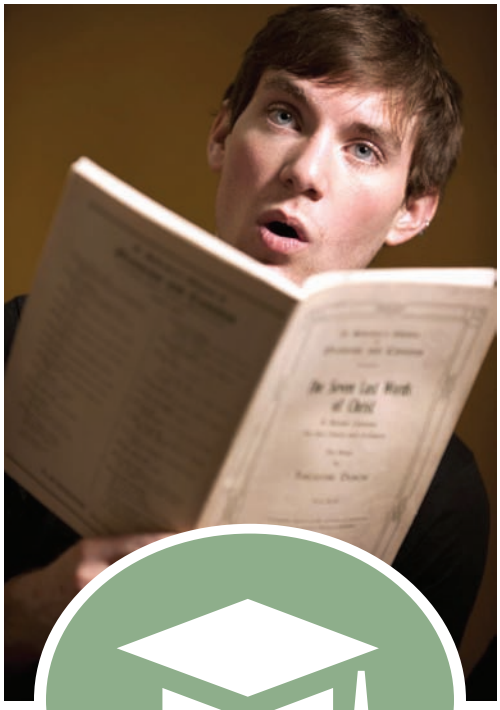

CARS

DRIVING CREATIVE ACTIVITY, RESEARCH, AND SCHOLARSHIP AT NAZARETH COLLEGE

Friday, April 12, 2013 • 1–5 p.m.

Peckham Hall and Linehan Chapel

naz.edu/cars

Nazareth COLLEGE

Introduction

This year marks the second annual CARS (Creative Activity, Research, and Scholarship) event, which showcases the achievements of Nazareth's students. CARS 2013 builds on the success of last year's event and features nearly 200 participants who will display their work in a variety of formats, including performances, posters, and presentations. The breadth and depth of our students' academic activities are remarkable and demonstrate the value of a Nazareth education that partners students with faculty who are dedicated to their individual learning and development.

I am also pleased that this year we are able to join CARS 2013 with the official kickoff of the public phase of the Nazareth College Campaign for College and Community. The focus of Nazareth's fundraising efforts is our students and the impact they have on the world around them. From biochemistry students conducting HIV research to theatre arts students writing and directing their own plays, a Nazareth education enables the kind of learning that makes a difference in the lives of our students and in the lives of those in the larger community.

I hope you are as impressed as I am with the notable achievements of our students.

Sincerely,

Daan Braveman
President, Nazareth College

CARS 2013 Planning Committee:

Diane Enerson (Committee Chair, Psychology and Academic Affairs)
Cathy Doyle (Library)
Grant Gutheil (Psychology)
Rich Hartmann (Chemistry)
Debra Mathewson (Sponsored Programs and Faculty Research)
Kim McGann (Sociology and Anthropology)
Marjorie Roth (Music and Honors Program)
Lindsey Mathewson (Graduate Assistant)

PROGRAM AT A GLANCE

Format	Location	Time
Performances	Linehan Chapel (GAC)	1:45 p.m. – 3:15 p.m. (tentative time)
Posters	Peckham Hall First Floor	1:00 p.m. – 2:00 p.m.
	Peckham Hall Second Floor	3:00 p.m. – 4:00 p.m.
Presentations	Peckham Hall 101	2:00 p.m. – 3:00 p.m.
	Peckham Hall 219	2:00 p.m. – 3:00 p.m.
Reception	Peckham Hall Atrium	4:00 p.m. – 5:00 p.m.

Program Details

Program Details

PERFORMANCES

Location	Time	Name(s)
Linehan Chapel (First floor of GAC)	1:45 p.m. – 3:15 p.m. (Tentative time)	Schedule will be posted outside Linehan Chapel.

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Henry DuRocher & Kayla Perconti

Title: American College Theater Festival Region 2 Irene Ryan Scholarship Auditions Finalist Performance

Faculty Sponsor: Prof. Matt Ames & Prof. Don Kot

Abstract:
Henry and Kayla participated in a regional acting competition and made the final 16 of some 270 pairs of participants.

Reason for Participating:
Course requirement for THA 098 ACTF Prep.

William S. Martinelli

Title: Cello Suite No. 1 in G Major, BWV 1007: Menuet I & II & Gigue

Faculty Sponsor: Prof. Gaelen McCormick

Abstract:
I would like to showcase a performance of a few sections of the first Bach Cello Suite. These pieces are some of the items I have been working on over this year for my primary instrumental lessons. Through extensive practicing I have prepared these pieces for my personal benefit on my instrument and my degree program.

Sarah Miller

Title: Debussy's "Pierrots"

Faculty Sponsor: Prof. Soo Yeon Kim

Abstract:
I investigated the musical thematic and tonal aspects in two of Claude Debussy's treatments of different "Pierrot" texts. Using my previous music theory training along with my current Music of Debussy class, I was able to find thematic continuities as well as tonal differences between his pieces "Pierrot" and "Apparition." I also used my previous work on singing "Pierrot" in my approach to learning "Apparition." I did this because I believed it would be good practice to apply the skills from my academics to my music performance to achieve a better musical understanding.

Reason for Participating:
I am applying to graduate schools in the fall and I want to attempt a scholarly evaluation of music in an undergraduate environment.

Reneé Ruscitto

Title: Expression in the Soprano Voice

Faculty Sponsor: Prof. Soo Yeon Kim

Abstract:
There is a great deal of time and research that goes into performing a piece of music. A singer must research the historical background, original poetry, possible meaning behind the text, and then interpret the piece as closely to the way the composer had intended it to be performed, or give reason why they are changing it. With this in mind, no two performances are the same even by the same person. It is important to make sure to establish a deep emotional connection with every piece of music. I will be presenting a few pieces I have been working on this semester to demonstrate how I have made a connection with each piece. The goal of my performance is to demonstrate how a singer can make an emotional connection with a piece and convey the message the composer had intended.

Reason for Participating:
I would like to present a few of the pieces I have been working on this semester and demonstrate how a singer makes an emotional connection to the pieces they perform.

Stephanie Zimmer, Carly Schwarzkopf, Nikki Morris & Katrya Cichanowicz.

Title: Divertimento by Katherine Hoover

Faculty Sponsor: Prof. Marjorie Roth

Abstract:
In preparation for an audition, we chose to learn Katherine Hoover's unique quartet. It was not the typical repertoire that we perform together, so we encountered many challenges. We worked with 3 different professors within the Nazareth music department to develop our intonation, balance, performance technique, style, musicality and much more.

Reason for Participating:
Our quartet feels that the music of female composers does not get a lot of exposure, therefore, with a performance at a well-attended event, such as CARS, we can increase that exposure in the Nazareth community.

POSTERS

Location	Time	Name(s)
Peckham Hall First Floor	1:00 p.m. – 2:00 p.m.	Student presenters #1 through #42
Peckham Hall Second Floor	3:00 p.m. – 4:00 p.m.	Student presenters #43 through #83

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Laura Babocsi & Marni Glickman (#1)

Title: Which Liquid Makes Plants Grow the Fastest?

Faculty Sponsor: Prof. Kelly Hutchinson

Abstract:
The purpose of this experiment was to test different liquids on plants to see which makes the plant grow the fastest and to determine whether or not water truly is the best liquid to make a plant grow. In order to test this, we planted five different seeds and added a different liquid to each of the five different plants: water, regular coffee, decaffeinated coffee, soda, and salt water. The coffee helped us to determine whether or not caffeine had an impact on the overall growth, the soda helped us to determine whether or not the CO_2 impacted growth, and the salt water helped us to see whether or not pH plays a role in plant growth. By controlling the environment to make sure each plant receives the same amount of water, sunlight, and amount of liquid, we were able to determine which substance was truly able to help grow our plants the fastest.

Reason for Participating:
Course requirement for SCI.Q 101- Integrated Science and Inquiry.

Grete Bader (#2)

Title: Biodegradation of the neonicotinoid insecticide Imidacloprid by Pseudomonas aeruginosa and Pseudomonas putida

Faculty Sponsor: Prof. Stephanie Zamule

Abstract:
The purpose of this research was to investigate the ability of several species of bacteria to degrade imidacloprid, a popular insecticide that has recently been linked to honeybee Colony Collapse Disorder. Bioremediation takes advantage of an organism's natural metabolic processes to degrade contaminants in the environment. For this experiment, cultures of Pseudomonas aeruginosa, Pseudomonas putida, and Escherichia coli were grown in liquid media with a known concentration of imidacloprid. Samples were taken periodically over one week, and the imidacloprid concentration was analyzed using High Performance Liquid Chromatography. This research has the potential to assist in the development of microbial bioremediation strategies for habitats polluted with imidacloprid, which would lessen the insecticide's impact on honeybee populations.

Reason for Participating:
I am participating to showcase my senior research and gain valuable presentation experience.

Annamarie Bailey (#3)

Title: The Development of the Concept of Family in Children

Faculty Sponsor: Prof. Grant Gutheil

Abstract:
I have been conducting an independent research study since October 2011. This study investigated the conceptual development of family in children. Past family concept development research shows that younger children use social-psychological factors to determine what constitutes a family, but by first grade they are using biological factors. However, general conceptual development research shows that children have developed a naïve biology by age four or five. Therefore, this study was conducted to resolve this discrepancy. Through the interview method, children ages 4-7 years were asked a series of questions regarding whether individuals were part of a family (e.g. This is Mr. and Mrs. Brown and their son, Billy. They all live together. Are they a family?). Adults were asked the same questions to provide a developmental control. Results were consistent with past research, showing that children did not apply naïve biology to the concept of family until age six. I

concluded that the concept of family is particularly complex, therefore taking longer to fully develop.

Reason for Participating:
This work was originally being completed for credit in an independent study. In order to analyze a comprehensive set of data, additional time past the end date of the class was needed. Preliminary results of this study were presented at the CARS Celebration last year, and I am participating this year in order to share the completed results. Also, because I am interested in a career in research, I would like to take every available opportunity to present my work in order to gain presentation experience.

