

Urban Blight in the Pine Hills

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Faculty Supervisor: Dr. Cailin Brown

Over two semesters students in the Newsroom and Journalism II classes identified residential properties in the Pine Hills neighborhood plagued by urban blight. Students conducted interviews with owners of compromised properties, as well as with neighbors of those properties. Students employed the state's Freedom of Information Law to acquire public documents from the City of Albany which initially declined to share the information. In addition, students hand-delivered and mailed letters to potential sources and used various social media to collect data. In-person interviews were conducted. Three stories were published on the topic and the city conducted property inspections as a result of this research. In part, the journalism fulfilled its mission to serve the public and the students fulfilled the College's mission as an engaged urban campus.

Linking Number Theory and the Bible

Lily K. Appleton – Department of Mathematics
Faculty Supervisor: Dr. MaryAnn McLoughlin

In the past, and the present, the number 12 has been a fascinating one. It appears in a variety of forms in our society whether it's the number of hands on a clock or months in a current year. It also is a significant number in the Bible (the religious text of Christians). Besides our society, and the Bible, other societies find it intriguing as well. Was it chosen by chance? Or did the branch of mathematics number theory have a significant role?

Stratigraphy of the Valley of Fire State Park and the Muddy Mountain Thrust Fault

Bryan Barry – Department of Physical & Biological Sciences
Faculty Supervisor: Dr. Jacqueline Smith

Valley of Fire State Park, Nevada, is about 130 miles west of Grand Canyon Village, but the older rocks at Valley of Fire are a continuation of the younger rocks at the Grand Canyon, mainly Mesozoic red beds and alluvial (river) deposits. A striking feature of the Valley of Fire geology is the Muddy Mountain Thrust Fault (MMTF), along which older limestones (~500 Ma) were thrust over the younger (~160 Ma) Aztec Sandstone during the Cretaceous Sevier Orogeny. The MMTF is easily recognized from the valley because the limestones are gray-green while the younger, underlying Aztec Sandstone is brilliant orange.

Recipient of a 2013 Undergraduate Research Grant

Microplastic Pollution in New York Waterways

Bryan Barry – Department of Physical and Biological Sciences
Faculty Supervisor: Dr. Jacqueline Smith

Microplastics are plastic particles <5 mm in diameter. Exfoliating scrubs are potential sources of microplastics in wastewater. I am investigating microplastic pollution in NY rivers. Water samples were collected from 16 sites along the Mohawk and Hudson Rivers in eastern New York. Water was bailed from the river either at the shoreline or from a dock. For each sample, 150-250 gallons of water were poured through a stack of sieves to isolate particles. Samples are undergoing wet peroxide oxidation and microscope examination for particle identification. Preliminary results show microplastics are present in very low concentrations in the suspended sediment load.

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Going Out With a Bang: Volcanism in Death Valley National Park and the Formation of Cinder Cones and Craters

Amanda Bartik – Department of Physical & Biological Sciences
Faculty Supervisor: Dr. Jacqueline Smith

Death Valley National Park has a long volcanic history. Many of the features seen in the park were formed in volcanic events beginning 11 to 12 million years ago. What was previously a landscape of rolling hills was disturbed by faulting and volcanic activity that trailed westward, producing a long chain of volcanoes between Furnace Creek and Shoshone. These events resulted in the presence of igneous intrusions, tuff layers, cinder cones, and craters. We hiked into Ubehebe Crater, which formed 800 to 2100 years ago in a violent eruption caused by rising magma hitting groundwater and flashing it to steam.

Have you Logged off Facebook? The Effects of Lurking on the Self

McKenzie Bourque – Department of Psychology
Faculty Supervisor: Dr. Nancy Dorr

The current study examined lurking on Facebook and its effects on a variety of self-related constructs. Participants were randomly assigned to an hour-long lurking session or control condition and completed a number of self-report measures. In general, results showed that individuals with Facebook highly integrated in their lives reported lower self-esteem, self-concept clarity and life satisfaction when they were not lurking on Facebook as compared to when they were.

Recipient of a 2013 Undergraduate Research Grant

Microbial Contamination of Prepackaged Spinach

Meaghan Brady – Department of Physical and Biological Sciences

Faculty Supervisor: Dr. Kari Murad

One in six Americans become sick from foodborne illness each year according to the Centers for Disease Control and Prevention. Leafy greens such as spinach are frequently the subject of recalls due to microbial contamination. This study used a standard plate count to determine how much contamination is present on commercially-available, prepackaged spinach and differential testing to determine if the bacteria present are harmful pathogens. The spinach sampled was found to have an original cell density of 6.40×10^7 microbes/ml. Eleven colonies were isolated and all were found to be gram-negative, rod-shaped bacteria.

M.C. Escher

Bridget Buckley and Micaela Cimino – Department of Mathematics

Faculty Supervisor: Dr. Joanne Powers

M.C. Escher was an amazing artist and among his greatest admirers were mathematicians who recognized his work as an extraordinary visualization of mathematical principles. Most amazingly, Escher had no formal mathematics training beyond secondary school. Escher often worked directly from structures in plane and projective geometry and eventually captured the essence of non-Euclidean geometries. Escher's work can be separated into five main categories: tessellations; polyhedra; the shape of space; the logic of space and self-reference. Escher's intersections of the worlds of imagination, mathematics and our daily lives is what makes him so powerful.

Special Case of a Bernoulli's Equation With a Tail

Bridget Buckley – Department of Mathematics

Faculty Supervisor: Dr. Jamal Teymouri

By definition, Bernoulli's equation is in the form; $y' + p(x)y = q(x)y^m$, where $p(x)$ and $q(x)$ are continuous functions of x . My work introduces a special case using the Bernoulli's equation for $p(x)$ and $q(x)$, with my introduction of a term that is called $L(x)$. This additional term is also a continuous function of x , and it is called the tail of the Bernoulli's equation. My special equation is now in the form, $y' + p(x)y = q(x)y^m - \frac{1}{x}$, where my paper will demonstrate the general solution of this equation.

Magic and Latin Square

Michael Burgess – Department of Mathematics

Faculty Supervisor: Dr. Mary Ann McLoughlin

Magic Squares were known to Chinese mathematicians as early as 650 BCE. A Magic Square is an n by n square matrix where each cell has 1 to n^2 distinct integers. The sum of each individual row, column, and diagonal sum is the same number. According to the Chinese legend, while the Emperor Yu was walking along the Yellow River at about 2200 BC, he found a tortoise with a unique diagram on its shell, the "Lo Shu square" which is the first magic square that was recorded.

Family Structure as a Predictor of Trust in Romantic Relationships and Unrealistic Expectations

Alexandria Busch – Department of Psychology
Faculty Supervisor: Dr. Nancy Dorr

This study examined how family structure could impact a person's trust within a romantic relationship and unrealistic expectations of marriage. The study consisted of 91 students and acquaintances of the researcher. Participants were given envelopes containing the Trust of Romantic Partner scale, Relationship Expectations scale, and an attached demographic form. Due to a miscommunication on the demographic form, 43 participants were removed to minimize error. Results showed that there were no differences in trust or expectations between those from intact families and divorced families. While these results were inconclusive, the area of study could lead to important knowledge of a growing demographic.

Age Variance in Relation to Language Acquisition

Lindsey Cagle – Department of World Languages and Cultures
Faculty Supervisor: Dr. Erin Mitchell

A study of children, grades K-6, that explores the question of whether the age at which they begin to learn a new language matters. The study was conducted by teaching a group of children select vocabulary over 3 days and then verbally testing them on it after the 3rd day.

