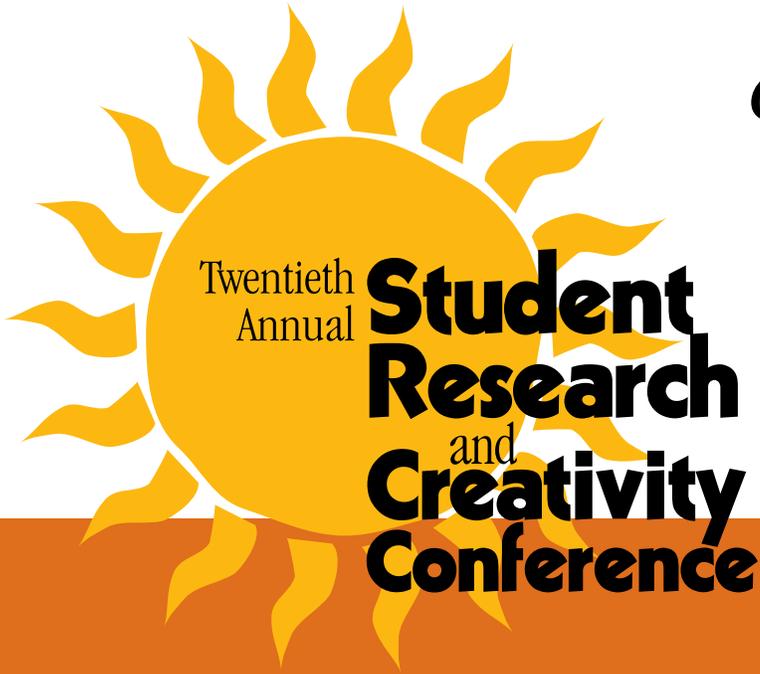
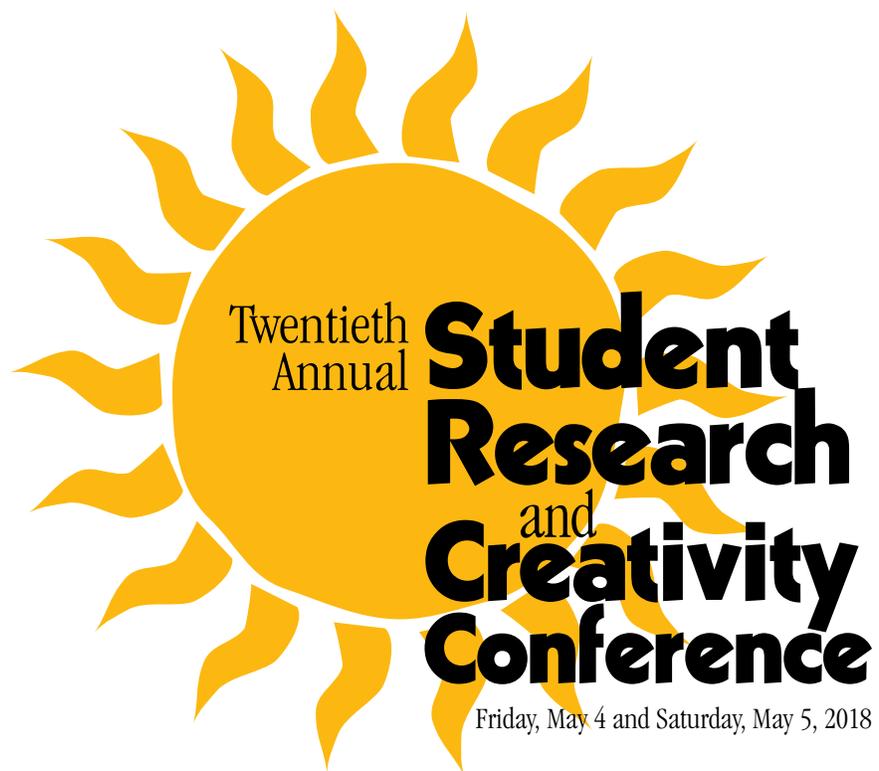


*Celebrating Discovery
Across the Disciplines*



BUFFALO STATE
The State University of New York



Editor

Jill Singer, Ph.D.

Director, Office of Undergraduate Research

**The following individuals and offices
are acknowledged for their many contributions:**

Donald Schmitter, Hospitality and Tourism, and students
in HTR 400: Catering Management

Bruce Fox, Photographer, RITE Creative Media Services

Bernadette Gilliam and Mary Beth Wojtaszek,
Events Management

Paul Smith, Audio Engineer, RITE Services

Department and Program Coordinators (identified below)

Sean Fox, Ellofex, Inc.

and very special thanks to:

Kaylene Waite, Graphic Design, RITE Creative Media Services

**Department and Program Coordinators for the
Twentieth Annual Student Research and Creativity Conference**

Lisa Marie Anselmi, Anthropology

Sarbani Banerjee, Computer Information Systems

Saziye Bayram, Mathematics

Carol Beckley, Theater

Lynn Boorady, Fashion and Textile Technology

Carol DeNysschen, Health, Nutrition, and Dietetics

Eric Dolph, Art and Design

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Reva Fish, Social & Psychological Foundations

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Jinseok Heo, Chemistry

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Lynne Scalia, Business

James Sobol, Criminal Justice

Gary Solar, Earth Sciences and Science Education

Carol Townsend, Art and Design

Mark Warford, Modern and Classical Languages

Robert Warren, Biology

Peter Yacobucci, Political Science

Jo Yudess, Center for Studies in Creativity

Kimberly Zittel-Barr, Social Work

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Welcome to the 20th Annual Student Research and Creativity Conference!

2018 is truly a special year of celebration for this wonderful forum as we reach a two decade milestone of showcasing the research and creative activities of some of the best and brightest student talent at Buffalo State.

The Student Research and Creativity Conference is an important tradition and certainly one of our premier vehicles to showcase student research and learning initiatives. Our student researchers have worked diligently with their faculty mentors to bring together research projects from all academic disciplines and in a variety of scholarly and creative formats.

It is through research that we acquire new knowledge, explore critical and timely problems and discover new approaches. We at Buffalo State College are proud of our efforts to cultivate stimulating and meaningful initiatives for our students to learn, grow, and develop into strong leaders and solid citizens. I congratulate and commend the remarkable students who are participating in this year's conference. I also thank the faculty mentors who work with such commitment and dedication to bring our students to this level of scholarship and creative work.

Again, welcome to all. I hope you enjoy the 20th Annual Student Research and Creativity Conference at Buffalo State College.

Katherine Conway-Turner, Ph.D.
President



Welcome to the 20th annual Buffalo State College Student Research and Creativity Conference! Over the last twenty years, Buffalo State has established itself as a national leader in undergraduate research under the leadership of Dr. Jill Singer. Over two decades, the undergraduate research program has developed from a relatively modest undergraduate conference to a fully integrated academic program central to Buffalo State's mission. Today, the Office of Undergraduate Research oversees multiple programs, including a summer research program, an undergraduate travel program, the Early Undergraduate Research Opportunity program, and a program that supports course-based research. Together, these research opportunities reflect Buffalo State's focus on academic excellence and commitment to providing an outstanding undergraduate education for all students.

Each year hundreds of students representing every discipline on campus gather to share their research and creativity with our community. The SRCC could not happen without the hard work of the students, faculty, and staff who have devoted their time and talents to this event. Congratulations, and thank you for your dedication.

Melanie Perreault, Ph.D.
Provost and Vice President of Academic Affairs

Welcome, everyone!

This weekend marks the 20th anniversary of the Buffalo State College Student Research and Creativity Conference. Reaching this milestone provides me with the opportunity to reflect on an event that has become an institutional tradition. The level of support and enthusiasm for this celebration of student research, scholarship, and creativity grows stronger each year. I gratefully acknowledge the enthusiastic commitment to this event by the Buffalo State administration. And I deeply appreciate the efforts of all the individuals and offices that help make this event successful each and every year.



The quality and breadth of the presentations and displays confirm the excellence of the mentoring provided to Buffalo State students by their dedicated faculty members. It also speaks to the myriad opportunities afforded to students and to their strong desire to forge new knowledge, ideas, and works of art.

Since the program's inception, the world has undergone many advancements in technology. Likewise, we have transitioned from paper applications to electronic submissions and from conventional posters to large-scale digital presentations, designed by students through the use of poster templates. In 2016, we moved the SRCC schedule to an online-only format, and last year, the SRCC program followed suit, saving both money and trees by "going green." We now present the program as a digital viewbook that allows you to turn the pages as you would a printed program.

Between 1999—the year we first launched this campuswide research conference—and 2018, over 4,800 abstracts and artist statements have been authored or coauthored by close to 8,000 students; however, it is not the advances in technology or the metrics that best define the impact of this program. It is the difference the program makes in the academic experiences of the students who have presented at this event over the years and the accomplishments they have gone on to achieve.

In addition to the students and mentors participating in this 20th annual celebration, past recipients of our summer research program are also attending the opening reception and attend, talks, and poster presentations on Saturday. Profiles of more than 40 summer research alumni can be found on the Buffalo State and Undergraduate Research websites.

It has been a tremendously rewarding 20 years, and I have derived great joy and satisfaction from developing this program that has been embraced by the campus community. The inclusion of students across all academic disciplines places Buffalo State among those institutions that value the teacher-scholar model and consider undergraduate research as a high-impact educational practice. Undergraduate research challenges students to pose and answer meaningful questions, enlivening the intellectual climate on our campus and stimulating discussions and collaborations within and across disciplines. In sum, undergraduate research is one of the best ways to engage all students.

So please join the conversation! I hope you enjoy listening to and meeting the student presenters at this year's SRCC. I am certain you will be impressed by the diversity and quality of their presentations. Thank you, as always, for attending this year's event and for supporting our student presenters and their faculty mentors.

Enjoy the program!

Jill Singer, Ph.D.

Professor of Earth Sciences

Director, Office of Undergraduate Research





The 20th annual Research and Creativity Conference is one of the highlights of the academic year at SUNY Buffalo State. It provides our students the opportunity to showcase their scholarly and creative accomplishments. The work displayed at the conference attests to our faculty's commitment to mentoring and our students' commitment to engaged learning. As research and scholarship are critical parts of the graduate education experience, the Graduate School is honored to support this work. Congratulations to all those contributing to this inspiring event. I also offer sincere appreciation to all faculty and mentors for their contributions to our students' success. Special thanks to Dr. Jill Singer for her passionate leadership and for organizing the Research and Creativity Conference, now in its 20th year!

Kevin J. Miller, Ed.D.
Interim Dean, The Graduate School

Welcome to the annual Student Research and Creativity Celebration, our twentieth consecutive year of national leadership in student scholarship! It is a delight to share the exceptional scholarship and creativity of our talented students at this Buffalo State hallmark event. Our nationally and internationally recognized faculty of the School of Arts and Humanities inspire and mentor student exploration of the diversity of scholarly pursuits available in the arts and humanities and beyond. On behalf of the School of Arts and Humanities, I am very pleased to congratulate all participants.

Benjamin C. Christy, A.Mus.D.,
Dean, School of Arts and Humanities



Recent events played out in the public "laboratory" known as our schools have given us all a heightened awareness of the urgent need to ask more questions, seek real answers and use our intellect and professional acumen for the promotion of social justice and the advancement of civilization. The responsibility for the future of humankind is truly embodied in our children. As the School of Education at Buffalo State represents almost 150 years of excellence in teacher education, we find renewed purpose for our research done in schools with children and adolescents, parents, families, care-givers and teachers. The best evidence of great teaching has always been profound learning. In today's demonstrations, we see exactly how that looks. Congratulations to student presenters and faculty mentors!

Wendy A. Paterson, Ph.D.,
Dean, School of Education

Congratulations to the students and their faculty mentors taking part in the 20th annual Student Research and Creativity Conference! The fact that this is the twentieth of these annual celebrations demonstrates Buffalo State's dedication to engaging students in research, and I am very pleased that you are able to be a part of this milestone event. I offer a warm welcome to students, guests, and faculty to this showcase of the outstanding research and creative work of Buffalo State undergraduate and graduate students.

Mark W. Severson, Ph.D.,
Dean, School of Natural and Social Sciences



On behalf of The School of The Professions, congratulations to all the student presenters participating in the 20th annual Student Research and Creativity Celebration! This wonderful event highlights the outstanding work done across our many different academic programs, and we are proud of the research you have done this year. We applaud you on achieving this significant academic accomplishment, and your work is inspiring to us all. Thanks also to the faculty mentors that encouraged and supported these students.

Rita M. Zientek, Ph.D.,
Interim Dean, School of The Professions

Recipients of Undergraduate Summer Research Fellowships in 2016

TJ Adeniji, Computer Information Systems
Faculty Mentor: Professor Sarbani Banerjee, Computer Information Systems
Title: **FoodWeb: An App to Reduce Food Waste**

TJ Adeniji is graduating in May 2018 with a B.S. in Computer Information Systems. After graduation he plans to seek employment in the area of Software Engineering.

For his research project TJ has designed and developed both the front-end and the back-end of the login screen for the FoodWeb App. He also wrote the password recovery program for this App. Using Angular 2, Node.js, and Postgre SQL he developed different parts of this App project. TJ plans to submit his work at the 23rd annual conference of the Consortium for Computing Sciences in Colleges, Northeastern Region (CCSCNE) in Manchester, New Hampshire.



Kazz Archibald, Biology
Faculty Mentor: Professor Robert Warren, Biology
Title: **Do Non-native Ants Eat Themselves to Carrying Capacity?**

Kazz is a Biology major planning to graduate in Spring 2017. Kazz is interested in all areas of biology and ecology and his goals include attending medical school.

Kazz's research in invasive ants includes preliminary findings suggesting that the non-native *Myrmica rubra* ants undergo unrestrained population growth during the summer until they draw down food resources and undergo a population and health crash. Kazz presented his research at the Rochester Academy of Sciences in November 2017.



Elaina Bolles, Public Communication
Faculty Mentor: Professor Seth Oyer, Communication
Title: **Crisis Communication in the Airline Industry**

Elaina Bolles is a public communication major that will graduate in spring 2018. Her interests are in public relations and she is planning to work in the Buffalo area in the field after graduation.

Elaina analyzed the crises communication plans of United Airlines flight 3411 and Air Asia flight QZ8501. Research results revealed United Airlines CEO lacked consistent messaging, timeliness, and accuracy. Air Asia CEO employed the International Air Transport Association (IATA) best practices of visibility, responsibility, and timeliness. Case studies were conducted and Elaina identified improvements in IATA best practices for future crises.



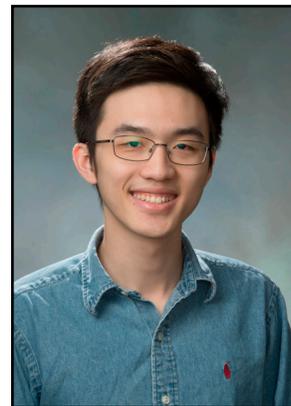
Huangpu Chen, Electrical Engineering Technology

Faculty Mentor: Professor Jikai Du, Engineering Technology

Title: **Scattered Electric Power Conversion – Door Generator**

Huangpu Chen is a double major in Electrical Engineering Technology: Electronics and Smart Grid. He plans to pursue graduate study in Electrical Engineering.

Huangpu designed a door generator for scattered electric power conversion. He compared various electric generators and ratio wheel systems and then designed with AUTOCAD software an optimized 7:1 ratio wheel system and tested it with electric generator. He also designed the mechanical connection between door and generator.



Christina Chilberg, Ceramics

Faculty Mentor: Professor Colleen Toledano, Art and Design

Title: **Connecting Through Clay**

Christina Chilberg is a Ceramics major and graduated with a B.F.A. in December 2017. After graduation, her plans are to continue participating in activist work and to pursue a career in young childhood education.

Christina traveled to Chicago to work with activist groups to create protest art and volunteered with childcare during rallies where she lead art projects with the children. Christina learned how to make activism part of her studio practice and artwork. She created ceramic sculptures that were inspired by her experience. She would like her work to educate the viewer on social issues and injustices while having a dialogue with activists.



Lucas Colon, Fiber Design

Faculty Mentor: Professor Jozef Bajus, Art and Design

Title: **Landscape Inspired Tapestries**

Lucas Colon is a Fiber Design major with a minor in Theatre. He will graduate with a B.F.A. degree in May 2018. His plans are to attend graduate school and hopes to pursue his studio practice at a professional level in fibers and theater field.

Lucas traveled to Vancouver to seek inspiration in the surrounding natural beauty. He translated his experiences into several woven and mixed media pieces that combine weaving using a floor loom, screen printing, dyeing and other mixed media techniques. Lucas created three small final tapestries and one larger intricate artwork using knitted cable technique. His experiences from the travel and weaving served as the theme of his solo exhibition “Woven Wilderness” displayed in the E.H. Butler Library in Fall 2017.



Jennifer Crowley, Sculpture

Faculty Mentor: Professor Ken Payne, Art and Design

Title: **Art and Textiles**

Jennifer Crowley is majoring in sculpture and will graduate in December of 2018. She hopes to pursue her work as a professional studio artist and graphic designer.

Jennifer made major progress in the development of her aesthetic style and solved technical problems regarding the stability of her finished work. Jennifer completed a large body of successful work in textiles and experimented in composition and the use of color. Jennifer exhibited one of her works in the Cooperstown Art Association 82nd Annual Juried exhibition.



Sara Deer, Mechanical Engineering Technology

Faculty Mentor: Professor Ram Rai, Physics

Title: **Deposition of Hexagonal HoFeO₃ Thin Films by Magnetron Sputtering**

Sara Deer is a Mechanical Engineering Technology major, Mathematics minor, and will graduate in 2019. After graduation, she plans to find a job in industries.

For her research, Sara prepared HoFeO₃ compound using a solid state reaction and fabricated hexagonal HoFeO₃ thin films on single crystal c-axis sapphire and (111) yttrium-stabilized zirconia substrates using Magnetron Sputtering Deposition. Sara successfully deposited the hexagonal HoFeO₃ thin films and characterized them using x-ray diffractometer, atomic force microscope (AFM), and optical spectroscopy. The energy band gap of the hexagonal HoFeO₃ was measured to be ~3 eV from the absorption data.



Marc Dudley, Biology

Faculty Mentor: Professor Martha Skerrett, Biology

Title: **Understanding the Structure and Function of Invertebrate Gap Junctions Using Site-Directed Mutagenesis**

Marc Dudley is a Biology major with interests in cell biology and biochemistry. Marc will graduate in May 2018 with Departmental Honors and a minor in Chemistry. Starting in the fall, Marc will be attending the University of Buffalo Law School Juris Doctorate Program.

Marc's project involved the study of invertebrate gap junctions at the molecular level. Specifically, site-directed mutagenesis was used to modify the gene sequence of the innexin ShakingB (lethal) in order to better understand the role of the carboxyl terminus in pH sensitivity.



Kaitlyn Malinowski, Painting

Faculty Mentor: Professor Lin Jiang, Art and Design

Title: **Celebration and Documentation of the Polish Heritage of Western New York**

Kaitlyn Malinowski is a B.F.A. painting major and is graduating in May 2018. She plans to pursue an M.F.A. in painting.

Kaitlyn identified and highlighted the achievements and efforts that Polish Americans had on the community of Buffalo, New York. She used this motivation to complete eight paintings to celebrate and document the WNY Polish heritage. Her paintings include four landscapes of major historical landmark architecture designed by local Buffalo Polish architects for the local Buffalo Polish communities and four portrait paintings of selected individuals from the Polish community who have made major contributions to the society. One of Kaitlyn's paintings has been included in a national juried exhibition in Chicago.



Anthony Marino, Forensic Chemistry

Faculty Mentor: Professor Jinseok Heo, Chemistry

Title: **Synthesis of Monodisperse Gold Nanoparticles with an Average Diameter of 70 nm**

Anthony Marino majors in forensic chemistry and is graduating in May 2018. Anthony plans to go to a graduate school in the interdisciplinary field of biology and chemistry.

Anthony examined several methods of synthesizing a uniform size of gold nanoparticles with a 70 nm diameter from gold chlorides. He discovered the seed-mediated growth synthesis of gold nanoparticles was the most promising one. He presented a part of his research in the 255th American Chemical Society National Meeting in March 2018.



Victor Morales, Geology

Faculty Mentor: Professor Gary Solar, Earth Sciences

Title: **Structural Study of Deformed Migmatites and Granites in the Norumbega Shear Zone, Coastal Maine**

Victor is an Earth Sciences (concentration Geology) major graduating in May 2018. He plans to attend graduate school in Geology.

Victor documented the deformation recorded in rocks that were at the edge of ancient North America approximately 300 million years ago, but now exposed in coastal Maine. Victor measured the minimum strain in the rocks using elliptical boudins. He presented at the Geological Society of America Northeastern Regional annual meeting in Burlington, VT in March 2018.



Meegan Petrucci, Criminal Justice
Faculty Mentor: Professor Robert Delprino, Psychology
Title: **Support Services for Law Enforcement**

Meegan Petrucci is a Criminal Justice major with minors in both Psychology and Deviance. She graduated in December 2017 and plans to go on to earn a master's degree in social work. Ultimately she would like to work for the National Center for Missing and Exploited Children as a Forensic Case Manager.

Meegan's research focused on the assessment of law enforcement officers' utilization and awareness of support services provided to them by their departments. Results indicated that agency size and population served may influence officers' awareness and use of services. Also officers who reported having fewer issues with the potential use of services identified comparatively less work-family conflict.



Shelby Priester, Biology
Faculty Mentor: Professor Amy McMillan, Biology
Title: **An Estimate of Canopy Cover and Habitat Preferences in Captive-released Eastern Hellbenders**

Shelby Priester is Biology major in the Integrative Biology track. She is graduating in May 2018, with a B.A. in Biology and a minor in Philosophy. She is interested in graduate school or work at a state or federal agency after she graduates.

Shelby's research involved characterizing the habitat use of hellbender salamanders that were released as part of a conservation initiative to increase their populations in the Allegheny Drainage. Shelby assisted in the release of these animals into cages or directly into the stream and tracked them using radio telemetry.



Emma Roberts, Communication Design
Faculty Mentor: Professor David Derner, Art and Design
Title: **Italian Renaissance and Baroque Painting**

Emma Roberts is a Communication Design major with a Painting minor graduating in Spring 2020. Her academic interests are to continue and master the art of oil painting. Her future plans are to continue in Graphic Design work and painting.

Emma gained a better understanding of the techniques and aesthetics involved with painting. She learned the difficulties presented with painting in a style influenced by the artists of the Renaissance and strategies for solving them. Her works were displayed at 'Beary Good Juice and Eatery' in Amherst.



Kelly Rosenfeld, Graphic Design
Faculty Mentor: Professor Stan Friesen, Art and Design
Title: **Take A Second Look**

Kelly Rosenfeld is a Graphic Design major anticipating graduation in Spring of 2019. Her interests at this point are broad and include illustration, photography, and branding and corporate identity development.

Kelly's research involved the design of an online survey that educated consumers about ethical/unethical business practices and the actual ingredients in the various drinks. She developed parallel advertisements based on the high profile company advertisements and created a survey that gauged responses to the products after product knowledge was provided. Results included demonstrating that consumers would be willing to pay more for healthier products.



Dan Schleyer, English
Faculty Mentor: Professor Christopher Shively, Elementary Education and Reading
Title: **From Camp Counselor to Teacher: Inferring Dispositions From Narratives**

Dan Schleyer is an English education major and will graduate in December 2018. Dan will be pursuing a teaching job and opportunities to work with students in various art programs.

Dan's qualitative research study examined a collection of narratives told by five veteran teachers. Thinking dispositions were inferred from the narratives and one common disposition emerged. Dan was able to identify the degrees of the disposition: teachers care about the dignity and worth of every person.



Lonijae Simonton, Ceramics
Faculty Mentor: Professor Robert Wood, Art and Design
Title: **A Ceramic Study of Teratology and Other Prejudices**

Lonijae Simonton is a Ceramics major with a minor in Art Therapy. She graduated with a B.S. degree in Ceramics in December 2017, after which she plans on furthering her education by pursuing a Masters in Art Therapy.

For her project, Lonijae traveled to a number of museums and historical sites across the eastern half of the country to research events where communities demonstrated prejudice against individuals or groups of individuals because of physical, mental, religious, or socio-economic differences. From those research findings, she created a series of figurative clay sculptures based upon the ostracization of individuals or groups, drawing attention to the transgressions imposed upon them.



Samantha Stanford, Psychology

Faculty Mentor: Professor Pamela Schuetze, Psychology

Title: **The Association Between Prenatal Cigarette and Marijuana Exposure and the Regulatory Processes of Kindergarteners**

Samantha Stanford is graduating as a Psychology major with a minor in Sociology in May 2018. She has been awarded a 2017 Chancellor's Award for Student Excellence and will begin her graduate career at a doctoral program in school psychology with an emphasis on applied behavioral analysis in the fall. She would like to secure a position in the field that allows her to pursue research and treatment of autism spectrum disorder.

Samantha's research was part of an ongoing longitudinal study examining the association between prenatal tobacco exposure and regulatory processes in children. She spent her summer learning how to code observational data, achieve reliability with other raters and was able to code all of the paradigms for the full group of kindergarteners in the sample (n=251). She continued this research for her honor's thesis examining the direct and moderational effects of prenatal tobacco/marijuana exposure and other risk factors on regulatory processes among the children.



Stephen Thompson, Biology

Faculty Mentor: Professor Derek Beahm, Biology

Title: **Cell-Cell Communication During Hypotonic Stress**

Stephen Thompson is a Biology major with a concentration in Biotechnology. He is graduating in Spring of 2018 and will pursue graduate studies in the field of molecular and cell biology.

Stephen investigated the effects of osmotic challenges on gap junction mediated cell-cell communication in mammalian cell cultures. He discovered that cell swelling did not cause an appreciable change in the extent of cell communication in HeLa cells expressing the gap junction protein Cx43, but also observed communication to be sporadic under control conditions. He continues his work for intended publication, expanding into different cell lines and investigating conditions that modulate the efficiency of gap junction formation.



Allison Torsey, Applied Mathematics and Physics

Faculty Mentor: Professor Saziye Bayram, Mathematics

Title: **Stochastic SIRI Model of Opioid Abuse**

Allison Torsey is an Applied Mathematics and Physics major. She will graduate with a B.S. in Applied Mathematics and a B.A. in Physics in May 2019, after which she plans to attend a graduate school with a program in Mathematical Biology.

Allison began her research topic in opioid abuse in Spring 2017 as a capstone research project in the Mathematics Department with Dr. Saziye Bayram and continued her research by expanding her model to be a stochastic model that analyzes opioid abuse in Erie County, NY. She created her algorithm using MATLAB software and obtained computer simulations that provided data on how opioid use would progress in the region. Allison presented at the Penn State Behrend Sigma-Xi Undergraduate Research Conference in April 2017 and received the second-place oral presentation award in the mathematics session. She also presented her work at the Joint American Mathematical Society and Mathematical Association of America (JMM) Conference in San Diego, CA. This is the world's largest Mathematics conference and Allison was the only undergraduate student presenting in the panel.



Julio Valentin, English

Faculty Mentor: Professor Barish Ali, English

Title: **Latin@ Poet on the Road**

Julio Valentin is an English major with an anticipated graduation date of December 2018. After graduation he plans to go on to graduate school for English or Creative Writing.

Julio embarked on a poetry tour to help him understand the perception of Latino poets in disparate parts of the United States. Julio found that Latino poets experienced similar themes of systematic oppression and racism and misunderstanding. Based on his experiences, Julio is planning to organize various Latin@ writers groups and a poetry commune to develop their voices as writers.



Emily Waldron, Psychology

Faculty Mentor: Professor Stephani Foraker, Psychology

Title: **Love and Lust: Relationship perception based on eye fixations**

Emily Waldron will graduate in May 2018 with a B.A. in Psychology. She plans to attend graduate school and pursue a career in School Psychology.

Emily's research examined how people's eye fixations differ when perceiving romantic love compared to sexual desire in couples that are homosexual or heterosexual. A main finding was that we tend to look at faces more for romantic love scenes, and at the body areas relatively more for sexual desire scenes. Emily is a co-author on a journal article currently in preparation.



Nolan Wall, Philosophy and Psychology
Faculty Mentor: Professor Leigh Duffy, Philosophy
Title: **Sartre and the Sciences**

Nolan Wall is a Philosophy and Psychology major who hopes to combine his interests in both fields by pursuing a Masters degree in Existential-Phenomenological Psychology.

Nolan's study focused on Sartre's conclusions in "Being and Nothingness" about human nature and free will and compared them to what modern psychological research has discovered about the two. He discovered that while the conclusions from the different fields might seem to be incompatible and contradictory, a deeper understanding of what Sartre was trying to describe about what it's like to be human shows that Sartre's conclusions are not necessarily contrary to those of modern psychology.



Weng Yu, Electrical Engineering Technology
Faculty Mentor: Professor Ilya Grinberg, Engineering Technology
Title: **Elderly Support System: Embedded Monitor and Alert**

Weng Yu is an undergraduate student in Electrical Engineering Technology majoring in Electronics and Smart Grid. He will graduate in May 2019. He plans to attend graduate school and pursue a career in cyber-physical systems.

Yu's research investigated sensors, a microcontroller, and communication processor to design a system that automatically notifies family members and/or medical professional if parameters are out of norm. Several subsystems were assembled and tested to determine their feasibility.





Arts

An American in Paris: Gershwin and 20th Century France

Julianne Beiter, MUS 303: Music History 2
Faculty Mentor: Professor Carolyn Guzski, Music

Gershwin's *An American In Paris* is a prime example of musical expression inspired not only by the 1920s, but prior eras as well. Gershwin drew on musical influences from sources as diverse as symphonic composer Johannes Brahms and the musical theater composers of his own time. Gershwin's celebrated orchestral piece, written in 1928, features jazz and blues harmonies that the composer heard during a trip to Paris in the summer of that year. Based on his experience of 1920s Parisian culture, the piece tells its story through the eyes of an American tourist, depicting the French city that never sleeps through diverse musical elements. Gershwin demonstrates his mastery of orchestration through the use of distinctive instruments to demonstrate aural aspects of Parisian culture; he uses, for example, the trumpet to represent the taxi horns of Paris. Evidence of Gershwin's wide historical influences are also present, such as the idea of creating a musical narrative, much like Berlioz's *Symphonie Fantastique*. *An American in Paris* also features elements of popular art forms of America's Jazz Age that were exported to Europe. Gershwin's music thus demonstrates transatlantic artistic culture of the twentieth century.

Art in Textiles

Jennifer Crowley, Sculpture
Faculty Mentor: Professor Kenneth Payne, Art and Design

As an artist, I want to create evocative work that solicits an emotional response from the viewer. I first needed to understand how this response was achieved by other artists. I traveled to galleries and museums in Washington, D.C. to carefully study the works of Louise Bourgeois and Magdalena Abakoniwicz. I began to understand the colors, tones, and texture of their work. It communicated to me on many different levels and I made an important discovery about my work. I should create works that elicit a response in me and not worry about whether or not others like it. When I create pieces that are from within me they have a stronger energy. I turn the surrounding environment 'off' and allow my hands to transmit the energy I feel. I use elements and principles of design to explore composition to produce works using primarily textiles and color to bend, fold, and manipulate space. An example of this is my large sculptural piece composed of fabric, lace, and casein glue.

The piece is a culmination of my experimentation in both process and form and uses dyed fabric the way a painter uses a brush stroke. It relies on its simple strong color and sweeping gesture to create its aesthetic presence. The red color exerts a powerful pull on the viewer as the movement sweeps across the wall in front of them. As the view follows the movement they find an unexpected delicate lace element that brings their eyes to rest at the terminus of the gesture. As I overcame technical challenges to create my pieces, I have grown more aware as an artist that if I create the art from within myself I succeed in soliciting an emotional response from the viewer.

Bamboula: Looking into the Innovative Life of Gottschalk

Emily Abbey, MUS 303: Music History 2
Faculty Mentor: Professor Carolyn Guzski, Music

Louis Moreau Gottschalk (1829-1869) was among America's most innovative composers of the nineteenth century. Born in New Orleans, Gottschalk was a piano virtuoso who wrote works for his own concert use that were also highly evocative of the Creole culture of his time. My project analyzes the brilliant *Bamboula* (1844) for piano solo. Subtitled "Dance of the Creoles," the composition uses African-derived rhythms commonly heard in the popular Congo Square venue for outdoor entertainment in the city's French Quarter. The composer was progressive in his use of rhythmic structures throughout the work, which continues to fascinate modern listeners. Gottschalk scholar Carl Lindstrom thought that the composer "created nostalgia for the people of New Orleans." Yet *Bamboula* retains typical stylistic elements of the Romantic piano repertoire as defined by Chopin. Gottschalk's infusion of ethnic cultural elements reflected the global character of the New Orleans of his day while remaining true to his European musical training.

