore some of the unique investment challenges faced by companies

in the high-tech sectors. I also offer policy prescriptions aimed at increasing foreign direct investment (FDI) in China, which would ultimately benefit both multinational companies and the Chinese economy.

**Sorenson:** With so many people using credit cards today, I am researching how this affects the average person's budget and financial situation. Does using credit cards lead people to debt or is it a helpful cash management tool? I will also be looking at various areas of spending to determine if using a credit card leads people to overspend in certain categories like dining out, shopping online, or buying groceries. My research involves a survey asking different people about how often they use a credit card, if they believe credit cards are a good thing to have and what are the benefits for having a credit card.

**Krebsbach:** As businesses become more global, employees are sent overseas by their employer on long-term assignments for work. With this change in living, employees are taxed in both their home country and host country. It is the responsibility of the employer to cover the tax consequences that arise through the difference in tax rates and to avoid double taxation for the employee through a technique called tax equalization. My research will explore the costs to companies of tax equalization at different tax rates in different countries.

**Gohman:** International corporate tax reform is currently a hot topic in Congress. Why? Because many of those who oppose the current system of taxation on global companies believe there are too many loopholes that allow companies to avoid paying U.S. tax. Most legislators agree there is a strong need for reform, but the debate is over which method of reform is the best to implement. My research focuses on one of the currently proposed reforms: the elimination of the deferral system. My analysis of the proposed change sheds light on the benefits and consequences of this specific reform option on future tax revenues.

**Salerno:** Over the past few decades, the cost of college has seen an increase exceeding that of the cost of living and even medical costs. With such a high price placed on a college education, many are now asking the question: is college worth it? My research will address this question in a very specific manner. I created spreadsheets on Excel to quantify the financial well-being of various occupations at the time of retirement; some of the occupations chosen require a college degree and some do not. This will show, on a specific level, if college is worth it or not in this day and age.

**Dean:** Primarily inspired by society's lack of knowledge about the Bitcoin, coupled by its rapid appearance in the media over the past year and a half, my research examines and determines the ideal characteristics that Bitcoin needs to succeed.

Possessing current characteristics such as, great convenience, absent banking system and strong volatility, Bitcoin as it is has made media appearance in both a positive and negative spotlight. However, despite some opposing views, Bitcoin has the potential to become a well-used form of currency. In making my determination, I will be analyzing the success and failure stories of various foreign currencies – pooling together similarities and differences to come to a general conclusion on what will it take for the Bitcoin to succeed.

**Kosch:** As many students are preparing to enter the professional world, many may be wondering how their career will affect their work-life balance. Specifically, students who are starting their career in public accounting and want to maintain this balance. My research question will explore the best practices for maintaining a work-life balance in public accounting. In answering this question, I am gathering information through a survey sent out to the College of St. Benedict and St. John's University alums. Based on the results of my survey, I will analyze different individual factors, and their effect on work-life balance. Also, I will make suggestions for graduating accounting majors specifically those entering public accounting, but also the working world.

**Haworth:** Is your entrepreneurial spirit alive and well, pushing you to create that dream business and be your own boss? If so, fantastic! Now, who's doing your accounting, consulting, and tax work? Do you have a good accountant taking care of you? Would you know if they are good? My research explores the future of the small accounting industry, surveying current professionals about their views/assumptions and discussing how to find competent and affordable accounting services in an ever-changing environment.

**Armaly:** Due to the impact of globalization, which encourages countries to reduce barriers to trade, the Bahamas is searching for ways to replace the revenue they have lost by lowering their import tax rates. It is crucial for the Bahamas to discover more ways of generating tax revenue to pay their rising debt, and to have more economic development. The Bahamas is in the preliminary phase of deciding whether value added tax (VAT) would be beneficial. In my research, I identify if it would be beneficial to implement VAT in The Bahamas while providing guidance to ensure VAT accomplishes The Bahamas' financial goals. My answers are supported by analyzing the progress of other developing countries that have implemented VAT.

**Dwyer:** Today, more than ever, eyes are on America's top executives and the compensation they receive. In fact, in 2012, the average Chief Executive made 380 times the amount of the average worker. My research examines the question of whether or not top executives are worth the compensation they receive and if higher compensation for executives leads to better company performance. In my research, I

hope to find a correlation between the compensation of top CEO's and the performance of the companies they lead.