Sarah Baluta (#4)

Title: Acetaminophen-Induced Mitochondrial Toxicity in 3T3 Cells

Faculty Sponsor: Prof. Stephanie Zamule

Abstract:
Acetaminophen (Tylenol(r)) overdose can cause severe liver damage and is one of the leading causes of acute liver failure in the United States. Mitochondria have been demonstrated as the primary targets in acetaminophen hepatotoxicity, through the onset of mitochondrial permeability transistion (MPT). To test the hypothesis that acetaminophen may cause significant damage to the mitochondrial membrane, mice fibroblast cells (3T3) will be treated with acetaminophen (3mM, 5mM, 7mM). After 30min and 60min cells will be stained with 20uL of the fluorochrome, rhodamine 123 (R123). Presence of mitochondrial damage will be viewed using a fluorescence microscope. If the appearance of the acetaminophen treated mitochondria are similar to mitochondria treated with potassium cyanide (KCN), then mitochondrial injury has occurred through acetaminophen exposure. This work has the potential to enhance understanding of the mechanisms by which acetaminophen causes liver damage.

Reason for Participating:
It's another way for me to present my research and help me get ready for my senior presentation.

Morgan Bauer, Heather Freemann & Katherine Rhea (#5)

Title: Teaching Story Grammar to Young Preschoolers

Faculty Sponsor: Prof. Mary Kay Bradley

Abstract:
Oral language skills precede written language. Being able to tell a logical, sequential story with all of its essential components is vital to social and academic success. This poster presentation will describe strategies and techniques used to teach story grammar to young children who have little knowledge and experience with telling a cohesive story.

Reason for Participating:
Course requirement for CSD 362L- Methods of Therapy Lab.

Sara Bauer (#77)

Title: The Effects of Income Distribution and Economic Growth on Poverty

Faculty Sponsor: Prof. Rochelle Ruffer

Abstract:
I researched the relationship between income inequality and poverty in countries around the world. I gathered information from each nation in the world about the percentage of people living in poverty, the GDP per capita, and how equally income was distributed. Any country that was missing one or more of the variables was removed from the data set. Then I input the data into the program STATA and ran a regression analysis. I did this project because it was something that had been mentioned in my principles class and I was interested in learning more about the relationship between income inequality and poverty.

Reason for Participating:
Course requirements for ECO 349G and ECO 48.

Ana Bautista, Justine Smith, Samantha Yetter & Wendy Belt (#6)

Title: An Analysis of the Parenting Stress Index

Faculty Sponsor: Prof. Leanne Charlesworth

Abstract:
An analysis of Parenting Stress Index data was conducted for Rochester's Catholic Family Center. Specifically, intake and six-month follow-up data were compared to explore changes associated with participation in the Catholic Family Center's Preventive Services. In addition, Catholic Family Center (CFC) staff were interviewed to explore perceptions of PSI usefulness. The goal was to deepen understanding of the effectiveness of CFC Preventive Services as well as the usefulness of the PSI as an evaluation tool.

Reason for Participating:
Course requirement for SWK 352- Social Work Research Methods.

Eileen Bruns (#7)

Title: The Traveling Salesman Problem in Square and Rectangular Grids

Faculty Sponsor: Prof. Yousuf George

Abstract:
I completed mathematics research on the traveling salesman problem (TSP) through the Science and Mathematics Scholars Program (SaMS) at Nazareth College. I specifically explored the traveling salesman problem in relation to square and rectangular grids. I conducted this research in order to expand my mathematical understandings, specifically in the area of graph theory.

Reason for Participating:
I am in the Science and Mathematics Scholars Program (SaMS). I participated in mathematics research through SaMS this summer. I presented my research in San Diego, CA as a part of the Joint Mathematics Meetings. I would like to present my research again to exhibit my work to the Nazareth College community.

Jocelyn Burton (#8)

Title: The Immediate effects of Varying amounts of Fertilizer on the Plant Life

Faculty Sponsor: Prof. William Lammela

Abstract:
The effects of various amount of fertilizer on plant growth was studied. Five identical plants were treated with various amounts of the same fertilizer were studied by measuring plant size, health of plant, number of leaves, etc.

Reason for Participating:
Course requirement for SCI 103L- Integrated Physical Science.

Sara Cappellino & Mahalie Lissade (#9)

Title: Squeaky Clean

Faculty Sponsor: Prof. Kelly Hutchinson

Abstract:
The purpose of this experiment was to determine which brands and types of hand soap are the most effective at removing dirt and bacteria. For example, does foaming hand soap have a greater effect versus regular bar soap, liquid hand soap, or home-made soap, and does hand soap with lotion have an effect on the effectiveness of dirt and bacteria removal. In order to test this, we used GloGerm on our hands, which under UV light shows the bacteria left on your hands after washing, then tested each different brand and type of soap to see which one left our hands the most germ-free. Also, using the data we collected, could we make a more effective home-made soap?

Reason for Participating:
Course requirement for SCI.Q 101- Integrated Science and Inquiry.

Tom Caraher, Marissa Young & Adam ten Broeke (#10)

Title: Potassium Content in Various Bananas

Faculty Sponsor: Prof. William Lammela and Prof. Sheila Brady-Root

Abstract:
Several different types of bananas (yellow, green, red and plantain) were evaluated for potassium content. Samples were extracted with hydrochloric acid and water to remove potassium. Flame Emission Spectroscopy was used to quantify potassium content.

Reason for Participating:
Course requirement for CHM 226L- Analytical Chemistry Lab & SCI 132L- Nutrition Concepts Lab.

James Chambers, Jeff Malgady & Nicholas Polito (#11)

Title: Investigation of dipicolinic acid-derivatives using structural activity relationships

Faculty Sponsor: Prof. Stephen Tajc

Abstract:
Some bacteria spores release dipicolinic acid (DPA) is a naturally occurring compound released that is known to chelate to calcium, copper, cobalt and iron. DPA has multiple parts on the molecule that could be used for chelation, and although the location of the interaction has been extensively studied the binding could be optimized. Testing DPA and its derivatives with other cations will help to determine the optimal binding for cations and the essential aspects for optimization. Performing a structural activity relationship test on the DPA molecule will allow us to find compounds with better chelation as well as allow us to further understand the mechanism of binding allowing us to improve the binding capabilities.

Reason for Participating:
It is highly encouraged for the students participating in the chemistry research program and represents an excellent opportunity to present my research to others.

Anouluck Chanthabandith & Clara Weinert (#12)

Title: Determination of Alkalinity in a Freshwater Aquarium

Faculty Sponsor: Prof. William Lammela

Abstract:
We are testing the alkalinity of a freshwater aquarium that contains twenty-nine gallons of water and three-red minor serpaes and a freshwater catfish. In any aquarium, alkalinity has more to do with buffering capacity then pH. Samples will be titrated with sulfuric acid. A composite sample (mixed from all sections) was used for all analyses.

Reason for Participating:
Course requirement for CHM 226L- Analytical Chemistry Lab.

Katrya A. Cichanowicz (#79)

Title: Fantasia: No Musicians Allowed

Faculty Sponsor: Prof. Zbigniew Granat

Abstract:
In my 20th century music history course we were assigned to write a research paper on any topic of our choice relating to music in the 20th century. Since I was going to be dedicating a significant amount of time and resources to this paper I wanted to choose a topic that would be practical for my career as a teacher and musician. Additionally, I wanted a topic that would pique my interest since I would be delving into this topic in some detail; the music of Disney was the obvious choice. As I looked back to my childhood memories I recalled nothing frightening me more than the Rite of Spring segment in Fantasia. I decided to face my childhood fears and confront this multimedia marvel that left me more terrified than awestruck some 15 years ago. To research a motion picture I immediately went to the movie itself and then followed up with audio recordings and various text-based sources. What began as an exploration into a 20th century cinematic and musical masterpiece, ended up as a study of the effects of musician prejudice towards the exposure and accessibility of highbrow music for the common man.

Reason for Participating:
I enjoy researching and would like to share my work with my peers and the faculty in a public forum. I am also interested in getting people's opinions on the various controversial issues raised in my research about music accessibility and interpretation, especially in regards to composer Igor Stravinsky's rather volatile reaction. My poster will challenge viewers to consider the pros and cons to one of Disney's greatest and most controversial film endeavors to date.

Alyssa Cohen, Adam Kosloski, Lauren Beikirch & Meaghan Connors (#13)

Title: Analyzing Calcium in Different Types of Milk

Faculty Sponsor: Prof. William Lammela and Prof. Sheila Brady-Root

Abstract:
Three milk samples (including both soy and dairy) were analyzed through atomic absorption spectroscopy. Each sample was ashed, dissolved in acid and quantified.

Reason for Participating:
Course requirement for CHM 226L- Analytical Chemistry Lab & SCI 132L- Nutrition Concepts Lab.

Alan Connor & Jacob Murray (#14)

Title: Optimization of Solubility and Chelating Effects of Dipicolinic Acid

Faculty Sponsor: Prof. Stephen Tajc

Abstract:
Dipicolinic acid (DPA) has been shown to have strong chelating capabilities in polar solvents with various metals. DPA lacks hydrophilicity therefore it is pertinent to modify the structure in order to maximize chelating effects. Structure activity relationships (SAR) will allow us to identify the fundamental bonding characteristics of DPA through various modifications aiding in the optimization of DPA solubility in polar solvents, in turn improving binding to metals. In this research we utilized synthetic chemistry to modify DPA for SAR studies in aqueous solutions.

Reason for Participating:
Course requirement for Chemistry Research.

Paige Culver, Brianna Thurston & Connor Harty (#15)

Title: Homemade vs. Store Bought Pop Rocks

Faculty Sponsor: Prof. Kelly Hutchinson

Abstract:
The purpose of this experiment was to see if different recipes of Pop Rocks pop differently and if so in what ways. Specifically we wanted to investigate: Which liquids increase the pop in Pop Rocks and is there a difference between homemade and store-bought Pop Rocks? We compared homemade Pop Rocks and store bought Pop Rocks by testing them in different solutions. The solutions we tested the Pop Rocks in were water, salt water, milk, soda, and hydrochloric acid. We then observed them by recording quantitative and qualitative data.