Why is Spain Healthier than the United States?

Lindsey Cagle – Department of World Languages and Cultures

Faculty Supervisor: Dr. Claire Ziamandanis

This study delves into the culture of Spain versus the United States and how that contributes to the overall health of the country. Many aspects will be explored to explain why Spain has the highest life expectancy in the world.

The Effects That Negative Representations of Women in Music Videos Have On Men and Women

Esa Cano – Department of Communications

Faculty Supervisor: Dr. Karen McGrath

It's widely agreed that women in music videos are negatively represented and that these representations have negative effects on both women and men. In fact, two specific negative representations, sexual objectification and gender specific stereotyping, have been studied and the findings were significant. Research indicates that such representations can lead women to experience self-objectification and internalized beauty ideals, while men may be more likely to engage in violence and harassment towards women. This paper explores the media effects research on women's representations in music videos and then claims that these portrayals lead men to feel entitled to women, men and women having unrealistic expectations in relationships, and that victim blaming could stem from objectifying women.

Temperament and its Relationship to Learning and Performance in General Chemistry

Gabriella M. Castillo – Department of Physical and Biological Sciences
Faculty Supervisor: Dr. Sara Alvaro

This ongoing research project is investigating the link between Temperament (patterns in how people think) and overall performance in general chemistry. Students in Professor Alvaro's CHM 190 class were surveyed to (1) determine their Temperament according to David Kiersey's Temperament Sorter (Keirse, 2000) and (2) determine other factors that may affect class performance, such as study habits, prior preparation in chemistry, etc. Since temperament is also related to how people learn, it is our hope that any information obtained regarding patterns in temperament, class performance, and their relationships can be used to improve teaching methodologies.

Higher Trust, Extroversion, and Optimism Correlates with Healthier Friendships

Alissa Chung – Department of Psychology
Faculty Supervisor: Dr. Robert Flint

Examined how various friendship components (help, intimacy, reliable alliance, stimulating companionship, self-validation, and emotional security) correlate with optimism, interpersonal trust, and extroversion. One hundred and one college students completed four self-report measures of friendship satisfaction, trust, extroversion, and optimism. Results suggest that only extraversion correlates with security, intimacy, helpfulness, and friendship satisfaction. Trust correlates with helpfulness of a friendship. Optimism and trust yielded no significant results to overall health of friendship.

The Use of Attenuated Total Reflectance - Fourier Transform Infrared (ATR-FTIR) Spectroscopy to Detect Contaminants in Over the Counter Medications

Jessica Cirillo – Department of Physical and Biological Sciences

Faculty Supervisor: Dr. Sara Alvaro

The FDA is continuously discovering cases where medicines are laced with toxins or are not what they appear to be in their defense against acts of drug contamination. Drug contamination is the incorporation of or lack of some element in a medication that can ultimately harm or kill the individual who ingests it. In this project, four over-the-counter medications were characterized using ATR-FTIR spectroscopy and the effect of adding contaminants to these drugs on their unique FTIR spectra was investigated. The ultimate goal of this project is to design a laboratory for the Instrumental Analysis class here at Saint Rose.

Properties and Investigation of Alluvial Fans in Death Valley, California

Ashley Cirone – Department of Physical & Biological Sciences

Faculty Supervisor: Dr. Jacqueline Smith

Most mountain ranges in Death Valley are edged by alluvial fans that form when mountains erode and debris (gravel, sand, and silt) is transported to the valley floor, where it is deposited. Over time, deposits build up in a triangular shape. Fans in western Death Valley, along the Panamint Mountains, are large and combine to form bajadas. On the east side, along the Black Mountains, fans are smaller, steeper, and individual. The size difference is due to the eastward dip of the fault-bounded valley floor. Sediment dating indicates that the ages of the fans are 2.5 million years to present.

Business along the Camino de Santiago

Liliana Coraizaca – Department of World Languages and Cultures

Faculty Supervisor: Dr. Claire Ziamandanis

El Camino de Santiago, or “The Way of Saint James,” is the pilgrimage route to the Cathedral of Santiago de Compostela in northwestern Spain, where legend has it that the remains of Jesus’s apostle Saint James the Elder lie. The Camino has existed for well over 1,000 years, and there are many businesses along the Camino that support the economy of this main religious and cultural attraction. The research gathered will illustrate how these businesses enrich the culture, economy and experience of the Camino de Santiago.

LGBT Representation in Sports Media

Sam Crocker – Department of Communications

Faculty Supervisor: Dr. Karen McGrath

Only one person in the ‘Big Four’ American sports leagues has participated as an openly gay athlete. This paper seeks to analyze why so many LGBT athletes choose not to come out and looks at the influence that sports media has on their decision. We synthesize the small research field of LGBT representation in sports media to understand what mistakes the media are making when it comes to coverage of LGBT athletes and seeks to suggest areas for improvement or future research.

Molecular Dynamics Investigations of an Oligomer in Bulk Water and at the Water-Air Interface

Stephen Delarede – Department of Physical and Biological Sciences
Faculty Supervisor: Dr. Brad Bauer

Studying hydrophobic tendencies of polymers and oligomers in water lends insight to relevant physical processes such as surface wetting and the folding phenomena of proteins within organisms. In this study, we have systematically varied interaction parameters for a ten-monomer oligomer. Using molecular dynamics simulations, the influence of these parameters on the oligomer's behavior in bulk water and at the water-air interface were assessed via structural properties of the oligomer (end-to-end distance, radius of gyration) and of the solvating water (radial distribution functions). Although anticipated trends in hydrophobicity were generally observed, we found that significant differences in the oligomer's solubility occurred when the monomers were treated as independent molecules.

Uncovering Gustave Courbet's *The Painter's Studio: A Real Allegory of Seven Years of My Moral and Artistic Life* and Larry River's *The Studio*

Whitney Dobladdillo – Department of Art
Faculty Supervisor: Dr. Lucy Bowditch

One of the most significant paintings created during the twentieth century would be Courbet's monumental work *The Artist's Studio: A Real Allegory*. This phenomenal piece of work has had a variety of analogies given by critics from the day it was created until the present day. Four different approaches taken by various authors will be addressing *The Artist's Studio: A Real Allegory* and be analyzed in order to compare and contrast what really influenced Courbet in the composition followed by hidden interpretations throughout Courbet's process.

Pascal's Triangle and Triangular Numbers
Scott Eisner – Department of Mathematics
Faculty Supervisor: Dr. Mary Ann McLoughlin

My presentation will be about the world of Pascal's triangle and triangular numbers. I will go into talking about how the triangle has multiple uses such as primes, counting, and triangular numbers. There is also perfect symmetry among the whole triangle. Then I will be digging deeper into the meaning of the triangle, and rows adding together to equal 2^n . This is as well as the hockey stick theorem, magic 11's, and the Fibonacci sequence.

Polychromatic Sandstone in Valley of Fire State Park, Nevada
Emma Ervolina – Department of Physical and Biological Sciences
Faculty Supervisor: Dr. Jacqueline Smith

One of the most striking features of Valley of Fire State Park, Nevada, is the brightly colored Aztec Sandstone, which is about 1400m thick. Originally tan or beige at the time of deposition as sand dunes, the layers of sandstone have since been stained red, yellow, purple, and white over millions of years. The staining occurred when hematite (iron oxide, "rust") was dissolved and re-deposited during local changes in the water table. The sandstone aquifer was deformed during the Cretaceous Sevier Orogeny, with small thrust faults and joints forming throughout, and again dissected by faults related to subsequent Basin-and-Range extension.