**Bui:** After graduation, many accounting students choose to start their careers in public accounting firms. However, most of them are still not sure about their long term career path in this field. My research will provide accounting students with information regarding career advancement in public accounting. In order to gather data for my research, I sent out a survey to accounting professionals, asking them how the career advancement in their firms look like. In addition, I also gathered facts from existing researches about opportunities in this field. Based on this information, I will be able to identify the trend in public accounting and assist accounting students in their long-term career paths.

**Zheng:** Online shopping offers us another way to make purchases. Customers make their decisions of whether to get an item in retail stores or online shops by considering all the advantages of one over the other. Existing research shows the factors that influence customers' attitudes toward online shopping, then in turn affect also their shopping behaviors. I would like to explore the potential financial impacts on online shoppers. I am doing a survey and further researches to conclude my project with the answer of how we can truly become smart online shoppers.

**Smisek:** Ever since the first credit card was created and sold to the public, its popularity has been on the rise. Credit cards were the prominent form of payment until the 2008 financial crisis. When credit cards became less popular as a result of the crisis, debit cards took over as the prominent form of payment. Now in 2014 debit cards and credit cards are the two most common types of payment, surpassing cash. My research will go through a cost/benefit analysis of the increased use of credit and debit cards and how this will affect citizens and both large and small businesses.

**Schoenecker:** As many of us make the transition into the work place within this next year, it is crucial for us all to know and understand the benefits of saving for retirement early on in our careers. Going along with that, it is also beneficial to know the monetary benefits that come from working various years past the typical retirement age. In my research, I will be looking at the benefits that come from working past retirement age while taking into account social security, individual savings and 401k, and any defined/contribution benefit plans. From there I will be comparing the overall wealth of individuals who stop working at various ages.

**Jacobson:** A major concern of individuals is managing their personal finances. Individuals struggle between paying bills, saving for retirement, and having cash available for leisure activities. Many individuals are not educated on how to manage

their money, so my goal is to determine whether using a personal budget will result in more wealth accumulation in the long run. My research consists of a survey that gathers data from a variety of individuals from different age groups, family sizes, and professional backgrounds.

**Gast:** Welfare reform is currently a topic of much debate, which is why it's important for the policymakers and the general public to understand the current system. The current system is complex, and contains both federal and state funding. My research focus will be on welfare benefits available to Minnesota residents. In particular, I will be looking at how a one parent and two child household's welfare benefits are effected by working. This will be used to evaluate whether welfare discourages working.

**Whiting:** The Sarbanes-Oxley Act of 2002 drastically changed the work that public accounting firms are able to perform on their attest clients. In particular, stringent restrictions were placed to limit the amount of nonaudit services a firm can complete for their clients. My research will help show the impact of this Act on public companies, as well as public accounting firms and their audit procedures. This research will show the trends of audit and nonaudit fees since 2002.

**Nicholas:** Ever since the major frauds in the early 2000's, there has been a push there are greater regulation regarding fraud. In 2002, the Sarbanes Oxley Act was passed to address fraud concerns. My research has shown that there are common themes in fraud before and after Sarbanes Oxley to see if fraud was properly addressed, as well as if fraud has been reduced or not.

**Mason:** As of March 31, 2014, all US citizens are required to carry health insurance. While not all size companies are required to offer healthcare to its employees, many will decide to do so. As an incentive, the government offers a tax credit to certain companies who do so. Many small businesses, however, claim that providing health care to employees will cause them to endure great costs and negatively affect their bottom lines. I will be researching how this healthcare requirement financially affects small businesses. Since all businesses are affected differently based on their number of employees, I will investigate which size business financially benefits/suffer the most and the least from the Affordable Care Act.

**Jirik:** Current US GAAP lease accounting standards, with its four part test, and two types of leases (Operating and Capital) has existed since the 70s. In cases such as WorldCom and Enron, the assigning of assets to special purpose vehicles has contributed to some of the world's largest bankruptcies and misleading financial statements. The SEC called for elimination of all off balance sheet financial arrangements to change the guidelines of financial reporting to better reflect the

economic transaction and not distort it. The new proposal has created a Right-of-Use model where new assets and liabilities will be created to represent the value of the lease on the books. My research explores the repercussions of the accounting proposal and implications the changes create.

**Otto:** The 2007/2008 financial crisis had devastating effects on the United States economy. In order to restore economic growth, the Federal Reserve implemented quantitative easing. Quantitative easing operates through monetary injections, which decrease interest rates and lead to increased consumption. One major concern about quantitative easing is that lower interest rates encourage flows to foreign markets. My research examines quantitative easing and explores its relationship with international capital flows.