Art in Textiles: The Exploration Continues

Jennifer Crowley, Sculpture
Faculty Mentor: Professor Kenneth Payne, Art and Design

My exploration of self-discovery as an artist is ongoing. I explored textiles in terms of their ability to be shaped without losing purity or intent. I also explored various dyes to discover intense emotive colors that lent themselves to the flow of the fabric used in the spatial illusions found in my free standing work - a 16" in circumference and 27" high piece composed of string dyed blue and stiffened with casein glue - that seems to defy gravity. The piece uses unraveled stands of burlap to make drawings in space that describe the outline of an absent form. These forms are intended as

models for work on a much larger scale that the viewer might actually walk into and experience the interior space.

Beethoven Tempers “The Tempest”

Anthony Urena, MUS 303: Music History 2

Faculty Mentor: Professor Carolyn Guzski, Music

Beethoven’s Sonata in D minor, op. 31, no. 2 (“Tempest”) is among his greatest sonatas for solo piano. The “Tempest” (1801) reflects the character of Beethoven himself and his mastery of the art of musical composition. Yet many scholars have argued over the complexity of this sonata, as well as the attribution of its descriptive title. Listeners continue to debate whether the sonata was named after Beethoven’s reference to a performance of Shakespeare’s *The Tempest* or whether the title simply reflects the music’s evocation of a dramatic storm. Analyzing and interpreting Beethoven’s art is particularly difficult in this work, as its formal structure and definition of principal themes are still debated. The sonata is in three movements, but I focus on the first movement and how Beethoven broke Classical sonata-form rules and even enhanced compositional technique of the time to create the work. Some examples are the inclusion of a prelude before the main theme and the “not so clear” first theme. My goal is understanding how Beethoven advanced the Classical style in music and inspired future composers.

Beethoven’s Fifth

Derek Jenkins, MUS 303: Music History 2

Faculty Mentor: Professor Carolyn Guzski, Music

My project investigates artistic meaning in Beethoven’s celebrated Symphony no. 5, op. 67 (1807). Just as with Beethoven’s final Ninth (“Choral”) Symphony, the C-minor Fifth Symphony is among the best known orchestral compositions of the era. I analyze the interplay of melodic, rhythmic, harmonic, and formal structures in the work. Among the composers of his time, Beethoven was a master of musical elements, and the Fifth Symphony expresses them in a distinctly compact form. I also examine sketches of Beethoven’s initial ideas and realization of the opening of the work, which reveal the overarching artistic goals he wished to accomplish in it. I employ contemporary published critiques in addition to score analysis of Beethoven’s orchestration to gain further insight into genre and style in the Classical era. My goal is to learn what inspired him to compose music of such impact.

Beethoven’s Masterpiece

Peter Stadelman, MUS 303: Music History 2

Faculty Mentor: Professor Carolyn Guzski, Music

Beethoven’s Symphony No. 9 in d minor, op. 125 is arguably the greatest symphony ever written. Composed between 1822 and 1824 during his late period, it is almost universally considered to

be Beethoven’s masterpiece. The composer had been completely deaf for nearly twenty years by the time the symphony was premiered, but his genius is reflected in the work. The symphony is considered to be a metaphorical journey of darkness into light. The first movement is a dark allegro, and does not even hint at the “Ode to Joy” theme pervasive in the fourth movement. The second movement is a scherzo, but hints at the Joy theme. The third movement Adagio is beautifully expressive in the key of A flat major. The finale begins just as the first movement; however, the main theme modulates from d minor to the parallel major key of D major. Like the finale of Beethoven’s Fifth Symphony, the Ninth concludes with a celebration of humanity that received universal acclaim at its premiere. However, Romantic composer Richard Wagner believed that certain passages lacked clarity and brilliance due to Beethoven’s deafness. My research seeks to correct Wagner’s erroneous score analysis of Beethoven’s groundbreaking orchestration of musical passages that continue to speak to modern audiences.

The Birth of “Eh, It Was OK”: Copland’s Piano Concerto

Jeff Boyer, MUS 303: Music History 2

Faculty Mentor: Professor Carolyn Guzski, Music

In this project, I’d like to shed light on a musical composition lost in time and Aaron Copland’s expression of the 1920s American cultural heritage. Copland’s Concerto for Piano and Orchestra (1926), a piece that reached one of the most elite concert venues, Carnegie Hall, effectively demonstrates the use of jazz harmonies through symphonic orchestration (featuring a full string section, trumpets, trombones, flutes, oboes, contrabassoon, bass clarinet, piccolo, and five percussionists). The Concerto was premiered by the Boston Symphony Orchestra with Copland as piano soloist in 1927. Since then, despite its impressive technical and musical accomplishments, the piece itself received mixed reviews that acknowledged the excitement of its jazz idiom, yet stopped short of the full-blown praise it deserved. The Concerto was neglected for decades, until conductors like Leonard Bernstein showed during the 1950s how amazing a work it was. Music critic Richard Goldman reviewed it in *The Musical Quarterly*, affirming that decades later, its masterful combination of genre and style mirrored the achievement of Gershwin. My goal is to demonstrate the unique flavor of Copland’s musical recipe as well as its continuing artistic significance.

Casting Resin in Glazed Ceramic Molds

Samantha Schnell, DES 421: Ceramics Senior Seminar

Faculty Mentor: Professor Robert Wood, Art and Design

I create ceramic sculptures that show the similarities between aspects of nature and my own emotions such as the relationship

between a spring flood engulfing an entire town and my own feelings of being overwhelmed by what is going on around me. Water is a dominant aspect of nature and an important part of my life, so it is frequently the subject or an important part of my work. Normally organically shaped resin castings are created using silicone molds. However, this is an expensive process and does not always create a crystal-clear casting. My goal was to use glazed ceramic molds in place of silicone molds to recreate the clarity and fluidity of water with cast resin. My research involved making test samples to determine the best type of ceramic glazed surface and release agent to produce clear resin castings. The results of this research allow me to build individualized and organic molds for each sculpture I create and use a largely unexplored casting method that is less expensive than using silicone molds yet maintain the organic, flowing movement of water I aim to capture. My presentation will include one of the sculptures created from this process, along with some of the test pieces and an outline of the process.

Celebration and Documentation of Polish Heritage and Accomplishments of Buffalo

Kaitlyn Malinowski, Painting

Faculty Mentor: Professor Lin Xia Jiang, Art and Design

Buffalo, New York is one of the largest cities in the United States with a large population of Polish immigrants. The city is well known for its rich Polish heritage which is still proudly celebrated today. Many people from Poland began immigrating to Buffalo after the year 1872, in which the St. Stanislaus religious community was born. The church became the center of the Polish Community on the East Side of the city of Buffalo. This neighborhood came to be known as the cultural district of Polonia. Though many years have passed, some of the old structures of early Polonia still stand today. Through oil painting, I wanted to capture and preserve the integrity of these historical treasures. I also wanted to celebrate and honor the Polish immigrant architects who have designed these buildings. Through truthful observation and a modernist painting style, which includes visible brushstrokes and a high-key palette I captured the historical structures in the modern world. In addition, I wanted to commemorate the leading figures of the Polish community. By painting monochromatic oil paintings, I portrayed the leading figures of Polonia through the art form of portraiture. These individuals have contributed greatly in disciplines such as, leadership in the community, education, and military achievements. Through my project, I created an archival exhibit of Polish Buffalo. For my presentation, I plan to share with my audience the cultural significance behind the people I have portrayed and the buildings I have captured.

Chair-emin: A New Approach on the Theremin

Matthew Burch, Wood/Furniture Design and Industrial Technology

Faculty Mentor: Professor Sunhwa Kim, Art and Design

In 1928, Leon Theremin patented an electrical musical instrument named after himself. The theremin has a unique characteristic; it's the only instrument in the world played without physically touching it. It gained popularity when it was used in soundtracks for movies. Its odd sound made it the ideal instrument to play during eerie scenes. Throughout my life I've taken an interest in the creative process and how things work. Musical instruments have been the most fascinating thing for me and, just recently, I've begun building them. In 2015, I built the first electric Chinese guzheng in the world using electromagnetic pickups. Since then, I've created a second guzheng using different materials that solves design problems from the first build. As an extension of building with electronics, I aim to explore sensing technology, such as the theremin, and challenge myself to create a more ergonomic and playable theremin while keeping full musical functionality. My research project will recreate the theremin to maximize playability. Since the theremin is typically played standing up, I will address the problem of player fatigue by building the instrument into a chair. This will allow the player to have a stable platform for playing, eliminating the need to stand perfectly still. Having the ability rest your elbows on the arms of the chair will make playing less difficult. I envision the player as both the orchestra and conductor.

Character Development to Enhance Dance Performance Expression

Madeline Allard, ALT 490: Senior Seminar

Faculty Mentors: Professor Joy Guarino, Theater, Professor Aaron Moss, Theater and Professor Naila Ansari, Theater

Nigel Lythgoe from *So You Think You Can Dance* once said, "Dancers are sometimes the best actors". Since acting and dancing are both kinesthetic art forms, it makes sense that they should support each other when considering expressing to an audience. For my research project, I wanted to explore this idea of applying acting technique to dance performance by choreographing a character piece for Buffalo State's dance concert *Movers and Shakers: Dance as Activism*. Using the theme of feminism, I had my dancers develop movements based on different women of history, whose actions have impacted us today. For 20 weeks, I guided my dancers through different acting exercises to enhance the portrayal of their characters through kinesthetic artistry. These methods ranged from breathing exercises to character development workshops to personal discussions. Throughout every rehearsal, I documented discoveries as well as disappointments. At the end of the process,

my cast of dancers completed a questionnaire that asked them to indicate the acting methods that worked to enhance their expression during performance and those that did not. There have been many dance films that were made purely for entertainment. People fail to realize that dance can be a method for telling a serious story in the same way as live theater and filmmaking. My ultimate career goal is to create films that teach powerful lessons through the use of dance. I am excited that the findings from this research project will be applied to my future work.

The Choice: A Sculpture and Dance Performance Piece

Courtney Haeick, Art Education

Faculty Mentors: Professor Kenneth Payne, Art and Design and Professor Michael Lambert, Theater

In my work I go through an exploration of medium through communicating my interest and ideas in a versatile manor. As a dancer and fine artist, I find that my work is starting to focus on the theme of body movement and social issues in society. “The Choice” Is a project I have been working on for the past summer, fall, and spring semester and is a sculptural dance performance piece based on social justice in bullying. The dancers interact with one another through these concepts and are dancing within and around the sculptures I have created. In the process of creating the performance my dancers were a major contributor to my discoveries. They shared personal experiences with the group and with those in mind they were able to connect to the choreography and really embrace the movement and share opinions, making the piece come alive. While creating my artwork and researching I have discovered a contrasting feeling of dominance and empathy in the dancers that represented the bullies, this created an atmosphere of conflict in the beginning that then turned into a more apologetic and hopeful ending. As we reflect upon our personal needs, we must also be aware of the impact on others through even the simplest and most obscure gestures. If not, a reaction to that insensitive choice could lead to something unimaginable and unforgivable. Yet, having people strive for an emotional connection to social justice will allow us to reach for hope.

Connecting Through Clay: How to be an Artist and Activist

Christina Chilberg, Ceramics

Faculty Mentor: Professor Colleen Toledano, Art and Design

The goal of my project was to find the place of an artist in an activist community. While my background is in ceramic sculpture and pottery, the current state of the world has pushed me into activism. Artists have a long tradition of creating politically and socially motivated work and I wanted to explore the ways I could

do the same. By immersing myself in an activist community in Chicago I learned where my help was needed and how important getting involved in the community is. This allowed me to determine how I could use art to make positive changes. This included creating works of protest art for a demonstration and teaching art activities with a childcare organization at a rally. Upon returning to Buffalo, I used my inspiration from my time in Chicago to create classic style busts of activists I met and learned from. Some of the activists are gender non-conforming. My sculptures show how a gender fluid person can still be very feminine or masculine and not identify within the binary. I also created fifty cups that I will use to fund raise for an organization I worked with that underwent some turmoil in the community while I was there. The cups I created are diverse and colorful. Some of the cup forms look very lightweight but are very heavy, while others look dense and heavy but are very fine and lightweight. This was intentionally done to symbolize that things are not always what they seem.

Enter Wagner and His Die Walküre

Jeremy Nesbitt, MUS 303: Music History 2

Faculty Mentor: Professor Carolyn Guzski, Music

The Romantic composer Richard Wagner (1813-1883) mastered the art of opera, a dramatic genre typically structured in one or more acts and set to music for singers and instrumentalists. Wagner's redefinition of the form was so striking that the composer insisted his works be known as “music dramas.” His masterwork, *Der Ring des Nibelungen*--commonly known as “The Ring”--was a cycle of four operas based on German Nordic legend and mythology. My project focuses on the second opera in the tetralogy, *Die Walküre* (The Valkyrie). In Act II, Wagner digs deeply into the German poem “*Nibelungenlied*,” which tells of Siegfried the dragon slayer as he faces the wrath of mortals and gods. I pursue an analysis of Wagner's unique orchestration and explore strategies he used to express an aural sense of battle. Wagner played around with new dissonances in his efforts to create tension leading to the opera's climax. I also explore Wagner's own self-authored libretto, which contributes to the work's strong sense of plot. My goal is to increase understanding of the complex aural world of music drama.

Ethel Smyth: The Composer, The Writer, The Suffragette

Emma Davignon, MUS 303: Music History 2

Faculty Mentor: Professor Carolyn Guzski, Music

Among the most memorable and influential female composers in music history is Ethel Smyth. Born in the late 19th century, Smyth became renowned not only for her compositions, but also for her political activism in support of the Women's Suffrage movement in England as well as an unapologetic

openness about her sexuality, a subject very rarely discussed at that time. Smyth wrote masses, concertos, and operas--her most famous lyric drama being *The Wreckers*, premiered in 1909. The opera tells the story of a community of sea villagers experiencing love and dramatic betrayal. I analyze the Overture's complex orchestration and use of varying melodies to portray images vital to the story. Many commended Smyth on her highly original orchestrations and ability to emotionally transform audiences with her scores, something few female composers were credited for in her era. Smyth later dedicated two years of her life to the Women's Suffrage movement in London. She wrote a march anthem for women's voices, and was later jailed for two months, accused of participating in a riot. Ethel Smyth devoted her life to her two passions: music and women's rights. She will be forever recognized not just as a composer, but as a woman who helped pave the way for significant social progress.

Exploring New and Unusual Materials

Tamica Cuffie, FAR 343: Advanced Sculpture
Faculty Mentor: Professor Kenneth Payne, Art and Design

My project explored the use of non-traditional materials to create works of art. Materials used in the creation of art can influence the work. Initially, materials were chosen for their stability and permanence but now artists select materials more for their conceptual value. Using a non-traditional material in a work of art can alter how it is perceived by the viewer. The inspiration for my body of artwork is drawn from this emphasis on experimenting with non-traditional materials and I challenged myself to push the limits of what can be used in sculptural pieces and even what one might call 'art.' Part of my approach included researching artists that use non-traditional materials. I examined the works of Chakaia Booker re-purposing tires and Lin Evola-Smidt's use of garbage scraps to make dimensional figures. I next found myself wandering the aisles of hardware stores to find non-traditional materials. My initial works consisted of wall reliefs composed of several different materials - for example, stucco and clay and silicone and metal. From there I began to explore more complex multidimensional forms using a combination of materials. Even now, I continue to experiment and my sculptural pieces continue to evolve as I struggle to define what my pieces should convey to the audience. I know that while my work has progressed, I am not finished with my exploration of non-traditional materials and how they can be used in the creation of sculptural works.

The Fallen Angel and His Concerto

Amanda Dailey, MUS 303: Music History 2
Faculty Mentor: Professor Carolyn Guzski, Music

Nicolò Paganini was the supreme violin virtuoso of his time, and his spectacular technique is evident in the music he

composed. Unfortunately, Paganini became the monster some people needed to hate. On tour in Italy, he composed his second Violin Concerto (c. 1826) which achieved fame particularly for its final movement, "La Campanella" ("The Bell"). Paganini was often criticized for his orchestration, which was considered vulgar and "noisy." Consequently, he paid greater attention to pure melodic content and thematic development. He subsumed his virtuosic flair into the creation of a dramatic, operatically inspired musical expression. My project analyzes the structure of the full Concerto with a focus on the final Campanella movement and its subsequent use by composers who followed. Paganini's biographer highlights key moments in the composer's life that molded him into the great musician he became. These same events also led to his unpopularity among artistic colleagues. I also demonstrate how the violinist's playing and musical output changed as he aged, as well as contemporary critiques of the Concerto itself. I hope to reveal that Nicolò Paganini did not lose his compositional flair; rather, he modified it over time to meet the demands of his artistic critics.

Fiberglass Resin Layup: Plan, Process, Output

Maryrose Fridey, FAR 499: Portfolio Development
Faculty Mentor: Professor Kenneth Payne, Art and Design

My project consists of creating two sculptural works of art by means of fiberglass resin layup. In my previous sculptural explorations, I have worked mostly with cast and welded metals, plaster, and foam. I am interested in this new approach of creating objects with a different voice because of the material application. I have worked with pigmented resin in the past by dripping it over plaster and applying with a brush. I also worked by dipping fiberglass cloth into the pigmented resin and draping it over a welded form. I have taken my research a step further by exploring fiberglass resin layup. I have fabricated two welded steel abstract forms and covered them with chicken wire, plaster, and clay. I will take plaster molds of these patterns to start the lay-up process. Once the molds are finished. I will lay in the gel coat, a layer of pigmented resin. Once this sets, I can then begin the second layer which will include the fiberglass cloth, added strength. I will repeat what I have just done for the third and fourth layer. The forms will then be removed from the molds and finished. When finished, I will be able to reflect on my interpretations of the materiality of the fiberglass resin layup and how this fits into my body of work as a whole.

The Five Brothers

Britten Walker, Painting/Sculpture and Art History
Faculty Mentor: Professor Lin Jiang, Art and Design

In the early developmental stages of this research project, my initial intentions were too make paintings, that would help

bring an awareness to the importance of a service dog for combat veterans. After taking photos of veterans with their service dogs in their daily lives, I worked on charcoal sketches and pastel drawings of these images. I still have the intentions on painting these veterans with their service dogs on a monumental scale as I continue with this body of work. However, I decided that the dramatic experience of battlefield would be the best painting to begin this series of work with. I made a decision that it was much more important to bring awareness to the traumatic experiences that a veteran has gone through in real combat. The traumatic experiences such as killing or being killed in the battlefield are typically the root cause of post traumatic stress disorder (PTSD); it is very stressful and challenging for a veteran with PTSD to reintegrate back into the society. A service dog is compassionate, loving, loyal and often times more understanding than people can be. To create the painting titled "The Five Brothers", which depicts a rescuing scene of wounded soldier by his comrades in the mist of enemy bullets and bombing, I studied and referenced some documentary photos of battleground as my inspiration. I felt that this painting needed to be very large because this dramatic scene needed to be depicted in a grand manner. This painting is a 12' x 7' oil on canvas. The process of creating a large scale painting was not only physically demanding, it was also very mentally exhausting and personally emotional. It functions as the beginning of healing process for me who still suffers PTSD. I believe the final results of this painting are very powerful and rewarding.

A Hidden Communication of Melody

Cassiah Gilvin, MUS 303: Music History 2
Faculty Mentor: Professor Carolyn Guzski, Music

My project explores the significance of French modernist composer Francis Poulenc's Sonata for Flute and Piano (1956). In particular, its second movement, titled "Cantilène," exhibits an interesting use of musical style. Poulenc wrote many solo instrumental sonatas during his lifetime, but the Flute Sonata, composed seven years before his death, occurred at the apex of his career. Using score analysis, I focus on ways in which the composer's use of melody imitates earlier musical styles, as well as its similarities with music sung by Sister Constance in Poulenc's operatic masterpiece, Dialogues of the Carmelites (1953-56). I also consider the overall formal structure of the Sonata and its cyclic patterns of musical correspondences among movements. I acknowledge the impact of issues from Poulenc's personal life, such as his sexuality and financial struggles as an artist, as well as the political events he experienced living through two world wars. These contributed to the distinctive sense of style found throughout his compositional output. Poulenc's creativity in his Sonata for Flute and Piano drew on these extensive career

and life experiences, giving the solo instrument a renewed sense of identity.

Holst, the Mystical Composer

Ashley Henderson, MUS 303: Music History 2
Faculty Mentor: Professor Carolyn Guzski, Music

English composer Gustav Holst (1874-1934) wrote his seven-movement orchestral masterpiece, the symphonic suite *The Planets*, later in life. Holst's musical career had developed slowly, and it took him until age thirty to develop his individual compositional voice. *The Planets* represent their astrological significance rather than classical mythology. In addition, the planets in the work are not aligned heliocentrically, as Mercury is positioned after (rather than before) Mars and Venus. Rather, Holst aligned them as they appear from the vantage point of Earth, providing symbolic meaning of life from youth to old age. My musical analysis focuses on the first two movements of the suite. With "Mars, the Bringer of War," Holst opens with an aggressive and physical, almost primal, element with repetitive rhythm and harsh dissonance; a youthful, chaotic energy is delivered with irregular motion within the movement. Although the Mars movement dates from 1914, it anticipated the World War rather than being influenced by it. The second movement, "Venus, the Bringer of Peace," unfolds in a contrastingly expansive tempo, relying on subdominant harmonic progressions that lend it a warmer tonal atmosphere. The complete composition, finished in 1917, concludes with Neptune; Pluto was not included as it was not discovered until 1930. Holst's descriptive planetary titles effectively prepare the listener for the emotional trajectory of the work, and the composer's focus on astrology gives the music the humanistic view of the planets that he intended.

In Between

Carlton McKay, FAR 323: Advanced Photography and HON 400: All College Honors Colloquium
Faculty Mentors: Professor Yola Monakhov Stockton, Art and Design and Professor Michael Johnson, Modern and Classical Languages

Alleyways and empty lots are the opposite of what is shown to the public, typically the front of buildings. From these alleys, we can get a sense of the social landscape, the in-between, and domesticity that is our civilization, or a small part of it. Alleys can be homes to some, a place for refuse, or a form of storage. They can be quite personal since they are not curated and aren't seen often by the public eye. In this project, I'm going to show some form of connection between what is seen in these alleys and the social-economic landscape around it. The foundation of this project is focusing on the use and mastery of the 4x5

camera, but I will also be photographing with medium format and 35mm films. The initial subject matter will be alleyways and urban landscapes, but later I could branch out to portraiture and conceptual work as well. I hope to create alleys that some people might want to inhabit, or shy away from their obscure nature.

Italian Renaissance and Baroque Painting Study

Emma Roberts, Communication Design
Faculty Mentor: Professor David Derner, Arts and Design

My research project focused on Italian Renaissance and Baroque master painters. Renaissance and Baroque art has always been an inspiration to me and I found myself thinking, “I wish I could paint like that.” My goals from this project were to better understand and experiment with different techniques and styles in order to replicate Italian Renaissance works. During my research I found artists I have never heard of before and spent time researching their work. I found that each artist had their own look to their piece. Some used a warmer color palette, some used heavy brushstrokes, and some used a lot of transparency techniques. In response, I was able to experiment with many different techniques in order to replicate the master’s work. This research was beneficial to my painting because I found different ways that I can apply paint and ways to mix solvents that make the oil paint have different effects on the panel. The series of works that resulted from my research were six 8x8” panels titled, “Recreations.” I chose six pieces by Italian master painters and replicated portions of their work to the best of my ability. In addition to the oil painting replicas, I also was able to practice Fresco Painting while in Florence, Italy. This process was completely different from anything that I have done before, but allowed for me to practice another form of painting that was commonly used during the Italian Renaissance.

Joanie and the Beasts: Finally, an Adventure Film for Girls

Amanda Hebblethwaite, HON 400: All College Honors Colloquium
Faculty Mentors: Professor Aaron Daniel Annas, Communication and Professor Michael Johnson, Modern and Classical Languages

Joanie and the Beasts: Finally, an Adventure Film for Girls is an artistic, feminist film project. We will be shooting on a Canon Mark III DSLR camera and have a cast of local Buffalo actors. Throughout Hollywood film, there are many more male protagonists than female protagonists. Even more so when the stories are not in a high school environment or involving a romantic relationship. This happens under the claim that women as protagonists just don’t sell as well in the box offices as male protagonists. The goal with Joanie and the Beasts is to offer an

example of an entirely female cast of likable characters that movie goers would enjoy seeing in theaters. It’s an adventure movie for girls because as of right now they don’t have one. I want to be able to prove to people that an adventure movie can be just as compelling if not more compelling with girls as it would be with an entirely male cast (such as Stand by Me). The idea of presenting this in the form of a film rather than a formal presentation is to literally display to people that this is possible rather than just discussing the idea of it. It’s time to stop talking about it and actually take action.

Landscape-Inspired Tapestries

Lucas Colon, Fibers
Faculty Mentor: Professor Jozef Bajus, Art and Design

Landscapes and fiber are intimately connected. As a fiber artist (and an avid traveler), this connection has always stood out to me. The curling of a flower stem is reminiscent of threads, a lattice of moss suggests weaving, and the overlap of tree roots has a thick cabled texture. In the summer of 2017, I traveled to Vancouver to gather inspiration from landscapes for a series of woven tapestries. I spent a week sketching and photographing the landscape and the city skyline for my summer research. Considering the specifics of tapestry techniques, the skyline suited my project perfectly. Upon my return, I began with a small sample, in which I learned the basic techniques, including basket weave, interlocks, plain weave, slits and more. In addition to other colors, I used soft greens and blue yarns that reflected the Pacific Northwest in full bloom. As I gained confidence, larger pieces followed, and I accordingly moved to more intricate techniques (such as balanced twill, checkerboards, and shadow weaving) inspired by my city skyline sketches. As I progressed to these larger samples, I start incorporating yarn purchased on location in Vancouver, giving a local flair to the pieces. By the end of the summer, I completed one final sample that demonstrated all I learned, highlighting more advanced techniques like incorporating 3D elements as well as working with multiple yarn thicknesses. These works, taken together, are intended to convey the beauty and connection between fiber and the natural landscape.

Manuel Ponce’s Concierto del Segovia

Derick Sears, MUS 303: Music History 2
Faculty Mentor: Professor Carolyn Guzski, Music

Manuel Ponce (1882-1948) was among the most prominent Mexican nationalist composers of the twentieth century. His life and music led him to extended sojourns outside his country in order to further his own compositional career. The most influential part of his artistic life was defined by his interactions with Andres Segovia (1893-1987), the single most influential classical guitarist in musical history. Segovia went to great efforts to expand the guitar’s repertoire in his day, and Ponce’s efforts

were among the many he supported. Segovia had a significant influence on Ponce and his compositions, and this would be exceptionally relevant in Ponce's acclaimed work *Concierto del Sur*. This project aims to elaborate on the history surrounding the creation of this well-known guitar concerto, exposing the influences of Segovia on Ponce's work even beyond this celebrated piece. I evaluate the work with an analytical approach as well, exposing crucial features such as its unconventional melody and Latin signatures. I define what makes this concerto one of the most perfect artistic balances between solo guitar and orchestra in the repertoire.

Movement: A Collaborative Investigation of Art and Dance

Rachel DeForrest Repinz, ALT 490: Senior Seminar
Faculty Mentors: Professor Joy Guarino, Theater and Professor Kathy Shiroki, Art and Design

Many artists that we consider to be "classic" are male, leaving us to wonder where women fit into this world that so often dismisses them and their work. Rejecting art as a "boys club" that casts women aside, "MOVEMENT: A Night of Art and Dance" was a unique, one-time performance art experience that celebrated women artists and their contributions. According to scholar Virginia Mackenny, performance art is a great tool to mold and remold gender because performance art, in most instances, includes a direct subversion to everyday conventions. The collaborative effort of a diverse group of female visual and dance artists allowed me to delve into what makes feminine art so powerful and unique. The six visual works, selected for their diverse inspirations and expressions of the female experience, were interpreted and translated into illuminating dance movement. The ensuing intimate performance art event was presented in the Margaret Eschner Bacon Student Gallery to an audience of over thirty people. Because the collaboration between visual arts and dance discussed women in the arts and feminism in the art community, the audience engaged in a lively conversation about art, feminism, and the connections between art mediums. The reception, which immediately followed the performance, allowed the audience to mingle with dancers, view the visual art more closely, and enjoy refreshments. The intimacy of this performance allowed the audience to be fully immersed in the art and movement, as they explored the idea of what it means to be a female artist.

Operatic Love, in the Non-Traditional Way

Zack Mathewson, MUS 303: Music History 2
Faculty Mentor: Professor Carolyn Guzski, Music

Beethoven's *Fidelio*, op. 72, his one and only opera, follows the story of political prisoner Florestan and his devoted wife Leonore on their quest for freedom. Locked in a dungeon,

Florestan must be rescued by Leonore, disguised as 'Fidelio.' Beethoven's singular opera is a story of love, but differs in comparison to operas by his Classical predecessors, specifically Mozart. My project aims to explore how Beethoven's personal life may have affected his views on the concept of love, and what that concept meant to him as a composer. Beethoven's concept of 'love' is explored in *Fidelio* in a unique way, in which 'love' is represented as the union of two individuals as a force. This idea is explored heavily in *Fidelio*'s overture. The perspective on the lives of unlikely lovers is made even more interesting by looking at the life of Beethoven. Beethoven never married, and never found lifelong love as had many other opera composers. *Fidelio* is the embodiment of Beethoven's ideal scenario for love. Mozart's operas, in contrast, tend to take a more romantic 'honeymoon' approach to love. I ask whether Beethoven's lack of love experience make his views irrelevant in the opera world; or, paradoxically, is his contrary viewpoint just what the world of opera needed?

Ostracize the Other: A Ceramic Study of Teratology and Other Prejudices

Lonijae Simonton, Ceramics
Faculty Mentor: Professor Robert Wood, Art and Design

The purpose of my research was to examine the darker sides of humanity and society as a concept for my artwork. I traveled through the eastern half of the country, visiting historical museums with exhibits depicting moments when communities turned their backs on their fellow man based on physical, mental, religious, or socio-economical differences. I then created sculptures based on my visual responses to my experiences and findings. These figurative sculptures demonstrate how society can ostracize their fellow man, at times putting them on a pedestal, and create a divide of "us versus them". The pieces I made from my travels depict the prejudice surrounding homelessness, physical deformities, and sexual orientation and identity. The idea of creating artwork dealing with anguish within a community resonates with my belief that through visual expression we can heal from previous trauma. My current ceramic work has a deep connection with the human psyche and the manifestation of despair within a society that rejects you. With my interest and minor in Art Therapy my work tends to focus on mental health, people's reaction to the mentally ill, as well as societal involvement and treatment of persons deemed 'Other'. Throughout my research trip I was met with terrible events that showed me how ugly a society without understanding can be and how those who are different can be persecuted and mistreated. By documenting my findings and exploring the concept of ostracization, I also found that there can be caring and kindness within a community, a society that has prejudices can also contain healing and helping hands.

Paganini and the Devil's Violin

Holly Zimmerman, MUS 303: Music History 2
Faculty Mentor: Professor Carolyn Guzski, Music

My project focuses on the infamous violinist Nicolò Paganini (1782-1840) and how he broke new ground in expanding the artistic boundaries of virtuoso instrumentalists. His uses of new techniques and “devilish” playing sparked a new artistic style in the Romantic era. Before the age of Paganini, Antonio Vivaldi had invented the solo concerto, a musical genre that features an instrumental soloist with an orchestral ensemble. Vivaldi made himself a star with his phenomenal violin playing, yet it was Paganini who took this idea to another level. His compositions for the violin were so fiendishly difficult that at the time only he could play them. Many took his achievements as proof of a pact with the devil. My project examines Paganini’s Violin Concerto in D major, op. 6, no. 1, which displays many techniques that had never been heard in the work of past composers for the instrument. My research explains, however, why Paganini’s art is not as “demonic” or strange as it initially seemed. I hope to contribute to an understanding of this extraordinarily talented musician’s influence and the lasting impact he continues to have on string players today.

Pagliacci: A Clown Car of Tragedy

Tanner McMullen, MUS 303: Music History 2
Faculty Mentor: Professor Carolyn Guzski, Music

Ruggero Leoncavallo’s opera *Pagliacci* (1892) enjoyed huge success among crowded audiences throughout Europe. This is a startlingly emotional and graphic operatic drama in which the protagonist, Canio, murders his adulterous wife and her lover onstage. A stark contrast to operas of past eras that featured magical creatures and mythological characters, Leoncavallo’s work was termed *verismo*, or realistic drama. This I believe is what set his opera apart. The shockingly tragic story of love and betrayal with its horrific conclusion captured the imagination of audiences from its premiere to this day. My project analyzes the famous central aria “*Vesti la Giubba*” (“Put on your costume”). Sung by Canio upon discovering his wife is unfaithful, the tenor breaks down emotionally as he prepares to perform as a *commedia dell’arte* clown, forced to induce an audience to laughter as his heart breaks. I show how Leoncavallo was able to transform such a realistic and tragic story into captivating theater. I discuss Leoncavallo’s life as a young man living throughout Europe, gathering experiences that supplied his core dramatic ideas. My goal is to explain the truly powerful combination of a compelling libretto and great music in the creation of lyric drama.