Reason for Participating:
Course requirement for SCI.Q 101- Integrated Science and Inquiry.

Cara Czechowski (#16)

Title: Modifying small molecule HIV-1 viral entry inhibitors to bind glycoprotein gp120 on a solid surface

Faculty Sponsor: Prof. Stephen Tajc

Abstract:
According to the World Health Organization, 34 million people are currently living with HIV1. Small molecule HIV viral entry inhibitor drugs are interesting compounds as they target protein complexes involved in viral membrane fusion that could be used for HIV diagnostics. The small molecule drug BMS-806 binds to the HIV-1 envelope glycoprotein gp120 and is a potent HIV-1 viral entry inhibitor (2). In this research we explore adding a synthetic linker using solid surface techniques to BMS-806 focusing on the portion of 7-azaindole with amine molality. The linker on BMS-806 will then allow for solid surface binding analysis with gp120. These studies will provide further insight of HIV-1 viral protein interactions with small molecules. 1. 2012. Global Summary of the HIV/AIDS epidemic, December 2010. http://www.who.int/hiv/data/en/. 2012 April 12. 2. Lin P, Blair W, Wang T, Spicer T, Guo Q, Zhou N, Gong Y, Heidi W, Rose R, Yamanaka G, et al. 2003. A small molecule HIV-1 inhibitor that targets the HIV-1 envelope and inhibits CD4 receptor binding. PNAS. 100(19):11013-11018.

Reason for Participating:
Course requirement for CHM 400.

Katherine Dec & Nathan DeLone (#17)

Title: Does Magnetism Affect the Growth of Plants?

Faculty Sponsor: Prof. Kelly Hutchinson

Abstract:
Through experimentation, we investigated whether or not the force of magnetism plays a role on the growth of plants. We started with five plant seeds of the same kind. All plants received the same amount of sunlight, water, and soil. One plant served as the control, with no alterations in any sense. The other plants in the experiment had crucial alterations: one was placed under the force of a weak magnet, another under the force of a strong magnet. The other two plants then had either the weak or the strong magnet buried in the soil with the seed. Through the trial of their growth, we were able to establish the following: whether or not magnetism has any impact at all on the growth of plants, if the force of the magnet plays a key role in the situation, and whether the location of the magnet in relation to the seed altered its progress.

Reason for Participating:
Course requirement for SCI.Q 101- Integrated Science and Inquiry.

Sarah Delmont (#18)

Title: Tablets for Tots

Faculty Sponsor: Prof. Lisa Perks

Abstract:
I feel the advancement in technology can be harmful to children if they are not taught the educational aspects and capabilities. I wrote a paper on this subject in the fall and created the poster to represent the key ideas. My presentation mainly focuses on the ways a tablet, like an iPad, can benefit a child's education and developmental growth. Technology isn't going anywhere and it is only becoming more dominant in our society. Because it is inevitable, we must learn to adapt with it and use it wisely.

Reason for Participating:
I am interested in participating in CARS because I think it is a rare opportunity that should be taken advantage of, especially for a college student like me who is building a resume and a network for potential career opportunities when I graduate in the Spring of 2015. I want to use my degree for a teaching position, but given the budget crisis in the field of education, I know it will not be easy to find a permanent job out of college. I am hoping that CARS will give me experience to help set me apart as a candidate for a job in my future.

Meghan Denny & Emily Triplett (#19)

Title: The optimal pH for Gymnocorybus tenetzi and Hyphessobrycon eques

Faculty Sponsor: Prof. William Lammela

Abstract:
Fish use ion pumps to establish the osmotic gradient necessary for proper function of the gills. The ion pumps require an optimal pH to function properly. These two common aquarium species require a pH value between 6.5 - 6.8 and 6.0 - 7.5 respectively. The current work examines the pH of an aquarium environment for these fish over the course of two weeks to determine whether the pH consistently falls within the desired range. The variation in pH was found to be statistically significantly different. The buffer capacity of the aquarium was also analyzed to account for this fluctuation.

Reason for Participating:
Course requirement for CHM 226L--Analytical Chemistry Lab.

Mirzi Grace Devolgado, Maurice Mills & Sarah Sarkin (#20)

Title: Analyzing Vitamin C concentration in cranberry products

Faculty Sponsor: Prof. William Lammela and Prof. Sheila Brady-Root

Abstract:
We are analyzing the vitamin C concentration in cranberries and cranberry products to compare analytical results to published values. Vitamin C, also known as ascorbic acid, is a water-soluble vitamin which is needed in the body to form collagen in

bones, cartilage, muscle and blood vessels. Vitamin C also aids in the absorption of iron which is essential fro many metabolic processes. Samples of dried and fresh cranberries were pureed with water to extract the juice and 100% cranberry juice was analyzed as is. Samples were titrated with iodine to a starch indicator endpoint. It is expected that the juice sample will have the greatest vitamin C and the dried cranberries the least.

Reason for Participating:
Crouse requirement for CHM 226L- Analytical Chemistry Lab and SCI 132L- Nutrition Concepts Lab

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Sarah Dickerson (#21)

Title: Soil and Growth of Pachira Braid (Money) Tree

Faculty Sponsor: Prof. William Lammela

Abstract:
The goal was to determine the best soil for growing a "money tree." Three trees were used which were re-potted into different media: "dirt", Miracle Gro potting soil and Earth Gro commercial soil. Plants were observed as to height and leaf count for three weeks. I have killed this type of plant several times in the past and wanted to see if soil type could be a factor.

Reason for Participating:
Course requirement for SCI 103L-Integrated Physical Science.

Christian Drew (#22)

Title: Verdi's Colors

Faculty Sponsor: Prof. William Lammela

Abstract: This experiment was to show how differentiating different concentrations or other variables changes a chemical reaction. To do this, a set of seven different reactions was prepared. The first was a control so nothing changed. Then, I did two reactions: one had double the concentration of one reagent and the second with double the concentration of second reagent. A final preparation had double the

concentration of both reagents. After testing different combinations, I tested what variables I could change to different results. These included: adding a catalyst and then increasing or decreasing the temperature of reaction. After the preliminary trials, I attempted to time my reactions to a piece of music so that the color would change at certain points in the music.

Reason for Participating:
Course requirement for SCI 103Q L01--Integrated Physical Science.

Tom Dwyer, Morgan Ross, Melanie West & Mariah Mersereau (#23)

Title: Folic Acid Analysis of Green Vegetables

Faculty Sponsor: Prof. William Lammela and Prof. Sheila Brady-Root

Abstract:
In this experiment, we were testing to see how much folic acid is present in fresh spinach, collard greens, and romaine lettuce. In order to do this, we created different samples of the three types of vegetables by blending into a slurry with pH = 7.25 buffer to extract the folic acid. Analysis was accomplished by HPLC.

Reason for Participating:
Course requirement for CHM 226L- Analytical Chemistry Lab & SCI 132L- Nutrition Concepts Lab.

MaryLynn Eddington, Tiggani Fox & Ranel Belete (#24)

Title: Calcium in Milk

Faculty Sponsor: Prof. William Lammela and Prof. Sheila Brady-Root

Abstract:
In this experiment, we used atomic spectroscopy, microwave digestion and the t-test in order to determine that the advertised amount of calcium in four milk samples with different fat content (skim, 1%, 2% and whole) was accurate. We used trichloroacetic acid to precipitate the proteins and lanthanum nitrate as a masking agent. Samples were microwaved to digest the organic compounds in the milk and release the calcium. The reason for the experiment is that nutrition labels claim that

fat content does not change the calcium content in milk. Milk is a convenient source of calcium for many people to build strong bones and teeth. The accuracy of these nutrition labels is important as many people depend on this information to determine proper nutrition.

Reason for Participating:
Course requirement for CHM 226L- Analytical Chemistry Lab & SCI 132L- Nutrition Concepts Lab.

Jessica Ellis (#78)

Title: The Digestive Efficiency of the Green Anole (Anolis carolinensis) based on Cricket and Mealworm Prey Items

Faculty Sponsor: Prof. Brian Witz

Abstract:
For my Biology senior research project, I determined the digestive efficiency of the green anole (Anolis carolinensis) based on cricket and mealworm prey items. First I measured the caloric value of a small cricket and mealworm larva using a bomb calorimeter. Following, I fed 29 green anoles crickets or mealworms and collected their fecal samples over a 2 month period. A bomb calorimeter was then used to measure the caloric value of the egested fecal matter and uric acid. From the data collected the assumed digestive efficiency of a green anole was determined.

Reason for Participating:
Dr. Brian Witz asked if I would present my Biology senior research at this function.

Rahmy Eltoury (#25)

Title: The Methodology, History, and Development of the Music Printing Industry Throughout The Renaissance

Faculty Sponsor: Prof. Marjorie Roth

Abstract:
I would like to create a poster based on a paper that I wrote in my last semester's History of Western Music class, under the direction of Dr. Marjorie Roth. The paper

consists of compiled research on the topic of how musicians got their music printed and distributed during the Renaissance era, circa late 15th and early to mid 16th century. I explored different topics such as how they actually printed music, how they gained patronage, and the inner city and long distance trade of music. To do this, I spent many hours perusing scholarly resources and compiling abstracts to make a whole collection of information. I did this at first to satisfy a requirement of class, but soon after I started, I took great interest in the subject. I, along with my professor, feel that it would make an interesting poster presentation and a great part of CARS.

Reason for Participating:
I would like to participate in the program, because I feel that it would be a fun and creative way to show off my work as a student here at Nazareth. I would like to positively represent my department as well.

Burak Engin & Cain Bowman (#26)

Title: Nitrate Levels in Dr. Lammela's aquarium

Faculty Sponsor: Prof. William Lammela

Abstract:
We tested Dr. Lammela's aquarium for nitrate levels. The preferable levels of nitrates in a fish tank is 0-20 mg/L while the maximum should not be greater than 40 mg/L as it can become detrimental to the fish's health. The analysis was done using a diphenylamine method and the color was quantified using visible spectroscopy.