**Marquette:** The SEC has determined a number of current problems on how companies are disclosing their information. One of these major issues is segment reporting. Laws and regulations are set as to how companies must report their information, but segment reporting still varies. My research will look at a number of companies and how they report their segments. After figuring out the details of how information is reported, I will determine whether or not detailed reporting signifies a higher stock price.

**Fadden:** SFAS 131 was passed in 1997 in an effort to change how companies reported financial results of their different business segments. Under 131, companies are required to release financial information on the business segments they use to make business decisions in an effort to make companies more transparent. These segments may be business units, countries, geographic regions, or a combination of any of the aforementioned. My research will focus on whether or not segment reporting has improved based on the number of segments and line items disclosed by a sample of fortune 500 companies over the last ten years.

**Karnick:** The final phase of the Affordable Care Act is being implemented this year and will continue to affect small businesses in the upcoming years. Under the healthcare law a small business includes any employer with 50 or less full-time employees. Once an employer employs more than 50 full-time employees they are required to offer affordable healthcare coverage to their employees. My research will analyze the financial impact of the 50 full-time employee threshold employers face, as well as other implications of the health care reform that will affect small businesses financially.

**Anderson:** There is a need for comparable financial statements in this global business environment. United States companies account for revenue differently than a majority of other countries. Accounting boards have been working to design a

change in how United States companies will be required to recognize revenue. This change is to be implemented in 2017. My research will explore how this proposed change will affect United States companies' revenue recognition process.

**Ho:** For companies, leasing plays an important role in their day-to-day businesses. The U.S Financial Accounting Standard Board just issued an exposure draft proposing to establish a new accounting model for both lessees and lessors and to fundamentally change how leases are recorded in a company's financial statements. My research primarily focused on the effects of the new lease accounting rules have on the financial statements of the lessees. First, I randomly chose 50 businesses from the Fortune 500 list. Then, I analyzed the changes in different accounts on the balance sheets, the financial ratios, and the stock price of these companies. From my research, my goal is to determine how significantly the new lease accounting rules will impact key financial ratios of various businesses

**Gajeski:** While we all hope we will never be close to the line the fact of the matter is many people in the United States live day to day on or near the poverty line. With this sad truth comes one very large question; Can a universal poverty line in America work for purposes of determining wages and government assistance? The U.S. currently has a universal poverty line across the lower 48 states. My research looks at cost of living, the cheapest states to live in, minimum wage and much more. I will be exploring this idea of a universal poverty line and looking at whether or not it is practical.

**Moncada:** Over the counter (OTC) derivatives markets, and specifically the credit default swaps market, has instigated several concerns to government officials and financial regulators over the last few years. Academic literature suggests that opaqueness and systemic risk are two of the main concerns. According to a Federal Reserve report in 2011, "An analysis of CDS Transactions: Implications for Public Reporting", suggested the need for increased regulatory and legislative improvements, including greater transparency and central clearing. In 2010, Title VII of the Dodd-Frank Wall Street and Consumer Protection Act effectively required that most derivatives be traded on centralized exchanges. In addition, the DTCC Trade Information Warehouse is a data repository that provides a registry of the details of almost all outstanding credit default swaps traded globally, including centrally cleared CDS and those that are not centrally cleared. From the period of 2008 to 2014 increased market transparency and the inclusion of Central clearing has significantly reduced CDS market activity and systemic risk.

**Dylla:** Business Acumen is the ability to make good business decisions in a timely manner with an understanding of how the decision should impact the business. Business acumen training has been on a recent up-rise in order to help individuals



within organizations improve these skills. Learning to understand the five drivers of business: cash, profit, assets, growth, and people, is the key foundation to improving business acumen skills. All stakeholders realize the value of having business savvy individuals with strong business acumen skills within their organization. My research will explore the strengths and weaknesses in identifying and being familiar with these drivers across demographics such as age, gender, and how often they listen to earnings calls. These results will, in turn, allow organizations to more efficiently implement business acumen training.

**Armitage:** In 2009, the SEC created a mandate stating that all filers must submit their financial information in eXtensible Business Reporting Language (XBRL) format along with financials in the traditional U.S. GAAP format. The XBRL format allows companies to analyze financial data in real time, but the implementation of XBRL also brings about a number of additional expenses. My research will primarily focus on phase 1 implementation companies that were required to use the XBRL format first, and I will explore whether the SEC's estimated costs of XBRL implementation were accurate compared to the actual costs incurred.