Palette Knife Portraits

Emma Roberts, Communication Design
Faculty Mentor: Professor Joseph Miller, Art and Design

I became fascinated with how texture could be created within oil paintings. In class we were given an assignment to create a still life using only palette knives. This was my first time working with palette knives in this way and the texture and movement inspired me. I became curious about other ways I could use this style throughout my work. I enjoy painting portraits so I decided to experiment with combining brushwork and palette knives to create impressionistic portraits. This allowed me to form a looser style and this project led me to use color in ways I had not used before. I became more fearless in applying paint and found new techniques and materials that could help create the *impasto* effect I was looking to achieve. I wanted the audience to feel the fearlessness and joy that went into this series. I learned how to create harmony, even when texture, color, and movement are all very prominent. This project was a learning experience and I found that palette knives create amazing effects that cannot be achieved by using brushes. I also found that one must be careful with the amount of texture that is used in the overall piece because it is easy to overdo it.

Ravel and the Art of Orchestration

Brendan Ryan, MUS 303: Music History 2
Faculty Mentor: Professor Carolyn Guzski, Music

The French composer Maurice Ravel was a master of orchestration, and there is no better example than his *Boléro*, composed in 1928. This traditional Spanish dance is among his most influential works and masterfully displays the wondrous detail that went into creating a staple of orchestral music that has far outlived many other examples. The inner workings of Ravel’s orchestration highlight a single snare drum repeating an infectious rhythm that underpins the orchestral texture. This rhythm is complemented by a long crescendo: starting from nothing, then leading to a strong apex with the entire orchestra supporting the solo snare’s incessant rhythmic pattern. I employ sources such as Ravel’s biography, with details of the composer’s life and personality, as well as many of his inspirations (such as Russian composers, particularly Prokofiev). My goal is to display the significance of brilliant orchestration and the mindfulness it takes to produce much with limited means. *Boléro* clearly displays the ability to highlight a single musical line despite its deceptive ease, while simultaneously complementing a large ensemble. Ravel’s brilliance is transcendent with few limitations.

Rodrigo's Walks Through Madrid

Dayzha McKelley, MUS 303: Music History 2
Faculty Mentor: Professor Carolyn Guzski, Music

Joaquín Rodrigo's *Concierto de Aranjuez* (1940), for solo guitar and orchestra, was said to have been inspired by the walks taken by the composer and his wife in the Aranjuez district of Spain, near Madrid. Rodrigo had been blind since the age of three. After a long journey through times of war, Rodrigo returned home to Madrid unknowingly having written what is considered his strongest musical composition. While teaching and writing music criticism in Germany and France, the composer managed to create a distinctively light-textured orchestration suitable to the guitar and paid great attention to the use of melodic motive. The principal motivic phrase in the second movement *Adagio* is quite romantic, and develops into an evocative musical conversation spoken in a unique blend of harmonies. Throughout each section in which this phrase is spoken, Rodrigo seems to musically relate former times walking through the Aranjuez. The *Concierto* speaks to me as meaningfully as it does to audiences throughout the world. Rodrigo's disability was clearly no hindrance, as he composed music that continues to hold national importance in Spanish culture.

Saint-Saëns and the Dance of the Dead

Madison Brown, MUS 303: Music History 2
Faculty Mentor: Professor Carolyn Guzski, Music

Camille Saint-Saëns, who was born in 1835 and lived to the age of 86, composed from the late Romantic era into the early Impressionistic period in France. Renowned for his virtuosic musicianship from the age of ten, Saint-Saëns made significant contributions to the 19th-century concept of program music. This is prominent in his celebrated 1874 symphonic poem *Danse Macabre*, the third of the composer's four orchestral tone poems and easily his most popular work in that medium. Based on a well-known poem by Henri Cazalis, the French legend describes the chilling folklore tale of Death appearing every Halloween at midnight and summoning the dead to dance at their gravesites. Death's appearance is embodied in solo violin, using a scordatura "mistuning" technique to sound the demonic tritone interval. With the *Dies Irae* funeral plainchant as a traditional (and creepy) funeral march, Saint-Saëns effectively brings to life the dance of death. The piece begins with a fiery introduction but develops subtly, eventually building to a climax that fades as the dead return to eternal sleep, and concludes with a "rooster call" played by the oboe. Through my score analysis, I hope to illuminate Saint-Saëns' contributions in the programmatic symphonic genre.

Song Traveling with Poulenc

Abigail Farr, MUS 303: Music History 2
Faculty Mentor: Professor Carolyn Guzski, Music

Banalités is one of the many song cycles composed by the French modernist composer Francis Poulenc (1899-1963). Emerging during the Romantic period, the song cycle genre consists of a series of art songs set to a group of texts, often authored by a single poet, and typically expressing a central theme or motif. Poulenc's *Banalités*, however, varies immensely from song to song, shifting expectations of the genre itself. My project explores *Banalités* from an analytical perspective, focusing specifically on the first two songs of the cycle. These provide insight into its overall poetic aesthetic, as well the style of Poulenc's musical writing, modeling other composers in aspects including rhythm and harmony. The texts for *Banalités* were taken from poems of Guillaume Apollinaire written in the early 20th century. Apollinaire's texts encompass great contrast, but all are related to an overarching theme. Unlike most song cycles, the texts Poulenc chose were not originally written as a set of poems, and the only common feature they share is the theme of travel. Through his use of different texts and the absence of common musical motifs, Poulenc creates a musical aesthetic of variety and surprise in *Banalités*.

Take a Second Look: An Investigation into Advertising and Truth

Kelly Rosenfeld, HON 400: All College Honors Colloquium
Faculty Mentor: Professor Stan Friesen, Arts and Design

"Big drink" companies have been the targets of public debate because of their extremely high sugar content (up to 39 grams of sugar per 12 oz) and questionable practices of targeting drink campaigns to impressionable children. My study investigated whether or not participants would be more willing to purchase a healthy drink from an ethical source as opposed to an unhealthy drink from a "big drink" company. I defined ethical source as a homemade drink (so that there was no company bias), and a "big drink" company as a company who pushes unhealthy drinks on the public. My experimental design involved creating parallel advertisements based on the big drinks' current marketing campaigns that insinuate healthiness and a coming together of people. Parallel advertisements included identical advertising concepts, but replaced the unhealthy drinks with healthy homemade drinks. I collected data by administering an online survey to a random sample selected from volunteers on social media sites. I was able to calculate whether people were willing to switch to healthier alternatives once they were exposed to information about big drink companies and their products, as I placed information on them under the parody advertisements I created on the survey. Based on 105 responses, people preferred advertisements for healthier alternative drinks, and many

expressed that they would be willing to pay more for them. Based on my research findings, it seems that education can help the public make healthier dietary decisions.

Tale of Two Divas: African American Opera Singers in Post-War Europe

Alison Cleary, MUS 303: Music History 2
Faculty Mentor: Professor Carolyn Guzski, Music

My research explores the developing careers of two young African American opera singers who aspired to sing at the Metropolitan Opera during the 1950s. This is part of a larger book project on desegregation in the performing arts on which I am assisting Professor Carolyn Guzski of the music department. Contralto Carol Brice and mezzo-soprano Vera Little exchanged letters while Little sang across Europe during 1954. The letters are preserved at the Amistad Research Center in New Orleans among the papers of Brice. Although neither singer was ever engaged by the Metropolitan, Little describes how her career abroad was going swimmingly. While in Paris, she received professional recognition at multiple artistic events. However, she still had to face a myriad of challenges, including homesickness, stress, and dealing with the difficulties of the classical music industry. Eventually, through hard work and determination, Little managed to overcome these obstacles to build and sustain a satisfying European career. In the post-WWII period, discrimination towards African American artists was still a very present reality in the United States. Therefore, these singers felt that their career prospects abroad were much more promising. My project ultimately reveals that there was ironically less racial tension in Europe than in the United States immediately after the fall of fascism. The Metropolitan Opera eventually responded to these developments with the debut of Marian Anderson in 1955.

Tchaikovsky and the Emotion Behind the Music

Teressa-Jo Izzo, MUS 303: Music History 2
Faculty Mentor: Professor Carolyn Guzski, Music

Peter Ilych Tchaikovsky's Symphony no. 4 in F minor, op. 36 was a product of the most turbulent year of the composer's life: 1877, when he met two women who forced him to evaluate himself as never before. The first was Nadezhda von Meck, the sensitive, music-loving widow of a wealthy Russian railroad baron. She had become enthralled by Tchaikovsky's music. The second woman was Antonina Miliukov, an unnoticed student in one of the composer's large Conservatory lecture classes who had worked herself into a passion over her young professor. What Tchaikovsky found in his relationship with Miliukov was a confirmation of his belief in the inexorable workings of Fate in human destiny. He later wrote to Mme. von Meck, "We cannot escape our Fate, and there was something fatalistic about my

meeting with this girl." His personal relationships with the two women occupy important places in the composition of the Fourth Symphony: one made it possible, the other made it inevitable, but the vision and its fulfillment were Tchaikovsky's alone.

My ideas are drawn from testimony of Shostakovich and other Russian musicians. Tchaikovsky ultimately believed that music was a more powerful and subtle way of expressing emotion than words. His Symphony broke free of traditional classical musical structures of his time, so that he could express the emotional turmoil he eventually faced in life.

Tech Application in Design: New Technology's Impact on Interior Design

Rachel Crane, IDE 499: Independent Study
Faculty Mentor: Professor Eric Dolph, Art and Design

In today's society, the world of technology is ever growing, expanding into diverse arenas and providing new possibilities for its application. The profession of interior design is no different; the application of physical and digital 3D technology is predicted to be the future of the field. Throughout the Spring 2018 semester, I have learned how to use and apply these tools including 3D printers, laser cutters, and virtual reality (VR) technology in the field of interior design and architecture. I will present the research I have completed on this topic as well as provide a hands-on opportunity for visitors. My research will include designs that utilized 3D technology. Additionally, I will present how I integrated the technology into my own design process and my findings based on that experience. The hands-on element will include a physical model. I am also working on the possibility of offering visitors the opportunity to interact with a similar digital model through VR goggles.

Tides Brought in by La Mer

Jonathan Ziegler, MUS 303: Music History 2
Faculty Mentor: Professor Carolyn Guzski, Music

La Mer (1905), a large orchestral piece composed by French impressionist Claude Debussy (1862-1918), is famous for the global musical influences it evokes. My project explores what went into creating La Mer, which is considered one of the most groundbreaking pieces written during the twentieth century. Cast in three large movements with evocative descriptive titles, La Mer contains many exotic scales, especially forms of the pentatonic scale, that were unusual for Western art music of the period. Through score analysis, I hope to shed light on the origins of Debussy's principal theme for the piece, which may have derived from his childhood experiences or influential visual depictions of the sea, such as Hokusai's famous Edo period artwork "The Great Wave off Kanagawa." Among my source materials are biographical and stylistic studies as well as the composer's own writings. I also hope to contribute an understanding of Debussy's

innovations in orchestral timbre (instrumental sound color), which he brought fully to life in *La Mer*. Finally, my study forges connections between the international influences that impelled Debussy to develop this composition into a creative masterpiece.

Tropos: El Camino de Santiago de Compostela

Marissa Mergler, MUS 303: Music History 2
Faculty Mentor: Professor Carolyn Guzski, Music

Tropos, or τρόπος, is a violin concerto written by Octavio Vázquez in 2010 for the Xacobeo Classics Festival in Galicia, Spain. This festival commemorated the Jubilee Year of El Camino de Santiago de Compostela, known as the Way of Saint James. A Jubilee or Holy Year is declared whenever St. James' Day (July 25) falls on a Sunday, which occurs in every fifth, sixth, and eleventh years. According to legend, St. James was transported after his death to Spanish Galicia by two disciples in a boat led by angels. The body was found in 9th-century Galicia and a temple was built to commemorate the saint. Travelers had followed El Camino even before the Temple of St. James was built, as beyond Santiago de Compostela one reaches Finisterre, believed to be the end of the world. Vázquez's 21st-century music embodies all the ideals of the spiritual pilgrimage. His piece includes many varied methods of composition and expressive strategies, such as extended techniques and spectralism, a technique developed in the 1970s using computer analysis of the quality of timbre in acoustic music or artificial timbres derived from synthesis. *Tropos* employs a melody from the plainchant "Benedicamus Domino" adapted from the Codex Calixtinus, an important manuscript comprised of liturgical texts, Jacobean traditions, miracles, and remembrances of the Way of pilgrimage made in the XII century.

I explore how the dual histories of El Camino de Santiago de Compostela and Galicia, as well as the ideals of a pilgrim, are woven expressively throughout this composition.

Unappreciated Architecture: a Virtual Reconstruction of the Larkin Administration Building

Ashley Teleki, Interior Design
Faculty Mentor: Professor Eric Dolph, Art and Design

Throughout history, significant buildings have been torn down for reasons not comparable to the importance of those buildings. In 1950, the Larkin Administration Building designed by Frank Lloyd Wright was decimated for a truck stop that was never built. Today the resting place for one of the first atrium centered office buildings is a parking lot, and the only remains of the building is one pillar. The purpose of this research project is to bring attention to the tragedy that was the decision to tear down a building that was constructed to stand for many more years than it stood. The technological advancements designed by Frank Lloyd Wright, like the air conditioning system, alone should have been enough reason to restore the building rather than have it demolished. With the help of floor plans found in various books, I expect to recreate the architectural advancement that was the Larkin Admin Building in SketchUp to be able to view the entire building in virtual reality. With the help of virtual technology, I hope to show others the importance of restoration and spread the word about the Larkin Administration Building and its effect on architecture today. If I can achieve anything from this research, it will be awareness and hopefully it will prevent another misfortune like this in the future.



Underrepresentation in Film: The Feature-Length Fight for Inclusivity

Robin Lazzara, HON 400: All College Honors Colloquium
Faculty Mentors: Professor Lou Rera, Communication and
Professor Michael Johnson, Modern and Classical Languages

My film is an educational video involving song, dance, and text to depict research performed about underrepresentation in the film industry, both in front of and behind the camera. Its purpose is to raise awareness to the severity of the issue, and to inspire aspiring actors and filmmakers who are women, people of color, or members of the LGBTQ+ community to continue pursuing their dreams. I hope to encourage the film community to combat this issue in ways such as casting appropriately by ending whitewashing, implementing a diverse workforce that reflects our society, and subverting stereotypes when writing characters. The work will be a music video that incorporates dance and onscreen text indicating facts discovered throughout the research process, including statistics on underrepresented races in television and film, and the lack of diversity on a majority of film crews. All of the artistic work will be original, including the music. The idea of presenting this information in an unconventional way is in hopes of the message leaving a lasting impact on people, making them want to take action for a brighter future full of equal opportunities.

What's an EWI? An Investigation Into Electronic Wind Instruments

Shayla Lance, DMP 491: Capstone in Digital Music
Production
Faculty Mentor: Professor Tomas Henriques, Music

An EWI, or an Electronic Wind Instrument is in simple terms the electronic woodwind version of the electronic keyboard. Back in the 1970's, when the electronic music scene was taking off, Nyle Steiner, created the first EVI (Electronic Valve Instrument) and shortly after, the first EWI. One of the first wind driven electronic instruments before the Steiner EWI was the Lyricon by Computone. It was widely played in the 1970's before Steiner broke out with the first commercial EWI which consisted of two parts: a wind controller, and a voltage-controlled analog synthesizer in a rack mount box which housed the instrument's electronics. My research delves into the origins and development of the Electronic Wind Instrument from the first voltage-controlled EWI to MIDI based wind controllers such as the Morrison Digital Trumpet and the recent Aerophone produced by Roland. I will also study the use of wind controllers in both experimental and mainstream electronic music and speak at length about the new performance related potential of these instruments.



Business, Fashion & Textile Technology, Hospitality and Tourism

Abandoned Beauty

Emily Montz, FTT 304: Surface Pattern Development for Industry
Faculty Mentor: Professor Brianna Plummer, Fashion and Textile Technology

Bohemian clothing has a basic style that we can identify when shopping. Although, what if there was a way to have the feeling of that classic style but with a bit of a more modern aesthetic? The “Boho” clothing we tend to see seems to have a common theme of retro and floral prints with lace and fringe layered all over. Now, there’s nothing wrong with it, but reinventing this style so it shows both a personal aesthetic and a relationship with the inspiration sources would allow for it to hold a new perspective. The plan was to make a textile collection inspired by the Boho style and also the idea of nature and man intertwining. Inspiration came from photos of abandoned structures or manmade objects being taken over by nature’s messy beauty, and the desired outcome is that this collection will recreate that contrast. With the use of Adobe Illustrator and Photoshop the creation of motifs, that can be repeated and placed in a way that will illustrate the randomness of nature and the structure of man’s work, is possible. I am drawn to the contrast of dark backgrounds with pastel motifs or linear patterns layered with florals to create an interesting movement and mood for the textiles. This is also why this color palette was chosen. That, along with the placement, movement, and the collection as a whole will be perfect for a fresh look at Bohemian style and the possibilities of surface pattern design.

The Affects of the GST On the Indian Textile Economy

Kyra Travis, FTT 450: Issues in Fashion and Textile Industry
Faculty Mentor: Professor Arlesa Shephard, Fashion and Textile Technology

The purpose of this paper is to compare both the negative and positive aspects of the GST (Goods and Service Tax) being implemented into India’s Textile/Economic Industry and its effect on the cotton industry as well. The methods used to obtain the information in this paper were scholarly journal articles, fashion sites, online news outlets/papers, and online magazines. Overall the main concepts and topics being presented in this paper are how the GST is affecting the textile industry in India and causing prices of manmade fiber to increase dramatically, putting small (unorganized) textile companies out of business. This is because

of the new technology and increase in manufactured fibers, the prices of cotton in the industry skyrocketing because of the increase of the tax percent on man made fibers, and lastly major (organized) company sectors are for the GST because of the major benefits that will come their way in the industry.

As a Design Student Would

Ana Polito, FTT 304: Surface Pattern Development for Industry
Faculty Mentor: Professor Briana Plummer, Fashion and Textile Technology

Besides being an apparel major, I’m also in a sense a merchandiser, a marketer and a computer geek. Not only can I sew or design my own patterns but by utilizing programs that are within Adobe, I have learned to utilize this program, that everyone has at one point come across and you absolutely have had no idea how to utilize it. Well in my “Photoshop for Surface Pattern Development” course, not only have I learned how to perform tasks such as the usual copy and paste, repeat, mirror, duplicate, transform an image, delete a background but also so much more to help with those “future tasks” that require myself to have the knowledge of this software. Something not a whole lot of design students or even college students can say they’ve done and something that the industry now thirsts for. My work will show a different textile collection with my unique designs for which I am choosing to showcase an athletic and swimwear collection. Health and fitness are the now and my designs will show my understanding of the knowledge I have gained from utilizing this “innovative” software, especially being in a now “technology savvy society”. It will show comfort, versatility and part of my future goals for my upcoming “brand” as well showcasing my inspiration, In which I will end by saying “Everyone has a story; Allow your canvas and your style to tell it.”

Attitude Study Comparing Croatian and American Students Regarding Social Media

Alexis Lewis, BUS 389: Civic and Community Engagement in Croatia
Faculty Mentor: Professor Christine Lai, Business

My project is going to compare the attitude regarding social media use between students in Croatia and students within the US. My goal for this project is to become more educated and teach others about the similarities and/or differences in social media use between the two groups within our generation. Based on personal experience and literature, my anticipated outcome is that Croatian students’ motives with social media would reflect collectivist tendencies and encouraging social interaction while American students would reflect individualistic tendencies and self-promotion. Based on my own experience as an American, we used hashtags for documentation, Croatian students use

hashtags for self-promotion and creativity. Social media usage in Croatia has been on an upward trend in the last few years just like everywhere else, the demographics show that it is most popular within my generation (18 to 24 year olds.) LinkedIn is becoming very popular with university students (myself and peers included) who are using it to also present themselves to potential employers. The significance of my project will bring awareness to a topic that has a great impact on my generation. Social media is being used around the world and has an effect on a global scale, that's why understanding the culture of its use is mandatory to enhancing both local and international relationships.

Attitudes Towards Non-traditional Student of University of Rijeka

Nakia Hock, BUS 389: Civic and Community Engagement in Croatia

Faculty Mentor: Professor Christine Lai, Business

Being a non-traditional student that works full-time and has a family, returning to school to receive a degree is not an easy task. It is not the route that is easily maneuvered and tends to not be the path that most people would take. Majority of the student body that at SUNY Buffalo State are traditional students that entered into their academic journey right after high school. As for myself, I am a professional that is working to receive a degree that backs up my career and experiences to match. With the opportunity to go to Croatia, I want to explore their world and their views of non-traditional students. There are questions that could be answered for reasons to return to school, the support they have may or may not have to be able to do that, and their end goals after they receive the degree. Essentially, our worlds may be similar or be completely opposite but with this opportunity, it will give me and the non-traditional student of the University of Rijeka a chance to voice our experiences.

Black Venus

Alexis Davis, FTT 451: Senior Project

Faculty Mentor: Professor David Brinson, Fashion and Textile Technology

Black Venus is a collection, inspired and named after the late performer, Josephine Baker. It is also created for all women of different shapes and sizes. This collection idolizes what Baker stood for, her beliefs, and confidences. She was rejected by many companies in America for how dark her skin was, how skinny she was and her nonchalant attitude. When her fame reached its peak in France, she decided to travel back to America with all the confidence, France allowed her to build. She used her fame to inspire other women to be themselves, and love themselves while they're doing it. Black Venus will inspire other women to embrace their inner Josephine Baker. The fabrics I used were inspired by Josephine Baker's presence, when she walked on stage she lit up every performance. I will use a mesh fabric, with glitter glued

onto it, to allow each model and client light up the room when they walk in. I incorporated feathers in each garment, by sewing the feathers the hem. During Baker's era, feathers symbolized sexiness and elegance. Feathers hats were always created for Black Venus, to give the women wearing the garment, the full on Josephine Baker experience. Black Venus is used as message to society, to show everyone that women are shaped completely different from each other. We as society, needs to accept all the shapes women have to offer, and as women we need to be confident in the skin we're in. The observers, will be allowed to see Black Venus up close, and understand the purpose of my collection.

Blumesque: Flowers inspire Design

Alyssa Rose, FTT 304: Surface Pattern Development for Industry

Faculty Mentor: Professor Brianna Plummer, Fashion and Textile Technology

How much of an impact do flowers really have on the environment? The issue is with the flower industry. Many chemicals are put into the air and into nature in order to keep flowers lasting a longer period of time. Companies do this in order to make more money, but they forget about what they are doing to the environment. My goal is to bring awareness to the topic through the use of my textile pattern development. It will show the effects that the industry has on the environment in order to create a pretty flower just to sell money. My presentation will include a poster and talk about the issue and examples of my work.

Boss Lady Brewing

Lea Lechner, HTR 495: Special Project

Faculty Mentors: Professor Kathleen O'Brien, Hospitality and Tourism and Professor Lori Till, Hospitality and Tourism

Throughout the months of December and January, I had the opportunity to work alongside of the employees and management at New York Beer Project in Lockport, NY. This is a full service restaurant, brewery, distribution center, and event destination. Each department provided me with a valuable understanding of what it had to offer. This was part of an independent research that would lead me to the same learning objectives as I would have in the course HTR495. My mentor and I came to agree on this idea as a result of my interest in owning a brewery or restaurant someday. I've gained necessary and relevant experience versus graduating without proper groundwork. The Hospitality Department has allowed me to focus my learning on the path that I see myself working in someday as opposed to following a straight and narrow guide to graduation. This two month stretch allowed me to see upfront what this specific industry needs to do in order to thrive. During this time, I was able to shadow each manager and learn their unique way of operating a full

service brewery and restaurant. Each team member provided me with their specific insight based on their lives and previous careers/jobs. I obtained this information through demonstration, participation, and interviewing techniques. Furthermore, this project allowed me to participate as a woman, in a mostly male dominated industry.

Community Engagement: Moving the Needle on Staff Retention in Private Clubs

Wesley Choi, Hospitality, Kim Danko, Hospitality, Robert Hammond, Hospitality and Bryn Summerson, Hospitality
Faculty Mentor: Professor Kathleen O'Brien, Hospitality and Tourism

Community engagement is defined as “to actively seek a meaningful presence in nearby communities”. The Club of the Future who practices community engagement will improve relationships with various populations in their surrounding urban communities. This practice may lead to successful recruitment and retention of workers for positions at the club that are difficult to fill. A survey of private club managers will be developed and used to determine the extent to which Private Club Managers of city clubs in the New York State Chapter practice community engagement with the goal of improving staff recruitment and retention. This project, Community Engagement: Moving the Needle on Staff Retention in Private Clubs, is a scientific study which uses the practice of Community Engagement to create data sets for analyzing staff recruitment and retention in Private Clubs. Expected outcomes are to measure impacts on staff retention in two Buffalo city clubs who practice community engagement. The student researcher needs to determine the information needed prior to selecting a survey instrument.

Comparing Social Media of Southern Fried Cotton and Coastal Cotton

Empress Phelps, FTT 455: Issues in Fashion and Textile Industry
Faculty Mentor: Professor Liza Abraham, Fashion Textile Technology

Most companies and consumer use websites and applications to create and share content and/or participate in social networking. Both Southern Fried Cotton and Coastal Cotton are cotton clothing businesses based in southern U.S. The purpose of this study is to investigate strategy used by these businesses on various platforms to attract traffic to their website. The goal of Southern Fried Cotton on social media is to promote clothing that captures the southern spirit in contrast the Coastal Cotton promote their classic Styles. Both companies used social media applications such as Twitter, Facebook, and Instagram to interact with their customers and potential customers. Businesses use

social media sites at very low cost to advertise. Coastal Cotton and Southern Fried Cotton have grown their brand on social media platforms and gained exposure. Both also use social media to engage customers, drive sales, and network.

Cotton Goes Green

Matine Uwangabe, Samuel Brown and Tatiana Garner, FTT 150: Introduction to Fashion Merchandising
Faculty Mentor: Professor KeunYoung Oh, Fashion and Textile Technology

The main purpose of this study is to investigate how cotton sustainability is perceived by fashion consumers. Cotton is one of the most environmental-friendly fiber which is sustainable, renewable, and biodegradable across the entire product life cycle. Cotton is the largest natural fiber supplying the global demand for apparel products regardless of different fashion consumers and product categories in the fashion industry. This research primarily examines how contemporary consumers of the Millennial generation perceive cotton sustainability and its effects on the fashion industry. The Millennial consumers are one of the biggest fashion consumers today. The research questions for this study are as follows: Are the Millennial consumers aware of cotton sustainability? If so, how does it affect the fashion industry, especially fast fashion companies' business practices? The findings of this study will provide a valuable insights into the future of cotton sustainability from the consumer perspective to fashion professionals.

Cotton in Our Clothing: Wardrobe Analysis

Jeniffer Luna Ruiz, Lorin Marmion, Derric Jordan and Corrine Stanislaus, FTT 206: Introduction to Textiles
Faculty Mentor: Professor Arlesa Shephard, Fashion and Textile Technology

What the group did to collect the information of the fiber content of the garment was going through our closet and just counting the garments we use in a specific weather or season. We decided to go with Fall, each of the members created a table where they recorded the content of what we have. After having the information we came together as a group and created a final table, where we wrote the total of clothing pieces we had that fell into each category (Example-We counted how many items made out of cotton we had so we can put it under the cotton or cotton blends category.) Cotton is the fiber we preferred, based on our wardrobe analysis. Something we notice was how we didnt have an idea of how many cotton items we had. Our first though was that we were going to have less cotton items, but it was actually the opposite. Something else we noticed was that we didn't have a lot of other types of natural fiber such as silk and wool. This category was the one that had less items in total. So far in my group discussion we have come to the conclusion that there is

mostly cotton garments in our wardrobe which is cotton pants and sweaters. Therefore, cotton is the most important fabric we have in our wardrobe. It seems like cotton is a really versatile fabric that can be use in different garments and is also a really common fabric used in our clothes today.

Dare to be Original

Moesha Reid, FTT 328: Apparel Design III: Draping
Faculty Mentors: Professor Alexandra Eagen, Fashion and Textile Technology and Professor Arlesa Shephard, Fashion and Textile Technology

The purpose of this project is to explore draping techniques with different weights of cotton fabric. My initial inspiration for this garment came from the spring/summer 2019 trends for women's woven tops from WSGN. Our design had to be functional and also incorporate the different design methods we learned in class while adding our own touch. I was inspired by the asymmetrical tops, but wanted to make the concept more unique by including a bra top and voluminous sleeves. I instantly knew that the organic cotton fabric would be great because of its lightweight quality, which is extremely breathable, making it perfect for spring and summer. I choose denim for the skirt because it provided a nice contrast with the top. I first draped everything, then transferred the drapes to paper patterns in order to cut out the final product to sew the garment together. I wanted to create something that was funky yet still very feminine. The flow of the top from the sleeve to the fitted bust all ties right back in with simplicity of the denim skirt. I wanted everything to be youthful but modest. That being said, this outfit could be worn by a young woman ages 18-24. This garment will accentuate every curve of her figure nicely.

Denimized

Jeniffer Luna Ruiz, Jani Myree and Alexis Brignoni, FTT150: Introduction to Fashion Merchandising
Faculty Mentor: Professor Keunyoung Oh, Fashion and Textile Technology

This research project is designed to understand how denim has changed throughout the decades. One of the subtopics discussed is the denim fabric and how it is different from the 1900's where the fabric was rougher and now denim can come in a softer fabric. Another perspective that will be incorporated in this research is the role of jeans in women's fashion. This includes the initial introduction of jeans by companies such as Levi's, Gap, and Lee Jeans and also famous celebrity icons that had an impact on the style of jeans. Such celebrities brought in revenue to big name companies. Stars like Jane Russell and Marilyn Monroe soon started to have a huge impact on jeans in women's fashion. This research also identifies some of the different uses of denim and how apparel companies are making

more eco-friendly style jeans that are better for the environment. These topics have a significant importance on the role of denim and jeans in today's society because no matter how other trends come out of style, denim continues to impress the world with its evolving styles and development. Fashion industry is ever changing at a fast pace, but denim has still stuck around for decades. Denim will continue to stick around due to its practical value and durability. This reason makes denim one of the most known fabrics in the fashion industry.

Designing Prints: City or Nature?

Simone James, FTT 304: Surface Pattern Development for Industry
Faculty Mentor: Professor Brianna Plummer, Fashion and Textile Technology

Whenever going online and looking at different fabric prints or shopping, a lot of people always wonder, what is it that allows these prints to come out so well? Over the semester I was able to understand how to effectively use Adobe Photoshop and Illustrator when creating my own textile prints, how to properly adjust the motif in patterns and allow it to come out as an actual print without any errors/ mistakes. My collection of textile prints is inspired by the city and nature itself. With my original motifs I wanted to capture certain things that represent city and nature. The purpose of this print is to be used on outdoor furniture and or cases that can cover up items (anything city or nature related). Adobe was able to help me put together prints that made the appearance universal. The prints could be used with anything and reflect my inspiration. As of which season my brightly colored prints can be used in, it really depends on where you decide to use the print. I created my prints to have a comfy, fun look to it. Illustrator and Photoshop was able to give me an opportunity to put a few of my motifs together, make it as one and add my own spin to it with not only colors but with gradients to mix my motifs, bringing together my idea of how I wanted my textile prints to come out exactly.

Diamond Shape Motifs

Berlyncia Fabian, FTT 304: Surface Pattern Development for Industry
Faculty Mentor: Professor Brianna Plummer, Fashion and Textile Technology

My research was based on creating my own Diamond shaped motifs that were tweaked to my personal style. Getting in touch with your creative side expands how you can take a simple shape and drastically change it to your own liking. The Diamond shape is a symbol of protection in the form of wind. The shape is also a symbol of life in the Native perspective, each side is a facet of life's learning phases: Freedom, Equality, Unity and Eternity. I designed a collection of textile prints using technology as a method to

design and print my artwork. The diamond shape motifs are created by using the Adobe programs Illustrator and Photoshop. A motif is a decorative design or pattern. These patterns were manipulated by colors and scaling. My color inspiration was from WGSN commercial color update Spring/Summer 19 for women & young women. My target market is business women who likes to have a little fun with fashion while still looking professional. My print designs can be used to make button down shirts and dresses.

Distorted

Aretha Michel, FTT 304: Surface Pattern Development for Industry

Faculty Mentor: Professor Brianna Plummer, Fashion and Textile Technology

The earth is filled with many wonders that even after thousands of years has not fully been explored. It is constantly changing and creating, everything on earth is unique and although it may be formed the same nothing on earth is the same, not even identical twins. The world is filled with so much beauty: from underwater caves to topographical views. By using illustrator and photoshop I was able to design a collection of textile prints using the earth and all its living things as my inspiration. Our earth is very important and without the proper care it will crumble. By incorporating environmental aspects to create patterns with illustrator I want to raise awareness for the environment. I feel very connected to nature and the earth because we are all one as an ecosystem, surviving off the plants, living on the land, supporting and using everything on the earth. My surface designs come from images I took while I was overseas, and from images of nature/animals that I abstracted to make it different from the original image but still identifiable as what it is. My patterns can be used on shirts, shower curtains, carpets, blankets, water bottles or even tiles. One image was clouds from the airplane, as clouds are shifting they can take on various shapes, such as a heart which is something I was able to capture and transform into an abstract pattern.