Reason for Participating:
Course requirement for CHM 226L--Analytical Chemistry Laboratory.

Gretchen Erlichman (#27)

Title: Frauenliebe und Leben: Robert Schumann's Battle for Love

Faculty Sponsor: Prof. Zbigniew Granat

Abstract:
“Frauenliebe und Leben: Robert Schumann's Battle for Love" is a research project addressing Robert Schumann's struggle for his dearly beloved Clara Wieck's hand in

marriage and the composer's musical response to the emotional and physical hardship he experienced while fighting for love and happiness. The research presented explores the idea of Schumann's cycle of songs, Frauenliebe und Leben Op.42, as being a specific response to his battle for love and a testament of his feelings for Clara, directed toward Father Wieck as a final attempt for permission to marry his daughter. Through an analysis of the song cycle, including specific musical and poetic examples, as well as through a study of historical accounts and letters of correspondence between Robert and Clara, this project identifies a strong connection between the composer's musical productivity and his emotional and physical state at that time. In my poster presentation I will illustrate how the events of Robert Schumann's life deeply influenced his music and, in particular, how the song cycle, Frauenliebe und Leben reflected the composer's passionate battle for his future wife. The musical, poetic and visual examples contained in the poster help to illuminate an intimate sense of insight into the events of Robert Schumann's life and how these events manifested themselves as the products of his musical creativity.

Reason for Participating:
I wish to participate in CARS 2013 not only because I will be given the opportunity to present my research to my academic elders and colleagues, but also so that I may be actively engaged in the academic growth and research endeavors of my generation. I believe that participating in CARS 2013 will nourish my enthusiasm for my own academic and research endeavors as well as open my mind and my interest to other fields of creative research and scholarship

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Ashlee Evertt & Larry Czubinski (#28)

Title: The Secret of Nim

Faculty Sponsor: Prof. Yousuf George

Abstract:
We studied the game of Nim and found optimal strategies to win this game, as well as offshoots of the same game. We did this for out Mathematics Research class and presented in at the Joint Mathematics Meeting in San Diego this year.

Reason for Participating:
Interest in sharing our research.

Ryan Flynn (#80)

Title: The Nazareth College Greenhouse Database Project

Faculty Sponsor: Prof. Deborah LaBelle

Abstract:
WHAT: The Nazareth Greenhouse Database Project is a web-based database system which provides the functions of inventory, search, and outputting relevant information about the college's greenhouse plants, and their care. HOW: The new system utilizes a web interface comprised of PHP, HTML5, CSS3, and jQuery. This interface connects to a relational, MySQL database on an Apache Web Server, where the data is stored. WHY: The greenhouse at Nazareth College already had implemented a local, flat-file database. Dr. Beverly Brown, Professor in charge of the greenhouse and its activities, found its functionality to be very limited. The narrow search capabilities of the existing system was further impaired by non-uniform user input. A new, modern, custom-tailored, and internet accessible system was the solution.

Reason for Participating:
Course requirement for CIS320 - Web Based Application Development.

Ellen Franz, Chelsea Diekvoss, Alexis Root & Laura Gennaro (#29)

Title: The Analysis of Fresh Fruit for VItamin C Content

Faculty Sponsor: Prof. William Lammela and Prof. Sheila Brady-Root

Abstract:
Juice was extracted from fresh fruit and titrated with an iodine reagent. Vitamin C is important for overall well being and can benefit your immune system. The goal of the project was to determine which of several fresh fruits would have the greatest amount of vitamin C. We expected that Kiwi would have the highest amount of vitamin C (literature review).

Reason for Participating:
Course requirement for CHM 226L- Analytical Chemistry Lab & SCI 132L- Nutrition Concepts Lab.

FRN102 Class (#30)

Title: Writing for Peace and Justice in French

Faculty Sponsor: Prof. Mireille Le Breton

Abstract:
As part of their course assignments, elementary students of French will write poems, on the theme of "Peace and Justice in French". They will also do a field-trip to the Memorial Art Gallery, where poet and artist, Kathryn Jospe, will guide them through the paintings of French, Vietnamese, Native American, and American artists Christian Boltanski, Binh Danh, Jaune Quick-to-See Smith, and Nancy Gong. As part of the CARS project, the students will create a class poster where they will exhibit their peace poems. Some students may wish to perform their poems to visitors while other will explain the goals of their exhibit, which is also tied to the 5th Annual Poetry Competition in French at Nazareth College (April 11th, 2013).

Reason for Participating:
Course requirement for FRN102.

Angela Gonnella & Cassidy Zeller (#31)

Title: What's In Your Water?

Faculty Sponsor: Prof. Kelly Hutchinson

Abstract:
The purpose of this experiment was to determine how tap water and bottled water differ. We wanted to know if it is really worth the extra money one spends on bottled water. Is there a significant difference between what is found in bottled water compared to what is found in tap water? We did this by testing for different chemicals present in the water by using different testers. We also compared the concentration of the different chemicals present in both waters. This led us to a better understanding of the differences between bottled water and tap water.

Reason for Participating:
Course requirement for SCI.Q 101- Integrated Science and Inquiry.

Suzanne Grant (#32)

Title: Saxophone Composition as a Form of Musical Rebellion in Soviet Russia (1922-1991)

Faculty Sponsor: Prof. Marjorie Roth

Abstract:
For this project I did in depth research into saxophone composition in Soviet Russia. I read many books and recent dissertations into the lives and works of several Russian composers and settled my focus on Edison Denisov. I was interested to look into this because the Saxophone was banned by the government but yet many composers continued to compose music for it despite the political consequences.

Reason for Participating:
I am interested in participating because I love research and plan on continuing in school in Musicology with a focus in Russian studies. Also, I think that my topic has implications outside the realm of music research and delves into political history as well.

Geoff Graser (#33)

Title: Whatever it Takes

Faculty Sponsor: Prof. Meg Callahan

Abstract:
I created a podcast about a city high School teacher who fights through multiple obstacles to get an ESOL (English for Speakers of Other Languages) program off the ground. 2. I interviewed the teacher, incorporated academic scholarship, and created the podcast using Garage Band. 3. The podcast was part of a class assignment for my Literacy course. I was particularly inspired by this teacher and the relationship she has formed with her non-native English speaking students.

Reason for Participating:
Recommended by School of Education department chair - Dr. Meg Callahan.

Tim Hausler (#34)

Title: Coke in Your Laundry?

Faculty Sponsor: Prof. William Lammela

Abstract:
This experiment involved studying the effects of different colas on grease stains. Using several types of cloth; Pepsi, Coke and Wegman's cola were studied. Grease stains can ruin people's clothes but there is a myth that adding a can of cola to your laundry can remove stains.

Reason for Participating:
Course requirement for SCI 103L- Integrated Physical Science.

Moudi Hubeishy (#35)

Title: Modifying small molecule HIV-1 viral entry inhibitors to bind glycoprotein gp120 on a solid surface

Faculty Sponsor: Prof. Stephen Tajc

Abstract:
HIV infection continues to be a prevalent stress in the nation. About 1.2 million people are living with HIV in the United States but approximately 240,000 are unaware of their infection. The Center for Disease Control and Prevention (CDC) is studying ways to rapidly screen for HIV by using antibodies. However, because antibodies are large proteins that cost more and are less stable than small molecules, we are interested in using a small molecule drug that is proven to bind to the HIV-1 envelope glycoprotein gp120 such as that of BMS-806. In this research, we explore the addition of a synthetic linker to create an amine on the 7-azaindole portion of BMS-806 in solution. This amine will allow us to covalently attach a linker to BMS-806. The linker will allow for solid surface binding analysis so then we might have more information about how the HIV-1 viral protein interacts with small molecules.

Reason for Participating:
Course requirement for CHM 400.

Joshua Hurd, Ashley Yerdon &Mary Lawrence (#36)

Title: The Forgotten Atrocities: Eyewitness Accounts from the Stanislau Ghetto

Faculty Sponsor: Prof. William Hopkins

Abstract:
We read a copy of an original document, obtained by Dr. George Eisen from the archives at the University of Haifa, Israel. The manuscript contains eyewitness accounts from the happenings in Stanislau (present day Ivano-Frankivsk, Ukraine) between 1940 and 1943. We analyzed similarities and differences in the testimonials and continued to raise questions as to why this could be. Our goal is to broaden study of the events of the Shoah to form a more complete historical picture.

Reason for Participating:
Our goal is to expand the modern understanding of the events of the Shoah and shed light on the unexplored and less-documented atrocities in the Ukraine.

Joshua Hurd (#81)

Title: Horizontalization of Love

Faculty Sponsor: Prof. Candide Carrasco

Abstract:
In my project, I propose to do a comparative study of two contemporary Québéquois works: author Michel Tremblay's 1995 "La nuit des princes charmants" ('The Night of Prince Charmings') and director/actor Xavier Dolan's "Les amours imaginaires" (Imaginary Loves; Eng. "Heartbeats"). In this study I wish to explore changing social attitudes towards male homosexuality in modern-day Québec. Through mass medias like literature, film, music etc. social attitudes are rapidly changing in many domains and furthermore these ideas are not subject to geographical borders. Thus we may be able to apply ideas brought forth in Québéquois mediums and apply them to American societies.

Reason for Participating:
This is a subject that I really have a passion for. I believe that finding common ground between each and every unique individual of society is extremely important.

Acceptance, not toleration, will be one of the next great challenges to our world in the 21st century.

Elizabeth Jaramillo (#37)

Title: Secrets in Sexuality

Faculty Sponsor: Prof. Rachel Bailey Jones

Abstract:
The purpose of this project is to show the occurring labels and stigmas that are tied to various sexualities. I want to share my story of how the labels of bisexuality and the term gay are so misunderstood and turned into a negative identity. I created this project to further display how individuals of the same-sex community are being affected and impacted by labels and stigmas on a daily basis. This project displays not only my personal experience, but the experience of similar individuals in the local, national and global aspects of life. I have researched different case studies and current sociological journals about the impact of labels and stigmas on individuals of the gay community. This is an important issue that I chose to bring awareness too, and hopefully views change about the idea of using labels within a persons sexuality.