**Vogel:** As residents of the state with the 4th highest income tax rate in the country, many of Minnesota's retirees are taking their wealth and their residency elsewhere. As states with low or no income tax and plenty of sunshine, Florida and Arizona often appeal to Minnesotans looking to escape high income tax rates in retirement. However, the actual benefit gained varies greatly with each individual based on a number of factors. Some of these factors include amount, type, and frequency of income, as well as duration and location of stay in Florida or Arizona. My research will determine who benefits the most from retiring to Florida and Arizona.

**Wilson:** Accounting professionals today are faced with many career path decisions and must determine for themselves which is the best choice. One such path is a graduate degree in an accounting related field. While this extra degree is said to create many opportunities for professionals, what these opportunities are is somewhat unknown. In solving this unknown, I am researching the true value of these degrees in order to determine if they are in fact, worth the financial investment. I will be researching this issue through a survey. This survey will give insight into whether a graduate degree is a smart career path decision.

**Miller:** Over the past few decades, substantial economic growth in emerging markets has been on the rise. In fact, over the next five years 70% of the world's economic growth is said to derive from these very same emerging countries, including China, India Brazil, and others. Among a diverse number of reasons, foreign corporations are attracted to these countries because of the significant

growth opportunity along with access to various resources, cheaper labor, and new markets. In turn, foreign investment is contributing to both social and economic advancement in these counties, but by how much? Throughout my presentation I will be conducting a comprehensive analysis of the foreign direct investment and its impact on economic growth in emerging markets.

## Education

### Schedule

*2:00 - 4:00 PM*

*HAB 117*

Va Lor, Ryan T. Miller, Christina M. Angell (Alicia Peters, Education) Beyond the School Walls: Sharing and Documenting Art with Ipads

### Abstracts

**Lor, Miller, Angell:** We will construct a documentation of an art process including artist's statements. Next, QR codes will be developed to share process and exploration of work. Lastly, students' art will be recorded and shared virtually within local and global communities.

## Exercise Science and Sport Study

### Schedule

*2:00 - 2:15 PM*

*ASC 104*

Kaitlyn M. Rolando (Mary Stenson, Exercise Science and Sport Study) The Effects of Coach-Administered Feedback on Physical Performance in Collegiate Female Athletes

*2:25 - 2:40 PM*

*ASC 104*

Patrick J. Miles (Mary Stenson, Exercise Science and Sport Study) Relationship between Pain Perception and Anaerobic Treadmill Test Performance

*2:50 - 3:05 PM*

*ASC 104*

Sara R. Buermann (Mary Stenson, Exercise Science and Sport Study) Adequacy of Exergames: Is Just Dance an Effective Exercise?

*3:15 - 3:30 PM*

*ASC 104* Daniel M. Siers (Mary Stenson, Exercise Science and Sport Study) Investigation of the relationship between lipid profile and aerobic exercise

*3:40 - 3:55 PM*  
*ASC 104* Ryan L. Brutger (Mary Stenson, Exercise Science and Sport Study) Decision Fatigue and Exercise

*4:05 - 4:20 PM*  
*ASC 104* Elizabeth J. Camber (Mary Stenson, Exercise Science and Sport Study) The Effects of Saddle Height on Power Output in Male Cyclists

## Abstracts

**Rolando:** Athletes experience a variety of coaching behaviors directed at the athlete personally, at a teammate, or at the team as a whole. Interactions and communicative acts between coaches and athletes affect psychological and emotional well-being, motivation, and sport persistence of athletes. The purpose of this study was to better understand how the relationship between coach and athlete affects performance. The current study examined whether coach-administered positive feedback and coaching presence (present but not administering feedback and not present) during a physical test would impact performance. Ten, Division III female ice hockey players participated in the study. Each participant completed three anaerobic treadmill tests at 7mph with a 20% grade while being administered one of three treatments: 1) coach providing positive feedback, 2) coach present but not providing feedback, 3) coach not present. Testing was completed over a three-week time period, each treatment separated by one week. A one-way ANOVA revealed no significant difference in performance outcomes between feedback treatments ( $F(3,11)=1.668, p>0.05$ ). Inconsistencies in the pre-test screening, as well as the testing procedure, may have contributed to statistically insignificant results. Overall, coach feedback or presence during a treadmill test did not affect performance in Division III female ice hockey players.