Effects of Social Media on the Fashion Industry

Jordan Bauth, FTT 450: Issues in Apparel and Textile Industry and HON 400: All College Honors Colloquium
Faculty Mentors: Professor KeunYoung Oh, Fashion and Textile Technology and Professor Michael Johnson, Modern and Classical Languages

Social media is the most prevalent part of today's society and has been infused into all different tasks of life. This widespread use of social media is increasingly affecting our daily lifestyle, especially the fashion industry. Since new social media platforms are constantly emerging, retailers must adapt to this ever-changing dynamic to understand the shopping habits of its consumers. Social media can be used as a tool to potentially

improve the popularity and appeal of a company / brand to its consumers. This research project is designed to understand the effects of social media on the fashion and retail industry. This study will incorporate the use of two different research methods: literature review and an online survey. While the literature review will provide data on the current usage of social media by the fashion retailers, the survey will provide insights on the consumer's point of view and consumer social media behavior. The journal articles reviewed in the study include small and large apparel brands at a global standpoint. Topics of research include online influencers, sustainable fashion, the consumer decision process, and consumer retention. The initial research findings suggest that there is a positive correlation between the incorporation of social media and the sales revenues of the retailers. Social media allows for greater accessibility to a wider consumer base for fashion retailers.

Ethics vs Rules: What Do You Live By?

Amber Martinez, BUS 389: Civic and Community Engagement in Croatia

Faculty Mentor: Professor Christine Lai, Business

Ethics is simply the right and wrong behaviors an individual or corporation makes. Depending on the decision process an entity makes will vary how others view their decision making, or ethics. But what drives someone to use ethics learned outside of a professional setting into their work life and how does one's religious beliefs influence their professional life beyond what is thought during religious teaching. Overall, what drives their work ethic? During my service learning travels to Croatia, I want to explore the relationship between religion and its influence it has on one's work ethics. My research will be comparing the attitude difference between Croatia students and Buffalo State students regarding religion and ethics. In Croatia, a country who is just becoming its own after decades under communism with no religion, how are Croatian millennials influenced by religion and how does religion influence their work ethics? Although United States millennials do not claim one religion, most claim to be spiritually connected. Is there a difference between being spiritually connected and following procedural duties a religion gives to their followers?

Explosive Energy

Dhalya Jemmison, FTT 304: Surface Pattern Development for Industry

Faculty Mentor: Professor Brianna Plummer, Fashion and Textile Technology

I was inspired by the Netflix documentary Sky Ladder which follows Chinese pyrotechnical artist Cai Guo-Qiang. He pushes the limits and creates some of his dramatic installations using explosives, fireworks and gunpowder. Cai began using

gunpowder in his work to encourage spontaneity and confront the controlled artistic tradition and social climate in China. For his projects, Cai draws on a wide variety of materials, symbols, narratives, and traditions: elements of Feng shui, Chinese medicine and philosophy, images of dragons and tigers, roller coasters, computers, vending machines, and gunpowder. He has reflected upon his use of explosives both as metaphor and material. My own surface pattern developments play on many of these elements while incorporating trends from the WGSN Catwalk Analytics S/S 18: Print & Graphics forecast. Some major trends that I decided to focus on were using bright pops of color, bold prints, and expressive designs. The colors I chose for my collection consist of a bright palette, a pastel palette, a neutral palette and a dark palette. The motifs I created reflect some of Cai's older works of art where he used animals and common objects and symbols to have his audience view art in a different perspective. As a textile surface designer, I like creating without a purpose and using inspiration from unusual things in everyday life.

Extraterrestrial

Nia-Ceri Young, FTT 304: Surface Pattern Development for Industry

Faculty Mentor: Professor Brianna Plummer, Fashion and Textile Technology

The universe goes far beyond our measures; do you ever wonder what is out there in the universe? I find myself constantly wondering; I am fascinated by the stars and it is where I get my inspiration. The universe is beautiful, natural, and unique; the sun, stars, planets, comets, galaxies, and so on. As I gathered my inspiration from the universe, I used Photoshop and Illustrator technology as a design and print method for my textile print collection. Truly learning how to use these programs to the best of their ability is challenge but also rewarding. I experiment with the programs to see which would work best for my design. I illustrated most of my designs on the program or used photographs I obtained and then manipulated to my liking. For example, I illustrated and colored the head of an alien in Adobe Illustrator and then repeated the image to create a tile. Another method I used to create my designs is to draw them out and scan them into the computer to be edited and finalized. Learning how to use these new technologies has definitely made my design process easier and even broadened the different ways I can make my designs. My designs can work for anyone; whether it is a kid who dreams of going into space or a young adult like myself who is infatuated with the universe. My designs, like the universe, have no limit to whom they appeal to.

Fiber Content Preferences

Hannah Lewis, Tyla Bleu Bryant, Katie Manges and **Peter Olonade**, FTT 206: Introduction to Textiles

Faculty Mentor: Professor Arlesa Shephard, Fashion and Textile Technology

An analysis was completed to study which fiber contents are the most popular in wardrobes today. Knowing the most-owned fiber contents in our wardrobes is significant to finding out which fibers people prefer to wear on a daily basis. We conducted our research by analyzing each of our wardrobes and examining the fiber content listed on the labels of each clothing item in our possession. After analyzing our wardrobes, each of us made a table where we categorized the articles of clothing into groups of fiber contents such as cotton/cotton blends, other natural fibers, regenerated fibers, and synthetic fibers. After comparing each of our tables, we did find a good amount of similarities in our analyses. We found that cotton plays the most important role in all of our wardrobes, especially in our everyday clothing items like shirts and under garments. Following cotton, the second fibers/fiber blends we own the most of are synthetic fibers such as polyester, nylon, etc. As a group, we do not own many regenerated fibers such as rayon, lyocell, acetate, etc. The fibers that we own the very least of are other natural fibers, such as wool, silk, linen, etc. Reasons we prefer cotton are because it is comfortable, absorbent, practical for all seasons, hypo-allergenic, durable, and is less toxic than most other fibers. Upon discussion, it was found that most fiber contents in our wardrobes are blends of different fibers; therefore, it is hypothesized that fiber blends are important in our everyday wardrobes.

Fiber Findings in Our Wardrobe

Jordan Gabryel, Sam Kidder, Mary Lou Green and **Evelyn Williams**, FTT 206: Introduction to Textiles

Faculty Mentor: Professor Arlesa Shephard, Fashion and Textile Technology

We used a fairly simple process to categorize, collect, record, and analyze the garments in our wardrobes. The four categories were Cotton/Cotton Blend, Natural Fibers, Regenerated Fibers, and Synthetic Fibers. To further break down the categories we wrote examples of specific fibers that belonged to the different categories. Cotton/Cotton Blend were garments consisting of 50% Cotton or more, Natural Fibers were garments consisting of 50% of more of wool, silk, linen or other natural fibers, Regenerated Fibers were items that contained 50% of more of Rayon, Lyocell, Acetate, or other Regenerated fibers and the Synthetic Fibers were garments containing 50% or more of Polyester, Nylon, or other Synthetic Fibers. We each worked our way through our closets checking each tag and making a tally in the proper category. When we had all the information we needed we proceeded to convert the tally count into percentages and created a table. The

majority of the clothes in our closets are made up of a Cotton/Cotton Blend. The second most common fibers in the clothes from our closets were made from Synthetic Fibers. Regenerated Fibers follow close behind making up a smaller portion of the clothes. We do not own a lot of Natural Fiber garments with those being fairly uncommon. The findings are interesting to us because most of our wardrobe consisted of Cotton and Cotton Blends. Based on the findings from our groups different wardrobes we would hypothesize that garments made from Cotton/Cotton Blend are most common.

Fiber Research Analysis

Amber Pollock, Darian Fenton, Jani Myree and Jacob Centeno, FTT 206: Introduction to Textiles
Faculty Mentor: Professor Arlesa Shephard, Fashion and Textile Technology

As a group we categorized our clothing by fiber. The process began with sorting through garments that were relevant and practical to our needs. For example, our environment, our lifestyles and our fancy. We then categorized our clothing into groups of fibers: cotton and cotton blends, other natural fibers, regenerated fibers and synthetic fibers. After doing so we were able to see which fibers were most prevalent in our wardrobes. This then allowed us to make quantitative conclusions as to our fiber preferences. From the completion of our wardrobe analysis we discovered that cotton and synthetic fibers are the most common amongst our group. With this information we hypothesize that these fibers will be most prevalent in the average wardrobe as well. We believe that synthetic fibers will be in the highest concentration of garments in the majority's personal closets. Not particularly because we think that is the general preference but because most people likely do not pay attention to the content of their clothes, or at least not all of it. And with the increase of demand for fashion trends at cheap prices, the most affordable and efficient textiles are synthetic. Currently synthetic fibers have taken over the affordable fashion market, so much so that they are difficult to avoid. So with this information and the findings of our own research we predict that synthetic fibers will be the most prevalent fiber in the average wardrobe with cotton coming in second.

Fiber Science of Cotton

Lillian Pfeiffer, Hannah Lewis and Naomi Jackson, FTT 150: Introduction to Fashion Merchandising
Faculty Mentor: Professor Keunyoung Oh, Fashion and Textile Technology

Cotton fiber science is the study of production of textiles, fabrics and dyes using chemistry, physics and basic textile management. Cotton fiber science is significant to the fashion industry for many reasons. The main reasons include consumers being concerned about cottons being ethically sourced,

sustainable, high quality, comfortable, colorfast, washable and wearable in the different weather conditions. This study is intended to answer the following research questions: What is cotton fiber science and why is it important to the fashion industry? Yarn manufacturing, dyeing, printing, and finishing are key parts of cotton fiber science. Yarn manufacturing is using cotton fiber to be spun into a cotton yarn for mechanical knitting and weaving. Among many dyeing processes within cotton fiber science, finding efficient and sustainable techniques is becoming a major topic in the cotton fabric production process. Printing on fabric is known as the selective application of color to a design or material. Different methods of printing may be used during cotton fiber science, including screen printing, heat transfer, and roller elaborating on different finishings such as mechanical finishing and chemical finishing. To collect and discover new information for this research, the review of academic journal articles, CottonWorks' website, and WWD database are called for.

Flourishing Vision

Veronica Ross, Fashion and Textile Technology
Faculty Mentor: Professor Lynn Boorady, Fashion and Textile Technology

The "Flourishing Vision" research project was meant to bring more awareness, attention and utilization to the fashion and textile technology community and fashion industry to 3D textile printing and the use of 3D objects in garment design. Research was conducted on the forecast for the spring 2019 season. On campus machinery was investigated to use the desired filament, which was flexible, for this project however, the only substances available were stiff and breakable, rendering them useless for the desired outcome. Online options were also explored but due to limited expenses, were quickly discarded. An alternative then had to be explored to be able to institute 3D elements in the final design but without the use of actual 3D printing. The basic shape of the garment was inspired by the forecast. The 3D elements are pre-constructed silk flowers in different sizes, colors and styles. The silk flowers were the closest elements to the forecasted surface prints and also in the 3D shape I wanted to work with. Though I was unable to complete my research project as anticipated, I feel that the use of the 3D silk flowers give the garment the same artistic feel as I would have been able to produce otherwise. My project was overly ambitious and I now know why 3D printing has not been widely embraced by the fashion industry as the expense is high and the technical knowledge is very specific. Hopefully, I will be able to use this technology in the near future.

Forced Child Labor in the Cotton Industry

Kimberly Smith, FTT 450: Issues in Fashion and Textile Industry
Faculty Mentor: Professor Arlesa Shephard, Fashion and Textile Technology

There are many forced child labor issues within the cotton industry, mainly within poor developing countries. Many developing countries use the cotton industry to help their economy, and to provide a home and food for families. These countries have many cotton farms, but no technology or machines to help harvest the fields, so an increase in employment on the cotton fields is highly needed. With poor economies in developing countries, the cotton industry needs to find the cheapest labor possible, which is where forced child labor comes into place. In many cases, people believe forced child labor is due to families living under the poverty line, which is only part of the reason. In many of the developing countries, the local governments and the educational systems are forcing children to work on the cotton farms, in harsh and intense working conditions. This is the nature of the industry and the state control over rural areas in specific countries. In most countries, the local government controls all the cotton farms and all activity that happens on the fields, such as, planting the seeds, picking the cotton, and most importantly, who is working on the fields. Some countries are going to bring in farmer field schools to learn how to make working conditions better, but that still does not help the forced child labor, it just makes their working conditions a little better.

Genetically Modified World

Chelsea Quarmby, FTT 450: Issues in Fashion and Textile Industry
Faculty Mentor: Professor Arlesa Shephard, Fashion and Textile Technology

This paper discusses the impact that genetically modified cotton has on the environment, along with the environmental effects from the use of pesticides during the production of cotton. It will discuss the demand for more organic or sustainable cotton from the consumers, and the importance of striving to achieve a more sustainable textile all while remaining affordable to the fashion and textile industry. Issues around this topic range from the effects of using chemicals during the production of cotton, namely pollution and human consumption, who is growing organic cotton versus who is growing genetically modified cotton, why consumers and companies desire more organic cotton, and different methods farmers and fashion companies are using to achieve a better cotton. Research was obtained from the scholarly articles, along with blogs, government resourced websites, and non-profit organizations. The objective of this paper is to find a more resourceful way to produce cotton in order to reduce its current affects around the globe.

The Grand Reveal: Secrets to Event Success

Magdeline Jasinski, Hospitality Administration
Faculty Mentor: Professor Kathleen O'Brien, Hospitality and Tourism

Robert Louis Stevenson once said, "An event strikes root and grows into a legend, when it has happened amongst congenial surroundings". The Legacy of an event also includes the memory of an experience. "It's not enough to do things just right, because anyone who organizes an event is an emotions broker and much more than just a service provider" (Demetz, 2015). How can the event manager better understand the emotions of guests when in the venue space for a special occasion? Are they happy? Excited? Connected? Curious? This study will fill a gap in knowledge about how to understand guests' emotions and how to make a good decision when choosing a venue for an event. The research method used is a comparison between three restaurant types that host events. A casual pub, family friendly restaurant and a fine dining restaurant have been chosen. These restaurants are "congenial surroundings" that host hundreds of events annually. In this research study, I observed a variety of emotions experienced by guests while in attendance at events. The findings indicate that different types of restaurants influence the guests' emotions. The conclusion is that the atmosphere and style created through the event design is a major factor how the guest feels in an event space, which may be the difference in event success.

Hand Made to Digitally Designed: Replicating Hand Made Fabrics Through Digital Processes

Emily Ziegler, FTT 304: Surface Pattern Development for Industry
Faculty Mentor: Professor Brianna Plummer, Fashion and Textile Technology

For centuries, textiles have been created completely by hand through different weaving processes and colored through traditional natural dyeing techniques. The introduction of new technologies have sped up the process of fabric making; the loom and later power loom, synthetic dyes and commercial screen printing being just three examples. However, can fabrics be designed digitally and printed to emulate those hand made and dyed with traditional dyeing techniques such as Shibori. The purpose of exploring if Shibori dyeing can be transferred into the digital world is to see (a) how closely hand made works can be replicated through digital design or manipulation and (b) when printed, how does the quality and composition compare to hand made counterparts. Manipulating scanned images of hand made fabrics in Photoshop to achieve a digitally manufactured design provides a platform to this inquiry. The use of Photoshop allows for the originality of design and color gradation maintained in

scanning, but offers digital uniformity in repetition. A highly structured pattern can be achieved once the scanned fabric is a repeat pattern tile. Printing the fabric using commercial screen printing makes traditional dyed designs available for mass production and commercial use. In taking the digital design and printing route, there is a shift in how the artist interacts with the work. The digital quality of design and composition will be maintained through printing, but the artist's hand and natural unpredictability of hand dyed shibori could be lost.

Her Opulence

Kimberly Granados, FTT 451: Senior Project
Faculty Mentor: Professor David Brinson, Fashion and Textile Technology

This collection was inspired by the opulence and elegance of the Victorian Era especially from evening occasions, such as Balls and Soirees. This is an era that is remembered for stylish clothing. Not only did appearances matter but etiquette and manners were set very high. Victorian evening occasions were significant because they gave women liberty in their choice of clothing. That is where they were able to connect with their femininity and bring out their intimate social side. These events also brought the upper classes together as an innocent recreation with the effects of elevating rather than depraving the mind. My purpose is to interconnect the elegance of the Victorian Era with today's modern women who desire to get in touch with their feminine side. This collection was constructed by using experimental draping techniques, along with flat pattern making methods. For fabric choices I kept in mind Victorian favorites such as taffeta and crepe blends. As my specialty fabric that brings all the detail and attention to I chose a gold pleated lame. For colors, I wanted everything to be solid, yet it is the different fabric textures that will make them both stand out. This all resulted in four evening wear looks. I plan to share with the audience how I made my concept become reality. Overall this represents everything I have learned during my undergraduate years here at Buffalo State.

House of Sin

Angelina Walker, FTT 304: Surface Pattern Development for Industry
Faculty Mentor: Professor Brianna Plummer, Fashion and Textile Technology

The basis of this project was to design a collection of textile prints, using technology to recreate them into textile designs. I began with trend research to help with correlating trends for re-creating intricate designs. With the Adobe programs Illustrator and Photoshop, I was able to manipulate production ready motifs into straight, mirrored, seamless, vertical and horizontal shift pattern layouts. With flat color reduction, cleaning and

manipulating images, using filters I was began the process of creating my surface patterns designs. I was able to express and exemplify the different characteristics of women through my surface patterns designs. My work was also heavily inspired by the feminist movement therefore I used motifs such as stereotypical beauty and sexuality interpretations. The technical definition of Feminism is the belief in the social, political, and economic equality of the sexes. To me, being a feminist is a personal quest to embrace, understand and nurture my gift of femininity. We are complex creatures, no more or less capable than men, nor above or beneath them. Rather, we are a complimentary factor in their lives, and must strive to be all that we were destined to be. Being a feminist is to never allow oppression, or disrespectful treatment. Equality is a right. My overall approach was to create a theatrical wearable textile designs. I found the piece aesthetically pleasing because of the way it represents different interpretations of women and their beauty, however it can be a piece all on its own.

How Does Social Media Affect Our Mental Health?

Anastasiya Muzychko, HON 400: All College Honors Colloquium
Faculty Mentor: Professor Christine Lai, Business

This project will evaluate the relationship between social media and overall life satisfaction. Looking into the effects on mood and mental health that individuals may experience from the consistent use of social media by sharing and viewing posts on the internet. This study will concentrate on teenagers and young adults between the ages of 15 and 24 and will also investigate whether the time at which one begins using social media correlates to a difference in the impact that results from constant usage. Various peer-reviewed publications on the topic of social media and its effects on mental health will be taken into consideration for this research. This research takes into the account that social media may be addictive and that addictions may cause people to be more dissatisfied with their own lives. Social media may be something that causes short-term happiness to many people but in the long run, can have negative influence on mental health in relation to depression and anxiety. The purpose of this study is to see if social media is the cause of change in mental health or if it merely feeds into the current mental state of those using it.

The Hunger Games: Is Your Restaurant Starving for Profit?

Abby Pelonero, HTR 499: Independent Study
Faculty Mentor: Professor Kathleen O'Brien, Hospitality and Tourism

Profit is not easy to produce. In fact, "net profit margins in the restaurant industry are unusually thin and vary from around

2 percent for fast food restaurants to around 6 percent for fast casual, casual and full service.” Correct purchasing, budgeting, and inventory procedures play the largest role in making a profit. Since the commercial kitchen is the hub for this type of activity how are these management responsibilities dealt with on a daily, weekly and monthly basis Inventory Management includes a series of standard operating procedures that may determine financial success or failure within a food and beverage facility. The Quantitative Research method was used for this study and involved collecting and converting data into numerical form so that statistical calculations can be made. The question at hand was how to gain the upper hand in controlling costs through inventory management. In this study I have collected inventory data at Campus House. This data is combined with information gathered through multiple interviews with food and beverage superiors, as well as a literature review. I learned which inventory procedures are successful and which ones are not that by collecting data and comparing inventory management procedures among three different restaurants. Overall, the information I have collected has shown how much time and organization is needed to make a profit.

If You Don't Succeed Fail 95 Times

Faith Mann, FTT 304: Surface Pattern Development for Industry
Faculty Mentor: Professor Brianna Plummer, Fashion and Textile Technology

As a textile technology major you either become a designer or you're yesterday's news. Using very powerful software programs such as Illustrator and Photoshop you can create marvelous pieces of art. In my case sometimes creating half pieces of work, such as repeating a half drop 45 times for submission. However, learning to engineer prints is a critical skill for up and coming designers, working with these dense software programs is the gateway for design opportunities even outside of textiles. Using just simple tools such as rulers and guides can make or break your pattern. Learning how to use marquee tools in Photoshop and creating an offset ratio for patterns to operate as a repeat can give your pattern definition. Another tool that can broaden a designer's range of pattern development is clipping masks in Adobe Illustrator that can reconstruct patterns beyond your typical copy and pasting a picture. The strongest and most powerful tool there is in almost all Adobe design platforms is Layers. They show you in-depth of how your pattern is layered on a board. Layers are the history of your paths in surface designs and in some cases it can fly under the radar if you allow it. Furthermore, the pattern that was created shows emphasis on the technical aspects of surface design itself from grainlines to guidelines. The motif shows the technical and emotional sides of the designer and the mood is emphasized by the use colorways

Inspired by a Wedding Stage: Pleats and Asymmetry Define Simple Elegance

Valeasha Collins, FTT 328: Apparel Design III: Draping
Faculty Mentors: Professor Alexandra Eagen, Fashion and Textile Technology and Professor Arlesa Shephard, Fashion and Textile Technology

My creative project is a gorgeous asymmetrical voile top and poplin pegged skirt. The inspiration for this outfit is drawn from the delicate and beautiful scenery of wedding stages. I love how the soft, fluid fabrics are used to decorate the walls with various types of drapery. I first sketched out my idea and drew technical flats, to illustrate how the outfit is supposed to be constructed. Then I plotted out my designs, draping muslin fabric around the dress form. Then I marked, trued, and traced the muslin sloper on pattern paper, before constructing the outfit out of my final fabrics. The pleats and cowl details of my designs show a couple of many ways that darts can be manipulated, to create different beautiful fashion details.

Interconnecting the Unexpected: Combinations and Styles in Cotton

Jordan Stover, FTT 328: Apparel Design III: Draping
Faculty Mentors: Professor Alexandra Eagen, Fashion and Textile Technology and Professor Arlesa Shephard, Fashion and Textile Technology

The FTT program received a grant from Cotton Incorporated for fabrics including denim, chambray, sateen, voile, and poplin. My FTT 328 Draping class used these fabrics to create an outfit consisting of one or two pieces along with designing around the techniques of dart manipulation, sleeves, and either a basic skirt or a peg skirt. Using the theme of Interconnect from Runway 11 and using the page “Keeping it Lit” from WGSN's Creative Manifesto, I designed my three-piece outfit. For my design, I wanted to step out of my normal comfort zone and create a more wearable look. The skirt I designed was a basic one dart skirt that I modified to be tea length and to include a slit for function. The skirt was created out of white voile, includes a 2” waistband and an invisible zipper in the back. For the top, I decided to use denim and sateen along with white cording and lining material for the pockets. I created yokes for the front and back along with princess panels in the front and 1 dart in the back panels. I also created pleats on the back yoke. The collar, piping, belt, and placket were constructed out of sateen. By inverting the fabrics with the lightweight on the bottom and the heavy weight on the top, this creates a top-heavy silhouette that interconnects with many styles.

Lunar Link: Celestial Couture Inspired Spring/Summer 2019 Runway Collection

Kelsey Jeffs, FTT 451: Senior Project
Faculty Mentor: Professor David Brinson, Fashion and Textile Technology

Lunar Link is a collection of 4 designs which are displayed in a professional theatrical setting: Runway. These garments were draped and flat patterned from original designs which were inspired by the research on Fashion trends for the upcoming Spring/Summer '19 fashion season. This collection incorporates couture elements. Hand sewing with beading is also prevalent to demonstrate the qualities of hand sewing versus machine stitching. Lunar Link explores a design market that represents average women sizes. The design process also involves specification sheets (which are technical guides to sewing my garments.), photo shoots, and more for the production on Runway. My collection must also fit the overall theme of the Runway show, Interconnection. In my concept, We are all made of stardust and live under the same moon. The moon is associated with water and fluidity. She is empathetic and in tune with the Earth's Tides. Humans are made up of about 60% water, and since the moon influences our tides, she can influence people as well. The moon is associated with the season Fall; However, she is often visible during the day. The moon reflects the sun's light with her own personal soft feminine glow. I've artistically demonstrated much of these concepts in my fashion sketches and through fabric choice.

Management Accounting Research in the Hospitality Industry

Chuntao Li, HTR 499: Management Accounting Research Activity
Faculty Mentor: Professor Kathleen O'Brien, Hospitality and Tourism

In this project, I will review management accounting research in the hospitality sector, focusing on hotels and the ancillary activities, especially restaurants and bars, as Campus House Club. It is not surprising that in the hospitality culture, finance and accounting issues are always of the highest priority. To further understand why accounting has such a significant role in hotel management, take a look at some examples of important questions accounting can readily answer for hospitality managers: 1. What was the total sales achieved by the business last year? 2. What was the average price of our hotel rooms last week? How does it fare compared to our competitors? 3. How is this month's profit compared to last month? 4. What was our most popular menu item? What was our least popular one? Knowing the answers to these questions are vital to be able to plan for the future and improve the business to better serve clients and increase profits. With this information, it is clear why accounting is such an indispensable aspect of hotel management.

Marketing of Cotton Using Social Media: A Study of PrAna and Wrangler

Jada Washington, FTT 455: Issues in Fashion and Textile Industry
Faculty Mentor: Professor Liza Abraham, Fashion Textile Technology

Social Media is an online communication channel that allows ordinary people and businesses to share through words and visual messages. Businesses use social media to acknowledge their brand, encourage customer loyalty, decrease promotional cost, and receive customer feedback. The purpose of this study is to compare social media strategies between two companies; PrAna and Wrangler. The study will investigate Instagram, Facebook, YouTube and blogs to establish similarity and differences between the two businesses on their social media goals. Both PrAna and Wrangler use cotton as the predominant fiber in their clothing. However, both companies take a very different approach to promote their products made from cotton fiber. PrAna's social media focuses more on yoga wear, comfort, and sustainable issues. Wrangler on the other hand emphasizes the rugged and durable nature of jeans. The findings will highlight other social media emphasis and the responses of customers to the different platforms.

The Millennial Generation's Influence on Fashion Companies

Alexyss Cariglia, FTT 450: Issues in Fashion and Textile Industry
Faculty Mentor: Professor Arlesa Shephard, Fashion and Textile Technology

Millennials influence the fashion industry in ways that urge companies to be more ethical and eco-friendly with their production standards. This research report aims to study the ways that the millennial generation, with their recent awareness of health, social, and political issues, have become influencers to fashion companies when it comes to sustainability. With the use of technology and social media, Millennials are demanding transparency and respect for the planet from retail brands, and companies are responding to this considering Millennials represent a large portion of spending in the world. As this generation drifts towards "mindful luxury" and away from companies that don't value green production and consumption, brands will find themselves favorable with Millennials. "All-natural" living and the increased consumption of organic cotton goods will be discussed in greater detail as information will be obtained through literature review. Some of the main themes in this report will be recent popularity of thrift shopping, Millennials being agents of change in society, Millennials being trend-setters for retail brands, and the Millennial's lack of brand loyalty among fashion companies.

Pathways to BioTech Business Innovation

Aaron Fernando, Biology

Faculty Mentor: Professor I. Martha Skerrett, Biology

The growing biotechnology industry creates many business opportunities. As part of this project a range of Biotechnology-type businesses were investigated with regard to business development models, costs related to establishing the business, and methods of marketing the business to potential customers. One of the businesses was selected for further theoretical development and analysis. This company was named “The Biotech Development Co.” and would be a business that provides services to the Biotechnology industry by facilitating development and success of biotechnology ideas and products. The theoretical Biotech Development Co. would find markets for biotechnological developments from private industry, large educational institutions, and research centers. By facilitating the cultivation of ideas and finding ways to develop and market them, the company would promote opportunities for a profitable business development and/or partnership. Contracting the services of The BioTech Development Co. would allow recipient organizations to focus on refining their product rather than marketing, licensing, financing, and other aspects of the business development process. The goal of the company would therefore be to provide an economical and efficient service by organizing and then pursuing opportunities that were most appropriate and beneficial. Biotechnology developers are employed by companies to perform similar tasks and their job description aligns closely with the services provided by The Biotech Development Co. However outsourcing the biotechnology development process would allow new companies, or economically struggling corporations or institutions to develop ideas and innovations without committing a full-time salary to a business development officer. This presentation will include organizational tools such as business canvas models and will further demonstrate how The Biotech development Co. could facilitate biotechnology development.

The Radiant Garden

Jillian Sickler, FTT 451: Senior Project

Faculty Mentor: Professor David Brinson, Fashion and Textile Technology

The creative project I explored was designing and sewing a collection of wedding dresses for the Buffalo State’s Runway Fashion Show. My collection was inspired by the forecast of common ground Spring/Summer 2019. The main concept of the trend is rediscovering your roots and seeking out things that connect us. My collection is made with vintage and older style laces, paired with modern day silhouettes and fits. Using the inspiration of wild flowers and baby’s breath for a delicate lace look from common ground. The traditional white dress with small pops of color and floral. One major technique I

am creating hand made flowers for each of my dress. I’m also focusing on fitting the dresses to the models. The flower making technique is very time consuming but I feel it will be worth it in the end. The steps I took, the problems I faced, and how I overcame them!

Sisterhood of the Traveling Dress

Olivia Garvey, Lorin Marmion, Allie Lucci and Elisa Moulden, FTT 150: Introduction to Fashion Merchandising
Faculty Mentor: Professor Keunyoung Oh, Fashion and Textile Technology

Have you ever wondered where exactly your clothes came from? Your clothes had a life of their own before they got to you! This research is aimed to discover the exact path that a simple cotton dress will travel before it caught your eye in a display case at the mall, was uncovered by a box and bow on your birthday, or sparked excitement in you when you pulled it from the depths of a sales rack at your favorite used clothing store. No matter how it came into your possession, it has a story, and a line of travel. Cotton is significant in one’s daily life, as manufacturers are moving closer to more synthetic materials; so, this research supports the notion that cotton is a wonderful alternative to all this “fake stuff.” It’s affordable, easily harvested, and it is also a renewable resource. Starting with the cotton fiber itself, the research will explore the make-up of this dress, travel a distance and learn how it was designed and how that design became patterned, dyed, and constructed. Finally, the finished product will present just how far this dress traveled, and see the impact that it made along its journey. Websites utilized will be the CottonWorks website in order to conduct adequate research on the travels of our cotton dress.

Social Media Usage by Cotton Businesses

Alize Rodriguez, FTT 455: Issues in Fashion and Textile Industry

Faculty Mentor: Professor Liza Abraham, Fashion Textile Technology

In recent years, all businesses are using social media. Social media is the interaction between people and businesses via technology. Businesses have the opportunity to capture the views of multiple people with just one post. Implementing a social media strategy allows businesses to explore creativity and receive feedback. Cotton On and Cotton Inc. are two companies that promote cotton on their websites and social media. Each company has utilized different social media strategies to increase cotton revenue. The purpose of the study, is to investigate the implementation of social media strategies by these companies. The Instagram and Twitter accounts of both companies are analyzed to further understand what really attracts consumers to

a company's profile. Cotton is being promoted by highlighting the pros of cotton. The sustainability of cotton is posted constantly to remind consumers that it is a safer choice for the environment. Cotton Inc. promote cotton to be the fabric of choice for ones entire life whereas Cotton On use Instagram to showcase cotton as being part of a glamorous and desirable lifestyle. As social media flourishes, companies are over time improving the quality of their social media content.

Social Media Usage by Two Cotton Based Businesses

Jordan Bauth, FTT 455: Issues in Fashion and Textile Industry
Faculty Mentor: Professor Liza Abraham, Fashion Textile Technology

As time progresses, the green movement and the push towards behaving in an environmentally friendly way is gaining rapid importance. More and more consumers are interested in buying clothing that is eco-friendly as well as knowing where the garments they purchase are coming from. To cater to the consumers wants and needs, many retailers are beginning to adapt and modify its clothing. One of the most prevalent focuses in the eco-friendly movement is in regards to cotton. More consumers are interested in wearing pure cotton over synthetic. Two companies in specific that are greatly built upon this are Cotton On and Cotton Inc. This research study seeks to understand the social media strategies used by both these companies and how these strategies affect Cotton On and Cotton Inc. sales. The dissertation does not incorporate an extended literature review. Instead, the social media usage and strategies are being compared and contrasted between both companies. The research findings suggest that there is a positive correlation between social media usage and eco-friendly retailers, such as Cotton On and Cotton Inc. The companies both use the following social media platforms: website, Instagram, Facebook, Twitter, and Youtube. However, Cotton Inc incorporates the use of blogs and Pinterest, both of which Cotton On does not use. Because of this Cotton Inc. has a greater competitive advantage.