Nostalgia in Landscape: An exploration of the work of Robert Adams and Michael Gregory

Jeremy Fink – Department of Art
Faculty Supervisor: Dr. Lucy Bowditch

The work of Robert Adams and Michael Gregory run many parallels: both focus on the changing American landscape, explore isolationism, and discuss the idea of the human interaction with the landscape more than the landscape itself. Adams' photographs "convey the glorious and the banal, invoking reverence, shame and wonder" while Gregory's recent paintings become illustrative landscapes lacking the profundity of Adams work. My research indicates that the difference happens because of location driven nostalgia. Adams is able to create a disconnect between himself and the landscape to create beautiful images, while Gregory's paintings do not offer the same strong narrative.

What's in a fingerprint? Using Attenuated Total Reflectance-Fourier Transform Infrared (ATR-FTIR) Spectroscopy to Determine If There Are Distinguishing Features in the Chemical Composition of Male and Female Fingerprints.

Mallory Foran – Department of Physical and Biological Sciences
Faculty Supervisor: Dr. Sara Alvaro

Latent fingerprints are significant in forensic science due to the information they can provide to identify a perpetrator. Smudged fingerprints currently provide little information because they lack ridge detail that is necessary for identification. We hypothesized that the presence of estrogen or testosterone in fingerprint residues could be used to distinguish between female and male perpetrators. ATR-FTIR Spectroscopy was used to collect spectra from the thumb and index finger of 25 male and 25 female participants. These spectra were analyzed to identify similarities among, and differences between each sex, and determine if any spectral signatures of the sex hormones exist.

Effect of mGluR7 Antagonist MMPIP on Spatial Memory Retrieval in Rats

Rhea French – Department of Psychology

Faculty Supervisor: Dr. Robert Flint

Eighteen adult male Sprague-Dawley rats were given four training trials per day on four consecutive days in the Morris Water Maze. Thirty minutes prior to a retention test on day 5, animals were administered either 10 mg/kg of MMPIP, the mGluR7 allosteric antagonist, or saline intraperitoneally. Performance on the retention test did not reveal any significant differences in long term spatial memory retrieval between the groups. The role of overtraining as a mitigating factor in pharmacological studies of memory modulation is considered.

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Relationships Between Depression, Substance Use, Aggression and Risky Sexual Behaviors

Erika Glaski – Department of Psychology

Faculty Supervisor: Dr. Robert Flint

Examined the correlation between depression, substance use, aggression and risky sexual behaviors. It was hypothesized that high levels of depression would be positively correlated with high levels of risky sexual behavior, aggression, alcohol use and drug use. One hundred and ten participants answered questionnaires measuring their drug use, alcohol use, depressive symptoms, aggression, and sexual risk taking behaviors. After using Pearson's correlation coefficients to examine the relationships, the results showed evidence to support the hypothesis.

Geometry of Bubbles

Marykate Graulich, Bianca Malta and Stephanie Vance

Department of Mathematics

Faculty Supervisor: Dr. Joanne Powers

The geometry of bubbles is based on Fresnel's equations. His effect on varying transparency helps us understand how colored patterns of reflected light are produced in bubbles at oblique angles. Soap bubbles are simple geometric relationships created by the principles of area minimization. Studying soap bubbles helps with a better understanding of area minimization and helps test for computation of geometric structures. The Color Plate shows a cluster of bubbles that are stereographically projected onto 4-dimensional regions. All of this work revolves around Augustin Fresnel; his major contribution was the wave theory of light.

The Effects of Simulated Aging on Attitudes, Prosocial Intentions and Life Satisfaction

Stefanie Green – Department of Psychology

Faculty Supervisor: Dr. Robert Flint

The current study examined whether a simulated aging activity would cause more positive attitudes toward the aged, an increased desire to help, and higher satisfaction with life. Eighty-six college students participated; half were randomly assigned to complete three tasks with sensory deficits designed to simulate aging, and half served as the control. Three questionnaires were then completed. Results showed that individuals who experienced simulated aging had more favorable attitudes toward older adults than did individuals in the control condition.

The Legend of Saint James

Briana Gualtiere – Department of World Languages and Cultures
Faculty Supervisor: Dr. Claire Ziamandanis

Legend has it that the body of Saint James is buried beneath the cathedral in Santiago de Compostela. The researcher found that Saint James was one of Jesus's twelve apostles. Saint James preached throughout Spain. According to additional legend, Saint James assisted the Spaniards to victory during the Reconquista. The legend states that he appeared on horseback during the battle of Calvjo and led the charge. These attributes to Saint James are what lead many to end their journey on the Camino, at the foot of the statue of Saint James.

Love and Mysticism

Daniel Haglund – Department of Religious Studies
Faculty Supervisor: Dr. Jeffrey Marlett

My project focuses on the relationship between three mystics: St. Catherine of Siena, Julian of Norwich, and St. Teresa of Ávila. I found that they share many similar thoughts on love and suffering. The second part of this project examines the usefulness of William James' four criteria for mystical experience: ineffability, noetic quality, transiency, and passivity. According to William James' criteria, none of these women would be considered mystics. These criteria are inadequate because James does not fully appreciate the purpose of the imparting of knowledge through mystical union, which is to pass that information on to others.

Assessing the Antibiotic Sensitivity of Bacteria from Common Environments

Aishwarya Hanspal – Department of Physical and Biological Sciences

Faculty Supervisor: Dr. Ann Zeeh

We are in the midst of a crisis of antibiotic resistance among microbial pathogens throughout the world. This project examined the antibiotic sensitivity of five different bacterial strains isolated from two everyday environments, human skin and a computer keyboard. Isolated bacteria were tested against two antibiotics, ampicillin and streptomycin. A strain of *Escherichia coli*, with no known resistances, was used as a comparison. All five unknown bacteria were differentiated by Gram staining into two large groups, namely gram positive and gram negative; additional analysis further segregated the bacteria by their shapes (coccus, spirillum, or rod). The results of this experiment show that one out of the five unknown bacteria that we isolated is resistant to ampicillin (strain AS-CH-Y1), however, none of the unknown bacteria are resistant to streptomycin.

Turtlebacks, Pull-apart Basin, Strike-slip Faults in Death Valley

Ryan Hapeman – Department of Physical and Biological Sciences

Faculty Supervisor: Dr. Jacqueline Smith

Death Valley is the hottest, driest, and lowest basin in the United States. It is ~125 miles long with a NW-SE orientation, and at its deepest point is 282 feet below sea level. Many of Death Valley's characteristic features are the result of faulting. Strike-slip faults cause extension of central Death Valley, which is why it is so deep. Normal faults typical of the Basin and Range region take the form of "turtlebacks" in Death Valley: convex-upward fault surfaces that curve over the faulted mountains. We hiked into an eroded turtleback to see the ancient basement rocks in its core.