**Miles:** Exercise induced pain may be a contributing factor in an athlete's decision to discontinue performing high intensity exercise. To examine the relationship between pain perception and anaerobic treadmill test performance, 11 male athletes participated in two experimental tasks. First, participants performed a cold pressor test where cold water (1°C) was circulated around their submerged hand. Pain tolerance was measured by the amount of time the participant's hand was submerged. Next, the participants performed a Cunningham and Faulkner Anaerobic treadmill test where they were instructed to run until exhaustion at 7

mph and a 20% incline. Their anaerobic performance was measured by the time spent on the treadmill. No statistically significant correlation was observed between pain tolerance and anaerobic performance ( $r=.601$ ,  $p=.051$ ). The decision to quit exercising was not likely due to the pain of exercise, but a physiological or psychological inability to produce force.

**Buermann:** The purpose of this study was to examine the effectiveness of interactive video games as a regular form of exercise using blood lactate, heart rate (HR), rating of perceived exertion (RPE), and oxygen consumption (VO<sub>2</sub>). Seven recreationally active female students participated in two testing sessions each. During the first session, a VO<sub>2</sub> peak treadmill test was performed followed by a 3-stage phasic treadmill protocol. The subjects were then allotted a familiarization period with the Wii Just Dance equipment. During the second testing session, the subject exercised for 20 minutes on the Wii Just Dance program. Songs were pre-selected by the researcher and included approximately 50% medium-level difficulty songs and 50% hard-level. Blood lactate, HR, RPE, and VO<sub>2</sub> measurements were taken between each song. HR, RPE, blood lactate and VO<sub>2</sub> measurements from the Just Dance trial were compared to the maximal measurements obtained during the first testing session to determine the level of intensity of Just Dance exercise. Blood lactate during the Just Dance trial was analyzed separately based on medium ( $2.08 \pm .50$  mmol/dl) and hard difficulty levels ( $2.73 \pm 1.52$  mmol/dl). Average HR during the Just Dance trial was similarly analyzed based on medium ( $136.1 \pm 14.94$  bpm) and hard difficulty levels ( $156.14 \pm 15.16$  bpm). Average VO<sub>2</sub> during the Just Dance Trial was also evaluated after separating medium ( $17.49 \pm 2.94$  ml/kg/min) and hard ( $24.78 \pm 1.86$  ml/kg/min) level data. The average percentage of heart rate maximum reached by subjects was 72.22% (SD = 7.65) during medium difficulty and 82.86% (SD = 7.56) during hard level intensity. The average percentage of VO<sub>2</sub> reserve during medium difficulty Just Dance was 47.63% (SD = 8.37) while average VO<sub>2</sub> reserve during hard level Just dance was 67.39% (SD = 6.95). One subject's blood lactate was below baseline during the medium level dances, four subjects' blood lactate was elevated from baseline but below lactate threshold (LT) and two subjects' were at or slightly above LT. During hard level Just Dance activity, four subjects' blood lactate was above baseline but below LT and three subjects' blood lactate was at or exceeded LT. Just Dance does qualify as at least a moderate intensity exercise compared to the guidelines set by the American College of Sports Medicine. Based on the findings, exergames can be considered at least moderate intensity exercise and may provide an alternative to gym-based exercise.

**Siers:** Previous research has demonstrated a positive correlation between aerobic exercise (AE) and HDL, or good cholesterol, while evidence has been mixed regarding the relationship between AE and LDL. Purpose: The first goal is to determine the relationships between AE of both high intensity (HI, 90 minutes per

week) and low intensity (LI, 120 minutes per week), and measures of lipid profile such as HDL and LDL. The second goal is to determine the relationship between HDL, LDL, and the frequency, intensity, and duration of AE. Methods: 112 Nutrition 125 students completed a 3 day diet log, aerobic exercise survey, and had their fasting blood glucose and lipid levels assessed. All participants were young, relatively healthy college students with no health conditions or medications which would affect lipid profile. Results: No significant relationship between AE and HDL was observed. A weak negative correlation was found between LI AE and LDL ( $p = .03$ ;  $r = -.295$ ), and a weak negative correlation was found between intensity of AE and LDL ( $p = .019$ ;  $r = -.221$ ). Total kilocalorie consumption (TE) also correlated to increased TG levels despite controls for saturated fat, polyunsaturated fat, and carbohydrate consumption ( $p = .048$ ;  $r = .190$ ), but the possibly significant effects of obesity were not considered. Conclusion: Based on the results of this study AE is weakly and negatively correlated with LDL and is not associated with HDL or other lipid profile measurements. This result is surprising and contrary to established literature trends. The AE correlations may have been influenced by the subject population, healthy college students, who are different from participants used in previous research concerning AE and blood lipids who commonly have multiple CVD risk factors. More research must be completed to understand the relationship between TG and TE, which may affect CVD risk, particularly due to the confounding effect of obesity which was not controlled for in the present study.