Student's Perception of Teaching Styles in Europe and the United States

Vadim Lebedyukj, BUS 389: Civic and Community Engagement in Croatia
Faculty Mentor: Professor Christine Lai, Business

The research will highlight the opinion of teaching styles from the student's view. It is important for teachers to understand how well each teaching style works. Obtaining the opinion of students who are the main audience will allow teachers to consider implementing the teaching style that students feel are most successful. In addition, the comparison between the

opinions from Buffalo State and The University of Rijeka might allow teachers to consider the teaching style differences that foreign students can experience. Studies suggest that the quality of learning will not improve without the changes to the teacher's conceptions of teaching. Understanding what teaching methods students prefer will influence the teachers approach to teaching. Over the years, there have been many approaches to teaching styles. The traditional method of teaching which consists of transmitting knowledge and the active learning approach to teaching. (Kember and Kwan, 2002). Bhalli, et al., (2016) have conducted a study where they asked medical students to rate teaching methodologies based on their effectiveness. Their findings show that the majority of medical students preferred interactive lectures and problem based learning as teaching strategies. Focus group methodology will be used to help participants explore and express their views in their own vocabulary that would be less accessible in one to one interviews or surveys (Kitzinger, 1995). I will use teaching styles found in other research to survey students in Buffalo State and The University of Rijeka. My research will be a poster presentation. I anticipate that students from the U.S.A and Croatia will have different preferences in teaching styles because of the different cultures.

Surface Design: More than Manipulating Motifs

Meghan Wehner, FTT 304: Surface Pattern Development for Industry
Faculty Mentor: Professor Brianna Plummer, Fashion and Textile Technology

While learning surface design techniques in Photoshop and Illustrator I find myself in a newly discovered creative outlet. Inspiration is different for everyone; nature and geometric shapes tend to inspire me. Throughout the process of creating motifs and picking a color story I have found myself going towards a fall and spring mix of colors. Sometimes something as simple as recoloring a motif can be a game changer, sometimes the motif you've spent hours on just doesn't do it. Creativity may not always take you down a road of success, but it taught you something along the way. Throughout my process I have found that a cohesive set of motifs is not always easy to achieve. Although it is a tedious process, the payoff is amazing. Although a cohesive collection can be the same motif but recolored, there's something about the way different motifs in similar colors look. While printing on textiles color has a major role, mainly due to the textile choice, and its colorfastness. A pattern can be seen in a totally different perspective from a cotton knit to a cotton gauze. The size of the pattern overall is also put into consideration, sometimes a small pattern looks sloppy, compared to a large detailed pattern. Overall the creative process takes time, and a finished product of a fabric collection is in my future.

Surface Research Pattern Development

Maxicicanin Cange, FTT 304: Surface Pattern Development for Industry

Faculty Mentor: Professor Brianna Plummer, Fashion and Textile Technology

My surface research pattern design was based on creating a unique collection of original motifs for textile prints that are aimed towards fashion product market using professional methods. Colorway development, basic repeat development, and surface design trends transform the original motifs into digital patterns or graphic prints while meeting the standards of current trends and the high demands of industry using Adobe Illustrator and Photoshop. The inspiration for the development of my motifs came from my interest of geometric designs being able to create a basic shape and manipulate it creating a technical layout of surface patterns or graphic designs. This research project has taught me the basics of manufacturing in the surface pattern development industry, understanding computerized technical layout of repeat patterns, business practices, creative thinking, problem solving, analytical and organizational skills for the components of a professional portfolio. This research project has allowed me to venture into questions that has required me as an individual not just as a student to think and solve problems based on an interpersonal understanding of the concepts discussed in class, a skill that requires evaluation on a structural approach on how to use market research related to product development for a web portfolio researching color trends creating a fashion color palette. A research design project like this has pushed me towards an increase of comprehension promoting active learning based on making observations and thoroughly investigating the my findings.

Sustainability Issues Affects on Generation Y Cohorts: Then and Now

Tessa Howell, FTT 450: Issues in Fashion and Textile Industry

Faculty Mentor: Professor Arlesa Shephard, Fashion and Textile Technology

When it comes to sustainability issues and the awareness and knowledge of the subject, many companies are making necessary changes in an effort to become more sustainable. In doing so, these companies also try to market and advertise of their sustainability efforts in an attempt to gain more environmentally conscious consumers, specifically Generation Y cohorts. For example, brands such as Patagonia, showcases their sustainability efforts, by providing step-by-step details of how their garments are made, sourced and developed before it reaches their consumers. However, the marketing strategies executed by such companies are not readily accepted or geared towards Generation Y cohorts. As the most influential and influenced generation,

when it comes to sustainability awareness and practices, millennials are not well versed nor fully knowledgeable about such practices. I will use scholarly sources and websites to gather information about this issue. With the information I gather, I will be discussing the way in which these cohorts utilize and discard textiles and their overall knowledge about sustainability issues. In addition, I will also explore how the sustainability practices utilized by Gen Y cohorts, aide in the water waste reduction within the cotton industry.

Triple Your (D)reams

Robin Ryles, FTT 304: Surface Pattern Development for Industry

Faculty Mentor: Professor Brianna Plummer, Fashion and Textile Technology

Dream catchers are mostly known to provide its owner with peaceful dreams. Most ethnographers believed that dream-catchers were passed down through intermarriage and trade from the Native American Indian tribe called “Ojibwe”. “Native Americans believe that the night air is filled with dreams, both good and bad. When hung above the bed in a place where the morning sunlight can hit it, the dream catcher attracts and catches all sorts of dreams and thoughts into its webs. Good dreams pass through and gently slide down the feathers to comfort the sleeper below. Bad dreams, however, are caught up in its protective net and destroyed, burned up in the light of day”, (K Shabi). Using a vector graphics software program (Adobe Illustrator) I designed a collection of textile prints using a combination of neutral, pastel, bright, and dark colors to bring out the different possible moods a person feels. The focus of “Triple Your (D)reams” is more symbolic than literal. Symbolically the designs incorporated with in the motif are feathers, a pom pom, and a web. Feathers can provide ticklish laughter. Pom-poms are used to show spirit. Webs are created or used to capture things. “Triple Your (D)ream”, was originally inspired by the persistence and dedication I yet still practice and will continue to practice even when my dreams are fulfilled. Continuously failing my way to success allows the persistence and dedication I withhold to create knowledge (through mistakes) which is the key to catching your dreams.

Val Moda Spring/Summer 2018 Fashion Collection

Valeasha Collins, FTT 451: Senior Project

Faculty Mentor: Professor David Brinson, Fashion and Textile Technology

Val Moda is the name of my haute couture athleisure fashion collection. The concept is based on Worth Global Style Network’s (WGSN) vision, Creative Manifesto: The Discomfort Zone. Designers are encouraged to step outside their comfort zones and

to not become complacent with their creativity and expressing themselves. Research information was used to create a four piece cohesive collection, using Adobe Illustrator to render each design. Technical flats and specification sheets were created to give the dimensions of each garment for production. A Garment Reference Sheet was also created to give guidance on how to construct each design. Cost sheets were made to give an estimate of the cost of fabrics and trims. The garments are made of muslin fabric via draping, as a rough draft for construction. The muslin fabric will be fitted on models, before the final production of the garments. Then the muslin patterns are transferred into paper patterns and later constructed with fashion fabric. The development of the ValModa fashion collection would give the opportunity to utilize the technical fashion skills needed to succeed in the fashion industry.

Venom or Denim

Darian Fenton, Irina Arias, Reign Louis-Gene and Peter Olonade, FTT 150: Introduction to Fashion Merchandising

Faculty Mentor: Professor KeunYoung Oh, Fashion and Textile Technology

The topic of this research is denim sourcing and manufacturing. Articles will be analyzed through Cottonworks.com for this research. The analysis will be done on the articles pertaining to garment construction, yarn processes, wet finishing, and dry finishing. Findings will be used to promote consumer awareness of the important role of denim. Many people do not realize that their favorite jeans are produced from denim's natural state, which is cotton. Denim is important to cotton consumers specifically, due to its versatility, comfort, and potential ability to be recycled. Among many uses of denim, the most common one is for apparel products. It is used in a variety of clothing items and can also be used in automotive interiors, insulation, and upholstery. The main purpose of this research is to develop a greater understanding of the importance of denim and its uses in the apparel industry. It will also cover the advantages and disadvantages of denim sourcing and manufacturing. The findings of this research will help the average cotton consumers be more aware of what they are buying when purchasing denim products. Denim plays a huge role in the lives of fashion consumers. When people think of denim, they mainly think of jeans. In fact, denim plays a much larger role in the lives of consumers through many uses. Denim is important to consumers because it is continuously evolving and becoming better for the environment. Denim is extremely valuable as the global market for denim is growing immensely.

Where Will We Bee Without Sustainability: Honeybee Inspired Designs

Grace Nadig, FTT 304: Surface Pattern Development for Industry

Faculty Mentor: Professor Brianna Plummer, Fashion and Textile Technology

In recent years, the population of pollinating species of bees has greatly declined. While the true cause of this is unknown, it helps to wonder if the increase in pollution on our planet has caused these species to die off. The Fashion and Textile Industry is the second highest generator of pollution, following closely behind the Oil Production Industry. Without the bees to pollinate, crops such as cotton, a common fiber used in textiles, may not be able to grow. If the Textile Industry is unable to use natural fibers, or the price of natural fibers increases due to high demand, the production of synthetic fibers will only get higher and thus will contribute more to the pollution of Earth. What if we, as an industry and society, take inspiration from the decline of the bees to increase our sustainability? Taking inspiration from: the geometric hives, the texture of a bee's fur, the substances they produce, and the beautiful flowers they help to grow, original motifs will be created. These motifs will be created digitally and repeated through the use of Adobe Photoshop and Adobe Illustrator, and will also feature hand painted florals that will be digitally manipulated, which will then be printed onto fabric. While the original printed fabrics will require the designer to use caution in designing to increase the use of sustainability, it is hoped that eventually these prints will be able to be printed onto sustainably made fabrics with more eco-friendly dyes.

Working with Cotton as Inspiration: Clean and Fun Fashion

Rachael Steinmetz, FTT 328: Apparel Design III: Draping

Faculty Mentors: Professor Alexandra Eagen, Fashion and Textile Technology and Professor Arlesa Shephard, Fashion and Textile Technology

After our class was told about Cotton Incorporated and the fabric we would be using, I was immediately inspired to create something clean yet fun. I wanted to make sure I knew I could drape my design with previous knowledge from past projects, but I didn't want it to be too simple. I created a cropped button-down top with bishop sleeves and a ruffle bustier. The skirt was a simple peg skirt with four pegs framing the center and back of the skirt. The designs were created before we were able to see the fabric, and that made for a new design element I was not anticipating. The voile that we had the option of choosing was very sheer. Due to the fact that I had a collar, cuffs, a button placket, and ruffles on the bodice, some parts would be sheer while others completely opaque due to the layering. I draped the top into four pieces,

separating the top and bottom at a sweetheart line I had drawn on my dress form. My dart manipulation in the bodice is hidden by layers of ruffles. It was a challenge getting the front and back to match up and lay correctly, but eventually fell into place. Unlike the sleeve that was drafted from my pattern book, the skirt was more challenging until I realized I was less restricted than I initially thought.

The Workplace Sabbatical

Jordan Hughes, HON 400: All College Honors Colloquium
Faculty Mentors: Professor Gary Berger, Business and Professor Jo Yudess, Creative Studies

A new trend, that is most commonly known among universities is creeping its way into today's corporate world; the sabbatical. The old definition of sabbatical is "a period of paid leave granted to a university teacher or other worker for study or travel, traditionally one year for every seven years worked" (Oxford Dictionary). However, this practice is being adopted among a growing number of companies such as Adobe, General Mills, REI and The Cheesecake Factory. Each of these companies and others that offer this perk span many different fields of work. The structure of these workplace sabbaticals differs greatly from the university sabbatical. Employees are granted the extended leave after working for a company from 5-15 years, and the sabbaticals usually range from 4 weeks, to upwards of three months. After taking a first sabbatical, they are granted roughly every 5-10 years. Some of these companies even force their employees to take these sabbaticals. Often times, they are used for "international travel, focus on work with nonprofits, stay home for summer break with their children, work on an invention, or extend maternity leave" (Colleen Kane, 2015). The effects of these sabbaticals are the real reason these companies offer

them to long term employees. They find that employees return refreshed, excited, appreciative of their jobs and companies, plus they regularly bring back creative and new ideas. My research will analyze the cost and benefits to companies and employees.

Wreak Havoc and Make Noise

Rachael Steinmetz, FTT 451: Senior Project
Faculty Mentor: Professor David Brinson, Fashion and Textile Technology

My participation in this year's Runway fashion show has allowed me to explore the connection of fashion and movement. WGSN, the fashion forecasting website used by Buffalo State students, releases predictions on the trends for the upcoming Spring/Summer 2019 fashion seasons. WGSN divided up this season into three themes; Creative Manifesto, In-Touch, and Common Ground. In-Touch explores the need to get back to our true humanity through psychedelic prints, energizing colors, and technological advances in our daily life. I was inspired by the yearning to "get back to our roots" and need to make a statement, so I created "Havoc." My collection forcefully brings the concept of environmentalism to the forefront to invoke emotion and hold people accountable for their negative contributions to our planet. Since this year's Runway focuses on balance and cause and effect, I thought the best way to convey all of this would be the use of the four elements. The idea of using virtual and augmented reality to view art as mentioned by WGSN's "In-Touch," led me to create realistic prints that would stand out in my collection. Each garment includes a bandage-wrapped bodice, which ties everything together while simultaneously introducing the concept of an attempted fix to the situation we have put ourselves in. Due to the odd silhouettes in collection, I decided to drape each garment to achieve the shape I wanted.



Computer Information Systems and Engineering Technology

Altoids Tin to mintyPi

Victor Darlington, CIS 490: Senior Seminar
Faculty Mentor: Professor Sarbani Banerjee, Computer Information Systems

In the world today, everything can become smaller and smarter. With the creation of the Raspberry Pi, the development of things getting smarter and smaller has rapidly increase. The Raspberry Pi Zero is a super low-cost self-sufficient computer. It's a third the size of your everyday credit card. With just a little bit of programming the Raspberry Pi (RPi) has relatively endless possibilities. Due to this modding communities and the Internet of Things (IOT) have been in their most productive and inventive stage. The purpose of this research project will be to take an Altoids tin and transform it into something much smarter. This project will be about working to create a custom Raspberry Pi computer inside the space of an Altoids tin. To create a mintyPi, it will include a Raspberry Pi Zero Wireless, and a variety of custom parts. With the use of a soldering iron it is possible to wire all of these tiny parts together. On the circuit board of the Raspberry Pi, a freshly restored SD card will be installed. The storage drive will be the location of all the operating systems files. The Raspberry Pi also has pre-built operating system images that can be wirelessly loaded onto the mintyPi. To start the pre-built image RetroPie 4.3 will be loaded to the Raspberry Pi that allows for the emulation of a wide variety of game systems. The presentation will showcase an aluminum tin that will provide the user with the ability to try their efforts at a classic game.

Aronson Calibrator Design for PCB

Max Marciniak and **Georgia Kleiner**, ENT 422: Machine Design II
Faculty Mentor: Professor David Kukulka, Engineering Technology

PCB Piezotronics designs and manufactures a wide variety of piezoelectric quartz sensors. Their main facility is located in Depew, NY. To calibrate their pressure sensors, they utilize the Aronson Calibrator, a machine capable of testing and calibrating between 200-1000 PSI. Initially designed to test one sensor at a time, it has since been modified to fit up to five sensors at once. These alterations to the original design have caused multiple problems with the fixture including pressure leaks and deformations to certain components during operations. Several faults require maintenance multiple times a year which requires full disassembly of the machine and costs the company

thousands of dollars. Five different designs have been provided to PCB to address these issues, all of which have been developed with 3D CAD software and based on various engineering theories and calculations. The final proposed design simplifies a complex movement of parts that is needed to create a pressurized seal. A reduction of return on investment will change from four years to two years after implementation of proposed design changes.

ASHRAE Student Design Competition

Manuel Lebron Ortiz, Engineering Technology and
Seath Lotempio, Engineering Technology
Faculty Mentors: Professor David Kukulka, Engineering Technology and Mr. Raymond Johnson, Wendel Engineering

The 2018 HVAC Design Calculations is a student design competition held by ASHRAE. Completion of the design competition includes correctly sizing the variable air volume (VAV), air handling units (AHU) for the HVAC system, and calculate heating/cooling loads for a four story mixed use complex north of Istanbul, Turkey near Arnavutkoy. In addition, the designs are within compliance of the latest editions of ASHRAE Standards. Five ductwork designs to supply air to a zone were taken into consideration with the best design was chosen. The chosen design was decided based on the owner's project goals of the HVAC system, which included energy efficiency, health, and safety, occupant comfort, functionality, longevity, flexibility, serviceability, and maintainability. This design consists of the VAV connecting to a cylindrical ducting with reducers where flexible ducts connect to the diffusers. Heating and cooling calculations were made with respect to the specifications by the project requirements. Based on the zoning calculation, the square footage that is required for heating and cooling is approximately $70,000(\text{ft})^2$. Taking this area in consideration for the summer/winter, the facility requires roughly 38,000 BTU/hr to cool and approximately 285,000 BTU/hr to heat. The budget evaluation combined with load calculations decided on the selection of the VAV, AHU units, and other equipment used in the system to satisfy the Owner's Project Requirements for desired temperatures. Heating/Cooling loads, system design, zoning calculations, meeting ASHRAE standards and completing the competition with the necessary owner's requirements is the main objectives of the competition.

Buffalo State Mini Baja Design

Ryan Galus, **Mike Wierzba**, **Thomas Moran**, **Enrique Torres** and **Olivier Poitevein**, ENT 422: Machine Design II
Faculty Mentor: Professor David Kukulka, Engineering Technology

Mini Baja is a collegiate design series sponsored by the Society of Automotive Engineers (SAE). This event challenges engineering students to design an off-road vehicle capable of

handling a harsh and punishing terrain. The cars are to be designed and built in order to provide the students a real world involvement in the design of mechanical devices. Competition includes a series of activities that evaluate the vehicles performance in a variety of static and dynamic events. We focused on improving the design to simplify the vehicle's systems and considered handling, weight, complexity, terrain versatility, and durability. Some specific design changes included: 1) making the vehicle lighter by 15 lbs through reducing redundant supports and the use of smaller diameter tubing; 2) redesigning the front control arms that had previously failed using stronger components; and 3) design a new multispeed gearbox with a compact shifter that allows the driver to change gears on the fly. The goal is to build a vehicle that is robust and allow us to competitively participate in this international collegiate competition.

Chatbot

Richard Arnaud II, CIS 490: Senior Seminar
Faculty Mentor: Professor Sarbani Banerjee, Computer Information Systems

Students have trivial questions for departments that often have an easy answer but, they typically make a phone call in to the department to find the answer. Although several FAQs are available online, students still prefer to call in. To put this issue in context, hundreds of students call the financial aid department to find out when their loans, grants and scholarships will be disbursed. Most times the answer to this question is the same or similar for each student. For this research project a ChatBot that partially uses Artificial Intelligence and Databases that can answer simple questions that students have. A.I. or Artificial Intelligence is where a machine or computer is programmed to act and solve problems the same way that the human brain does. The Bot will respond to questions asked by a student about their financial aid. It will use a sample database of a students that contain information specific to the individual using the program. Questions that are too complicated will be referred to the department phone number or e-mail. There will be a sample set of questions asked to the bot to demonstrate how it works and interacts with the user. For this research project Java and SQL programming languages on Windows will be used to create the Chatbot that can respond to student's questions based on algorithms, FAQs and specific user data from a database. This program demonstration will show a simple but useful tool that responds to students' financial aid questions.

Closing the Gap: Blacks and Women in Engineering

Jabryl Chin, Electrical Engineering Technology
Faculty Mentor: Professor Jo Yudess, Creative Studies

In my first Engineering class, I noticed I was the only black student and as a male student the second thing I thought was, where are all the girls? But thinking back in my high school, students weren't steered towards entering STEM majors. All we were encouraged to do was to take automotive and cosmetology courses. However, I was encouraged by my father to study Engineering. Were others not encouraged? Why is there such a large diversity gap in my program? To try to answer these questions, I researched some of the factors that may affect African American students and women in entering STEM majors. From this research, I also found that both were underrepresented in those STEM fields. I constructed a survey asking various questions about each student's background, high school history, encouragement, educational self-esteem, and many more factors that may have changed their outlook on engineering and other STEM majors. Currently the survey is ongoing, but preliminary results indicate that schools in certain neighborhoods do not provide the guidance for students to make the STEM decision, others said their impression was STEM courses were too hard for them. From my creative studies background, I expect that I will have many suggestions for elementary and secondary schools to help close the gap.

Control System for Electrical Water Analogy Project

**Severin Smith, Brian Hess, Brandon Parker,
Zachary O'Connell** and **Alexis Vasquez**, ENT 466:
Electrical Design II
Faculty Mentor: Professor Ilya Grinberg, Engineering Technology

To provide the functionality of the Water Analogy of Electricity project, the Human Machine Interface (HMI) based on touch screen controller and Programmable Logic Controller (PLC) are needed to control the processes of peripheral hardware connected to it. Input data from this hardware is read, and appropriate output signals are generated. The project concentrates on developing an HMI program that provides an easy to use interface to control the data from the PLC as well as communication between the PLC, HMI and peripheral devices. Simultaneously, ladder logic program for the PLC had been developed to achieve above-mentioned goals. This project includes the programming techniques associated with development of a graphical user interface and the communications between pieces of hardware using industry-based technique and methods. The resulting product presents future students a streamlined learning process of the devices extensively used in industrial control systems. It

also serves a purpose of demonstrating the capabilities of modern industrial automation in academic and industrial environments.

Daily Planning iOS Application for iPhone Environment

Aierfan Maierdan, CIS 490: Senior Seminar
Faculty Mentor: Professor Sarbani Banerjee, Computer Information System

In the modern world, time management has been a significant part of everyone's day-to-day lives. Specifically, many people experienced the pressure of having multiple deadlines and not knowing how to manage their time, prioritize their work, and keep track of their progress. In this research project, an iOS App for iPhone environment would be created to help the users to track and monitor their daily, monthly, and yearly plans and tasks. Also, this App would allow the users to manage their tasks by setting a start and an end time, organizing them by categories, and tracking current progress. In the market, there are few existing similar Apps; however, most of them are overly complicated for users. Also, these Apps function more like professional work calendars rather than "To-Do-List Apps" that assist users to reach goals and monitor their progress. Purpose of this application is to help users to increase their daily productivities and to keep their daily tasks in a more manageable and organized fashion, as well as to focus their attention on tasks of high importance that need to be completed. Moreover, this project would also provide a more user-friendly interface that would lead to increase user interaction and engagement with the application. The overall goal of this project is to publish the App to the Apple App Store, as well as to do sufficient marketing to advertise this product.

Design of a Brazed Double Wall Heat Exchanger Manufacturing Cell

Timothy Taylor and Nicholas Scibetta, ENT 422: Machine Design II
Faculty Mentor: Professor David Kukulka, Engineering Technology

Xylem Incorporated, located in Cheektowaga, NY, is a leading manufacturer in the heat exchanger market. They specialize specifically in heat exchangers, both gasketed plate heat exchangers and brazed plate heat exchangers. They are the sole manufacturer of Double Wall Brazed Plate Heat Exchangers. These units offer the highest level of leak protection and safety by directing a path of fluid flow to leak path vents on the outside of the unit. So that when an internal component of the unit fails, rather than the corresponding fluid mixing with the secondary fluid in the unit, which causes contamination, the fluid leaks outside of the unit, signaling that the unit has failed. These heat exchangers are made by stacking similar plates on top of

each other and brazing them together. Brazing is a process that permanently welds metal together after putting it in a furnace at high temperatures. Double wall heat exchangers have portions of some of the plates that cannot be welded in order for the unit to function. In order to make sure this area isn't brazed, a compound called Stop Off is applied to each plate, in a specified location. This Stop Off compound is currently painted on by a paint brush, which takes roughly 90 seconds per plate. Ideally, Xylem would like a system in which the Stop Off is applied using a hand sprayer that reduces the time per plate to at most 10 seconds per plate. The manufacturing cell developed reduces the application to a throughput of 9.6 seconds per plate. This increases the efficiency of the process by 90%. In addition to the application of the Stop off to the plates, the manufacturing cell also dries and stacks the plates in an automated process.

Design of a Smart Home Security and Renewable Energy System Based on the Internet of Things

Weng Yu and Xi Chen, ENT 466: Electrical Design II
Faculty Mentor: Professor Stephanie Goldberg, Engineering Technology

A smart home system has been designed for the supervision of home lighting, heating, and cooling, and for real-time monitoring of the home environment using smart sensors and fingerprint coded keys. Communication with the homeowner will be achieved with an interactive webpage and automated text message generation. The system can also direct efficient use of electricity by bringing in solar energy when available. All information acquired by smart sensors and cameras would be transmitted via Raspberry Pie to the webpage to enable remote control by the homeowner. An embedded MCU (microcontroller unit) residing within the specified WiFi module distance from all sensors and cameras will receive the sensor information from the internet and can then send out a text message with the sensor data, via a GSM module, to the homeowner or appropriate contact person. For home security, the smart home has fingerprint coded keys, so that the home cannot be entered without proper touch ID or correct fingerprint detection. The entry will be temporarily locked for three hours after three times unmatched attempts. A gas sensor will be triggered when the concentration of the combustible gas exceeds the limit that can be set in software. All emergency circumstances will trigger the GSM module to send a text to the homeowner. For power conservation, the brightness of lights and the height of curtains can be automatically adjusted by the luminance of the outer environment. A solar panel unit will be programmed to help make electricity consumption more efficient.

Eat&Pay App

Zhiqiang Zheng, CIS 490: Senior Seminar
Faculty Mentor: Professor Sarbani Banerjee, Computer Information Systems

This project will create an Eat&Pay App that is designed to assist users to have various restaurant choices as well as calculate tips. The principal design for this App is to provide various meal choices and the several categories of taste like hot, sour, sweet, etc. This Eat&Pay App will offer multiple features: the tips calculator, restaurant type setting, search history, the users' favorite food and the user's interface setting. The App has the ability to connect to the Internet and update the restaurant list. The Eat&Pay App will try to connect to nearby Wi-Fi and navigate through the Internet without charge to the user. For more convenient use, the users can manually turn off the auto-renew option or choose an offline mode. The App will require the user to download the restaurant name list on their phone. The Eat&Pay App will ultimately decrease spending phone charges and save Internet data. While designing the framework for this App, future developments of technology are being addressed. It will always follow up on the criteria rules such that the project is modular. Future developments can be implemented through different modules which will address users' concerns.

Elderly Support System: Embedded Monitor and Alert

Weng Yu, ENT 466: Electrical Design II
Faculty Mentor: Professor Ilya Grinberg, Engineering Technology

According to research, three most prone dangers for elderly people are tumble, sudden heart failure, and fever. In order to prevent or mitigate these dangers, the research project proposes a sensor-based alarm system that can be used to detect emergency conditions of the elderly and notify family members and medical professionals in a timely manner. With rapid developments in technology, more and smarter systems and sensors are being developed to check human health status. For example, Lina Tong conducted a research about Hidden Markov Model-based (HMM) human fall detection and prediction method using the tri-axial accelerometer. However, current products only having either a single function or limited functions to check only one aspect of human health status, such as heart rate or calories count. These products were not designed specifically for the elderly. Therefore, the application of multiple sensors with automatic communication is a novel method, because it requires the microcontroller unit (MCU) to analyze signals from sensors and then to decide whether to make a phone call or a send a message. Based on literature review, there are some methods to make the system design more accurate and practical. The DA14580 is the world's smallest, lowest power, and most integrated Bluetooth

low energy solution, so it is chosen as the MCU of the system. Gyroscopic, photoelectric, and temperature sensors are used in the system. If the system receives a dangerous signal from these sensors, the MCU will initiate a call to a designated family member and/or medical personnel. In addition, the elderly support system is not just be limited to health indicators, it is also a wireless network of sensors to interconnect all things in our daily life.

Electronics Monitoring and Protector System

Mitchell Hawke, CIS 490: Senior Seminar
Faculty Mentor: Professor Sarbani Banerjee, Computer Information Systems

For this research project, an Electronics Monitoring and Protector System will be built. This consists of an array of sensors and microcontrollers made to care for multiple computers. The main operation will be programmed in C++ on the Arduino IDE (Integrated Development Environment). This system will serve to protect computers from hazards such as power failure, dust, water, and overheating. Cooling computers is a simple problem but solutions to this can vary. A liquid cooling loop that uses water is the most efficient design for heat transfer. However, this method comes with a risk of leaking on the computer which will cause damage if the computer is running. To protect from this, water cooling blocks will be outfitted with sensors that detect the presence of water. In the event of a leak, the system will protect the computers by cutting power supply to those, drawing the water away, and sending an alert message. To protect from unplanned power loss, a backup power supply will be made to briefly keep the computers running. The system will then set into a power saving mode by sending a "power off" signal to the computers to shut down properly. The goal of the project is to integrate the Electronics Monitoring and Protector System in both home and business applications. PC enthusiasts will benefit from knowing their expensive machine is safe from leaks. Networking centers can also benefit as liquid cooling is incredibly more economical than air conditioning their machines.

FoodWeb: An App to Reduce Food Waste

TJ Adeniji, Computer Information Systems
Faculty Mentor: Professor Sarbani Banerjee, Computer Information Systems

Food waste is one of the major issues in America; so much food is wasted here when it could be given out to people and places that need food. Different organizations and companies that receive food or donate food have been reached out and are willing to cooperate with this initiative to actively combat the food waste that is present in Buffalo. Food Web is a community

driven project that works with local companies like Wegmans and Delaware North to donate food that would normally go to waste to non-profit organizations like the Buffalo City Mission. The companies with a surplus of food will go on the website and list up any excess food they have available. Organizations in need of food will then filter through this and select what food they would like to receive. Food Web is created using Angular 2, Node.js, and Postgre SQL. Angular 2 is a web design framework created by Google. It is useful to make web applications because of its versatility and compatibility with many of the different devices that can view the web. The project is also integrated with HTML (Hypertext Markup Language), CSS (Cascading Style Sheets), Typescript, and Javascript. Node.js is used to connect the data that is input into the front-end to the backend databases that contain all the client related information stored in Postgre SQL database. Postgre SQL is an open source object relational database system. There are multiple databases set up for the project to operate successfully.

The Future of Technology Education

Christopher Derrick, INT 689: Research Design and Methodology

Faculty Mentors: Professor John Earshen, Engineering Technology and Professor Steve Macho, Career and Technical Education

The purpose of this thesis is to examine Technology Education in New York State, with an eye toward redesigning the statewide curriculum guidelines. The approach to this redesign must be based on better meeting the demands of the ever-growing STEM career fields. Technology Education replaced Industrial Arts in the 1980's and has not undergone many changes since then, even though technology has advanced and changed considerably. In order to examine Technology Education this thesis will study multiple school districts in the Buffalo area that offer Technology Education to determine what is currently offered, to assess how each district approaches Technology Education and to explore what curricular changes might be made to better serve the students who elect to take Technology Education. This project will follow a case study design; data will be collected using a questionnaire instrument to be completed by technology teachers and by administrators. The goal of this thesis is to recommend a comprehensive strategy for updating the Technology Education curriculum across New York State.

Geriatric Smart Assistant

Matthew Huber, Mitch Fronczak, Ben Nesbit and Xi Chen, ENT 466: Electrical Design II

Faculty Mentors: Professor Ilya Grinberg, Engineering Technology and Professor Steven Barker, Engineering Technology

Due to various medical advancements within the last couple of decades, the life expectancy of elderly people within society has increased. The increase in the number of elderly individuals has also led to the number of dangerous and fatal falls. To alleviate the fear that something will happen to them when left unattended, a device can be created to monitor their condition and securely track them without leaking any sort of private patient data and allowing them to act independently. The Geriatric Smart Assistant (GSA) is a device to aid the elderly and their caretakers with basic wireless medical monitoring. The priority of the GSA is to monitor the individual for any detected falls. Coupled with the tumble sensor is a Galvanic Skin response, more commonly known as GSR, which can give us much more reliable data than traditional methods to monitor pain levels. Additionally, the device can alert the proper authorities in the event of an emergency or accident. To maintain the integrity of a user's private data, encryption has been embedded into the Geriatric Smart Assistant. This disallows malicious users to try and view the patient's physical state. The GSA project is accomplished with a combination of a few break-out-boards, working in conjunction with a PIC Mid-level MPU, Microchip PIC MCU, Wi-Fi Module, and BMICs. The benefit of the GSA is that it is a non-invasive device that will not inhibit users from doing what they need to do daily.