Desert Varnish: The Original Canvas

Everett Hart – Department of Physical & Biological Sciences
Faculty Supervisor: Dr. Jacqueline Smith

The petroglyphs of the American Southwest, specifically in Valley of Fire State Park, Nevada, were carved into stone surfaces by ancestral humans between 3,000 and 10,000 years ago. What we saw at many of these sites were numerous petroglyphs that were surrounded by desert varnish. Desert varnish is a paper-thin layer that is a combination of organic materials, clay, manganese oxides, and iron that coats the faces of rocks in areas where precipitation and erosion are minimal. Desert varnish blackens the rock surface and can be carved away in order to show the lighter rock beneath, creating the petroglyph.

Fourier Series

Danielle M. Heidcamp – Department of Mathematics
Faculty Supervisor: Dr. Jamal Teymouri

Jean Baptiste Joseph Fourier is best known for his work on the Fourier Transform from the publication of *The Analytical Theory of Heat*. Fourier's work has many applications such as partial differential equations, signal processing, quantum mechanics, and radio transmitting. The Fourier Transform represents a periodic function as a linear combination of sine functions and cosine functions. By using Euler's equation and Taylor series, this paper will set the foundations to understanding the Fourier series. This simplified version helps introduce the importance of the Fourier series with related example problems and graphs to support the evidence of the material.

Golden Ratio

Mackenzie Hemming, Danielle M. Heidcamp and Marisa Thorbjornsen
Department of Mathematics
Faculty Supervisor: Dr. Joanne Powers

The remarkable quality of the Golden Ratio is its ability to appear all around us. Long before it was a fascinating topic of discussion among mathematicians, its beauty surrounded us in nature and in art. This Golden Ratio or Golden Section can create the most aesthetically pleasing features in a simple rose or in a great work of art. Along with visuals of Fibonacci in nature, art, and various cultures; there is a comprehensive proof that the Fibonacci growth converges to Phi, or the Golden ratio. Today we can search for this wonderful ratio with a knowing eye, looking out for the harmonious proportion it is defined by.

"Selfies" and Other Posts on Social Media: The Implications for Intimate Relationships

Ashley Hoffman - Department of Psychology
Faculty Supervisor: Dr. Ann Zak

Investigations of online behavior and romantic relationships have centered on Facebook (Utz & Beukeboom, 2011). Some studies show that Facebook use predicts dissatisfaction and relationship jealousy (Elphinston & Noller, 2011), while others have found Facebook use associated with commitment and satisfaction (Bowe, 2010). Going beyond Facebook, we believed that "selfie" posts predicted less relationship quality, while similar partner posts predicted greater relationship quality. 132 members of romantic relationships completed measures of social medial use, satisfaction, and trust. Results partially confirmed hypothesis.

What will be the future of languages in America?

Ryan Hooper – Department of World Languages and Cultures
Faculty Supervisor: Dr. Erin Mitchell

Everybody knows that English is the main (official language) language of the United States; hence it is spoken by the majority of 300 million people who live there to this day. However, the future of foreign languages is on the verge of changing, causing English language to be taken over by languages that were once minorities like Spanish. The reason for my research is I wanted to see how aware Americans were that this change in language popularity is shifting from English to a language like Spanish. Also I wanted to see what their thoughts were about this change occurring.

Comparison of Fermentation Capability of Isolated Wild Yeast to Commercially Available Yeast

Mohammad Hussain and Clive Ricketts
Department of Physical and Biological Sciences
Faculty Supervisor: Dr. Kari Murad

Driven by the farm-to-table movement, a nearby distillery was interested in obtaining locally available or “wild” yeast strains for possible use in their commercial production. Previous studies in our lab focused on the isolation and initial characterization of five wild yeast strains from the skin of apples picked from the distillery’s orchard. The goal of this study was to examine the fermentation potential of these wild yeast strains in comparison to two commercially available yeast strains. Using a five-day fermentation set-up in apple juice, carbon dioxide, oxygen, ethanol and glucose levels were monitored for each yeast strain. Gas chromatography was then done at day 5 to determine more accurate levels of ethanol production.

The Role of Microbes in the Production of Coffee and Cocoa
Cailey Judge and Emily Riordan – Department of Physical and Biological Sciences
Faculty Supervisor: Dr. Kari Murad

Microbes play a major role in fermentation and therefore have a great impact on the production of many different foods. Two popularly consumed foods that are the direct result of fermentation are coffee and cocoa. In cocoa, a number of different fermentation pathways involving yeasts and acid-forming bacteria are responsible for giving cocoa its typical flavor and aroma. Unlike cocoa, the flavor and aroma of coffee is not dependent on the fermentation process but necessary to remove the pulp and mucilage from the bean – an important step in the process from bean to cup. The research presented here compares and contrasts the role of fermentation in these two food products.

Effects of MK-801 on Conditioned Taste Aversion, the Latent Inhibition Effect, and Memory Consolidation

Melanie L. Karow – Department of Psychology
Faculty Supervisor: Dr. Robert Flint

Conditioned taste aversion represents a well-known form of classical conditioning in which NMDA receptors appear to play an important role. Three experiments examined the effects of the NMDA antagonist MK-801 on conditioned taste aversion and the latent inhibition effects in rats. Results indicated that MK-801 induced a mild taste aversion, that CS pre-exposures attenuated this affect, and that MK-801 does not disrupt reconsolidation of the memory for CS pre-exposure.

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A Walk Through Time: A Geologic History of the Grand Canyon on the Bright Angel Trail

Rachel Kazda – Department of Physical and Biological Sciences
Faculty Supervisor: Dr. Jacqueline Smith

The rock layers of the Grand Canyon tell the story of the dynamic changes the region has endured throughout geologic time. The upper, horizontal layers tell vivid tales of tropical seas that have come and gone, immense mudflats, vast deserts filled with incredibly large sand dunes, and the histories of the organisms that once lived in the area. The lower rock layers of the Inner Gorge show evidence of volcanic eruptions, tectonic activity that raised mountains, and the powerful forces of erosion. Hiking through the Grand Canyon allowed me to experience these rock layers and their histories firsthand.

The Unsavory Truth: Isolation and Identification of Microbial Contents in Spice

Romia Khan – Department of Physical and Biological Sciences
Faculty Supervisor: Dr. Kari Murad

For years, spices have been used as traditional remedies as well as common household ingredients to enhance the aroma and flavor of foods. However, U.S Food and Drug Administration studies have shown that these spices harbor a risk of bacterial contamination. The purpose of this study was to identify bacteria in four common household spices: turmeric, cinnamon, black pepper, and curry powder. Using techniques such as bacterial counting and differential testing, our results showed that turmeric, black pepper, and curry powder all contained bacteria belonging to the genus *Bacillus*, while no bacterial contamination was found in cinnamon.

Perspective of Paper: A Literature Review of Henri Matisse's Paper Cut-Outs

Garrett Kipp – Department of Art
Faculty Supervisor: Dr. Lucy Bowditch

In January of 1941 Henri Matisse underwent two surgeries that mark the beginning of what he labeled as his “Second Life.” Matisse was bed ridden during this time and searched for a new way to “draw with color,” his answer was the paper cut-outs. As an already well-known sculptor and painter of the Modernist Era, Matisse’s paper cut-outs are the center of much debate among a wide variety of people, including art critics, curators, historians, patrons, and even doctors. My research compares and contrasts these analyses and provides important information regarding the life of Henri Matisse.

How do freshman/transfers of The College of Saint Rose feel about having a requirement of taking two of the same foreign language courses in order to graduate?