Reason for Participating:
Course requirement for Women and Gender Studies Senior Seminar.

Crista Johnson (#38)

Title: Weight and Appearance

Faculty Sponsor: Prof. Rachel Bailey Jones

Abstract:
Weight and appearance are aspects that are nothing close to personal in today's society. These two aspects are highly correlated within our society. With a highly regarded appearance generally comes a lower weight, and a less desired appearance, a heavier weight. To be successful it is believed that one must be attractive, and have an appearance that is highly regarded by the self, and more importantly others. Because of this weighing less and being thin is becoming highly desired in today's society. This desire and influence to be thin begins as we are children and continues

to strengthen throughout our lives. Women and men, as well as young girls and boys are trying to cope with the societal constraints placed upon them, and many times falling under the pressure to be ultra thin and or muscular in order to fit in and be desirable to others. This idea, does not just exist in society, but globally and in ourselves, though it is sometimes more difficult to observe. This poster presentation will represent how weight and appearance affect different people on many different levels.

Reason for Participating:
Course requirement for Women's and Gender Studies Senior Seminar

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Molly Kingsley (#39)

Title: Systematic modification of electron density on a series of tungsten based Lewis acid catalysts with minimal structural changes

Faculty Sponsor: Prof. Richard Hartmann

Abstract:
The results of recent experiments in our group have shown that tungsten compounds (WCl6 and WCl4(PPh3)2) are successful Lewis acid catalysts in the methylation of oleic acid. While it is clear the oxidation state of tungsten influences the rate of reaction, we are unsure of its specific role because both structural and electronic changes were made. In an attempt to investigate the sole effect of electronic changes, we have systematically synthesized a group of compounds of the general formula: WCl4(PPh3-X)2 (X = H, F, Cl, O-CH3, and CH3, all in the para position). These compounds present a scenario where no appreciable change to the structure has been made, yet the electron density of tungsten is influenced from afar. We report here the synthesis, and characterization of these compounds along with a 1H NMR study of their ability to catalyze the methylation of oleic acid.

Reason for Participating:
I want to showcase my independent undergraduate research.

Briana Laubacker (#40)

Title: Synthesis of tin (II) halide-phosphine complexes and characterization via 119Sn, 31P, and 19F NMR spectroscopy

Faculty Sponsor: Prof. Richard Hartmann

Abstract:
Recent work in our labs has shown SnX2 (X = F, Cl, Br, and I) to be effective Lewis acid catalysts for the methylation of oleic acid. The results show a clear trend in reaction rates, with SnI2 being the best catalyst and SnF2 the worst. However, we are unable to determine if this result is due to changes in electron density at the metal center, or the steric bulk introduced by the halide ligands. In an effort to systematically modulate the electron density on the tin center we have undertaken the synthesis of several phosphine derivatives of each tin (II) halide using the following phosphines: triphenylphosphine, tris(4-chlorophenyl)phosphine, tris(4-fluorophenyl)phosphine, tris(4-methoxylphenyl)phosphine, tri(p-tolyl)phosphine, 1,2-Bis(diphenylphosphino)ethane, and trioctylphosphine. 119Sn, 31P, and 19F NMR studies verify the formation of several novel compounds and this poster will discuss the interpretation of these spectra and the possible identity of the compounds that were formed.

Reason for Participating:
I would like to share my research with the Nazareth community.

Jeffrey Malgady & Goodwell Nzou (#41)

Title: The Analysis of Dissolved Metal Ions in an Aquarium

Faculty Sponsor: Prof. William Lammela

Abstract:
We will be testing for water hardness since it is one of the most crucial aspects of a healthy environment for a fish. The hardness of water is the measurement of the concentration of metal cations in water. We will use standard addition method to find the concentration of magnesium and calcium. This method eliminates the problems resulting from the matrix. We chose to find the concentration of these ions because they both affect osmoregulation and toxicity of these substances. We are going to use atomic absorption spectroscopy in order to quantify the concentrations of these ions.

Reason for Participating:
Course requirement for CHM 226L- Analytical Chemistry Lab

Abigail E. Mann (#58)

Title: Pre-Drawn Mandalas versus Constructed Mandalas versus Unconstructed Mandalas: Which Creates a Greater Reduction in Anxiety?

Faculty Sponsor: Prof. Reneé van der Vennet

Abstract:
The purpose of this study was to further the research of Curry and Kasser's (2005) and van der Vennet and Serice's (2012) studies on the effect mandalas have on anxiety levels to increase reliability and validity of their work and to research the effects constructed mandalas have on the anxious mood using the Zentangle(r) technique (Thomas & Roberts, 2012). This study also hoped to take Curry and Kasser's (2005) and van der Vennet and Serice's (2012) studies to a new "level" by testing different types of mandalas ("Zendalas"(r)) against the more empirically established pre-drawn mandala. The mandala forms explored through this study will help to either expand on the diversity of mandala forms for use in a therapeutic capacity or further establish that there are limited types of mandalas that are useful in anxiety reduction.

Reason for Participating:
Course requirement for CAT 532: Culminating Project Seminar II.

Christina Martucci & Lora Allen (#43)

Title: Fruit Wine: How Sugar Affects Fermentation

Faculty Sponsor: Prof. William Lammela

Abstract:

Reason for Participating:
Course requirement for SCI 103L- Integrated Physical Science.

Theresa Montante (#44)

Title: The Pressures of Love

Faculty Sponsor: Prof. Rachel Bailey-Jones

Abstract:
I will focus on addressing the issues created by the romanticism of marriage and compare the pressure to have the perfect wedding with the social demand to have the perfect heteronormative marriage. Further more I will be addressing a similar issue; how Valentines Day has romanticized the consumption of commodities rather than love itself.

Reason for Participating:
Course requirement for Women and Gender Studies Senior Seminar.

Daniel Mowery & Cody Kloepfel (#45)

Title: Service Learning Reflection - Somali Community of Western New York

Faculty Sponsor: Prof. Deborah LaBelle

Abstract:
We would like to take this opportunity to reflect on our service learning project with the SCWNY. We were able to harness our IT skills to develop a computer lab for the community so they could further their English and Technology skills. With donations from ITS at Nazareth, we were able to develop an avid learning environment. This opened us to a new culture where we are able to interact and learn amongst the community members.

Reason for Participating:
Course requirement for LST 485 - IS Service Learning

Jacob Murray, Lauren Osada, Jenna Marchese & Sangiacomo (#46)

Title: Determination of Iron Content in Liver with Atomic Absorption Spectroscopy

Faculty Sponsor: Prof. William Lammela and Prof. Sheila Brady-Root

Abstract:
We found the iron concentration in beef, chicken and veal liver. Samples were ashed, dissolved in nitric acid and concentration hydrogen peroxide followed by analyzed by atomic absorption spectroscopy.

Reason for Participating:
Course requirement for CHM 226L- Analytical Chemistry Lab & SCI 132L- Nutrition Concepts Lab.

Marissa Musso & Allie O'Borsky (#47)

Title: Ethoxyquin Extraction in Fish Meal

Faculty Sponsor: Prof. William Lammela

Abstract:
Ethoxyquin is a quinolone-based antioxidant used as a food preservative and a pesticide. It is commonly known as a preservative in fish meal and has been linked with health issues in many different types of fish. Because of this, we decided to test Dr Lammela's fish food and aquarium for the presence of ethoxyquin by using HPLC.

Reason for Participating:
Course requirement for CHM 226L- Analytical Chemistry Lab.

Zuber Najam (#48)

Title: Brown Anole Predation Preference Through Macronutrient Analysis

Faculty Sponsor: Prof. Brian Witz

Abstract:
I am experimenting with brown anole lizards to see if there is any indication of prey preference when they are offered crickets and meal worms. Then, after observing for preference, I will determine the macro-nutrient content of the prey items (crickets and meal worms) to look for any evidence to support why one prey might have been preferred over the other.

Reason for Participating:
Course requirement for Senior Seminar.

Kristin Nichols (#49)

Title: Activation Energy Determination for the Esterification of Free Fatty Acids in Oleic Acid for Biodiesel Synthesis using Lewis Acid TIN (II) IODIDE

Faculty Sponsor: Prof. Richard Hartmann

Abstract:
Biodiesel is a readily produced and commonly used alternative fuel source. Biodiesel can be synthesized from renewable resources, such as used cooking oil, through esterification of free fatty acids (FFA) or tranesterification of triglycerides. Because used oils are often contaminated with FFA's we have chosen oleic acid as a model system for investigating reactions that convert FFA into methyl esters. An acid catalyst is used to treat the FFA's and create fatty acid methyl esters (FAME). Tin halides are common Lewis acid catalysts and are readily available. Preliminary results show that the rate constants for these reactions fit the following trend: SnF2<SnCl2<SnBr2<SnI2, monitoring the reaction progress using 1H NMR. Based on these results, we have undertaken a series of experiments to determine the activation energies of the reactions. My poster will present my methods and results on the use of tin (II) iodide to catalyze the methylation of oleic acid.

Reason for Participating:
I would like to share my research with others and hopefully obtain feedback from others.

Randi C Nordin (#50)

Title: The Art of War: A Study of Anxiety in Veterans

Faculty Sponsor: Prof. Patricia Caballero-Schillaci

Abstract:
Studied how art therapy can help reduce anxiety in veterans. 2. Conducted HSRC-approved research at the Veterans Outreach Center in Rochester. 3. I am very interested in veterans and mental health treatment. I've been engaged with veterans

both personally and professionally my entire life. More men and women are returning home from deployment every day, and there is an increasing need for cost-effective, evidence-based treatment for psychological distress

Reason for Participating:
Course requirement for CAT532.03- Culminating Project Seminar II.