Inlet Air Guide Vane Redesign

Steven Durandetto, Brad Boyer and Matthew Hutchins, ENT 422: Machine Design II

Faculty Mentor: Professor David Kukulka, Engineering Technology

Founded in 1962, F.S. Elliott developed the first oil-free, integrally geared, multi-stage, centrifugal air compressor, establishing their reputation as a global leader in engineering and manufacturing of oil free, centrifugal air and gas compressors. F.S. Elliott and its affiliates specialize specifically in centrifugal compressors, which operate via a large impeller that rotates at high velocities to displace a large volume of air in a short time. When this happens, there is also a large suction on the inlet side of the compressor. At times in which the impeller is rotating at slower speeds, an Inlet Guide Vane (IGV) manipulates this suction to provide air rotation, or swirl, in the direction the impeller rotates. This phenomena is a vital part of compressor efficiency and longevity. Engineers from F.S. Elliott are working in affiliation with a student research team at Buffalo State in order

to implement an alternative IGV design for producing air swirl in E.S. Elliott's P300 model compressor. The objectives for the alternative design, called a Vortex Generator (VG), was to develop and analyze an assembly that meets E.S. Elliot's given criteria. From this research and design, manufacturing specifications and costs for the proposed VG option were compared to the IGV currently in production today. Several separate designs for the main cast body of the VG were generated and analyzed using Flow Simulation, embedded in SolidWorks 3D modeling software. Other important issues were addressed such as vane loading, gear backlash and actuation for the assembly. Simultaneously, an extensive cost analysis was done on each design, by acquiring and assessing quotations. The final VG design was determined by developing and evaluating a cause and effect matrix, which was heavily weighted by cost and the effectiveness of each design. The project demonstrated the design process for a real world application and required several necessary skills that engineers need in the field today. E.S. Elliott intends to continue to develop the VG and considers it as an alternative option that may one day replace the current IGV system and set it apart from its competitors.

Into the Future: The Memory of a Computer

Raymond Lin, CIS 490: Senior Seminar and HON 400: All College Honors Colloquium
Faculty Mentors: Professor Sarbani Banerjee, Computer Information Systems and Professor Michael Johnson, Modern and Classical Languages

A full-fledged computer, speaking in the most minimal sense for consumer use, is composed of a CPU (Centralized Processing Unit), motherboard, PSU (Power Supply Unit), and two types of memory: RAM (Random Access Memory) and hard drive. This composition can be minimized further by eliminating either the RAM or the hard drive. One technique, called RAMDisk, replaces hard drive with RAM by designating space in RAM to hard drive storage. This technique allows for a rapid transfer of data, theorized to be at least one hundred times faster than the normal hard drive. This research project will explore the possibility of eliminating the hard drive component from the traditional make up of computers. In this exploration, hardware components will be analyzed and compared. Hardware specifications will be inputted as factors in a virtual environment written in Visual Basic to see speed differences between hard drive and RAM. In addition, to exemplify the technique, a computer will execute a sample software with solely RAM and will also execute the same software with both RAM and hard drive. RAMDisk will be tested in a virtual and real-world environment and the test will bring about the answer to the research question whether to stick with the traditional make up of computer or entirely eliminate hard drive and replace it solely with RAM.

Invisible Internet: Security of Home Wi-Fi

Michael Hoppe-Spink, CIS 490: Senior Seminar
Faculty Mentor: Professor Sarbani Banerjee, Computer Information Systems

Is residential wireless Internet as secure as one would like it to be? How easy is it to crack your neighbor's wireless Internet password? This research project will study how easy it can be to crack into a residential home Wi-Fi router. Most homes with Internet connection share their connection wirelessly with little to no cables. Many of these users use the default settings of their router. Using wireless adapters and the Linux operating system, one can find out which networks are the easiest to crack. Linux has many built-in network analyzers and tools to help optimize and troubleshoot network and connection issues. Such tools in Linux are command line prompts. Examples are Terminal, airmon-ng (monitors wireless traffic), and Reaver, a brute-force penetration tool to test and recover Wi-Fi security keys and passphrases. All of these tools are command line based programming, and the user must know the commands to use and implement these tools. The presentation will give a preview of how hackers can gain entry into wireless networks. This will be accomplished by brute forcing into a locked network or monitoring the traffic on the network and gaining enough information to gain access to the passkey. The results and level of success will give insight on settings that can give the most security and privacy.

Journey to Smart Manufacturing

Eric Leffler, INT 689: Research Design and Methodology
Faculty Mentor: Professor John Earshen, Engineering Technology

This research project aims to analyze and discuss the state-of-readiness of a manufacturing facility/plant to adopt automation technology as it pertains to Industrial Internet of Things (IIoT). The study is designed around the assumption that progressive manufacturing companies desire an IIoT-enabled facility/plant which can utilize data driven information from the manufacturing floor up to the management level. All too often, management does not have a strong approach to capital asset planning and investment. This project seeks to identify best practices and procedures that company leaders may follow to improve facility performance. From this study we expect to provide a process approach that enables an initial assessment of an organization's current condition as it pertains to legacy equipment, storeroom management of critical spares, and the installed base of machine floor automation technology. This study assumes that organizations that effectively manage current installed capital equipment base and have a road map for upgrading antiquated technology are more likely to benefit from being IIoT compliant. Those organizations that are moving

towards IIoT-ready devices will likely benefit from the use of an organized systematic approach to managing strategic capital asset investments. A survey instrument will be developed to acquire opinions of equipment users and managers.

Light Induced Projector Screen Operation

Giovanni Villanova, Alex Rauen, Sourou Okouta and Ahmed Alkhanbashi, ENT 466: Electrical Design II
Faculty Mentor: Professor Ilya Grinberg, Engineering Technology

The purpose of this design project is to produce a fully automated projector screen, specifically to fully automate the standard retractable screens often seen in educational environments. The client's requirement stated the use of a push button operated projector screens can be somewhat distracting to the educational environment because often remotes for these devices are lost or misplaced. The project accomplished automation of the retractable projector screen through use of light sensing devices. With such light sensing devices, the screen apparatus reads a signal in the form of light from the projector to determine if the screen should retract up or down. As long as the projector is outputting a video signal the screen will stay down regardless of ambient light. For mechanical motion of the projector screen to occur, a DC motor was coupled directly to an existing screen device, and the screen's vertical position is determined through use of both a DC shaft encoder and a limit switch. The various inputs and outputs defined in the design scheme require a control device. A programmable Arduino device was incorporated to allow complete automation. Within the Arduino, a coded program reads ambient light conditions through various sensing photocells and Projector on/ off states through the photodiodes reading. The prototype demonstrates that the light induced projector screen can create an effortless and distraction free learning environment.

Matching Machine Tool Skills Instruction at NCCC to Employer's Needs

Perry Schultz, INT 689: Research Design and Methodology
Faculty Mentor: Professor John Earshen, Engineering Technology

Located centrally in Niagara County NY, Niagara County Community College, grew from nothing more than a vision in 1963 and a ramshackle collection of vacant buildings, into a modern accredited campus. Through the passing of time, both the college and industry have experienced ebb and flow as the local, national and global economies have changed and it has now become evident that there are gaps in what used to be a very close-fitting relationship with the local manufacturing industry. This project endeavors to closely examine the current course

offerings within the Mechanical Technology program at Niagara County Community College and compare them to the needs of local manufacturing firms. The problem is that there has not been an analysis conducted recently. When complete, this study will provide the framework for developing new courses, resurrecting idled courses and updating current course syllabi to fill those gaps. This will be accomplished through one-on-one interviews with managers, supervisors, and tradesmen at select Western New York companies and compiling their recommendations along with the direct experiences of the author, who spent many years in the manufacturing sector.

Passwords and Their Common Tendencies

Zackary Viney, HON 400: All College Honors Colloquium
Faculty Mentors: Professor William Lin, Computer Information Systems and Professor Michael Johnson, Modern and Classical Languages

The question I asked was what tendencies do people have when it comes to their passwords and are there any correlations between them that could be connected to passwords being stolen? I came upon this question after a classmate told me about his bank passwords being stolen. It made me think about passwords in general, and the possible repercussions of various habits that people may or may not follow when it comes to their passwords. The way I approached obtaining this info was a simple one. I decided to create a survey that I would eventually distribute to as many people as I could, with questions designed by myself. In my preliminary findings I've found the majority of people use various passwords, with the average being 5 passwords. Their primary passwords were usually a mix of 8 or more letters, numbers, and special characters. In addition, so far, about 20 percent of respondents reported to have had a password stolen at some point. With enough respondents I hope to find some sort of trend that could be used to determine possible password tendencies to best protect users from theft.

PCB Piezotronics Clamp Fixture

Sean Driscoll and Scott Kulczyk, ENT 422: Machine Design II
Faculty Mentor: Professor David Kukulka, Engineering Technology

PCB was founded in 1967 in Depew, New York. They manufacture piezoelectric sensors, accelerometers, as well as force, pressure and vibration sensors. PCB gained popularity and success within sensor manufacturing by utilizing microelectronic circuitry. Incorporating this circuitry allows for making sensors smaller and easier to use. Since PCB's founding, PCB has expanded and created new innovative designs in sensor manufacturing. PCB has been producing a highly accurate dispenser for an outside company for almost 20 years. Fixtures

used to clamp parts in place while an epoxy cures during production of this part have a few issues that PCB would like addressed. First issue being reliability and accuracy of current fixture which uses pneumatic pressure. Second issue is epoxy drying on to base and causing problems. Proposed solutions for the clamp fixture redesign include optimizing current fixture, a spring clamp design, camshaft design, rack and pinion design, and finally a power screw design. PCB chose to develop the power screw design due to its high reliability and accuracy. Epoxy runoff issue is also being addressed with a teflon skirt design which will fit around part to catch excess epoxy. Another area being looked in to is decreasing epoxy cure time from 20 hours to 2 hours. A strip heater design was proposed and is being designed for PCB. PCB is a top sensor manufacturing company which contributes its success to its highly accurate and compact products. Increasing accuracy and reliability of clamping fixtures is an important aspect to continuing product quality and customer satisfaction.

Pharmaceutical Compounding: The Outsourcing of a New Market

Dan Keem, INT 689: Research Design and Methodology
Faculty Mentor: Professor John Earshen, Engineering Technology

Reliable pharmacologic compounding plays a crucial role in the successful outcome of patients following a prescribed treatment regime. Drug manufacturers must be able to guarantee that drug orders adhere to specific concentrations, formats or diluents. In 2013, the FDA issued general guidelines to steer and monitor the activities of drug manufacturers. Unfortunately, since implementation of these FDA guidelines, many problems have been exposed. Quality of manufactured drug product has been inconsistent and in some cases has led to wrongful death of patients under treatment. The FDA compounding quality act needs revision and clarification. Presently, manufacturers are unclear as to exactly what the FDA expectations are; this is a major issue in the field. Additionally, many companies lack the proper design, methodology, implementation, and execution of processes and procedures to deliver viable product that is safe for consumers everywhere. A root cause analysis will determine the underlying issues. The ultimate goal is to suggest improved FDA guidelines that provide clear, unambiguous direction for every manufacturer.

Portable Learning Display: Capacitor, Inductor, and Reservoir Components

Carlo Malpartida-Ibanez, Billy Joiner and Reilly McClelland, ENT 422: Machine Design II
Faculty Mentors: Professor Ilya Grinberg, Engineering Technology and Professor David Kukulka, Engineering Technology

A system that allows a person to clearly see the relationships between mechanical forces and electrical forces is rare. The SUNY at Buffalo State's Portable Learning Display project creates a system of water analogy for an electric circuit. The goal for this project is to design three parts of the system: a capacitor, inductor and reservoir, which will serve as a power source. The use of water allows for equivalent mechanical forces to correspond to the various elements of a circuit such as friction to resistance, pressure to voltage and flow to current. The capacitor requires a mechanism that will build up pressure and release it at desired time. Several designs are capable of this but the simplest one is to use a two-valve and two-reservoir system. For the induction motor, a water wheel serves as a disturbance simulating inductance and resistance. The diameter of the motor is about 30-45% less than the total area of the frame of the motor. All containers are transparent and waterproof sealed. To fulfill these requirements, the material used is clear Polycarbonate for all parts and a waterproof sealant is being used. This project increases the accessibility of electric circuits and fluid mechanics knowledge to a variety of people who may not understand it otherwise. Any audience with the desire to understand more about the subject but may lack the educational background will easily be able to visualize the conversion of electrical flow analogy to fluid behavior.

Responsive LED Grid Using a Microcontroller

Aidan Krombach, ENT 346: Microcontrollers and HON 400: All College Honors Colloquium
Faculty Mentors: Professor Stephanie Goldberg, Engineering Technology and Josephine Adamo, Ph.D., Senior Academic Adviser

An embedded microcontroller system will be designed in which a grid of light dependent resistors (LDRs) will be monitored in order to control a corresponding adjacent grid of LEDs. The LDRs and LEDs will interface to the input and output ports of the microcontroller. When an LDR is exposed to light, its resistance decreases, and when the light source is removed, the LDR resistance returns to its higher 'darkness value'. The microcontroller will be programmed to respond to an increase in resistance caused by an LDR being covered by the user. This increase in resistance will cause the adjacent LED to turn on. One goal of the project is to integrate concepts of programming and electrical engineering in one project, as these two skills go hand-

in-hand in the electronics industry. The use of microcontrollers is essential to the functionality of any electronic device that is used today. Along with the hardware design, code, and scaled down prototype of the design, about 6"x6", supplemental research will be provided regarding potential applications of this device. The primary components used in this project are LDRs, LEDs, and a microcontroller chip. A printed circuit board (PCB) will be used to house the circuitry of the device.

Scattered Electric Power Conversion – Door Generator

Huangpu Chen, Electrical Engineering Technology
Faculty Mentor: Professor Jikai Du, Engineering Technology

People are exploring new energy resources and developing new techniques to generate more electrical power. However, there are various types of scattered energy in our daily life that get wasted or ignored, and door motion energy is a typical one. In our project, a door generator is designed for such door motion energy harvesting. Compared to conventional large electric generator, the advantages of such electrical self-sufficient energy unit are low power loss during transmission and high mechanical power to electrical power conversion efficiency. In our research, the theoretical background and mechanism of electric generator was studied and an appropriate model for door motion was selected. Then to improve mechanical power to electrical power conversion efficiency and to optimize door generator performance, various gear systems (ratio wheels), which were attached to the electric generator, were tested and analyzed. An optimized 7:1 ratio wheel system was finally designed with AUTOCAD software and fabricated for our application. The mechanical mechanisms for the connection between door and generator was also designed with AUTOCAD software and fabricated. Finally, for the evaluation of the door generator prototype, a breadboard electronic circuit, which consist of switches, sensor, logic circuits and light bulb, was designed and the whole system was evaluated on a lab door.

Someone Is Watching: Little Brother

Katherine Arriola, John Dipasquale, DeMetrius Jennings, Donald Taggart and **Michael Vangelista**,
ENT 466: Electrical Design II
Faculty Mentors: Professor Ilya Grinberg, Engineering Technology and Professor Steven Barker, Engineering Technology

One thing that will remain a problem in College Campus, is safety. There are some measures taken to improve campus safety, such as the forty-four Blue Light Kiosks on campus. Little Brother's objective is to enhance the current Blue Light Telephone System by improving campus surveillance while being cost-efficient. The components of the project consist mainly of Raspberry Pi development board and camera. Little brother

will include additional features such as pan/tilt, motion sensor, and rotation to assist in monitoring activity on campus. Each Blue Light Kiosk currently contains a red emergency button, a microphone, a dialing pad and Blue Light that's located on top of the kiosk. Updating the school's surveillance would require budgeting and planning. Little Brother is developed as a bench-top prototype for another team in the future to implement and deploy on actual kiosk. The project involves wireless transmission of data captured from the camera to servers located in any one of the buildings on campus that will receive it. The data will be transferred while following Buffalo State's Video Surveillance Policy. The University Police Department will then have access to the data. After gaining access they can use the footage acquired to handle the situation.

Stock Trend Prediction Using Machine Learning and Sentiment Analysis

Sukhjit Singh, CIS 490: Senior Seminar
Faculty Mentor: Professor Sarbani Banerjee, Computer Information Systems

This research project will focus on predicting stock prices using machine learning and sentiment analysis. The hypothesis is that if sentiment for a stock is negative it can be expected that the value of the stock will diminish, while the value will rise for positive sentiment. Twitter will serve as the primary source for public sentiment on a stock. A Python script will be used to scrape tweets pertaining to specific or trending stocks. Once the tweets have been captured they will be analyzed, using Python, to establish whether sentiment is positive or negative. The Python library called Tweepy will be used to access the Twitter API and parse tweets for specific words or hashtags. The Python library called Textblob will then be used to determine whether the sentiment about the selected stock is positive or negative based on the language used in the tweet. After sentiment has been established, the historical data of the stock will be downloaded and used to predict the price. This prediction will be made using various machine learning methods such as neural networks. Sentiment on the stock will be incorporated into all the machine learning models. To create the neural network model Tensorflow, NumPy, SciPy, ScikitLearn, Quandl, Keras, and other libraries will be used as needed. Other machine learning methods such as naïve bayes, maximum entropy, random forest, decision tree, and more will also be used to predict the price. The goal will be to create a model that best predicts the price using a machine learning method and sentiment analysis.

A Systems Engineering Approach to Microgrid and Transactive Energy

Radomir Pupovac, Andrew Ludtka and **Kyle Nadolinski**, ENT 466: Electrical Design II
Faculty Mentor: Professor Ilya Grinberg, Engineering Technology

Power systems is a complex and difficult concept to understand. There are high cost walls to be able to experiment with these concepts. Our goal is to expand the current microgrid model at Buffalo State to allow students to test the knowledge learned within prior coursework and create a deeper understanding of vital concepts of Power Systems. Power Systems today has become much more than just power. An engineer within the field can be expected to have a strong knowledge in control and digital systems as well. The project involves these three fields of engineering all within our Microgrid testbed. These three subjects are all taught separately, but systems engineering connects all of them. The project involves state-of-the-art technology used by industry to fully control and acquire data within our system. The potential of the system does not just stop at undergraduate work. Graduate students are expected to test higher level concepts of the grid. This consists of high level mathematical analysis and multidisciplinary economic analysis of microgrid operations.

Telnet++

Aaron Parnell, CIS 490: Senior Seminar
Faculty Mentor: Professor Sarbani Banerjee, Computer Information Systems

There are different paths one can take within the study of computers; practical or theoretical. Why don't we bridge the two together to create a solution for a problem we didn't know existed? The goal of the research project is to use programming to make a networking engineers job easier, eliminate keystrokes, reduce time deficits, and secure business networks. The standard method of entering code into Cisco devices can leave the possibility of creating security holes in the devices, if proper procedures are not followed. There are many rules to consider when programming these various products. The program will address these problems through its various methods of verification and will give feedback to the user if improper procedures are followed. This research project will be developed using a programming language called C-Sharp (C#), a proprietary and newer language developed by Microsoft. It will also require a GUI (Graphical User Interface), that is being developed using vector based WPF (Windows Presentation Foundation) in the .NET Framework. This program will take the inputs and generate custom PowerShell scripts, a powerful shell used for task automation which is also based on the .NET Framework. The script will Telnet commands into Cisco based

switches and routers; all of this will be accomplished without having to interact or configure the device directly. This project will require a Cisco Lab and an IDE (Integrated Development Environment) to write code in C#, and a fully functional GUI. The presentation will demonstrate how this method works.

Water Analogy of Electrical Circuits

Garret Fuerch, Dino Diamond and **Kashief Lewis**, ENT 422: Machine Design II
Faculty Mentors: Professor David Kukulka, Engineering Technology and Professor Ilya Grinberg, Engineering Technology

Electrical behavior in a circuit and its components are often times difficult concepts to grasp. Buffalo State students are interested in designing and fabricating an innovative and interactive water analogy of a generalized electrical system. This portable display will be designed to help students, ranging from fifth grade to first year college, visualize and understand how basic electrical systems work. Individual component behavior and their function within the complete circuit will be the primary focus of the display. These concepts will be portrayed through a network of transparent plumbing, electromechanical valves and components (pumps, valves, pressure gauges), a programmable logic controller, and a human machine interface. These components allow for blue dyed water, simulating electricity, to flow through a "circuit" and allow the viewer to visually see how the flow is effected by the changing of variables (ie. closing valves). The possibility to encourage young students into STEM education paths will be a primary focus of discussion and design, alongside the emphasis on an intuitive understanding of electronics. It is the team's hope that the familiarity of how a liquid normally behaves can translate and dispel the enigmas of electricity.

Water Analogy of Electricity: Using Technology to Illustrate Concepts

Percy Oblitas, Austin Snyder and **Andrew Graziano**, ENT 466: Electrical Design II
Faculty Mentor: Professor Ilya Grinberg, Engineering Technology

The concept of electricity is not the easiest one to grasp. Between current carrying conductors and passive components, to electrically controlled elements, the theory can be somewhat difficult to understand. Buffalo State students designed and fabricated an innovative and interactive water analogy of a generalized electrical system. This portable system is designed to help students, ranging from fifth grade to first year college students, visualize and understand basic concepts and how basic electrical components work. Individual components behavior and their function within the complex circuit is the primary

focus of the design. The project is realized through a network of transparent plumbing, electro-mechanical components (pumps, valves, pressure gauges, etc.), a programmable logic controller (PLC), a human machine interface (HMI), and a variable frequency drive (VFD). The primary focus of this project is to encourage young students into STEM education paths with emphasis on an intuitive understanding of electricity. The project involves much more sophisticated aspects dealing with control and information processing to operate the system that enhances the knowledge base of students involved in the design and development of the project. The project also benefits industry partners by allowing them to demonstrate advanced equipment and its capabilities in the area of industrial automation (modular PLC's, interconnection of sensors, wireless and wired sensor networks, and communication protocols among others).

Xylem Inc. Plate and Frame Heat Exchanger Design

William Schiavitti and Zachary Re, ENT 422: Machine Design II
Faculty Mentor: Professor David Kukulka, Engineering Technology

Xylem Inc, was founded 100 years ago and is now an industry leader in the design and application of heat exchangers. This project involves the design of a plate and frame heat exchanger for pool applications. These plate and frame heat exchangers involve two pressure plates; with a series of plates and gaskets in between; and they are fastened together with bolts. The key to this project is to design the most economical, practical and functional design for the pressure plates, inlet and outlet connections and how to fasten everything together. Various parameters that will be focused on for this project are the material used for the pressure plates, connections and bolts. The vessel must be able to withstand 150 PSI at 212° F. Thickness and material of pressure plates as well as bolt size/pattern will be examined to accomplish this. After completing numerous finite element analysis (FEA) studies of different materials at different thicknesses, it has been decided that lexan will be chosen. This material will have a minimal amount of displacement, therefore allowing a strong seal of a gasket. The material used can not have any sort of cracking or critical failures. Adjusting thickness of lexan in each FEA study provided the minimal thickness that will hold pressure.



Education

2+2 = Four: The Integration of Mathematics into Elementary English Education

Brittany Cronin, HON 400: All College Honors Colloquium
Faculty Mentors: Professor Dianne McCarthy, Elementary Education and Reading and Professor Michael Johnson, Modern and Classical Languages

Elementary education students have varying subjects in which they excel. Students also learn new material in different ways. Because of this differentiation in the classroom, it is possible that integration of elementary mathematics into children's literature can be extremely beneficial for a struggling student in either area. In order to explore this incredibly vast topic, I will be conducting a survey for elementary school teachers to complete in regards to what they have practiced in their classrooms in regards to this integration, and whether they think they would see an improvement in achievement level if they were to use this particular technique of teaching. I will also be providing titles of children's picture books that effectively and accurately utilize mathematics concepts taught in an everyday elementary school classroom. My hope is that my project will spark the interest of elementary school teachers to use this practice in their own classrooms.

Active Engagement in a College Class

Brittany Ferron, Early childhood and Childhood Education
Faculty Mentor: Professor Dianne McCarthy, Elementary Education and Reading

"The ingredient in the effective teacher's secret sauce is engagement." I surveyed college students to see if they liked, or disliked group work in the classroom. According the pre-survey, I learned that college students like group work when they have a structure and it is clear what needs to be accomplished. I have also learned that students do not like group work when it counts for a grade. It was also brought to my attention that students do not like group work when, "no one in my group does anything, and then I am stuck doing all of the work". To allow students to all have an equal role in group work, I conducted a few Kagan Structures in the classroom to get everyone involved and excited about group work. My presentation will show the results of my pre and post survey results about classroom engagement.

Adding Some Spice to the Melting Pot: Applicable Classroom Methods

Jessica Grear and **Jimmy Roberto**, EDU 380: IPDS Study Abroad and Service Learning: Italy
Faculty Mentors: Professor Kerry Renzoni, Music and Josephine Adamo, Ph.D., Senior Academic Adviser

This research explores the questions "What teaching methods observed and used during experiences in the Italian Professional Development School Partnership Program are applicable to American classrooms?" and "How can teacher candidates apply those methods in their future classrooms?" We conducted our study in January 2018 while participating in the IPDS Italy program. As part of the program, we traveled with nine other teacher candidates to observe and teach in classrooms in Torremaggiore, Italy. To conduct our research, we observed several different classroom settings in Torremaggiore, including an elementary school and high school. Our observations encapsulated different subjects, such as math and music. During our observations, we took extensive field notes on the classroom environment, student engagement, teaching methods, and classroom activities. We also blogged three times a week to have further information to reference. Our data sources included field notes and blogs of participating teacher candidates. We used qualitative data analysis techniques to review our notes and blogs about what we saw and identify out what kinds of teaching methods and activities would be most beneficial to American classrooms, and why. Through our coding process, several themes emerged. Themes included 1. Frequent intervention of activity based learning, 2. A classroom atmosphere that allowed students and the teacher to converse freely during lessons which encouraged thought provoking discussions, and 3. A large focus on projects as an outlet to learn about a topic. Our findings suggest a great deal of flexibility and energy in classrooms abroad.

All Work and No Play in Primary School?

Katelin Petranchuk, EDU 690: Master's Project
Faculty Mentor: Professor Coralee Smith, Elementary Education and Reading

Many people may wonder, what is happening primary classrooms today? Primary classrooms being defined as preschool, Kindergarten, and the first grade. Playing while in the classroom IS learning! Structured play is a type of play that can be conducted in different classrooms; and it is a type of play where learning is happening while the children are playing with a particular idea in mind. The results of this project will show the growth of learning that students can achieve within structured play environments. The students may display an increase in knowledge of a particular setting, communication/social skills, language, and mathematical skills. Through structure play,



teachers can expose students to language and skills expressed in a grocery stores, at the zoo, at the dentists or doctors, or even at the beach as a lifeguard without leaving the classroom at school. For this research project, a curriculum map and lessons for the classroom will be provided for the use a Kindergarten classroom aligned with New York State Common Core standards. This presentation will focus on structured play within a primary school environment.

Benefits of Studying Abroad in More Than One Country for Teacher Candidates: Chile and Italy

Catherine Welch, EDU 380: IPDS Study Abroad and Service Learning: Italy
Faculty Mentor: Professor Kerry Renzoni, Music

This study compares how teaching abroad experiences from two International Professional Development Schools program (Italy and Chile) impact teacher candidates as future teachers. Additionally, this study examines the benefits teacher candidates gain when studying and teaching abroad in more than one country, and how their experiences impact their teacher philosophy and technique. My primary research question was “What do teacher candidates gain from teaching abroad in more than one country, and how do their experiences impact their teaching techniques and philosophy?” During the three-week teaching trip to Santiago, Chile, I visited public, subsidized, and private schools to experience the different classroom environments in all three settings. During the three-week teaching trip to Torremaggiore, Italy, I observed and taught in multiple grade levels at an elementary school. The methods used to collect data included reading my fellow teacher candidate participants’ personal blogs written during the international experience and interviews with teacher candidates who have been involved in more than one teaching abroad program. Qualitative data analysis was used, in which coding was conducted for emerging themes. Preliminary findings indicate that teacher candidates were pushed out of their comfort zone and learned new ways to interact with students who did not speak the same first language as them. In result, the teacher candidates found new strategies while abroad they are implementing in their teaching technique now. Specific strategies include using music education to support language development and the use of children’s literature and interactive whiteboards for language development.

The Brick: Bengal Mock Trial

Chelsea Nowicki, ENG 389: Mock Trial
Faculty Mentor: Professor David Ben-Merre, English

Buffalo State is a member of the American Mock Trial Association (AMTA) and hosted a sanctioned regional tournament in February. AMTA is an intercollegiate organization that coordinates and governs competitive mock trial, which includes both criminal and civil trial simulations. Since last August I have been working with Professor David Ben-Merre to build an accessible, sustainable, and competitive team here. There are many objectives of this project: 1) Become more connected with the student body; 2) Increase social media networking; 3) Research mock trial courses and course syllabuses at other schools; 4) Assist in designing syllabuses for the Buffalo State mock trial courses; 5) Assist coordinating Spring Hum200 in-class trials; and 6) Co-captain February regional tournament. Working to achieve these objectives has refined my time management, interpersonal communication, and leadership skills. In May I will be doing an oral presentation. I will be using powerpoint, demonstratives, and video to explain mock trial practice and the class content.

Buffalo State Education Majors Tell Faculty What They Want in a Living Learning Community

Liberty Darr, Childhood Education
Faculty Mentor: Professor Julie Henry, Elementary Education and Reading

Belonging to a freshman learning community has been found to increase a student’s GPA up to a full letter grade, depending on the student’s background, race and gender and to increase retention (Gore, et al., 2016; Hotchkiss et al., 2006). We are continuing our investigation into the effectiveness of a learning community for teacher candidates enrolled in EDU 201, Introduction to Elementary Education. The purpose of the learning community is to develop a sense of belonging and a commitment to the profession among freshmen education majors in order to increase student success and retention. Each section of EDU 201 has been assigned a teaching assistant to assist with the development of student writing, to connect students with resources on campus, to invite student participation in professional development and social bonding activities and to promote involvement with service opportunities and student clubs. In addition, the college is planning more elaborate learning communities to be in the fall of 2018, and we will be investigating national best practices and local priorities related to these more elaborate learning communities. In order to ensure that students receive the best possible learning community, we will be conducting a survey and collecting data that will tell faculty exactly what Buffalo State students hope to see in the

future. The research questions are: Which learning community activities do freshmen education majors name as most effective in promoting their success and persistence in the major? How can a living learning community be leveraged to enhance the benefits of learning communities for resident students?

Comparison of Special Education in Zambia vs the United States

Claire Borczuch, EDU 380: IPDS Study Abroad and Service Learning: Zambia
Faculty Mentor: Professor Angela Patti, Exceptional Education

I will be conducting my research as a component of the International Professional Development School (IPDS) Zambia program which I am participating in June of 2018. I will have two main research questions: (1) What does special education look like in Zambian schools? and (2) How does special education in Zambia compare to special education in the United States? Within my teacher preparation program, I currently study the ways in which students with disabilities are served in education systems in the United States. Through my study abroad program, I will study how students with disabilities are served in another country, Zambia. I plan to do this by conducting interviews with teachers in Zambian schools, as well as observing service delivery models while in field placement in Zambian schools. Then, I will be able to compare the systems within the two countries. The anticipated outcome of this project is that I will broaden my perspective of how individuals with disabilities are served within education systems. As a future teacher, developing a more global understanding of education will make me better able to understand the contexts in which I work and how to meet the needs of all students. In this presentation, I will share my research plan and any preliminary data I have collected.

Developing and Exploring Children's Interests in Traditional Chinese Culture in American Daycare Center

Chen Lin, EDU 690: Master's Project
Faculty Mentors: Professor Coralee Smith, Elementary Education and Reading and Professor Don Lawrence, Elementary Education and Reading

High quality multicultural learning can enhance children's awareness of different views of the world and the diversity of their nation. Promoting learning about different cultures and understanding them when they are young, can help children develop their ideology and be truly friendly with different cultures. This research project explores the most effective method of teaching multiculturalism in a pre-K classroom. Students will be exposed to three types of learning situations. Children will read typical Chinese picture books (teacher read aloud).

Also, they will work together in groups, and learn to use Chinese brush to create Chinese characters. After the teacher introduces the historical story of the Chinese brush and the way it is used, children will have time to draw on rice paper. A third group will join a theme activity to celebrate Chinese New Year together. After each activity is finished, the researcher will ask 10 basic questions about what the students had learned about Chinese culture, and then recorded their comprehension and memory of knowledge questions. The three methods all will be positive and helpful to build children's interest in Chinese culture. Also, the researcher will determine which is the most effective way to introduce cultural studies. Having children learn about different cultures can give them pride in their own national culture, respect other different ethnic cultures and marvel at human wisdom and creativity. Children will also know and feel that the record of human development is the history of their cultural backgrounds that have emerged as multicultural coexistence, communication, innovation and development.