Samantha Kirincic – Department of World Languages and Cultures
Faculty Supervisor: Dr. Erin Mitchell

During this research, freshman and transfer students were asked how they feel about having to take two of the same mandatory foreign language classes in order to graduate even if you are not a foreign language major, minor, or concentration. A survey was given asking if the student thinks having to take two foreign language courses is necessary for students who are not studying a foreign language anywhere in their major and answer why they think this.

Chaos Theory and Fractals

Nicole Lassone, Enedina Maya, and Asia Tillery – Department of Mathematics
Faculty Supervisor: Dr. Joanne Powers

Chaos theory and fractals have attracted the interest of many mathematicians as a result of the development of technology. Chaos theory is the study of dynamical systems where an irregular isolation occurs with an emphasis on an initial condition. Fractals are “shapes containing self – similarity under repeated dilations” that have fractal dimensions. We researched the history, mathematicians involved, and the nature of chaos theory and fractals. Among the mathematicians discussed is the father of chaos theory, Henri Poincaré. Real-life examples are used to illustrate the content.

The Truth Behind Probiotics in Steeped Tea

Lina Libreros – Department of Physical and Biological Sciences
Faculty Supervisor: Dr. Kari Murad

Every day, there are more and more food products out on the market that are advertising the benefits of probiotics, but are you really getting your money's worth? Foods with living microbial cultures, such as yogurt, kefir, sauerkraut, and kombucha, all claim multiple health and digestion benefits. One product that caught our attention in our neighborhood supermarket was probiotic hot tea. To test the probiotic hot tea, serial dilutions and standard plate counts were performed on both hot and cold samples using aseptic technique. It was hypothesized that the probiotic nature of this tea would not survive steeping in boiling water (since most bacteria are killed by boiling water) and therefore demonstrated a case of false advertising. Our results supported this hypothesis, since cold water steeping showed more colony forming units (CFU) than hot water steeping.

Raoul Dufy's *La Fée Électricité* as a Historical Reference & Primary Example of Fauvist Art

Eden Loeffel – Department of Art
Faculty Supervisor: Dr. Lucy Bowditch

Created for the 1937 Exposition Internationale in Paris, Raoul Dufy's *La Fée Électricité* is an expansive, 60 meters by 10 meters, mural depicting electricity's pre-history, invention and application. It includes the portraits of many of the scientists and inventors who played a part in the discovery of electricity and exemplifies Fauvist Art. There is a distinctive use of color and line present, both of which embody Dufy's personal style. Raoul Dufy's *La Fée Électricité* is a monumental piece that not only acts as a historical masterpiece but also as a primary example of Fauvist Art and Dufy's personal style.

Analysis of *Moringa oleifera* Leaves and Seeds for Antimicrobial Activity

Jennifer Y. Lopez – Department of Physical and Biological Sciences
Faculty Advisor: Dr. Ann Zeeh

Moringa oleifera is a plant native to Northern India, Pakistan, Asia, Africa, and Latin America and has reported varied medicinal properties. Curiosity in the scientific field surrounding this plant has led to a variety of research. In this experiment, the antimicrobial activity of the seeds and leaves of *M. oleifera* was tested against *Escherichia coli* using the paper disc diffusion method. The minimum inhibitory concentration (MIC) at which antimicrobial activity was observed was 20 mg/ml aqueous extract of the seeds of *M. oleifera*. No antimicrobial activity was observed for aqueous extracts of dried or fresh leaves of the plant. The results of this experiment show that there is a degree of antimicrobial activity in *M. oleifera* seeds.

Counting CAG Repeats of the Androgen Receptor Gene on the Human X Chromosome

Lauren Mahoney – Department of Physical and Biological Sciences
Faculty Supervisor: Dr. Ann Zeeh

A variety of traits, including the second-to-fourth digit length (2D:4D) ratio, are thought to be a reflection of in utero hormonal influence. Furthermore, a smaller 2D:4D ratio has been linked to an increased athletic ability, higher spatial awareness, and greater cognitive ability. The hormonal influence in utero is believed to be governed by the androgen receptor gene on the X chromosome, which contains anywhere from 11 to 40 CAG repeats. Researchers suspect that the number of CAG repeats in the gene is negatively correlated with the sensitivity to testosterone in utero. Participants provided cell samples for DNA amplification, as well as information about their athletic ability and 2D:4D ratios. The sizes of the androgen receptor genes were measured and compared to the participants' 2D:4D ratio. While participants' 2D:4D ratios and athletic propensity are in agreement with literature reports, androgen receptor gene triplet repeats measured here do not support previous findings.

A Survey of Singers' Knowledge of Vocal Anatomy and Physiology

Drew Mancini and Kerry McNamara – Communication Sciences and Disorders
Faculty Supervisor: Dr. Jessica Kisenwether

The purpose of this study was to conduct a survey of singers' knowledge of vocal anatomy and physiology. One hundred and one undergraduate and graduate students currently enrolled in a music program with a voice concentration participated in the survey. Results showed that the singers did have some basic knowledge regarding vocal health, anatomy, and physiology; however, continued education is needed to ensure healthy singing practices. In particular, singers may benefit from education in respiration and phonation physiology, as well as an increased understanding of the speech-language pathologist's role in vocal health, especially when seeking treatment for vocal injury.

The Life and Legacy of Bessie Smith

Danielle Martinez – Department of Communications

Faculty Supervisor: Dr. Risa Faussette

The American City Project

During the Jim Crow era, African American Blues singers were often discriminated against based on the color of their skin. The late, great Bessie Smith, known as the Queen of Blues, was too dark to perform for Southern white audiences; however, racial segregation did not hinder Bessie from touring the South. She would become the highest paid blues singer of her time. She not only composed many of her own songs, but was also one of the first black musicians to record with a major record label. Bessie Smith inspired many musical artists in today's generation.

Death Valley Pupfish and Paleolake Manly

Amanda Marx – Department of Physical and Biological Sciences

Faculty Supervisor: Dr. Jacqueline Smith

During the Late Pleistocene (35-10 kyr ago), a deep, saline paleolake ~130 km long known as Lake Manly occupied Death Valley. Ancient shorelines carved by Lake Manly can still be found. The main inhabitants of Lake Manly were tiny pupfish (~4 cm long) which can survive wide ranges of temperature and salinity. Pupfish were important in tracking the history of Lake Manly. When Lake Manly began to dry out, lakes and springs were separated from the lake's network, leading to the evolution of pupfish trapped in isolated water bodies. In Death Valley today, four species of pupfish can be found.

A Break in the Earth: the Bright Angel Fault in the Grand Canyon
Rosemary McCormick – Department of Physical and Biological Sciences
Faculty Supervisor: Dr. Jacqueline Smith

The Grand Canyon has been shaped by a long, tumultuous history and hosts a wide variety of geological structures, most notably faults. It has experienced multiple sequences of uplift and erosion in the last two billion years, including the assembly and breakup of supercontinents. Basin and Range extension has also had a profound effect on the Grand Canyon, and the normal faults in the Grand Canyon continue to move. The Bright Angel Fault slices through 1.7 billion years of geologic history and allows hikers to note the mismatch of sedimentary rock layers on either side of this active normal fault.