**Brutger:** Decision fatigue is caused by successive and/or difficult decision-making. The purpose of this study was to determine whether exercise attenuates decision fatigue more so than rest. The current study examined the potential negative effects of decision fatigue on self-control, one of the manifestations of decision fatigue, and mood. Fourteen females age 18-22 ( $M=20.36$ ,  $SD=1.11$ ) participated in the study; each subject completed two trials. Upon arrival, the participants worked on one packet of math problems and completed one Positive and Negative Affect Schedule (PANAS). The subjects then completed a decision fatigue protocol, another round of math problems and another PANAS. They then performed either 20 minutes of exercise or 20 minutes of rest, followed by a final set of math problems and another PANAS. Math packets served as a measure of self-control, and the PANAS served as a measure of mood. Time spent on math problems and accuracy of problems was measured, while the PANAS measured positive and negative affect. Treatment had no effect over time for self-control ( $F(1.4, 5.9) = .601$ ;  $p > .05$ ), accuracy ( $F(1.9, 3.2) = .614$ ;  $p > .05$ ), or negative affect ( $F(1.6, 4.4) = .196$ ;  $p > .05$ ). The exercise treatment resulted in significant positive affect ( $F(1.3, 127.4) = .01$ ;  $p < .05$ ) compared to the rest treatment. These findings suggest that, while exercise does not attenuate decision fatigue more so than rest, it does elicit a perceivable, positive change in psychological state that is absent after rest.

**Camber:** Small variations in bicycle saddle height impact injury prevention, anaerobic power output, economy, gross efficiency, and lower limb kinematics. The Hamley method of setting saddle height is the best for maximizing power, and the Holmes method minimizes risk of injury. The two methods often do not yield saddle heights that overlap. Researchers have examined how saddle height affects anaerobic power production, but little work has examined aerobic power production. Since most cycling races rely on aerobic power, there is a need to examine how aerobic power is affected by adjusting saddle height. This study will investigate saddle heights set utilizing the Holmes method, in which saddle height is set such that the knee has 25° to 35° of flexion, and determine which saddle heights, within the range recommended for injury prevention, yield maximal power output. Participants will complete a standardized warm up consisting of dynamic warm-up exercises followed by 5 minutes of biking at a cadence lower than 50 rpm. At each of three test sessions, participants will perform one 2-mile time trial at a set cadence on a stationary bike at one of the three determined saddle heights. The order in which the participants ride at the three saddle heights will be randomly assigned. Participants will control the resistance in order to maintain a cadence of 90 rpm. Heart rate, power output, resistance, and cadence will be recorded throughout the trials. I hypothesize that use of a 25° knee angle will produce maximal power output.

## Global Business Leadership

### Schedule

*1:00 - 3:00 PM*

*BAC 130*

Mitchell B. Fader, Joshua H. Willaert, Carolyn A. Bedford, Emily J. Buchmiller (Aric Putnam, Deborah Pembleton, Global Business Leadership) Harley-Davidson Vrooming to the Top of Equal Employment

*1:00 - 3:00 PM*

*BAC 130*

Andrea Betts, Julia Vang, Elizabeth Diekmann, Brett Smith (Aric Putnam, Deborah Pembleton, Global Business Leadership) Examining the Wage Gap through Rewards and Compensation at Johnson and Johnson Corporation

### Abstracts

**Fader, Willaert, Bedford, Buchmiller:** Our research presentation analyzes the Human Resources (HR) department at Harley-Davidson. We will provide vital

information on Harley-Davidson including a brief history of the company and the values it was built upon. We will explain and analyze the HR department's global strategy and how that strategy incorporates Equal Employment Opportunity (EEO) throughout the company. Finally, we will discuss how Harley-Davidson is able to uphold its values and its position in the market with strong HR management with particular focus on EEO.