Goodwell Nzou (#51)

Title: Towards the analysis of small molecule HIV-1 viral entry inhibitor with gp120 on a solid surface

Faculty Sponsor: Prof. Stephen Tajc

Abstract:
The number of people dying from HIV/AIDS infection continues to escalate throughout the world. There is a critical need for smaller, inexpensive molecules for the diagnosis of the virus to help minimize the proliferation of this pandemic. Currently, a rapid HIV test that utilizes antibodies is available for diagnosing an HIV infection. However, a large antibody protein is less stable and cost more to produce large quantities than a small molecule with similar binding capabilities. This project is geared towards the exploration of NBD-556, a small molecule HIV-1 viral entry inhibitor1, which binds to the HIV-1 envelope glycoprotein gp120. Understanding the solid surface binding capabilities of this small molecule HIV-1 viral entry inhibitor may lead to fast and affordable diagnosing tools for lower income areas both domestic and worldwide.

Reason for Participating:
To share my ideas with other people in the field.

Kathleen O'Donnell & Molly Bianco (#52)

Title: Operation Clean Tank

Faculty Sponsor: Prof. William Lammela

Abstract:
Some types of algae can be harmful to aquatic pets, creating unsafe environments and posing the threat of toxic levels of inorganics within the tank. Not only can the type of algae be harmful, but a large quantity can indicate an imbalance of chemical levels within the tank. In this experiment, we took nitrate and phosphate readings from the tank and used these measurements to mimic similar levels to test the impact of these nutrients on algae growth. After a week of growth, visible spectroscopy was used to quantify the amount of algae and microscopic examination was used to identify the types of algae.

Reason for Participating:
Course requirement for CHM 226L- Analytical Chemistry Lab

Rachel Olson (#82)

Title: Collaborative Youth Research in Urban Schools: A Documentary Film on College Readiness

Faculty Sponsor: Prof. Meg Callahan

Abstract:
I have been working at East High school in the Rochester City School District examining social justice issues related to the plight of the urban poor. My students and some collaborative researchers from both Nazareth and St. John Fisher Colleges are working to produce a documentary film on college readiness. My role in this process is primarily as a researcher and co-producer of the film. We have read articles, conducted interviews, and shared experiences from both suburban and urban school experiences. Our ultimate goal of this qualitative research is to bring to light the current injustices faced by urban youth attempting to meet the academic and social demands of college, while competing with their more adequately prepared suburban counterparts. Our film, "Collaborative Youth Research in Urban Schools: A Documentary Film on College Readiness" will be screened publically at the American Educational Research Association's Annual Meeting in San Francisco. There, we aim to present our findings in a panel discussion and through the airing of our film, to bring awareness to the intellectual discrepancy experienced by my students at East.

Reason for Participating:
I am a part of the Nazareth Adolescent Fellows program. This project serves as my primary research in conjunction with my scholarship.

Jacqueline Peck, Katia Shepard & William Grome (#53)

Title: The Life of Federico Garcia Lorca

Faculty Sponsor: Prof. Candide Carrasco

Abstract:
We will create a poster describing the life of the extremely talented and influential Spanish poet, playwright, and writer Frederico Garcia Lorca. Lorca is the topic for our Senior Seminar Class as Spanish majors. We have been studying Lorca and his works for the entire semester. Our poster will describe Lorca's life, beginning with his origins and continuing all the way to his tragic death. Finally, our presentation will briefly touch on some of Lorca's important works, pointing out their significance in his life.

Reason for Participating:
Course requirement for Spn 402.

Emiline Pelletier, Grace Crowell & Ashley Binnert (#54)

Title: The Queen Chicken Problem

Faculty Sponsor: Prof. Yousuf George

Abstract:
When you put chickens in a cage, they will fight to establish a pecking order. We started our research by defining queen chickens as chickens that win the most fights over the other chickens. Of course, more than one chicken could tie for the most wins. As a result, we defined princess chickens as chickens that tie for the plurality of wins. From there we have been looking at the number of possible scenarios with both queen and princess chickens in order to determine the chicken hierarchy. Along the way we determined the number fights for n chickens, and how many chickens can tie as princesses. From these proofs, we have been looking at partitioning with relation to the number of scenarios. We have been able to determine the number of

scenarios for small numbers of chickens, and we are working on developing a formula for larger numbers of chickens. Our research relates to other real life situations involving rankings, such as sports.

Reason for Participating:
Course requirement for MTH 490- Research in Mathematics.

Nick Polito (#55)

Title: DPA Derivatives and their Affinity for Binding Dissolved Metals

Faculty Sponsor: Prof. Stephen Tajc

Abstract:
I synthesized (and continue to do so) different compounds from DPA and will eventually test them for their ability to bind to various metals. This was done using various chemical reactions and analytical techniques. This was done in the hope to find a compound that can remove metals from contaminated water.

Reason for Participating:
Course requirement for CHM 160- Chemistry Research.

Heidi Prentice, Molly Kingsley & Alan Connor (#56)

Title: The Evil Mathematicians Game

Faculty Sponsor: Prof. Yousuf George

Abstract:
For our Research in Mathematics course every group of 2 or 3 people were given a math game to research. We were given the basic rules of the game and had to figure out the best strategies of the game and how to win the game. We continued to look further into the games as we went along, figuring out what would happen in different scenarios and how we would approach the game differently (such as how the game would change if the number of players changed). We began by trying to play the game in order to get a feel for the strategy, using the smallest amount of possible players and building our way up. Eventually we began to see patterns and developed and tested formulas for figuring out how to win at any number of players.

Reason for Participating:
Our professor asked us to.

Tara Prosak (#57)

Title: Australian Trade

Faculty Sponsor: Prof. Rochelle Ruffer

Abstract:
I researched the trade patterns of Australian trade and compared it to the international economic concepts that we are learning about in class. I did it as a class assignment following the given directions.

Reason for Participating:
Course requirement for International Business.

Tara Prosak (#42)

Title: Vitamin C content in Broccoli

Faculty Sponsor: Prof. William Lammela

Abstract:
Cooked vegetables may cause a decrease in vitamin C content. Samples of broccoli were cooked by various methods and vitamin C content analyzed by iodine titration.

Reason for Participating:
Course requirement for SCI 102L- Integrated Physical Science.

Max Randolph & Konnor O'Bara (#59)

Title: Phosphate levels in Aquariums

Faculty Sponsor: Prof. William Lammela

Abstract:
For the laboratory project, we tested the levels of phosphate in Dr. Lammela's aquarium. We did this by looking at three different locations (water depth) and using the molybdate method, quantified phosphate using visible spetroscopy. A high level of phosphate can lead to overgrowth of algae which can release toxins that can kill the fish. Algae starts to grow at 1.00 ppm phosphate and rapid growth starts at 2.00 - 3.00 ppm phosphate.

Reason for Participating:
Course requirement for CHM 226L- Analytical Chemistry Lab.

Jessica Reisig & Marisa Vattana (#60)

Title: Lorca's España

Faculty Sponsor: Prof. Candide Carrasco

Abstract:
We would like to prepare a poster presentation that shows the events of the Spanish Civil War and how they influenced Frederico Garcia Lorca's work. We see Lorca's work as representative of the sentiments of people from southern Spain during the Spanish Civil War and we will show how his works were political in nature. Ultimately, we claim that Lorca's political works were the cause of his death by the right-winged Nationalist group lead by Francisco Franco, who would stay in power for decades.

Reason for Participating:
There has been a lot of debate regarding Lorca, his work, and his death and we would like to demonstrate our own, personal views on his work, what influenced his work and the reasons for which he died

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Reneé Ruscitto (#83)

Title: George Gershwin's Porgy and Bess: Controversy and Symbolism

Faculty Sponsor: Prof. Zbigniew Granat

Abstract:
George Gershwin's opera Porgy and Bess has long been a topic of debate. It has met both negative and positive responses from audiences, critics, and performers. On the one hand, Porgy and Bess was criticized for its stereotypical portrayal of African Americans and questioned as a work pertaining to be a folk opera. On the other hand, Gershwin's work has become a symbolic representation of freedom as well as opposition to the Nazi party. Although Gershwin's intentions to create a work that could be enjoyed by many may not have been realized in his lifetime, the use of the opera as a symbol of Nazi resistance, its feature of an all African American cast, its promotion of African American musicians in America, and the fact that it is still performed today without cuts, show that the opera has the power to speak to generations. I will be presenting a poster that explores the positive and negative feelings towards Porgy and Bess, as well as discussing the important role it played during WWII as a pillar of the movement against Nazism. My goal is to present both sides of the debate over the work, as well as show the impact it has had on American culture.

Reason for Participating:
I wrote a paper on this topic last semester for a music history class and would like to present my findings. It is not required for me to present; however, I would like to present my topic to inform people about the importance of the opera Porgy and Bess and its impact on American culture.

Katie Serron, Emma Dorschel & Nicole Greer (#61)

Title: *What Can Cola Really Do?*

Faculty Sponsor: Prof. Kelly Hutchinson

Abstract:
The purpose of this experiment was to determine the effect of Cola on bloodstains, rust, chocolate stains, and dissolving of teeth due to the low pH of Cola. We tested cola on removing rust from a nail, blood and chocolate stains from a cotton T-shirt, and how it affects teeth. We investigated the stain removal, rust removal, and teeth decay over time. We did this because we wanted to see if cola would act as a cleaner and why it is bad for our teeth.

Reason for Participating:
Course requirement for SCI.Q 101- Integrated Science and Inquiry.

Nicholas Sherman (#62)

Title: Oral Tradition of Irish Culture

Faculty Sponsor: Prof. Marjorie Roth

Abstract:
I would like to showcase the impact and importance of the concept of Oral Transmission in Irish culture. Although this is one of the longest lasting concepts in their culture, it is ultimately leading to the disappearance of their culture. Since very little is being recorded, there is no hard copy of the stories and information so the information is not only changed over time, but when the people who hold the information die, so does the information. I found all of this information through research (using books, databases, encyclopedias). I did the research for a State of Research paper as part of a class last semester (Music History). I chose this topic because of my Irish background.

Reason for Participating:
To show case the research I did regarding the Cultural Impact that Oral Tradition is having on Irish culture and its preservation.