Courbet's Controversy: A Burial At Ornans
Heather Megyesi – Department of Art
Faculty Supervisor: Dr. Lucy Bowditch

Due to the several views on Gustave Courbet and his 19th century painting “A Burial At Ornans,” it can be agreed upon that he caused an everlasting controversy among politics, religion and art. The colossal scale, the lack of composition, and the “ugly” representation of common folk in real life, Courbet without a doubt rejected everything taught by the Academy. This is supported with most all the literature on this subject. Summed up by Jack Lindsay in “Gustave Courbet: His Life and Art”: “No artist of high stature can have received so much abuse as Courbet did in his lifetime; the attacks were made not merely on aesthetic grounds, but saw him as a vile debaser of moral values as well.” Therefore, all authors could at least agree that Courbet’s radical realism greatly influenced modern art as well as immense debate and controversy.

Constantin Brancusi: A New Brand of Modernism

Jaquelyn Mendez – Department of Art
Faculty Supervisor: Dr. Lucy Bowditch

Constantin Brancusi was a Romanian-born sculptor whose artistic career took off once he moved to Paris, France. Many contemporary scholars and art historians call Constantin Brancusi one of the pioneers of modernism; but the artist never considered the same. Brancusi's role in the development of modern sculpture cannot be stressed enough. He is the first artist to explore the values of pure form which in contemporary sculpture is almost assumed. Through researching extensively, it is clear that Constantin Brancusi's body of work created a new model for modernism in relation to formal aesthetics, conceptual intent, and contextual basis.

Positive Impacts of Social Media Use in the Workplace

Shannon Mish – Department of Communications
Faculty Supervisor: Dr. Karen McGrath

Social Media are a growing foundation of networks that users can use to create, edit, evaluate, and share content on a world-wide scale. What started as a tool for personal interaction has developed and spread to a professional setting, allowing for businesses to more easily forge positive relationships internally and externally. This paper is a study of four smaller units under the umbrella theme of social media knowledge-sharing: the company's ability to build a consensus, the speed at which a company is able to operate, the strong relationships built, and how media advertising is boosting sales. Using these four core concepts, I will explore how social media positively impact the workplace.

The Effects of the Protein Synthesis Inhibitor Cycloheximide on Extinction and Reconsolidation in the Sand Maze

Mya Belle Mosher – Department of Psychology

Faculty Supervisor: Dr. Robert Flint

To examine the effects of effects of the protein synthesis inhibitor cycloheximide on extinction and reconsolidation, rats were trained to dig in a sand maze for reinforcement. After acquisition, reinforcement was removed from the maze, animals were injected with saline or cycloheximide, and 20 min later were allowed to explore the sand maze. Twenty-four hours later animals were returned to the sand maze for a non-reinforced retention test. Results indicated that animals learned the task well, but that cycloheximide had no effect on extinction or retention performance.

Riemann Sphere

Sevil Nakisli – Department of Mathematics

Faculty Supervisor: Dr. Jamal Teymouri

In this study, I described the Riemann sphere and stereographic projection. By using the extended complex plane, the complex plane plus a point at infinity, $\mathbb{C} \cup \{\infty\}$. I showed one to one correspondence between points on the sphere and the points on the complex plane, and the equations to find this corresponding points. In the second part of the study I introduced two examples. In the first example, given a point on the complex plain, I found the corresponding point on the sphere. In the second example, given the point on the sphere I found the corresponding point on the complex plane.

Sacred Geometry: A Study of Rotationally Symmetric Figures
Sevil Nakisli, Michael Burgess, Erica Watson – Department of Mathematics
Faculty Supervisor: Dr. Joanne Powers

In this study, we researched sacred geometry, focusing specifically on those figures with rotational symmetry. We cover 6 rotationally symmetric figures: the Triskelion, the Yin-Yang, David's Star, the Swastika, the Valknut, and the Flower of Life. In the first part, we explain the concept of sacred geometry itself, and then introduce the history and the sacred meaning of the six figures. In the second part, we use the program Geometer's Sketch Pad to explore the construction and geometry of four of these figures: the Flower of Life, the Yin-Yang, the Valknut, and the Triskelion.

Cyclic Groups with Respect to Music
Katherine O'Brien – Department of Mathematics
Faculty Supervisor: Dr. Mary Ann McLoughlin

There are many connections between mathematics and music. Specifically, the relationship between cyclic groups and common Western music theory is evident. Characteristics in mathematics that can be related to music include the properties of a group and generators of a cyclic group. Generators that were researched were found to produce many of the standard concepts used in musical composition throughout the common practice era. An in depth look at the twelve tones resulted in these structures.

Personality Indicators of Perfectionism as Predictors of Anxiety and Low Self-Esteem

Catherine O'Hearn – Department of Psychology
Faculty Supervisor: Dr. Nancy Dorr

The aim of the current study was to examine the extent to which perfectionism correlates with extraverted personality traits, experience of anxiety in daily life, and levels of self-esteem. Fifty-two college students completed self-report measures of perfectionism, extraversion, anxiety, and self-esteem. Results suggest that individuals who strive for perfection due to strongly perceived external pressures and a higher sensitivity toward criticism tend to experience greater degrees of anxiety in daily life. Suggestions for further research are discussed.

Literature Analysis of Jacques-Louis David's Political Art

Goodness Okoro – Department of Art
Faculty Supervisor: Dr. Lucy Bowditch

My research paper discusses the political repercussions of Jacques-Louis David's paintings before the French Revolution, his subjects and the role of women in his work. Further comparison is made with Cindy Sherman, a contemporary female photographer, who photographs herself, portraying women as objects, subjected to the scrutiny of men. René Magritte, a Belgian surrealist painter, painted a parody of David's work *Portrait of Madame Récamier*, replacing the subject with a coffin. The subtle implications behind the choices of these artists creates a complex connection between neoclassical and contemporary art.

Big Data Analytics

Jeff Palmer – Departments of Mathematics and Computer Science
Faculty Supervisor: Dr. Amina Eladdadi

Data creation has grown exponentially in recent years, not just in volume but also in the velocity at which it is created as well as the varying of types of data. Previous methods of management for this information have become antiquated and Big Data Analytics attempts to find a solution to this problem. The lack of data management creates a concern for security from the personal to national level and while a solution has yet to be reached, and uncertainty exists as to what Big Data actually is, there have been steps forward in possible solutions as well as some new technological possibilities.

Modern Art in Paris: Gustave Moreau "The Apparition" (1876)

Rita Papandrea – Department of Art
Faculty Supervisor: Dr. Lucy Bowditch

As professor at the École des Beaux-Arts in Paris, Gustave Moreau challenged the ossified conventions of 19th century academic painting and argued for a richer synthetic, ahistorical, inventive, literary and abstract approach to art. He aimed for a new kind of history painting that eschewed the limitations of the academic rules of historical painting. The self-professed “assembler of dreams” created a watercolor entitled “The Apparition” (1876), a layered, atmospheric composition of the beheading of John the Baptist that portrays Solome as the temptress responsible for bringing her mother Herodias’ revenge on him for protesting her marriage to Herod.

The Human Characteristics of Numbers
Tara Parker – Department of Mathematics
Faculty Supervisor: Dr. Mary Ann McLoughlin

We all know the basic characteristics of numbers such as even, odd, prime, composite, and so on. However, there are characteristics of numbers that we would not normally think of and may not even know exist. Numbers carry characteristics such as Happy, Weird, Narcissistic, and many others. These are what we would call “human characteristics,” and yet they are applied to numbers. The applications of these characteristics are based upon things such as symmetry, equations that can be found within the number itself, and so on.