**Betts, Vang, Diekmann, Smith:** In an age where the wage gap and compensation inequality are brought to light, we will be discussing a company that has implemented programs to reverse this imbalance through the support offered to their employees. Johnson and Johnson takes the issue of benefit and reward equity seriously. The concept of total rewards has become a critical part of Human Resource management; this umbrella consists not only of monetary rewards and compensation, but of benefits, work-life practices, and performance and talent management as well. Johnson and Johnson values the variety of needs that its diverse group of employees have, and has answered accordingly. Through various programs to invest in human capital, Johnson and Johnson has supported diverse employees, who in turn create solutions to benefit the equally diverse customer base they serve. Likewise, Johnson and Johnson supports the goals of its employees both in and out of the office. The only company to be named to Working Mother's "Best Companies for Working Mothers" for all 28 years, Johnson and Johnson is working to facilitate the needs of women in the workplace. Through an examination of the company's policies, we will examine the way that Johnson and Johnson has worked to narrow the wage gap.

## Political Science

### Schedule

*1:00 - 2:00 PM*

*HAB 101*

Alul Yesak (Christi Siver, Political Science) Human Trafficking: The Failure of States to Eradicate Slavery

*1:30 - 1:40 PM*

*Main 323*

Edwin Torres (James Read, Political Science) Financial Aid for Dreamers and Deferred Action Immigrants

*1:40 - 1:50 PM*

*Main 323*

Jake Collins (James Read, Political Science) Investing in US-Mexico Entry Port Infrastructure

*1:50 - 2:00 PM*

<i>Main 323</i>	Katie Spoden (James Read, Political Science) Creating a Healthier Community: Improving SNAP recipient access to the St. Cloud Area Farmers Market
<i>2:00 - 2:10 PM</i> <i>Main 323</i>	Katie Stelzner (James Read, Political Science) Educational Program for a Sustainable South St. Paul
<i>2:20 - 2:30 PM</i> <i>Main 323</i>	Mai Tong Yang (James Read, Political Science) Adaptation Programs for Hmong Immigrants
<i>2:30 - 2:40 PM</i> <i>Main 323</i>	Emily Olinger (James Read, Political Science) Strengthening English Language Learning in St. Cloud Public Schools

## Abstracts

**Yesak:** In 2000, the United Nations passed one of the first major protocols from an international organization to address human trafficking. This protocol is a crucial step taken by an international organization towards finding a solution for this commonly ignored form of slavery. Soon NGOs, religious groups, and states began to contribute to fighting against modern slavery. Human trafficking has emerged as the third most profitable genre of organized crime. The United Nations recognizes human trafficking as the physical taking of men, women, and children to an alternate location and using them for forced labor, sex trafficking, and various other forms of exploitation. Modern forms of human slavery clearly resemble the conditions of historical slavery. My research attempts to answer the question: why do states struggle with eradicating human trafficking? Though the international community recognizes human trafficking as illegal, I am puzzled as to why it has only now become more prevalent and one of the most powerful transnational crimes. Human trafficking is an offense against humanity. The sole action of buying and selling humans, which is a common action in trafficking, exemplifies the devaluing of the human life. The second factor is the transformation of the person being trafficked from victim to criminal. In countries where selling sex is illegal, victims, once found, are often treated like criminals. Most trafficking victims are eventually forced into prostitution, so it is likely that many individuals prosecuted for prostitution are victims of trafficking. Once arrested for violating the anti-prostitution laws, they are considered criminals and suffer legal consequences. This victim-blaming further subtracts humanity from the victim. Thirdly, this multibillion-dollar industry is growing exponentially, becoming a threat to the



sovereignty and national security of the involved states. The National Security Council, which advises the President of the United States, publishes strategies to combat transnational organized crimes. This document recognized human trafficking as a threat to national security that needs attention. This research will analyze the United States and India, countries that have a considerable common issue with human trafficking. Outside having one of the world's largest populations of human trafficking victims, they both are part of The Financial Action Task Force (FATF), they both struggle with high levels of police corruption, and they both have implemented anti-prostitution laws that are vague and open to interpretation. These factors are very important for this research.