Effects of Stress and Anxiety on Teachers in the Intermediate Level Classroom

Erin McGrath, EDU 690: Master's Project
Faculty Mentor: Professor Coralee Smith, Elementary Education and Reading

Stress and anxiety has seen to be on a rise in the Intermediate level classroom. After doing much research on this topic, studies have shown that when teachers' feel stress and anxiety within their own classroom, this leads to occupational burnout. Although, it is not only the teachers who feel the anxiety and stress but in fact students' as well then feel the effects in their classroom. This then leads to poor student work and behavior. Much of the stress on teachers is due to poor classroom management, administration workload of repetitive day-to-day behaviors, and lack of supervisor and team support. Stress levels in the Intermediate level classroom leave what is known as a rippled effect from the head teacher right down to their students'. Administration within school districts under estimate the effects that students' feel when it comes to changes in their classroom and building. Many wonder as to why students' behaviors seem out of control at different times of the year or they are having trouble grasping a particular subject or topic. It could be that the teacher shows no interest. It is important to create a welcoming environment in the building and classroom. Studies also showed that it is also very important to maintain teacher-student relationships. Many students' strive off of teacher-student relationships in feeling comfortable in the classroom. Providing this in the Intermediate level schools will allow students' and teachers to be able to tackle more challenging material academically and also bring positive attitudes and skills into the classroom.

Enhancing Learning During Early Childhood: Kinesthetic Activities and Brain Development

Jonise Hall, Theater

Faculty Mentor: Professor Joy Guarino, Theater

In a classroom setting, children typically sit and listen for hours in a day. Learning should be fun for children and by adding movement to lessons, children have a better grasp on subjects being taught. In my Kinesthetic Methods and Practices course, my fellow classmates and I are assisting classroom teachers with bringing movement to help with student learning. In my review of the current research, studies have shown that the same parts of the brain that coordinate thought, also coordinates physical movement; the brain and movement go hand and hand. Young children learn best through experiences so what better way for them to begin to learn academic concepts than through movement. If kinesthetic activities enhance learning in the classroom setting, then how can parents provide these experiences for their young child at home? My poster presentation will share the current research on how kinesthetic activities enhance brain development and consequently learning for the young child. I will also include activity ideas that parents can use at home. I want to share how essential it is that we continue to use movement to assist learning as children grow up. This will not only improve children's grades in school but will promote a positive attitude towards learning and attending school.

Establishing a Safe, Positive and Productive Learning Environment

Bernadette Giangreco, EDU 690: Master's Project

Faculty Mentor: Professor Coralee Smith, Elementary Education and Reading

The educational challenge I am investigating is establishing a safe, positive and productive learning environment based on student behavior. Researching this area matters as it sets the foundation for a functioning classroom. The results may identify positive and appropriate student behavior when educators acknowledge student stressors, establish trust and promote collaboration. The approach that I would use to explore this challenge is through a longitudinal research study involving multiple classes, teachers and students. When my Master's Graduate Research Project is used individuals may deliver the evidence to others, so they too have the tools to provide an effective learning environment. It is suggested that educators keep in mind what occurs in students' lives outside of school. Therefore, it is the responsibility of all educators to ensure that they reflect the behaviors they expect of their students. Studying student behavior is essential when seeking to establish a basis for a safe, positive and productive learning environment. My Master's Curriculum Research Presentation will identify and explain

expectations for teachers to establish in the classroom, the effects of student perceptions of teacher support and monitoring, strategies teachers can implement in the classroom, and a theory that correlates with creating a safe, positive and productive learning environment.

Exploring Music as a Second Language Learning Tool

Brittany Miller and **Rebeca Ruesch**, EDU 380: IPDS

Study Abroad and Service Learning: Italy

Faculty Mentor: Professor Kerry Renzoni, Music

This study explores the effectiveness of using music as a primary tool of second language learning. Previous studies have shown that having previous musical experiences can increase understanding of native language conventions. However, not much research has been conducted regarding musical experiences and non-native language understanding. In January, 2018, we traveled to Torremaggiore, Italy as part of the IPDS cohort. In preparation for our trip, we wrote level-appropriate books for children in both English and Italian, and paired each book with a song in order to facilitate English language learning. While in Italy, we observed and taught English and music using our created books in kindergarten through grade five classrooms at San Giovanni Bosco Elementary School in Torremaggiore, and at a high school in nearby San Severo. We sought to answer the research question "How does music aid in second language learning?" Using qualitative data triangulation, we collected data from multiple sources to promote research validity. Data sources included personal blogs kept by the IPDS Italy teaching cohort, field notes of observed classroom teaching by teacher candidates, and informal interviews with teacher candidates and Italian classroom teachers at the schools in Torremaggiore and San Severo. Using qualitative data analysis, we coded the data for emergent themes. Our findings included the following themes: 1. Music is a universal language, 2. Strategies such as, repetition, manipulation, rhythm, and movement contribute to communicating through music despite language barriers, and 3. Exposure to music is essential to encourage creativity and strengthen comprehension skills.

Family Involvement's Effect on Academic Achievement Among Elementary School Students

Matthew Woods, EDU 690: Master's Project

Faculty Mentor: Professor Coralee Smith, Elementary Education and Reading

One of the most impactful factors of a child's education is the inclusiveness of the family. The impact of the family can have a strong influence on whether or not a student will take their education seriously or let it fall down their list of priorities. My

research question is what is the impact of family participation and involvement on a child's academic achievement? The method to explore this issue would incorporate several participants, both students and their families. The children would come from several different classrooms across different schools that have varying levels of parental involvement in the classroom. Using this method we can accurately measure the effect that parental involvement has on their child's academic achievement. This research project is important because it sheds light on a situation that takes place both away from and at the school. If someone were to use this master's project they would be able to bring the student's families into their education then it will increase motivation and academic success. Incorporating this study will also have non-academic ramifications as well, as it will be responsible for bringing families closer together and have them spend more time together. In the future I believe that individuals will use this master's research project to bring a new drive into the students to learn. Students will have more motivation to learn when their families take an active interest in their education. This study will increase the students want and motivation to succeed and learn.

Fill in the Blanks Again: Teaching Writing to Learn

Jena Nunnari, EDU 690: Master's Project
Faculty Mentor: Professor Coralee Smith, Elementary Education and Reading

My research question is investigating the teaching of the standard essay form in English classrooms and how that writing model impacts students' overall writing ability. Creative writing often takes a backseat to the more formal, standard form of writing that is the three paragraph essay. This can be problematic. Students often become more concerned with meeting the very specific standards of the essay, rather than actually honing their skills as a writer. Nystrand (1998), Applebee, and Langer (2011) have found in recent studies that state standards and standardized testing has a sizable impact on the way we teach writing in our classrooms, often limiting our freedom to bring a variety of written assignments to our students. I plan to hold structured interviews with English teachers and students at a local high school, in order to find how often students write and how/what they are being asked to write. From my research project, other teachers could reflect on their own practices of teaching writing. I also think it could help to promote a more diverse offering of how we teach writing. I will use the results from this research project to cultivate my own classroom and to make informed decisions about how I plan to teach writing to my students, as well as help myself reflect on my teaching practices.

From Camp Counselor to Teacher: Inferring Dispositions from Narratives

Daniel Schleyer, English
Faculty Mentor: Professor Christopher Shively, Elementary Education and Reading

Teaching can be thought of as a maze of complicated problems to solve. Solutions require teachers to possess knowledge, skills and dispositions. Researchers have studied the development of dispositions in pre-service teachers, but have not examined the dispositions of veteran teachers and the degree to which their dispositions were revealed in their narratives. A qualitative research methodology was used to investigate the dispositional thinking of five veteran teachers/camp counselors. Interviewing was the chosen method for data collection because it would yield narratives that could be analyzed using constant comparison techniques. One common disposition, "the teacher makes the learner feel valued" (InTASC, 2013), emerged from the narratives. When the manifestation of this disposition was viewed through a strategic thinking lens, degrees of that disposition were exposed.

From Discipline to Self-Discipline: Do School-Based Experiences Advance Student Self-Reliance?

Alan Pomietlarz, HON 400: All College Honors Colloquium
Faculty Mentors: Professor Catherine Ansuini, Academic Affairs and Professor Michael Johnson, Modern and Classical Languages

Discipline and self-discipline, though often considered closely associated subjects, may have no quantifiable connection. Self-discipline is defined as maintaining yourself motivationally and keeping yourself in check, while discipline means maintaining order around a group of people. My initial research (Honors 102, fall 2016) revealed no evidence that a society exhibiting a highly disciplined culture is uniquely comprised of constituents possessing extraordinary self-discipline. Disciplinary policies are routinely posted in schools to reinforce and maintain order, yet transitioning discipline into self-disciplinary skills that promote lifetime self-advocacy are rarely discussed. Schools tell you the rules, when you've broken them, and the penalty for wrongful behavior, but self-discipline is not routinely developed or employed to guide individuals on avoiding difficulties, or correcting their mistake. Self-discipline and discipline are like two wheels on a wheelchair; when one is missing, operating the chair becomes a challenge. Exploring the relationship between discipline and self-discipline may reveal experiential, lifetime-learning strategies for utilizing the classroom experience as a vehicle to achieve self-discipline and self-reliance. Associations between discipline and self-discipline remain undetermined thus further research is warranted.

Gifted Program in General Classroom to Improve Learning Motivation

Zhiyu Jiang, EDU 690: Master's Project
Faculty Mentor: Professor Coralee Smith, Elementary Education and Reading

This research topic is: In what ways can a gifted program in a general classroom impact students' learning motivation? Sometimes, gifted students finish tasks faster so that they have more spare time in class. It would be great if the teacher arranges some extra challenging tasks for the students who finishes the task quickly, thus not only enriching the students' task time but also raises their learning motivation. It's important to consider the needs of gifted students in a general classroom. This research is intending to use quantitative methods to determine the result. Some gifted program factors are set in lesson plans and put into practice. The lesson plan considers the individual needs in the whole class rather than gifted students. The students' learning motivation will be collected by questionnaires. The anticipated participants are 1st-grade students in a Beijing's urban primary school, the questionnaires will be in Chinese. The anticipated results may vary depending on lessons setting. It is anticipated that most students in the whole class will improve learning motivation after taking lessons with the gifted program. In addition, gifted students may better recognize their abilities and make a good start to improve them. An oral presentation with a powerpoint will be the method to share findings with audiences.

The Impact of Resources on Learning and Teaching in Zambia

Karen Amaya, EDU 380: IPDS Study Abroad and Service Learning: Zambia
Faculty Mentor: Professor Hibajene Shandomo, Elementary Education and Reading

In the USA classrooms, teachers may have resources such as teacher aids, technology, textbooks, and school funds that support learning. However, in developing countries like Zambia, there is a lack of resources to support teaching and learning. The focus of my research is to determine how resources impact everyday academic learning and more specifically how resources impact student academic achievement in the Zambian school environments. Zambian schools are unique in their large class sizes, school uniforms, and provision of educational materials. Teachers work with what they have to develop successful educational learning environments for their students. Other educators have argued that even the finest teachers are limited in what they can do when they have large class sizes. Many Zambian classrooms are overcrowded and with little to no resources. This research will also focus on strategies teachers use to teach and manage large class sizes. I will conduct interviews with a selected teacher population and administer a survey to determine the

sources of educational resources in Zambia. Are these resources from the government, community, or donations? A comparison of the findings between the schools that provide a range of resources, such as technology to students, and those schools who lack access to such resources will be made. The outcome of my research should suggest how resources impact learning and teaching through all aspects of schooling in Zambia.

Implementing Structures to Promote Professional Growth in PDS Undergraduate Student Representatives

Daniel Klein, Curriculum and Instruction
Faculty Mentor: Professor Sherri Weber, Elementary Education and Reading

The SUNY Buffalo State PDS Consortium has grown and expanded over the years in order to help teacher candidates as they become educators. While all Buffalo State teacher candidates benefit from participation in the Consortium through the clinically rich practice embedded in their program, a select group is identified for leadership development as PDS Representatives. These undergraduate Representatives serve the Consortium while learning more information, gaining new experiences, and developing into the leaders and educators of tomorrow. This research study will survey current undergraduate representatives in the SUNY Buffalo State Professional Development Schools (PDS) Consortium to see how researcher created structures increase self-confidence in PDS representatives. This proposed study will focus on answering the following research question: "Does the implementation of PDS-related structures increase self-confidence in PDS undergraduate student Representatives? Subjects were interviewed in the beginning of the Fall 2017 semester. Structures were implemented throughout the semester on the SUNY Buffalo State campus. These structures will include different activities that develop self-confidence in the individual. To answer our research question, subjects will participate in a five minute survey and fifteen minute interview using the same five minute survey as in the beginning of the semester to measure if any increase in their self-esteem. The research will be conducted during the Fall 2017 semester. Preliminary findings indicate that the PDS representatives showed an increase in self-confidence using the research structures that were implemented.

Implementing Structures to Promote Professional Growth in PDS Undergraduate Student Representatives

Daniel Klein, EDU 690: Master's Project
Faculty Mentor: Professor Coralee Smith, Elementary Education and Reading

The State University of New York (SUNY) Buffalo State Professional Development Schools (PDS) Consortium has

grown over the years to help teacher candidates, as they become educators. Buffalo State teacher candidates benefit from participation in the PDS Consortium through the clinically rich practices embedded in SUNY Buffalo State education course and experiences. Each year, the PDS Consortium invites undergraduate students to become an undergraduate PDS representative. The PDS representatives attend meetings, assist with planning meetings and assist with planning professional development opportunities. These undergraduate representatives serve the PDS Consortium while learning more information, gaining new experiences, and developing into the leaders and educators of tomorrow. However, there is paucity of research findings documenting the impact of these types of opportunities concerning the undergraduate students' self-confidence. The purpose of this research is to document the experiences of undergraduate PDS representatives concerning confidence. The participants are current PDS representatives who willingly agreed to participate. Participants were interviewed in the beginning of the Fall 2017 semester. Researcher created structures were implemented throughout the semester on the SUNY Buffalo State campus. Participants will participate in a brief survey and fifteen minute interview using the same brief survey as in the beginning of the semester to measure if any impact in their self-confidence. The research will be conducted during the Fall 2017 semester. Preliminary findings indicate that categories of self-confidence emerged using a constant comparative contrast approach. These include public speaking skills, organizational skills, and collaboration skills.

Is Service Learning Field Experience? Is Field Experience Service Learning?

Hibbah Mojawalla, HON 400: All College Honors Colloquium

Faculty Mentors: Professor Julie Henry, Elementary Education and Reading and Josephine Adamo Ph.D., Senior Academic Adviser

How do field experience and service learning combine to help teacher candidates become better prepared for teaching? This is an interesting question as teacher candidates work to complete rigorous requirements for teacher certification and find themselves working in schools and community settings. Service Learning is an experience connected to a particular course where students participate in an organized service activity that meets identified community needs. Service learning has been found to engage students in active learning to connect academic work and career choices, increase awareness of social issues as they relate to academic areas of interest, and enhance perspectives of diversity issues. Service learning can develop a spirit of civic responsibility and allows college students to contribute to the local community. On the other hand, more formal supervised field experience has been found to grant teacher candidates mentored and scaffolded

experiences within classrooms, with focused attention on developing the knowledge and skills needed for the profession, and preparing them for student teaching. New York State requires 100 hours of supervised field experience prior to student teaching. This project elaborates on the distinct benefits teacher candidates receive through field experiences and service learning. Similarities and differences between service learning and field experience will be discussed, and my experience as a teacher candidate will be analyzed.

Learning to Play and Playing to Learn: Sociodramatic Play

Jennifer Norton, EDU 690: Master's Project
Faculty Mentor: Professor Coralee Smith, Elementary Education and Reading

This project focuses on developing a curriculum to be used by prekindergarten teachers to educate their students through play. The curriculum developed will center on the use of sociodramatic play and its role in fostering skills that will contribute to school readiness. The National Association for the Education of Young Children (NAEYC) defined school readiness as a concept that encompasses basic literacy and math knowledge, and areas such as physical, social, and emotional fitness (2009). Sociodramatic play has broad support in areas of school readiness including oral language, social competence, and emergent math and literacy skills (Berk & Meyers, 2013; Bodrova, 2008; Cohen & Uhry, 2007; Fromberg, 2017; Ihmeideh, 2015; Li, Hestenes, & Wang, 2016; Mendoza & Katz, 2008; Pagani & Fitzpatrick, 2014; Weisberg, Zosh, Hirsh-Pasek, & Golinkoff, 2013). Through use of this curriculum, students will likely become more engaged learners and begin to autonomously seek out language and math opportunities. The cooperative nature of sociodramatic play will also help to increase students' oral language and socioemotional skills. Through involvement in these opportunities, students will meet the standards set out by New York State and subsequently increase their school readiness. With such an outcome, teachers will better understand the proficiency with which play-based curriculum serves to support student learning. They will become more likely to incorporate play into their curriculum and to be able to provide evidence for parents and administrators of the necessity of play in the classroom.

Maximizing Engagement Is Maximizing Learning

Kathryn Jordan and **Angela Carriero**, EDU 380: IPDS Study Abroad and Service Learning: Italy
Faculty Mentors: Professor Kerry Renzoni, Music and Professor Christine Tredo, Elementary Education and Reading

In January, 2018, we traveled to Torremaggiore, Italy with nine other teacher candidates as part of the International

Professional Development Schools (IPDS) Italy program. During that trip, we conducted research focused on the question, “What engagement strategies help third grade students in an Italian elementary school learn English?” We were interested in learning how teacher candidates could incorporate similar strategies when working with English Language Learners. While in Torremaggiore, we taught English and music at San Giovanni Bosco Elementary School to PreK through grade 5 students. Specifically, we wrote a book about American landscapes in both English and Italian, and included the American folk song “This Land is Your Land” at the end of the book. We engaged children in read-aloud and write-aloud activities, and infused music throughout instruction. We used the qualitative research method of data triangulation to gather information from multiple perspectives and increase study validity. Our data sources included personal journal entries of our teaching experiences, field notes of our observations of other teacher candidates teaching, and teacher candidate blog posts published throughout the trip. Through qualitative data analysis, we coded for emergent themes. Our preliminary findings included that successful engagement strategies included a) music for redirection, b) music to learn vocabulary words, c) vocabulary identification, and d) word matching. Notably, we found incorporating music was very effective when teaching the students new material and keeping them engaged throughout the school day.

More Than Choice: Autonomy in the Elementary Classroom

Taylor Watson, EDU 690: Master’s Project
Faculty Mentor: Professor Coralee Smith, Elementary Education and Reading

In the world outside of school, not every decision is dictated to students. It is, therefore, the duty of a responsible teacher to create an autonomous-supportive classroom to foster independence and critical thinking skills that will help students in and out of school. Autonomy has been associated with positively impacting engagement in the classroom; high engagement is frequently related to positive school performance. Choice is far from the only way for teachers to provide students with autonomy, it is also providing rationale for activities and allowing students a productive channel to share their criticism. The proposed research would look at all of the different ways to be autonomous-supportive in a fourth grade suburban classroom using pre and post tests to determine what amount of autonomy in the elementary classroom best serves students. If previous research in other classrooms holds true, an approach that supports all types of autonomy and does not inundate students with too many choices will help students achieve their best. Provided autonomy-supportive classrooms demonstrate to be beneficial, it would then be recommended that teachers take every opportunity to support

the autonomy of their students, even if allowing students choice is not an option. This research can be used to compare the amount of autonomy that should be used in other grade levels as well as its lasting effects outside the classroom.

Music in the Classroom: A Tool For Second Language Instruction in Torremaggiore, Italy

Christine Garas and **Kristine Murnieks**, EDU 380: IPDS Study Abroad and Service Learning: Italy
Faculty Mentor: Professor Kerry Renzoni, Music

This study explores the use of musical activities in the general classroom to support vocabulary comprehension for English Language Learners in Italy. Prior to our travel, several instructional activities were developed to be implemented in classrooms at San Giovanni Bosco Elementary School in Torremaggiore, Italy. Musical activities such as singing, chanting, and movement were co-taught with English instruction. These activities were based off of the children’s book we wrote entitled *Buffalo’s Own Winter Wonderland* to support English vocabulary acquisition and knowledge of Buffalo, New York. We used musical excerpts to support the language of the text, such as the song “Walking in a Winter Wonderland”. Our primary source of data for this study was our peers’ blog posts about their experiences of using music to teach English in their classrooms at San Giovanni Bosco. Classroom observations, informal interviews, and personal written reflections of our teaching served as additional sources of data and contributed to our findings and common themes within this study. We used qualitative data analysis, reviewing blog posts, observation field notes, written personal reflections, and interview notes, coding for emergent themes. We found many pedagogical parallels between scaffolding music comprehension and vocabulary comprehension. Additionally, we observed that music is a universal language, as well as a multimodal teaching strategy which incorporates singing, chanting, and movement to reach all types of learners. After teaching in Torremaggiore, the findings in this study fully support the use of music as an instructional support for English Language Learners.

Narrative Writer’s Workshop in Second Grade

Andrea Mermigas, EDU 690: Master’s Project
Faculty Mentor: Professor Coralee Smith, Elementary Education and Reading

Constructing a narrative writers’ workshop for second grade students will begin with the basic steps of writing. Starting by narrowing down a specific topic to write about. Brainstorming is a great skill to use when students are figuring out what they should write about. They will be learning how to use dialogue, transitions, draft and edit their writing. This will lead all the

way to the finished product and sharing their stories with peers. Part of writers' workshop is for students to share and collaborate with their peers about their finished writing pieces. This helps to build their communication skills as well. The materials in this project will meet and follow the Common Core Standards in second grade writing. It will be a step by step process that will give students an opportunity to come together as a classroom through writers' workshop. Students will work everyday towards their goal of a narrative writing piece. This will also show students that a piece of writing takes time and effort to complete successfully. I plan to discuss the importance of writers' workshop and the many components that lead up to a narrative writing piece. Writing skills are an important part of a person's everyday lives. It is crucial that students at a young age become exposed to proper literacy skills. Giving students the power to be able to say what they want to say and give a choice in their writing is another important component of writers workshop.

Open Pedagogy: Go Ahead and Use It

Adriane Salerno, CHE 499: OER Research
Faculty Mentor: Professor Maria Pacheco, Chemistry

How often is it that the textbooks teachers select are just "good enough" for the course? Using open educational resources (OER) allows teachers the flexibility to pull from many different authors as well as the freedom to revise or remix these tools to create something that is perfect. OER are creative works that are licensed in such a way that allows them to be freely used, changed, or shared with others. The objective of this project was to develop a method for high school instructors to be able to easily search for and evaluate OER. A generalized search and evaluation procedure that can be used across content areas has been developed. The materials developed include a list of tools to aid in the search process as well as an easy to use interactive rubric for evaluating objects. The topic of dimensional analysis was chosen to evaluate the effectiveness of the process and materials developed, as it is a topic normally embedded throughout both Physics and Chemistry courses. The OER found will be evaluated along with traditional materials currently used in high school Physics and Chemistry courses and the scores compared. It is our expectation that that the OER will be of equivalent, if not higher, quality than the materials currently in use.

Parental Involvement in Zambian Schools

Bryanna Hill and **Brittany Miller**, EDU 380: IPDS Study Abroad and Service Learning: Zambia
Faculty Mentor: Professor Laura Klenk, Elementary Education and Reading

Our study explores the involvement of parents in Zambia in their children's education. In Zambia, parents play an important role in the academic success of their children. One way this takes

place is through parental involvement in the Parent-Teacher Association (PTA). Through this involvement, parents have input into policies and decisions regarding classroom goals and requirements, assessment, and other aspects of their children's education. Through interviews with parents and teachers we will attempt to quantify and characterize the levels of parental involvement according to the five levels of parental involvement defined in the "Influence of Parent Involvement" (2016). The levels range from low (informed about school programs) to high (accountable for a partnership between school and family.) We also intend to explore the socio-economic and cultural influences that contribute to the level of parental involvement.

Preserving Kindergarten: Impact of Learning Through Guided Play

Cheriskira St. Croix, EDU 690: Master's Project
Faculty Mentor: Professor Coralee Smith, Elementary Education and Reading

Can learning through guided play have an impact on children in kindergarten? Researchers found that play and learning were intertwined (Myck-Wayne, 2010; Wallerstedt and Pramling, 2012). This research project will focus on a guided play curriculum, using the common core standards to determine what kindergartners should be taught. My research project will focus on the academic subject; science, as lack of attention has been given to it as well as through science students are able to explore and make connections about the world. Students will actively engage in the five senses unit as they play an important role in our life. The purpose of this research project is to determine the impact learning through guided play will have on kindergartners. Researchers also found that guided play is more effective than direct-instruction (Bulunuz, 2013; Fisher, Hirsh-Pasek, Newcombe, & Golinkoff, 2013; Weisberg, Hirsh-Pasek, & Golinkoff, 2013). It is a developmentally appropriate practice that incorporates a balance of free play and direct instruction. Students are involved in the learning process, which allows them to set their own pace. Consequently, this research project can be beneficial to kindergartners, teachers, parents and the education system as kindergarten should be a place where learning is fun. In the future, this project can be implemented to a 6:1:1 kindergarten classroom because students learn how to be creative, independent, make observations, share, self-regulate, resolve conflict, and a vast number of other valuable skills.

Reading and Writing Aloud in Classrooms Around the World: IPDS Chile and IPDS Italy

Christine Garas, Exceptional Education
Faculty Mentor: Professor Pixita del Prado Hill, Elementary Education and Reading

Through my research as part of the 2017 IPDS Santiago, Chile program I have learned the benefits of interactive read alouds (IRAs) for both students and teachers in a variety of classrooms. Prior to travel, I developed instructional activities to accompany the IRAs conducted in my field placement. During these read alouds, I engaged students in the reading of the books in order to build comprehension. Chilean students demonstrated engagement during my instruction, and Chilean teachers perceived this approach to be beneficial for future use in their classrooms. I am interested in exploring a related approach while in another country: the write aloud method. As a part of the 2018 IPDS Torremaggiore, Italy program, I will observe how Italian students respond to write alouds, which demonstrate proficient writing to students, support comprehension and offer practice with sight words in English. IRB permission has been granted and an observation protocol will be used. Preliminary findings from Chile indicate IRAs are an effective part of a balanced literacy program. IRAs are a benefit for large class sizes, as some classes in Chile can reach over 45 students. I am interested in exploring the second approach, the write aloud – this time, observing in an Italian classroom. Though the class sizes will not be as large, I hope to observe how a balanced literacy program can be a benefit for both small group and whole class instruction. The results, implications, and recommendations will be presented at the March 2018 NAPDS Conference.

Schools in Zambia: A Question of Equity

Lauren Roetzer, EDU 380: IPDS Study Abroad and Service Learning: Zambia
Faculty Mentor: Professor Dianne McCarthy, Elementary Reading and Education

In Zambia today, there are two types of educational funding: rule-based and discretionary-based. Rule-based funding allocates a fixed amount of money to every school in the province. It is transparent and clearly defined and therefore is difficult for any political factors to influence school portions. However, discretionary-based funding is entirely centered on funding schools based on who can best politic for the money. Certainly, this creates a problem of equity. According to Zambian literature, many schools are incredibly underfunded, understaffed, lacking resources and are often times run out of small one room school houses. However, other schools, just miles down the road, are in pristine condition with technology and school supplies to spare. In my research, I plan to compare what I have discovered in the

literature and what I actually see while exploring abroad. I want to discover if the literature's description of funding in Zambia is accurate, embellished or understated. I want to answer the questions: How does funding and inequity affect different school's academic performance? How does funding and inequity affect different school's overall morale? How does funding and inequity affect different school's resources and materials, which in turn affects academic achievement?

Student Engagement During a Read Aloud

Rachel Nati, Exceptional Education
Faculty Mentors: Professor Patricia George, Elementary Education and Reading and Professor Pixita del Prado Hill, Elementary Education and Reading

To be engaged means to be fully immersed physically, mentally, and emotionally in an activity. Traditionally a student would have been called engaged in reading if they asked or answered questions that the teachers asked. Currently, it is preferred that a student be engaged in reading if they are asking questions to better understand the text and construct meaning, they are responsible for ensuring that all group members take turns and stick to the topic during discussion. Students should be the facilitators of information by restating the questions if others have said it was unclear, may relate topics or issues to assist others in understanding, compare and contrast characters and discuss the authors style and craft. Students should also respond to each other's questions instead of the teacher responding. Lastly students should challenge each other's ideas by telling whether or not they agree and why. Basically, students should become the inquisitor, facilitator of interaction, facilitator of interpretation, respondent, and evaluator. The following procedures will occur: Subjects will complete a survey at the beginning of the semester. Instruction and research will be done by the students during the Fall 2017 semester on the SUNY Buffalo State campus. Preliminary findings indicate that the students generally believe that engagement has to do with intonation, teacher led questions and students comprehending the text. The results, implications, and recommendations of the research study will be included in the final poster to be presented at the March 2018 NAPDS Conference.

Teacher Dispositions: Navigating the Minefield

Jordan Anthony, Childhood Education
Faculty Mentor: Professor Corinne Kindzierski, Elementary Education and Reading

Teacher candidate dispositions have been a focus of preparatory programs for the past 20 years (Brewer, Lindquist & Altemueller, 2011) however, a renewed wave of interest began

when the National Council of Accreditation of Teacher Education (NCATE) included candidate dispositions in the revised standards (2013). Due to the new standard, teacher preparation programs found themselves ‘scrambling’ to include this construct in content as well as assessment. This became problematic as dispositions have been described as an “undeniably murky concept” (Schussler, 2006) yet could no longer be avoided due to its ambiguous nature. In an effort to guide policies and procedures, NCATE defined dispositions as “professional attitudes, values and beliefs demonstrated through both verbal and non-verbal behaviors based on observable behaviors in educational settings” (NCATE, 2013). While this clarified standard provided guidance, higher education institutes still found themselves in “murky” waters trying to come to consensus as to what those professional attitudes, beliefs and values should be. Ultimately, schools of education have to assume responsibility for developing such behaviors as well and developing content knowledge and pedagogical knowledge (Thornton, 2006). Candidates must become aware early in their programs that they are potential teachers, not mere students and their dispositions will be monitored and assessed across their courses and fieldwork. Candidates who may be unsure of the multiple demands of a teaching career or those who are transitioning into a new career may be uncertain and/or unaware exactly what professional behaviors is expected of them as they no longer simply assume the role of a student. For this reason, this study ultimately looks to increase students’ awareness of what behaviors will be expected of them and to collect feedback as to why these dispositions are essential to a career as an elementary school teacher.

Teacher Perceptions of Parental Involvement in Zambia

Onnika Clarey, EDU 380: IPDS Study Abroad and Service Learning: Zambia
Faculty Mentor: Professor Hibajene Shandomo, Elementary Education and Reading

Ongoing research shows that family engagement in schools improves student achievement, reduces absenteeism and builds parent confidence in their children. Specifically, the National Association (NEA) has reported that when schools, families, and community groups work together to support learning, children tend to do better in school, stay in school longer and like school more. Many people correlate student success to parental involvement, along with many other factors. In the USA, teachers believe that if a student has the support of their parents or guardians, the student’s academics and social realms of life will lead to a positive school experience. Teacher-perceptions of parental involvement is important because teachers have a powerful, long lasting influence on students. Teachers are the most influential school related force in student achievement.

Prior to my trip to Zambia, I will research on teacher perceptions of parental involvement in the USA by reviewing the literature. While in Zambia, the opportunity has presented itself for me to take a look at teacher perceptions of parental involvement. I plan to administer my survey to teachers and interview them to determine teacher perceptions of parental involvement in their children’s education. Do teachers in Zambia think that parental involvement is essential to student success? Do teachers think that the socioeconomic status of parents impact their involvement in their children’s education? I believe my research will contribute to existing literature on parental involvement and its impact on student achievement in the field of education.

Teaching English as a Second Language in Zambia

Alexis Troutman, EDU 380: IPDS Study Abroad and Service Learning: Zambia
Faculty Mentor: Professor Wendy McLeish, Elementary Education & Reading

In the United States, most students begin learning a second language around the age of 12, and continue to study the language until around age 17. However, in other countries students are required to begin learning English around the age of 7 or even earlier. We grow up learning how to read, write and properly speak our own language, but, how does the young student acquire the English language skills we work years to master? In my travels to Lusaka, Zambia for International Professional Development Schools I will interview public and private school teachers and school administrators to explore how teachers in Zambia teach the English language to young learners, inquire as to when do formal English lessons begin, and how many years do students typically study English. I will focus on the overall curriculum and how/why it is taught in that manner. I will also observe the teachers’ methods to gain a wide range of understanding of the children’s English language acquisition.