Dance Craze: Changing Times in the 20's and 30's
Mariah Pasinski – Department of Childhood and Special Education
Faculty Supervisor: Dr. Risa Faussette
The American City Project

Night life had a song and dance! The Roaring Twenties and Great Depression Era saw a vast shift from the controlled grace of the Victorian Era. The rapidly blooming popular culture of the 1920's, filled with flappers and speakeasies, quickly seeped onto the dance floor with breathtaking dance sensations like the Charleston and Lindy Hop. This Dance Revolution, led by stars like Frankie Manning, had its critics who were similar to those of the hip-hop culture but that did not prevent the changing social atmosphere and values to make their way onto the dynamic dance floor.

Dietary Analysis of Food Advertising in Queensbury Grocery Stores

Katherine Pray – Department of Physical and Biological Sciences

Faculty Supervisor: Dr. Kari Murad

Chronic diseases continue to increase despite dietary advances. The objective of this study was to assess the quality of foods being advertised by five grocery stores in Queensbury, NY. Based on eight weeks of observations, 558 food items were analyzed according to two parameters: extent of processing and USDA food grouping. Overall, more than half of the foods advertised (52%) were highly processed, and only 24% of the foods were fruits or vegetables. In comparing the food groupings, it was found that the selected stores varied dramatically from one another in terms of advertised products. Additionally, when compared with the recommended dietary guidelines it was found that many stores were advertising foods that could contribute to the problem of chronic disease.

Teachers' Perceptions: The Shift to Common Core Learning Standards

Amanda Prinz – Department of Education

Faculty Supervisor: Dr. Christina Pfister

The purpose of this presentation is to share the results of a small scale study that looked at the teacher's perceptions of the Common Core Learning Standards. Results of my study indicate that regardless of grade level or the years of experience, participants feel uncomfortable with the new standards and believe their districts need to do more in the way of professional development.

Recipient of a 2013 Undergraduate Research Grant

Spanish and Galician Architecture

Heidi Proper – Department of World Languages and Cultures
Faculty Supervisor: Dr. Claire Ziamandanis

This project is about the architecture of Spain, especially the architecture of Galicia, a culturally rich region of Spain. Architecture in Spain has continued to change over time. For example, in 1236, Christian conquerors came to Córdoba, and the former "Mezquita," or Great Mosque, is now a church. The historical events of Galicia and Spain have had an important effect on the types and styles of architecture found there. Current events continue to have an effect on modern architecture. One new project in Galicia is an art center where artists want to show that Galicia continues to figure importantly in the culture of Spain.

Molecular Dynamics Simulations of Dilute to Supersaturated Aqueous Salt Solutions

Alexandria Remillard – Department of Physical and Biological Sciences
Faculty Supervisor: Dr. Brad Bauer

An abundance of theoretical and experimental research focuses on the behavior of ions in aqueous environments. This study contributes to this body of literature by utilizing molecular dynamics simulations to examine the molecular-level properties of aqueous salt solutions from dilute to supersaturated concentrations. Properties including partial molar volumes, radial distribution functions of ion-ion, ion-water, and water-water interactions are examined. Analyses focus on how and why these properties vary between different alkali halide solutions.

Brewing Beer: A Yeast Fermentation Experiment

Keri L. Robinson and Shanna M. Kenny

Department of Physical and Biological Sciences

Faculty Supervisor: Dr. Kari Murad

Today, brewing is a multi-billion dollar global business relying on carefully controlled environments. To see how the process of fermentation works in beer production, we brewed two different beers under controlled conditions using commercially-available yeast. Microbial data were collected during the entire process to monitor fermentation and potential contamination.

The Living Machine – A Greener Alternative to Wastewater Treatment

Keri L. Robinson – Department of Physical and Biological Sciences

Faculty Supervisor: Dr. Kari Murad

The Living Machine is a ‘greener’ alternative to wastewater treatment that makes water suitable for disposal into the natural environment or surrounding watershed. This method differs from conventional wastewater treatment in that it exclusively utilizes natural microbial processes instead of harmful and complicated chemical methods. To study this process, bacterial cultures were isolated and identified from each of the biological reactors in the Living Machine. The number of potentially harmful microbes was lower in reactors near the end of the system where water should have been cleanest, compared to wastewater just entering the system. This decreased bacterial load is representative of effective wastewater treatment.

Dirt! Did You Make My Lunch?

Jeanine Rodriguez and Jean Stella

Department of Physical and Biological Sciences

Faculty Supervisor: Dr. Kari Murad

The earth supplies both the abiotic and biotic conditions to grow and produce many different types of crops for food production. With only about 3% of the earth's land resources dedicated to food production and an ever-growing human population, agricultural research is always looking for ways to improve efficiency in order to feed the world. This study was conducted to compare and contrast three different methods of food production (conventional, organic, and hydroponic), in terms of land use, yield, and sustainability. Specific focus was given to the plant/microbe vs. plant/chemical nature of each of these methods.

Effects of Early Postnatal Acute Alcohol Exposure on Behavioral and Cognitive Performance in Adolescent/Young Adult Rats

Lauren N. Russo, Melanie L. Karow, Lindsey J. Noble, Mya Mosher, Rhea French and Robert W. Flint, Jr. – Department of Psychology

Faculty Supervisor: Dr. Robert Flint

Adolescent/young adult rats were administered a battery of tests after acute ethanol exposure at PN4 or PN12. Animals administered alcohol at PN4 showed anxiolytic effects in the elevated plus maze while animals exposed at PN12 showed hyperactive behavior in the open field. Despite these effects, animals showed intact environmental habituation, water maze performance, and beam walking. These results suggest a possible differential effect of early acute alcohol exposure on anxiety and locomotor activity in young adolescent/adult animals.

Women Leading the Way: Labor Reform After the Triangle Shirtwaist Factory Fire

Alicia Sherlock – Department of Childhood Education / Special Education
Faculty Supervisor: Dr. Risa Faussette
The American City Project

Female immigrants entering America in the late eighteen and early nineteen hundreds faced severe discrimination in the workplace. Limited employment opportunities forced these women to take jobs working in intolerable conditions. The Triangle Shirtwaist Factory Fire became a turning point for working women as it publicized unsafe working conditions, and led immigrant and native women to fight to put an end to the terrible conditions. These women are responsible for leading the labor reform that created labor laws that are still in effect today.

Prime Numbers and Benford's Law

Chelsea Siwik – Department of Mathematics
Faculty Supervisor: Dr. Mary Ann McLoughlin

Prime numbers are integers whose factors are one and itself. Benford's Law states that when looking at the leading digits of any data set, one will notice that the leading digit, 1, occurs more often than any other leading digit. Numbers with a leading digit of 1, according to Benford's law, should make up about 30% of the total number of points in the original set. This paper will link the connections between number theory and prime numbers; number theory and Benford's Law, and will also explore the question: Does Benford's Law apply to prime numbers?

Electricity in New York 1880s-1930s

Megan Sperry – Department of Psychology

Antonia Lazzara – Department of Childhood and Special Education

Faculty Supervisor: Dr. Risa Faussette

The American City Project

Thomas Edison patented the light bulb in the late 1870s and began to develop a system for electrical distribution in 1880 with the help of sponsors such as J.P. Morgan, a philanthropist, who competed with the gas companies of New York City and came out on top. Soon household appliance like clothes irons were replaced with cleaner, more efficient electric appliances. Fire risks decreased dramatically with the decline in the use of gas-powered lamps. Nonetheless, Edison was not without competition. George Westinghouse, a fellow inventor, proved to be a formidable opponent by challenging Edison's limitations. Westinghouse's reputation, however, was destroyed by J.P. Morgan when the latter spread false rumors about Westinghouse stock.