Nandini Singh (#63)

Title: Analysis of the Kinetic Isotope Effect using tin (II) halides for the esterification of oleic acid

Faculty Sponsor: Prof. Richard Hartmann

Abstract:
Biodiesel made from waste cooking oil is a popular substitute for petroleum diesel. However, due to its high content of free fatty acids (FFA), waste oil must undergo an initial acid catalyzed esterification. This process typically employs concentrated H_2SO_4 but we chose a milder Lewis acid, tin (II) bromide, as our catalyst. Our investigation is part of a larger project which uses oleic acid as a model FFA, and the tin II halides (SnF_2, $SnCl_2$, $SnBr_2$, and SnI_2) as catalysts. Methanol-D was substituted for methanol in order to assess the role of this species in the overall mechanism. Through the use of NMR, we have determined that methanol-D does

eventually make methyl ester, but it takes substantially more time for the reaction to occur. This poster will present our interpretation of the data, how it relates to potential mechanisms, and the broader impact for the series of tin II halides

Reason for Participating:
To present my research and gain feedback and experience.

Chelsea Sommer (#64)

Title: How is Your School Different From My School: Thoughts From Children With a Refugee Background

Faculty Sponsor: Prof. Susan Kwiatkowski

Abstract:
For my clinical experience this semester I have the opportunity to go to Mary's Place, a refugee outreach center. The goal as student clinicians is to facilitate English language learning through social interaction and academic support. Many of the students speak multiple languages and come from many different countries with cultural variations. When coming to the United States these students have to adapt to several changes as they assimilate to our culture. While speaking with the children from Mary's Place about their school day in the Rochester City School District, it made me wonder what school was like in their home country. Through a search of literature I found valuable information on this topic, which provided information and questions to discuss with the children about their school. I spoke with children about what a school day was like in their home country compared to a school day here in Rochester. I focused on differences in schools' dress policy, transportation, tuition, lunch, and level of respect towards teachers. By collecting this information I hope to inform others about the educational differences between countries while highlighting our diverse after-school program at Mary's Place.

Reason for Participating:
I would like to participate in CARS because it is a great opportunity to begin to learn presentation and research skills in a professional setting. I am fascinated with the way these children appear to have adapted so well to our culture. I would also like to share my experiences and stories I have acquired from working with these students. There are many factors refugees have to adapt to besides participation in learning the English language when they arrive in the United States and one is the school setting. By participating in CARS I hope to share with the Nazareth College community what

I have learned about the different cultures in schools around the world, compared to schools in the United States.

Jenny Stolt & Marlyn Rios (#65)

Title: Red Wine and Chocolate: Healthy?

Faculty Sponsor: Prof. Kelly Hutchinson

Abstract:
The purpose of this experiment was to determine the health benefits of red wine and chocolate. We did this by testing the growth of probiotic bacteria with red wine and chocolate. We were interested in this experiment because we have heard that both red wine and chocolate have health benefits, and we were curious to see if it was true and learn more about this subject.

Reason for Participating:
Course requirement for SCI.Q 101- Integrated Science and Inquiry.

Elana Tontarski (#66)

Title: Tin II Halides as Catalysts for the Methylation of Oleic acid

Faculty Sponsor: Prof. Richard Hartmann

Abstract:
Although biodiesel is known to be an effective and environmentally sound replacement for petroleum, it has remained a marginal fuel because of high production costs. The majority of this cost could be eliminated if high free fatty acid (FFA) containing waste oils were employed as the starting material rather than virgin oils. Because these types of oils require acid-catalyzed pretreatment, we have been investigating a variety of mild Lewis acids as replacements for the highly caustic and sulfur-containing H2SO4, which is the standard catalyst employed. Using 1H NMR spectroscopy we have found SnX2 (where X = Cl, Br, or I) to be effective catalysts for the reaction of oleic acid and methanol and have also observed an interesting trend in reaction rates (I>Br>Cl).

Reason for Participating:
To gain experience in presenting research.

Emily Triplett (#67)

Title: Structural Analysis of HIV-1 Viral Entry Inhibitor Drug Candidate BMS-378806: The Role of Benzyl Derivatives

Faculty Sponsor: Prof. Stephen Tajc

Abstract:
Since the discovery of HIV in 1981, AIDS has caused the deaths of millions of people (1). The current treatment requires high dosages and results in unfavorable side effects that discourage long-term use. BMS-378806 is a small molecule HIV-1 inhibitor that is preferable to the current therapy. However, little is known about the mechanism of this drug (2). This research aims to identify the most effective functional groups by attaching structural variations to the piperzine-adjacent phenyl ketone. Previous research has shown five-member rings to be the most favorable. These structural variants may be analyzed by isothermal titration calorimetry (ITC) to determine thermodynamically favorable binding conditions. This data may be used to construct an even more effect HIV-1 inhibitor.

Reason for Participating:
Course requirement for Independent Research.

Marisa Vattana & Craig Marasco (#68)

Title: Dante's Inferno-2013

Faculty Sponsor: Prof. Maria Rosaria Vitti-Alexander

Abstract:
We will present on Dante Alighieri's Inferno. We will explain why it is still relevant today, 700 years after it was written, and we will project what his Inferno might look like today. We will create a poster that is both in Italian and English.

Reason for Participating:
Course requirement for SCI.Q 101- Integrated Science and Inquiry.

Dyan VerSchage & Justin Sawran (#69)

Title: Euler's Characteristic & Planar Graphs

Faculty Sponsor: Prof. Yousuf George

Abstract:
My partner and I completed a semester of math research as part of a mathematical research elective course in the Fall 2012 semester. We were given a mathematical game to explore at the beginning of the semester, which we solved, and then broadened our studies to other theorems in math that branched off the concepts used in the game. Overall, we extended a well known theorem, Euler's Characteristic, and proved the other applications it has. The last two months of the semester were spent creating a poster and presentation (in a program called LaTeX) to showcase our research at the end of the semester. We did this as it was a requirement, but also because we want to share our research!

Reason for Participating:
Course requirement for Mathematical Research.

Caitlin VerSchneider (#70)

Title: Efficiency of the Atlanta subway network and functional connectivity of the human brain

Faculty Sponsor: Prof. Matt Koetz

Abstract:
This past summer I participated in a research experience for undergraduate students (REU) in mathematics. For two months, I worked on mathematics research in graph theory at RIT. During this time I worked with another student from RIT as well as a professor from RIT. We investigated the concept of efficiency between vertices in a graph. This concept was first introduced by Latora and Marchiori in 2001. In particular, we investigated the global efficiency of star-like networks, and found that networks of this type are very efficient. In addition, we analyzed the Metropolitan Atlanta Rapid Transit Authority (MARTA) Subway system, and found that this network is 82 percent as efficient as a network where there is a direct line between

every pair of stations. Lastly, we utilized the concept of efficiency to analyze functional connectivity of the human brain.

Reason for Participating:
I would like to share my experience doing mathematics research at a research experience for undergraduate students (REU) with other undergraduates.

Alexandra Vizgaitis (#71)

Title: Suicidal Ideation in Veterans: An Analysis of the Risk and Protective Factors Impacting Suicidal Ideation in Veterans

Faculty Sponsor: Prof. Mary Ann Bush

Abstract:
I did an independent study at the Rochester VA using the data they previously collected there to design my own study on suicidal ideation severity in veterans. I looked at the risk factors of depression and insomnia and how they might contribute to suicidal ideation severity, and I also looked into the protective factors of marital status, employment status, and living arrangements to see how they might impact suicidal ideation severity. I used SPSS to analyze the data and I am writing up an APA paper on my research. I will be presenting my paper via a poster. I did it because I wanted to investigate the current monumental issue of suicide in the military/veteran population in hopes to gain some insight as to why veterans are a demographic group especially prone to suicidal ideation and/or suicide.

Reason for Participating:
Independent research--to present my findings at a conference.

Tammy Wagner (#72)

Title: The Fermentation of Vegetables

Faculty Sponsor: Prof. William Lammela

Abstract:
I attempted to ferment vegetables with varying amounts of yeast and pectic enzyme. I chose fermentation because I've always wondered how the original people of yesteryear stumbled across alcohol and how the process evolved over time.

Reason for Participating:
Course requirement for SCI 103L- Integrated Physical Science.

Sarah Wazenkewitz & Sarah Getsy (#73)

Title: The Development of Small Molecule Linkers Towards Solid Surface Analysis of HIV-1 Viral Envelope Proteins

Faculty Sponsor: Prof. Stephen Tajc

Abstract:
There are millions of people that are currently infected with HIV/AIDS, yet countless contagious individuals remain unaware that they are infected. The Center for Disease Control is presently supporting a two-year study on a free HIV antibody rapid screen test for Americans to examine if increased availability and convenience will promote HIV diagnostics and awareness1. The antibody protein used in this test however, is less stable and costs more to produce large quantities than a small molecule with similar binding capabilities. Small molecule HIV viral entry inhibitors have been found to be a promising new class of drugs due to the ways in which they can target protein complexes that are involved in the process of viral membrane fusion, specifically the HIV-1 glycoprotein gp120. This research is designed to gain a fundamental understanding of small molecule HIV-1 viral entry inhibitors with synthetic linkers towards solid surface analysis of gp120.

Reason for Participating:
Course requirement for Advanced Independent Research Introduction to Independent Research.

Kendra Wienke & Courtney Taylor (#74)

Title: The Amount of Dissolved Oxygen located in Dr. Lammela's Aquarium

Faculty Sponsor: Prof. William Lammela

Abstract:
In order to keep an aquarium and it's fish happy and healthy, there needs to be an adequate amount of dissolved oxygen located in the aquarium. One way to test the amount of dissolved oxygen is the Winkler test. This test uses a thiosulfate titration to quantify the dissolved oxygen in a water sample.

Reason for Participating:
Course requirement for CHM 226L- Analytical Chemistry Lab.