**Torres:** Financial Aid for Dreamers and Deferred Action Immigrants

**Collins:** Investing in US-Mexico Entry Port Infrastructure

**Spoden:** Creating a Healthier Community: Improving SNAP recipient access to the St. Cloud Area Farmers Market

**Stelzner:** Educational Program for a Sustainable South St. Paul

**Yang:** Adaptation Programs for Hmong Immigrants

**Olinger:** Immigration: Strengthening English Language Learning in St. Cloud Public Schools

## Sociology

### Schedule

*12:15 - 12:35 PM*

*Simms G30*

Jessica Raboin (M. Nelson, Sociology) CAREER  
COUNSELING FOR AT-RISK HIGH SCHOOL  
STUDENTS

### Abstracts

**Raboin:** This presentation is based on my experience interning with the MN Workforce Center in three local high schools. I will provide an overview of the career planning and personal goal-setting programs, with special emphasis of how the schools approach at-risk and disadvantaged students. I evaluate this approach, utilizing Elliott Currie's suggestions for inclusive schools as outlined in "THE

ROAD TO WHATEVER: MIDDLE CLASS CULTURE AND THE CRISIS OF ADOLESCENCE."

## Interdisciplinary Presentations:

### Institute for Women's Leadership

#### Schedule

*3:00 - 3:45 PM*

*Gorec 120*

Siri Berg-Moberg, Jordan Doetkott, Mary Cherne, Alexa Erickson, Brandi Bollig, Emily Doyle, Pahee Xiong, Kaitlin Knapp, Beth Richmond, Elle Larsen, Frannie Pearson, Michelle Hansmann (Christi Siver, Institute for Women's Leadership) Gender in Career Aspirations

#### Abstracts

**Berg-Moberg, Doetkott, Cherne, Erickson, Bollig, Doyle, Xiong, Knapp, Richmond, Larsen, Pearson, Hansmann:** This is survey was developed by the Hynes Scholars Program Cohort which is part of the Institute for Women's Leadership. The survey is looking into CSB/SJU students' perspectives of career aspirations and future values. The results of this survey will be analyzed and presented at Scholarship and Creativity Day (April 24th).

### Intercultural Directions Committee

#### Schedule

*1:00 - 3:00 PM*

*BAC 130*

Lydia B. Ricard (Aric Putnam, Intercultural Directions Committee) Are We More Racist Than We Think?: Recognition of Racism and Racial Microaggressions

*1:00 - 3:00 PM*

*BAC 130*

Nikki M. Orth (Aric Putnam, Intercultural Directions Committee) Stepping out of the Shadows: Black Women, Feminism, and the Civil Rights Movement

#### Abstracts

**Ricard:** Racism is discriminatory behavior rooted in history and fostered by institutional power. Current theory and research posits that different types of racism have developed over time, such as overt, implicit, symbolic, and aversive racism. Stemming from these theories is the concept of racial microaggressions. Microaggressions are defined by Sue (2010) as subtle and commonplace

environmental, verbal, and behavioral indignities that convey negative, hostile, or derogative slights towards people of color. This study examines the ability to recognize racism, as well as relationships between the ability to recognize racism and factors of white privilege awareness, attitudes towards diversity, and ability to empathize. A sample of 208 participants were assigned to one of three conditions with varying levels of implicit or overt racism portrayed via a video scenario and were then asked to complete surveys designed to determine if participants labelled the events as offensive and as racist. Participants also completed surveys relating to white privilege awareness, attitudes toward diversity, and empathy. Findings indicate that participants were able to recognize racial microaggressions as offensive, and that the ability to empathize was partially related to ability to recognize racism in that it was related to participants' ability to label an event as racism. However, no relationship was found between a person's ability to recognize racism and white privilege awareness or attitudes toward diversity.

**Orth:** This project will explore the intersections between the Black civil rights movement and black women that critically engaged with the movement that set forth Black feminist thinking. By thoroughly examining the context out of which Black feminist thinking emerges, the evolution of this thinking becomes apparent and important. The struggle for Black women's liberation is constructed out of a tradition of both activism and intellect that can be traced all the way from slavery. This paper will analyze the work and thought produced by a range of leading black women writers, scholars, and intellectuals. The theoretical contributions of African American and African Diasporan feminists demonstrates how these women rely upon the idea that race, gender, sexuality, and social classes are of central, rather than peripheral, importance. This project will also identify and characterize the major issues which Black feminists had to address and the various forms of resistance to social structures which they employed. By exploring the obstacles Black women encountered and the ways in which they have defined (or re-defined) self and the community, this project will demonstrate how Black women are seen as both producers of knowledge and agents of transformation.