SLT vs. SLP: CSD Faculty Lead Program to Galway, Ireland. Spring 2014

Stephanie Staudle, Katie Schreiner, Kristin Whittaker, Erin O'Donnell, Chelsea DeStefano, Allie Willer, Alyssa Fumarola, Kaylee Sherwin, Ashley Spence and

Laura Flynn – Department of Communication Sciences and Disorders

Faculty Supervisors: Sarah Coons and Elaine Galbraith

A descriptive presentation of a CSD faculty lead program to Galway, Ireland during Spring break 2014. We compared clinical and cultural differences regarding the role of the speech language pathologist. We will highlight positive influences including clinic embedded learning, confidence learning, cyclical learning, and the clinic and academic settings. We will include the experience of traveling abroad and acknowledging the cultural differences and observations as they impact us as young adults, students, and future speech therapists.

Mater Christi School Public Relations Campaign

COM 471-The Agency "Mater Christi School Team"

Tinamarie Stolz, Project Lead; Meaghan Cahill, Talia Cass, Samantha Helbling

Schmitt, Joseph Lancelot, JR Pellant, Danielle Zadrma

Department of Communications

Faculty Supervisor: Rosemary Sheridan, Visiting Instructor, Communications

COM 471-The Agency takes on outside clients. Based on primary and secondary research, Agency students develop and execute public relations strategies, products and services that address client needs. One Fall 2013 client, Mater Christi School in Albany, engaged an Agency Team to develop a PR campaign to aid the school's recruitment efforts. The campaign was based on data gathered from an Agency-developed survey of school parents, interviews and site visits. Products and services delivered included: refreshing the school's social media; gaining media coverage for the school; and, in collaboration with COM 319 (a video production class), creating a 3-minute promotional video. The video has been posted on the Mater Christi website and YouTube and is used by the school at its Open Houses and other events.

"The effort of merging and flowing and creating rested on her:"

Community in Virginia Woolf's *To the Lighthouse*

Christopher J. Surprenant – Department of English

Faculty Supervisor: Dr. Catherine Cavanaugh

What is the place of woman, and how does one come to express it? This is one of the questions Virginia Woolf's 1927 novel *To the Lighthouse* poses. Through the Victorian matron Mrs. Ramsay and her young apprentice Lily Briscoe, Woolf's novel exposes the faults of the crumbling patriarchal structure during the early part of the twentieth century. As an outsider, Lily must come to terms with her role as a woman outside the expectations of the patriarchy and discover within herself a way of finding the same happiness that Mrs. Ramsay claims marriage and community will bring her, but on her own terms.

Important Religious Establishments on the Camino de Santiago

Leejun Taylor – Department of World Languages and Cultures

Faculty Supervisor: Dr. Claire Ziamandanis

The historical Camino de Santiago (The Way of Saint James) is the home of many important medieval religious establishments. People embarked on pilgrimages to Santiago; as a result, a growing number of sanctuaries were founded. In May, the journey from Burgos to Santiago de Compostela will take eight days to discover many important religious sites including a sixth-century monastery, a fourteenth-century Gothic church and the Romanesque structure of Cathedral de Santiago. The researcher focuses on the origin, the significance and the important events associated with these religious sites.

Género y el Camino: How Gender is a Factor along The Way of Saint James

Tess Thapalia – Department of World Languages and Cultures

Faculty Supervisor: Dr. Claire Ziamandanis

Using a survey of self-selecting volunteers, all of whom have completed the Camino de Santiago within the past ten years, the researcher will examine how participant's experiences differed based on gender, especially focusing on sexual harassment faced by the women. The researcher is also interested to discover how differently the women who traveled alone versus those who traveled with a group experienced the journey, as well as if the men noticed a marked difference in the way that women are treated in Spain versus their home country, if it is not Spain.

El Camino de Santiago: Galician Celebrations

Amanda Varno – Department of World Languages and Cultures

Faculty Supervisor: Dr. Claire Ziamandanis

The researcher will discuss the many festivals, rituals and practices celebrated within the unique Galician culture. Ranging from carnivals to farming festivals celebrating the spring, the researcher will display these pieces of the culture in photos depicting the attire worn, the food that is eaten and the rituals that are carried out in these events. The researcher will also discuss the significance of these celebrations to the great pilgrimage named the "Camino de Santiago" and the different routes "peregrinos" or pilgrims take to be a part of the celebration while on their journey to Santiago de Compostela.

Symmetries in Geometry

Maxwell Weaver, Nicoleen Winklerek and Scott Eric

Department of Mathematics

Faculty Supervisor: Dr. Joanne Powers

In our research we studied symmetry, particularly how symmetry is taught in schools and how symmetry exists in nature. Our research discusses the many different forms of symmetry that exist when teaching and when in nature, including radial, point, and plane symmetry. These symmetries are taught in many different ways in school, and these symmetries also surround us everywhere in nature. Symmetries in nature with an emphasis on the Fibonacci Sequence, human self-similarity, and animal gaits were explored in our research.

The Varying Views of Manet's *Le Déjeuner sur l'Herbe*

Marcie Whitcher – Department of Art
Faculty Supervisor: Dr. Lucy Bowditch

Literature written on *Le Déjeuner sur l'Herbe* ranges greatly because of its vague messages and the difference in modern artistic culture compared to that in the mid nineteenth century. The Salon des Refuses was seen as a double mockery for the 2,783 artists rejected from the regular Salon, a state-sponsored exhibition held in the Palais de l'Industrie. It was here that Édouard Manet presented *Le Déjeuner sur l'Herbe*. The painting was based off of Marcantonio Rimondi's engraving of *The Judgement of Paris* which was a lost drawing by Raphael. In *Le Déjeuner*, the scene depicts a nude woman gazing straight at the viewer with two dressed men on either side of her. She appears flattened out because her body contrasts with the background. In the background, a woman, painted too large in scale, is bathing in the river. This painting is considered a major contribution in art history but was frowned upon when it was first created.

El Camino de Santiago: Poemas a lo largo del viaje (The Way of Saint James: Poems along the Journey)

Lindsey Wiehl – Department of World Languages and Cultures
Faculty Supervisor: Dr. Claire Ziamandanis

El Camino de Santiago, or the Way of Saint James, is a very spiritual journey for most pilgrims that embark on the 800+ kilometer trek. Poems have played an integral role in the Camino. Explored in this project are poems that have inspired people to walk the Camino, poems that people have made during or after their experience on the Camino, or poems found along the Camino. This study is done on the connections and common themes found between the poems as well as differences between the artist's carefully chosen words.

Summer 2014 Undergraduate Research Grant Awardees

Jessica Lamoureaux

A Comparison of *His Dark Materials* and *Paradise Lost*

Rodney Schuyler

Manufacturing the Republic: Workers Charity, and Debates about Civic Inclusion in the Upper-Hudson Valley, 1787-1825

Rhea French

The Acute Effects of Delta-9-tetrahydrocannabinol in Adolescent Rodents

Lindsey Brooker

Frequency Altered Feedback on Voice and Fluency

Jennifer Gundrum

Computational Chemistry Studies of Salt Solutions

Jeanine Rodriguez

Frequency of Home Contamination with *Salmonella enterica*

Daniel Haglund

Comparison of the Female Mystics Julian of Norwich and Rābi‘a al-‘Adawiyya