Jennah Wolcott & Corinne Coppola (#75)

Title: "The aquarium project"--Testing the levels of dissolved carbon dioxide in Dr. Lammela's Aquarium

Faculty Sponsor: Prof. William Lammela

Abstract:
The upkeep and conditions of an aquarium are important to the health of aquatic life. Important factors to consider are pH, alkalinity, hardness and carbon dioxide levels. High concentrations of carbon dioxide lower the pH levels of water; this decreased the ability for the blood in fish (i.e. in Dr. Lammela's tank--tetras and catfish) to carry oxygen because of the low blood pH at the gills. The concentration of CO2 is important because at high concentrations, the fish may suffocate, but at low concentrations, the fish may appear unaffected. Therefore, an investigation of the carbon dioxide levels in Dr. Lammela's aquarium was conducted to determine if the conditions were suitable for his fish.

Reason for Participating:
Course requirement for CHM 226L- Analytical Chemistry Lab.

Mark Zavorin & Ramez Al-Hebshi (#76)

Title: Quantification of iron in chocolate

Faculty Sponsor: Prof. William Lammela and Prof. Sheila Brady-Root

Abstract:
The goal of the project was to determine how much content of iron are in various types of chocolates (e.g. dark chocolate, white chocolate, milk chocolate). The experiment was done by burning the chocolate until turned to ash so solutions can be made to take absorptions rates. Standards were used to help calculate the amount of iron in the chocolates. The experiment showed us the significant less amount of iron than was expected; however decent amount of iron was found.

Reason for Participating:
Course requirement for CHM 226L- Analytical Chemistry Lab & SCI 132L- Nutrition Concepts Lab.

PRESENTATIONS

Location	Time	Name(s)	Title
Peckham Hall 219	2:00 p.m. – 2:30 p.m.	Anastasia Arriaga & Rebecca Craver	*Exploring America Through Art*
Peckham Hall 219	2:30 p.m. – 3:00 p.m.	Bethany Althaus, Casey Dudziak, Meaghan Kanaley, Joan Quinn, Teri Ramos & Alexandria M. Roberts	*The Hospital Elder Life Program (HELP) at Highland Hospital: Gerontology Program Interns in a Geriatric Setting*
Peckham Hall 101	2:00 p.m. – 2:30 p.m.	Amanda Bucholtz & Professor Tracie Glazer	*The Resegregation of American Public Schools*
Peckham Hall 101	2:30 p.m. – 3:00 p.m.	Alyssa Lindstrom & Tess Hanna	*Art Within the U.S. Presidential Election*

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Bethany Althaus, Casey Dudziak, Meaghan Kanaley, Joan Quinn, Teri Ramos & Alexandria M. Roberts

Title: The Hospital Elder Life Program (HELP) at Highland Hospital: Gerontology Program Interns in a Geriatric Setting

Faculty Sponsor: Prof. David W. Steitz

Abstract:
The Hospital Elder Life Program (HELP) provides specialized care for older patients at risk for delirium. Between 30 and 50 percent of older adults experience a decline in

their physical and/or mental abilities during a hospital stay. One of the most common forms of this decline is delirium, a sudden confused state of mind. Delirium, fortunately, can be prevented. Seven Gerontology students at Nazareth College have completed training specific to delirium under the supervision of the HELP staff and the geriatric medical team at Highland Hospital. These interns provide daily visits with patients (socialization), various recreational activities (mental activity and focus), and meal assistance (helping patients to maintain physical strength). Through these activities, as well as coordination between the interns and the families of patients, results of the HELP have shown a significant decrease in the rates of delirium. Since the inception of the HELP, 1176 patients have been admitted to Highland Hospital Geriatrics, with 18.7% of those patients admitted to the HELP. As a result of the HELP, only 2.3% of these patients were determined to have experienced delirium at any point during their hospital stay, versus 6.1% of those patients that were not a part of the HELP.

Reason for Participating:
Class requirement for PSY 481/482- Gerontology Internship.

Anastasia Arriaga & Rebecca Craver

Title: Exploring America through Art

Faculty Sponsor: Prof. Tracie Glazer

Abstract:
My partner Rebecca Craver and I chose four American artists who explored the theme of American life and history through their artworks. We chose to do this through a PowerPoint presentation and presented at the American Studies conference at the University of Pannonia in Veszprem Hungary.

Reason for Participating:
To improve upon my education and to learn from the Hungarian students about their culture. I felt this topic was relevant in presenting to the Hungarian students so that the multiple perceptions could be identified in a small range.

Amanda Bucholtz & Professor Tracie Glazer

Title: The Resegregation of American Public Schools

Faculty Sponsor: Prof. Tracie Glazer

Abstract:
Professor Tracie Glazer and I compiled this research for "America Week" at The University of Pannonia in Veszprem, Hungary. We presented this information (The Resegregation of American Public Schools) to showcase a large controversy that is taking place within our culture at this time. Within American education, this issue is covered, but not in the large amount as we did in our presentation. We presented our information via PowerPoint to the audience and then answered questions in a discussion panel held after the presentation.

Reason for Participating:
Presenting at an international conference in Hungary was an amazing opportunity. I wanted the chance to exchange ideas with a different culture and learn about their lifestyles in comparison to ours. Through this experience I became more aware of American culture.

Alyssa Lindstrom & Tess Hanna

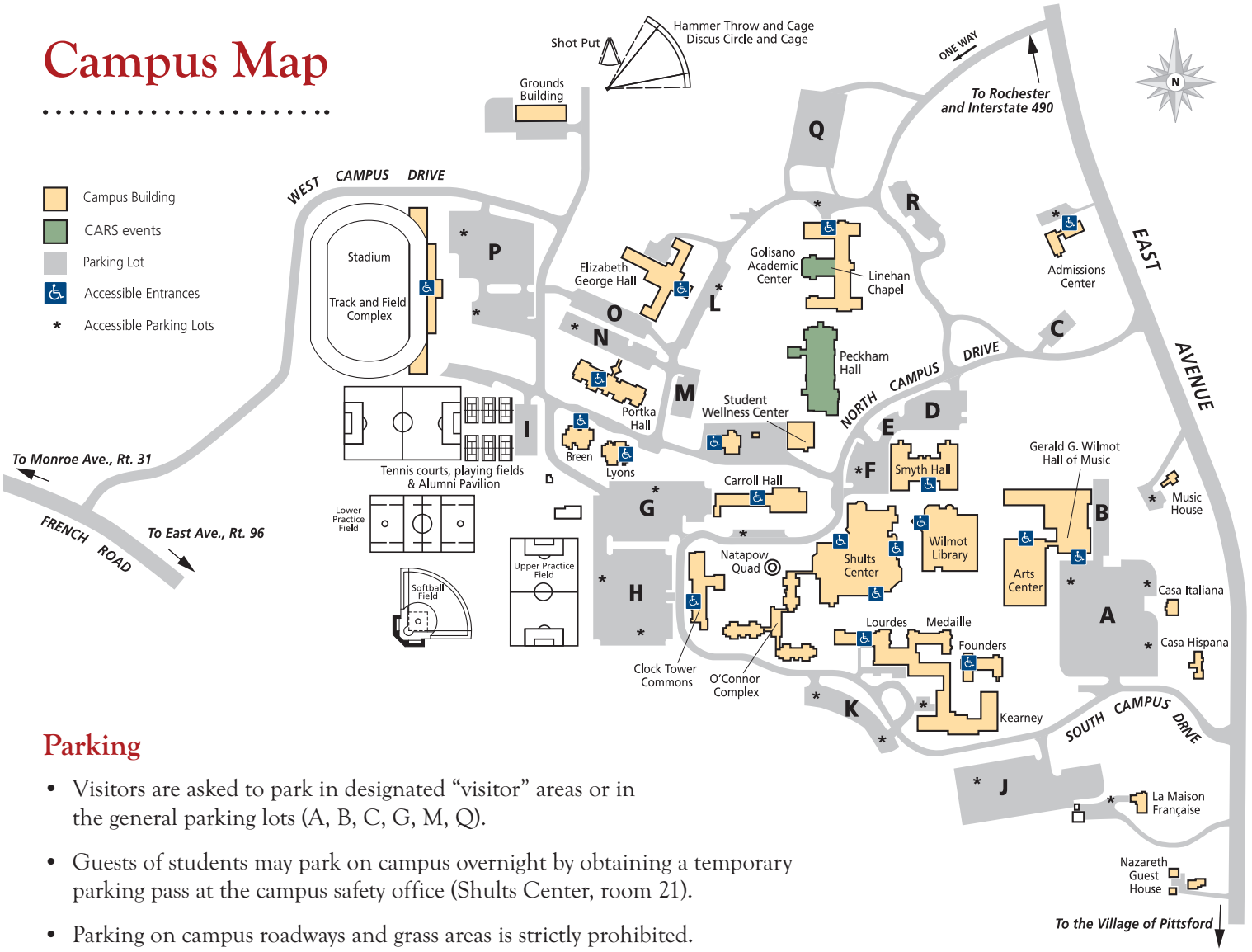
Title: Art within the U.S. Presidential Election

Faculty Sponsor: Prof. Tracie Glazer

Abstract:
We researched the role of art during the 2012 presidential election. We used research from current media, artists, critics and political sources. Our research helped us formulate the impact that art can have on media, the general population and politics. We did this research and presentation for a conference, America Week, at the University of Pannonia in Veszprem, Hungary. The goal of the conference is to share ideas between Americans and Hungarians while learning about the culture and society of the United States.

Reason for Participating:
We were invited to join a group of students and professors to travel to Hungary to present at the conference set-up by the University's professors, Nazareth Professors and the Fulbright program. We chose to participate in order to share our ideas with the Hungarian students and professors who are studying at the English and American Studies Institute. It was an amazing experience and we learned so much about both Hungarian and American culture.

Campus Map



Parking

- Visitors are asked to park in designated "visitor" areas or in the general parking lots (A, B, C, G, M, Q).
- Guests of students may park on campus overnight by obtaining a temporary parking pass at the campus safety office (Shults Center, room 21).
- Parking on campus roadways and grass areas is strictly prohibited.

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