Teaching Music Abroad: How Teaching Experiences in Italy Helped Us Grow As Music Educators

Brianna Jenkins, EDU 380: IPDS Study Abroad and Service Learning: Italy
Faculty Mentor: Professor Kerry Renzoni, Music

This study discusses how experiences in teaching elementary music in Italy informs American elementary music teaching. In January, 2018, I traveled with three other music education teacher candidates to Torremaggiore, Italy as part of the IPDS (International Professional Development School) Italy program. There, we taught music lessons at San Giovanni Bosco Elementary School for two weeks. During our time in Torremaggiore, music education majors wrote blog posts about

their teaching and learning experiences, and I kept a teacher journal throughout the trip to document my personal teaching and learning experiences. To answer my research question, I reviewed blog posts from the four music education majors, reviewed my teacher journal, and conducted informal interviews with the other music education majors. I used qualitative data analysis and coded for emerging themes within the data. My findings indicated that while teaching abroad, music education majors: 1. Learned how to effectively use more active and concise language along with the improvement of nonverbal communication strategies and methods, 2. Gained innovativeness in teaching and the ability to remain adaptable to changing circumstances, 3. Gained a clearer understanding of language acquisition through music, and 4. Learned the importance and effectiveness of strong modeling in the music classroom. All participants of this study agreed that what they learned in Italy can be applicable to teaching music in America in one way or another and that this experience helped them grow individually as music educators.

Timeline of Education in Zambia: Pre-Colonization to Pre-Independence

Keiayrrah Williams, EDU 380: IPDS Study Abroad and Service Learning: Zambia
Faculty Mentor: Professor Hibajene Shandomo, Elementary Education and Reading

This study confines itself to the education system in the pre-independence periods of Zambia. Therefore the emphasis is on the evolution of education in Zambia. Zambia attained its independence from Britain in 1964. Up to that point, provision of education was mainly in the hands of missionaries. It can be argued that education existed for as long as human beings started living in their societies in Africa. Kelly (1999) defines education as a long life process in which the older generation imparts skills, values and knowledge into the young ones for their own survival. This project will focus on what education was like in the pre-independence period. What was the main objective of education? How were the young educated? What was the content of the indigenous education and why? How was the indigenous education different from the education the missionaries introduced to Africans? What was the content of education brought by the missionaries? The second part of the research examines the methods used to achieve the objectives of indigenous education. Historians argue that indigenous education was meaningful, unifying, holistic, practical, and relevant to the individual as well as the community. The methodological approach for this study will be Historical research. I will interview 10 Zambian participants. I plan to use research articles, and visit museums in Zambia. Data will be analyzed by coding topics and categories. A major outcome of this project is that the researcher will understand the history of

Zambia and therefore connect it to the present Zambia.

The Universal Language of Classroom Management

Emily Librock, Early Childhood and Elementary Education
Faculty Mentor: Professor Patricia George, Elementary Education and Reading

Research has indicated that there are differences in the implementation of classroom management rules and procedures in the United States when compared to Germany. In the United States, teacher candidates are taught one way of putting classroom management strategies into practice. One common classroom management practice in the U.S. is posting a list of rules in the classroom for students to reference. An example of a classroom management practice in Germany is to use music as a cue that it is time to transition into a new subject. After observing the practice of German teachers' implementation of classroom management strategies, it has become apparent that the strategies used in both countries could be considered universal. In a world where English Language Learners have become more present in the classroom, the question to answer through literary review becomes "Do these students know what we are doing without knowing English?" If I could observe in the classroom in Germany without speaking German and understand classroom expectations through nonverbal management strategies, can we do the same for students in the United States? Through reviewing scholarly articles and published teacher reports, evidence will be collected of direct classroom management strategies that would benefit any student with a primary language that is not English. The intended result is to share the best possible classroom management methods that benefit students. The results, implications, and recommendations from this literature review will be used to provide information on ways to combine foreign and local ideas regarding classroom management.

The Use of Mother Tongue Instruction: Teaching in Local Languages in Zambia

Mackenzie Elliott, EDU 380: IPDS Study Abroad and Service Learning: Zambia
Faculty Mentor: Professor Julie Henry, Elementary Education and Reading

This study will examine the impact of teaching in local languages on students and teachers in primary schools in the Lusaka urban area. There is an ongoing debate on the introduction of local languages in schools as a medium of instruction. Zambia has taken measures to include local languages in their formal education curriculum, a practice often referred to as mother tongue instruction (MTI). A number of studies argue that MTI is superior to second language instruction in facilitating effective classroom communication, increasing access to and quality of education in Zambia. Studies show

that issuing instructions in local language is more beneficial because students are able to grasp things faster and participate in classroom more frequently. The significant challenges presented are the lack of teaching materials in local languages, language barrier between pupils and teachers, contribution and participation of pupils in class using MTI instruction methods, and pupils continually use “language of play” meaning that their use of academic vocabulary in their local language is limited. The objective of the research is to study the history and effects of using MTI in Zambian primary grades describing some of the advantages and challenges. The study will be conducted through review of research and plans for future observations of MTI instruction within Lusaka primary schools.

Welcome to Our School!

Jikang Kim, Childhood Education

Faculty Mentors: Professor Dianne McCarthy, Elementary Education and Reading and Professor Pixita Del Prado Hill, Elementary Education and Reading

This research study surveyed college students who attended schools in two different countries to learn about their P-12 school experiences. They were asked to identify the most beneficial aspects of their schooling to suggest effective classroom practices. I anticipate the results of most surveys will show different preferences for classroom practice. So with this survey I can figure out which teaching environment helped students learn. Each country has different ways to educate their youth and it shows in international education rankings. But, what do students think about how they were educated? By asking students who experienced schooling in at least two different countries I will show which education students prefer. The research results will be helpful to U.S. schools because it will show what students like and what is effective based on their experiences in international schools. In this study, participants will describe what they experienced in schools in other countries. The USA has an increasing amount of immigrants. According to US News journal, “The population of first- and second-generation immigrant children in the United States grew by 51 percent from 1995 to 2014, to 18.7 million, or one-quarter of all U.S. children.” If educators or teachers know about other country’s classroom environment and notice the difference between USA and other countries, they may be better able to help students.

Zambia’s Education System After Independence

Lavonnie Green, EDU 380: IPDS Study Abroad and Service Learning: Zambia

Faculty Mentor: Professor Wendy McLeish, Elementary Education and Reading

Independence in 1964 brought many wonderful things to Zambia. These were exciting times when the new nation formed the basis for its infrastructure; its laws, government and its education system. Everything needed to happen at once. However there weren’t enough educated and qualified people to run the new country. The Zambian educational system sorely needed schools, qualified teachers, curriculum, materials and students all at once. It adopted the British model whereby students take exams in the higher grades to determine if one is university bound or vocational schools bound. A few years ago the country took stock of its educational system. The rapid expansion of the educational system had some unintended negative aspects. The lack of adequate infrastructure to deal with the increase number of students and the subsequent need for trained teachers at the upper levels of schooling were two of the identified issues. (Maina, 2016). According to a study in 2013 Zambia was second from the bottom in literacy skills. Schools are viewed as an economic tool for the development of Zambia. In 2014 the Zambia Education Curriculum framework was implemented in an effort to educate all students. I will interview teachers, administrators and professors in Zambia to investigate how local schools implement the curriculum. How are the individual needs of students met? How much freedom does an individual teacher have to modify the curriculum? How are students assigned to classes if there is more than one class per grade level?



Health and Social Work

The Benefits of Mindfulness and Yoga on Chronic Pain in the Geriatric Population

Ana Lyons, HON 400: All College Honors Colloquium
Faculty Mentor: Professor Catherine Ansuini, Academic Affairs

The purpose of this research is to explore the potential health promotion effects of yoga and mindfulness practices on the senior adult population in Western New York. The study investigates if participation in lifestyle behavioral activities concentrating on meditation, mindfulness, or prayer, influence levels of self-reported suffering in members of the senior adult population. Sustaining the capacity to perform adult daily living tasks is essential to maintaining independence and quality of life in seniors. The elderly frequently experience diminished capacity as the result of age-related discomfort, chronic pain, and associated mental and physical stress. This investigation explores the efficacy of utilizing self-selected mindfulness activities as a holistic, preventative measure to chronic pain and potential treatment partner with traditional medical treatment applications. Research includes a literature review and an assessment of responses to a survey querying pain perception as influenced by mindfulness behavior. Surveys will be administered to senior adults and at senior centers throughout the region; participation is voluntary. Investigating the capacity of non-pharmaceutical behaviors to ameliorate pain and suffering could significantly impact the human condition; providing a means for maintaining pain-managed, optimal wellbeing throughout a lifespan.

Catching Z's: Sleep Quality and the Factors That Hinder It

Mykalah Brumfield, Health and Wellness
Faculty Mentors: Professor Leah Panek-Shirley, Health, Nutrition, and Dietetics, Professor Michael Johnson, Modern and Classical Languages and Professor Naomi McKay, Psychology

College students tend to struggle with daily responsibilities such as academics, employment, and social responsibilities, often forgetting or disregarding the dire need to sleep. Multiple factors may influence sleep quality, including naps, and exercise. As a result, students' lives may become negatively affected, creating a vicious cycle of inadequate sleep and negative health effects. Methods: As part of two larger studies, sleep questionnaires were administered to 74 (19% male) students of Buffalo State College after completing informed consent and prior to the implementation of study conditions. Hypothesis: The hypothesis of this study is naps, exercise throughout the day, and certain activities performed before bedtime will affect the quantity and quality of sleep among students. Results: There was a weak,

significant negative correlation between the amount of time an individual napped and sleep quality ($r(74) = -.34, p = .003$). A significant positive relationship existed between hours slept and feeling refreshed ($r(74) = .42, p < 0.001$) as well as sleep quality ($r(74) = .59, p < 0.001$). Summary: This study demonstrated the amount of minutes spent taking naps throughout the day affects the quality of sleep during the night. Conclusions: The results of this study add to the existing body of knowledge about sleep among college students and will be used to provide college students with better insights as to why they are receiving inadequate sleep, and how to alter their sleeping habits for the better.

Child Welfare Policies in Trinidad and Tobago

Giaangelina McCarthy, SWK 499: International Social Work Research

Faculty Mentors: Professor Kimberley Zittel-Barr, Social Work, Professor M. Dian Chin Kit-Wells, University at Buffalo and Professor Catherine Mazzotta, Social Work

The purpose of this project was to increase understanding the child welfare system and policies in Trinidad and Tobago compared to those in the United States. The project consisted of qualitative interviews conducted with members of the community who work closely with children or social work. The child welfare laws and policies were examined at the preschool level at the Naomi Chin Kit school, as well as, a public primary school. Interviews were conducted with a former principal of a primary school, the standing principal of a primary school, and social work graduates from a college in Trinidad. The goals of the project were to gain an understanding of the rules and policies that are in place to protect the well-being of the children in Trinidad and to understand how the rules and policies that are in place are applied within the schools. As Trinidad and Tobago is a developing country, child welfare policies integrated into the preschool programs are not well understood. The purpose of the interviews conducted are to assist the Naomi Chin Kit school in implementing appropriate protocols for child welfare. The interviews brought about significant findings. Some themes among the interviews were that the policies that are in place are not enforced or upheld. There appears to be a lack of follow through with child welfare policies at the school level because of reasons such as, lack of funds, lack of resources, and cultural attitudes. There was hope and desire to improve the child welfare system among all interviewees.

Complementary Therapy for Mental Health

Kaley Dewey, NFS 330: Integrative and Functional Nutrition
Faculty Mentor: Professor Suk Oh, Health, Nutrition, and Dietetics

Conventional medicine prescribed by medical doctors are the most common way to receive help for mental illnesses. Non traditional therapies for mental disorders make some differences; however, they do not significantly diminish mental illness symptoms. Complementary medicine/therapies along with conventional medicine may give the best treatment and outcome, over conventional treatment alone. Complementary therapies consist of natural herbs and dietary supplements, meditation, yoga, and other mind and body medicines. I conducted literature review on the topic and presented my findings on the poster. The most common complementary therapies used in general, and then for mental health. Once the most common therapies include The most common complementary therapies are found, I will explore to find new ones that may benefit mental health. Each therapy type I use will have evidence supporting the effectiveness and provide extended information on the process or any types of products suggested. I will also provide conventional medicine success without complementary therapies, and conventional medicine with complementary therapies, to show the importance of complementary therapy.

Cruciferous Vegetables: An Alternative for Cancer Prevention

Erin Nargi, NFS 330: Integrative and Functional Nutrition
Faculty Mentor: Professor Suk Oh, Health, Nutrition, and Dietetics

In the United States, 40% of men and 38% of women will develop cancer at some point during their lifetime. According to the 2018 Facts and Figures released by the American Cancer Society approximately 18% of all newly diagnosed cancers in the United States are caused by excess body weight, physical inactivity, excess alcohol consumption, and poor nutrition and are all considered 'potentially avoidable' cancers. For my research, I conducted a literature search that aims at finding sources of good nutrition, such as cruciferous vegetables, that helps to reduce the risk of developing cancer. Cruciferous vegetables have been used for medicinal purposes to protect and treat illness and disease since ancient times. Cruciferous vegetables - such as cabbage, kale, broccoli, cauliflower, turnips, rutabagas, and brussel sprouts - contain a group of secondary metabolites called glucosinolates which are hydrolyzed into many bioactive compounds such as Sulforaphane, Sulforaphane nitrile, Phenethyl isothiocyanate, Allyl isothiocyanate, and Indole-2-carbonil Crambene. Research shows that these compounds are anticarcinogenic due to their

ability to change detoxification pathways in ways that decrease the activation of procarcinogens and increase the excretion of carcinogens in the body. The findings from reviewing articles related to cruciferous vegetable intake and cancer risk will be presented on my poster along with the effects cruciferous vegetables have on specific types of cancer.

De-stress with Mindful Meditation Practice

Xylina Ulloa, NFS 330: Integrative and Functional Nutrition
Faculty Mentor: Professor Suk Oh, Health, Nutrition, and Dietetics

Anxiety and stress are among the most prevalent disorders in the United States. These disorders develop for a variety of reasons including genetics, brain chemistry, personality and life circumstances and can occur at any point in a lifetime. The purpose of my research is to explore if mindful meditation practice as an effective treatment for stress and anxiety. I conducted a peer reviewed literature search and present my findings in the poster. Although medications are often prescribed, there is an effective alternative! Mindful meditation (MM) has been reported to be a successful treatment for anxiety according to the ADAA (Anxiety and Depression Association of America). MM is a meditation practice that essentially involves focusing your mind on the present. To be mindful is to be aware of your current thought and keep your mind in the present, without judgment. Remaining mindful is developing the practice of paying attention to "the present moment" and being conscious not to seek or wish something but to achieve a mental state of awareness on the present situation, while calmly acknowledging and accepting one's feelings, thoughts, and bodily sensations to use as a therapeutic technique. Evidence from research suggests that mindfulness meditation may improve mood, decrease stress, and boost immune function.

Dead-Weight: The Burden of Obesity in the Workplace

Sarah Steiner, HEW 411: Critical Issues in Health and Wellness
Faculty Mentors: Professor Mary Platek, Health, Nutrition, and Dietetics and Professor Michael Johnson, Modern and Classical Languages

The objective of this study was to conduct a literature review examining the relationship between employee obesity and loss in productivity in the workforce (i.e. absenteeism, disability, and injury). Obesity is a critical health issue and is associated with chronic diseases such as cardiovascular disease and diabetes mellitus. Additionally, studies have reported a link between obesity and job related injury which, similar to chronic disease, affects ones work ability. Articles included in this review were published

in peer reviewed journals between January 2010 and March 2018 and were found to be of good quality and relevant to the topic. Workers classified as obese based on BMI or central adiposity were more likely to lose time from work due to illness or injury related to weight and recovered slower than individuals with a healthy weight status. Losing productive hours is costly and both employees and employers may benefit from programs designed to prevent and manage excess weight, including targeted lifestyle programs. The poster presentation will display current data collected from original research reports examining obesity and on the job injury, absenteeism, and disability along with the associated financial loss. Additionally, information on successful worksite health promotion programs for the prevention and management of obesity will be provided.

Dietary Supplements: What Are They and How Are They Regulated?

Connor Abbott, NFS 330: Integrative and Functional Nutrition
Faculty Mentor: Professor Suk Oh, Health, Nutrition, and Dietetics

This project focuses on dietary supplement use and how they are regulated in the United States. The most common supplements used in the United States are omega-3 fatty acids, Echinacea and glucosamine. The purported effect, clinical efficacy and safety of all three will be discussed. Next we will focus on the Nutrition Advertising Act of 1991, the Dietary Supplement Health and Education Act of 1994 (DSHEA) and the role the FDA plays in regulation of supplements. The DSHEA was proposed after the Nutrition Advertising Act of 1991 died in Congress, essentially giving the FDA power to regulate supplements. We will discuss why the original bill calling for regulation failed and how much power the FDA has to regulate supplements. Finally we will discuss how effective the FDA is in protecting the public from supplements and any changes regarding supplement regulation since the passing of the DSHEA.

Domestic Minor Sex Trafficking: Working Towards a Solution

Melissa Mazur, HON 400: All College Honors Colloquium
Faculty Mentors: Professor Catherine Mazzotta, Social Work and Professor Michael Johnson, Modern and Classical Languages

Human sex trafficking has been a catastrophic practice across the globe for numerous centuries. However, only recently has it been a topic of research. Many people do not realize that this modern day form of slavery still exists and affects thousands of people daily. This project will focus on a more specific category of trafficking: domestic minor sex trafficking, or the sex trafficking of youth within the borders of the United States. Using an ecological systems perspective, this literature review will provide a

comprehensive view of the strides that are being taken to address this social injustice, identify victims, and effectively support them. Information from peer-reviewed articles, as well as governmental reports, was gathered to gain a better understanding of how/why trafficking occurs and about intervention methods which are currently being utilized to assist victims. Preliminary findings suggest that more awareness within various human service disciplines, as well as, preventative intervention can help combat child sex trafficking. In conclusion continued research, education, and implementation of interventions on governmental, institutional, and individual levels need to occur in order to end trafficking.

Eating in America vs Eating in China: Cultural Aspects and Dietary Guidelines

Amanda Lewalski, NFS 330: Integrative and Functional Nutrition
Faculty Mentor: Professor Suk Oh, Health, Nutrition, and Dietetics

Many countries have their own set of dietary guidelines. These include scientifically-backed lifestyle choices and ways of eating that each country believes would be of the most benefit to its citizens. In the United States, the Dietary Guidelines put forth by the Department of Health and Human Services (DHHS); included is a graphic guideline for healthy eating “My Plate” which consisted of the food groups (dairy, protein, fruits, vegetables and grains) on a dinner plate. This helps people understand comparably how much of each food group to fill their plate with. China also has similar guidelines, however their graphic is a pagoda and depicts all of the food groups in the Pagoda. Apart from the government-sanctioned guidelines, Chinese divided their foods into yin and yang foods and eat a balanced amount of yin and yang foods for good health. I will compare and contrast both the Dietary Guidelines and the culture of food in both countries. I conducted literature review on the topic and compare the nutrient content of a typical day in both cultures. Preliminary findings suggest that adopting a diet more similar to that found in China has more benefits than both the typical American eating patterns as well as the dietary guidelines and MyPlate put out by the DHHS and the Department of Agriculture.

Effect of Taurine and Choline on Brain Function

Laura Steerman, NFS 330: Integrative and Functional Nutrition
Faculty Mentor: Professor Suk Oh, Health, Nutrition, and Dietetics

Nutritionally taurine and choline are classified as pseudo vitamins that do not meet the accepted definition of a required vitamin, although the two nutrients have significant health effects. My interest was sparked, when investigating the

biochemical and nutritional effects of choline and taurine on human body. The objective of my scientific literary research is to find the evidence-based health effects of taurine and choline. Choline is an essential nutrient for healthy brain and liver. Taurine is a sulfur-containing amino acid, that helps the body facilitate the action of insulin, improving glucose tolerance, and acting as an antioxidant. What makes taurine and choline worth researching is the fact that they are both involved in boosting cognitive function, brain development and protection. Previous research has found the site within the brain that these nutrients cross the blood brain barrier most effectively. One of the purposes of my study is to understand the properties and functions of these nutrients and to find their effect on the brain, more specifically the effect on learning and memory. I discuss the chemical properties and functions of taurine and choline in respect to the mammalian brain, due to lack of conclusive research that has been done on the human brain. Other studies on mammals have shown that taurine has a significant effect on retina and muscle function, and when combined with caffeine enhanced mental performance. Choline also exhibited positive effects by improving memory retention while reducing anxiety and depression. These findings support the rationale for classifying the two nutrients as pseudo vitamins that deserve our attention for adequate consumption for good health.

Emotional-Behavioral Skills Intervention at a Pre-School in Trinidad and Tobago

Sheila Morales, SWK 499: International Social Work Research
Faculty Mentors: Professor Kimberley Zittel-Barr, Social Work, Professor M. Dian Chin Kit-Wells, University at Buffalo and Professor Catherine Mazzotta, Social Work

This project examined the use of play with children to become more aware of their feelings and behaviors. The researcher conducted pre- and post-observations of pre-K children between the ages of 3-6, identifying when and how they expressed eleven emotions or behaviors during regular school activities. Emotions and behaviors observed included crying, sad, happy, pushing, yelling, anger, frustrated, afraid, proud surprised, and brave. Students were instructed using, "The Feeling Ball Game", to process an emotion or behavior and describe a time when they had experienced the emotion or behavior. Observational data were entered into the SPSS statistical program. The data was analyzed using frequencies and paired t-tests. Results showed a small change in emotional/behavioral expressions. Statistically significant results showed a decrease in happiness and bravery; while there was an increase in pushing. While this may be due to observational errors, these results might also represent the times at which observations were made. For instance, students were observed shortly before the team was leaving the school to return to Buffalo; thereby, decreasing happiness and increasing pushing.

Foster Care System: The Full Story

Marissa LaCelle, HON 400: All College Honors Colloquium
Faculty Mentors: Professor Jessica Fitzpatrick, Social Work and Professor Michael Johnson, Modern and Classical Languages

With almost 428,000 children in the foster care system in the United States, it is important to understand the different ways children are enter into the foster care system, how children experience foster care during their childhood, and how adults view their time in foster care and how it has affected their adult lives (Dokken & Ahmann, 2017). The research question that is being studied in this literature review is: in the United States of America, how has the foster care system impacted the lives of adults that have experienced the foster care system as a child? Although this topic is broad, it can be broken down into four main subjects: the experience of entering the foster care system, the experience of living in the foster care system, the experience of leaving the foster care system, and any suggestions of change for the foster care system. This literature review was performed by searching the E.H. Butler Library database using the following search terms: "Foster care in the United States" and "Qualitative Research". A poster will be created for this presentation that provides more information on the four subjects listed along with some other facts about the foster care system.

Go With Your Gut: The Effects of Probiotics and Prebiotics in IBS and Crohn's Disease

Marlena Croce, NFS 330: Integrative and Functional Nutrition
Faculty Mentor: Professor Suk Oh, Health, Nutrition, and Dietetics

Gut health refers to the variety of symbiotic and commensal bacteria, fungi, and pathogens that can have a number of impacts on overall health. The gut microbiome can be influenced by a number of factors including diet, exercise, lifestyle, genetics, use of antibiotics, GI diseases, and the addition of external bacteria, normally found within the gut, in the form of probiotics. Numerous research studies have shown that two particular GI disorders -- Irritable Bowel Syndrome (IBS) and Crohn's Disease -- can possibly benefit from probiotics for treatment purposes. Depending on the strains of bacteria introduced and the type of disorder, probiotics may prove useful in relieving many of the symptoms associated with IBS and Crohn's including constipation, abdominal pain, and inflammation, as well as promoting bowel movement. Despite numerous studies pertaining to the abundance of probiotics and prebiotics on our overall health, there still remains uncertainty on the efficacy of probiotics and prebiotics within these two conditions.

Health Benefits of Herbs

Mitchell Remond, NFS 330: Integrative and Functional Nutrition
Faculty Mentor: Professor Suk Oh, Health, Nutrition, and Dietetics

The role of herbs can be defined as a supplementary and assistive role in the healthy diet. When one looks at all the types of herbs and their benefits to humans, they are similar to that of fruits and vegetables in regards to the plant benefits such as phytochemicals and flavonoids exhibitions such as green tea. In regards to their studies and proven benefits, most studies have come to show that they are inconclusive to support a cancer-fighting or any of those characteristics in the actual product. However in vitro there are notable characteristics that support these cancer fighting and other characteristics but not in a manufactured product pill. This has recent as 2011 a big study in Europe about green tea benefits. Even though most stores and even several chain stores get revenue off the fact that supplements are a worth investment over getting those same cancer fighting and inflammation reducing agents from real raw organic foods.

Health Benefits of Kombucha

Kathryn Sychalski and **Megan Gawronski**, NFS 330: Integrative and Functional Nutrition
Faculty Mentor: Professor Suk Oh, Health, Nutrition, and Dietetics

Kombucha is a cultured beverage that the ancient Chinese called the “Immortal Health Elixir.” We, therefore are intrigued to find the real health benefits of Kombucha beyond those already found in green or black tea. We conducted a literature review on the tea and present our findings of health benefits of kombucha. Kombucha is a fermented tea that has been consumed for thousands of years. Because kombucha has recently gained popularity from people of varying health factions, we chose to report the science based evidence of its health benefits. What kombucha is, the process of how it’s made, potential health benefits as well as commercial values? Kombucha is a well-deserved new health-fad; not only does it have the same health benefits as green tea, but it is also rich in beneficial probiotics that have everyone buzzing. Kombucha is high in glucaric acid, which is beneficial to the liver and aids its natural detoxification. As kombucha also supports healthy gut bacteria and digestion, it helps the body prevent and fight cancer, arthritis, and other degenerative diseases. Kombucha also promote weight loss, lowering cholesterol levels, boosting heart health, controlling diabetes, reducing arthritis pain and protecting the liver.

How Nutrition Affects Athletics

Dameon Jefferson II, NFS 330: Integrative and Functional Nutrition
Faculty Mentor: Professor Suk Oh, Health, Nutrition, and Dietetics

As human nutrition plays a big role in leading to healthy lives. Individuals have different nutritional requirements depending on their life style. The purpose of my research is what can enhance athletic performance. I have been a long time athlete since the age of 8. And at one point in my life I was malnourished because of how intense my workouts were getting and I was not aware of the nutritional needs I had to give to my body. My research findings from literature review are presented in the poster. Successful athletic performance requires physical fitness and optimal nutrition from balanced diet that provides all required essential nutrients and energy to support physical activities. Carbohydrates are the preferred fuel for exercise, and athletes can increase their stores of glycogen by regularly eating high-carbohydrate foods coupled with regular exercise. For the cells to efficiently utilize carbohydrates and lipids for energy production, micronutrients such as water soluble B vitamins and certain trace minerals such as iron, copper, manganese, etc. There are lists for a number of “Do” and “Don’t Do” best performance. They will be discussed in the poster, and how nutrition effects athlete’s performance and how lack of good nutrition can lead to poor outcome. My purpose of this is to educate others on how important it is to take care of put body in order to be an athlete.

Investigating Program Intervention Abroad

Quiana Ware, SWK 499: International Social Work Research
Faculty Mentors: Professor Kimberly Zittel-Barr, Social Work, Professor M. Dian Chin Kit-Wells, University at Buffalo, Professor Catherine Mazzotta, Social Work and Professor Michael Johnson, Modern and Classical Languages

This project explores the effectiveness and experiences of the teachers at the Naomi Chin Kit Memorial School when individuals from abroad come to provide program and educational intervention. Dr. Zittel, Dr. Dian, and Ms. Averill (principal) conducted preliminary assessments for the school with parents. Observations of how the school was run, student-teacher interaction and peer interactions were noted and compared to Mrs. Chin Kit’s original goals for the school of the Point Fortin community. Based on these results, pilot projects were tailored and tested. This project assessed how different cultural backgrounds might impact program effectiveness. Information obtained from the article, “Culturally Competent Assessment and Consultation,” (Koltz & Canter, 2006), relays that cultural differences can lead to mismatched goals and expectations. Therefore, the results of the research provide a

better understanding of how the program can improve and how to infuse more culturally-sensitive strategies into program and educational interventions. Teachers at the Naomi Chin Kit school were given a short questionnaire aimed at assessing cultural sensitivity of the interventions brought by individuals from the United States. Teachers were provided informed consents, a private space, reassured that results were de-identified and that all results would be aggregated to best ensure confidentiality. Completed surveys were placed into a sealed envelope and remained unopened until returning to Buffalo, NY. All qualitative responses were organized by question number, themes were identified, and results were summarized. Findings show that teachers have a strong preference for project to be age and developmentally appropriate and indicated that the projects bring joy to the students at the school. None of the results indicated cultural insensitivity or offense.

Just Express It

Ngozi Osuji, SWK 499: International Social Work Research
Faculty Mentors: Professor Kimberly Zittel-Barr, Social Work, Professor M. Dian Chin Kit-Wells, University at Buffalo and Professor Catherine Mazzotta, Social Work

The purpose of this project was to develop non-verbal emotional communication skills through arts and crafts. Children between the ages of 3-5, from the Naomi Chin Kit Memorial Pre-School in Point Fortin, Trinidad engaged in the project. Intervention was broken down into two sections: 1) Make a set of 6 emoji faces (happy, sad, angry, shy, frightened and sick) and draw on or glue the face into a popsicle stick. Students were provided feelings education and instructed on how to use the emoji-popsicle sticks to share their emotional-state with their teachers. 2) Create a personalized color wheel, consisting of 6 colors (yellow, gray, red, blue, orange and green). Each color represented a feeling, for example, red = mad. Students were instructed to indicate their feeling on the wheel each morning upon entering school or when leaving the classroom in efforts to share their feelings with teachers. Observations were conducted pre- and post-intervention using a checklist created by the student researcher. All observations were entered into the SPSS statistical program. The data were analyzed using frequencies and t-test. Results decreases in happiness and anger. Reasons for these changes are postulated and discussed.

Nutrient Dense Foods: Nature's Supplements

Kelsey Schaffstall, NFS 330: Integrative and Functional Nutrition
Faculty Mentor: Professor Suk Oh, Health, Nutrition, and Dietetics

The term "superfoods" is used to describe certain foods of very high nutritional value. These foods earn this title based on

their impressive nutrient content- often containing high levels of vitamins, minerals, or unique phytochemicals. Recently superfoods have gained a large amount of press, being regarded as effective in supporting general health and aiding in the prevention of both acute and chronic diseases. For example, garlic contains organosulfur compounds which have been shown to elicit powerful anti-inflammatory and anti-oxidative effects within the body. For this reason, garlic has been used therapeutically, as a support to the immune system, for hundreds of years. More recently, garlic has been studied as a potential nutritional strategy for cancer prevention as well as the treatment of vascular diseases. After performing a scientific literature search, I have compiled the evidence available to explore superfoods like garlic and their effects on general health as well as their role in the prevention of acute and chronic illnesses.

Nutritional Genomics

Summer Neu and **Jessica Page**, NFS 330: Integrative and Functional Nutrition
Faculty Mentor: Professor Suk Oh, Health, Nutrition, and Dietetics

Nutritional Genomics is the connection of the DNA of the human body and the food that one consumes. These foods and their components have effects on genes and how genes are regulated within the body. These food-to-gene effects are what determines our overall health and disease. With the boundless combinations of genes throughout the human genome, and the individual's unique expression of their own genes, the effects are vast. Often, the result of inborn errors of metabolism will require a person to ensure that they avoid certain food components so that their disease is not exacerbated. Both phenylketonuria and defective aldehyde dehydrogenase enzyme are cases where certain foods and drinks must be avoided so that health can be maintained. Of these food-to-gene effects, we are only beginning to break the surface of understanding what and how we consume can affect our health and lifestyle outcomes.

Omega-3 Fatty Acid Supplements: Are They Doing More Harm Than Good?

Christina Ezak, NFS 330: Integrative and Functional Nutrition
Faculty Mentor: Professor Suk Oh, Health, Nutrition, and Dietetics

Omega-3 fatty acids are essential nutrients in the diets of human beings. Some of the most important factors that they play a role in are vision, memory, blood pressure, muscle contraction, blood clotting, inflammation, blood lipids and fertility, just to name a few. Popularity of consuming foods high in these beneficial fatty acids are on the decline while supplementation of omega-3 fatty acids are on the rise. Omega-3 fatty acid supplements are one of the most popularly consumed

supplements among adults and children in the United States. While little to no evidence exists on the safety of consumption of omega-3 fatty acids supplements, it is recommended that food sources of omega-3 fatty acids like marine fish, walnuts, and flax seeds are safe for consumption. Some studies have even shown that omega-3 fatty acids supplementation has increased a consumer's risk of heart disease while others prove that supplementation has decreased stiffness, joint pain and swelling in people suffering from rheumatoid arthritis. There is still much research to be done in order to have concrete evidence of whether or not supplementation of omega-3 fatty acids are safe to consume for the general population, or not.

Omega-3 for Long Lasting Memory

Lillian Esley and Michele Delo, NFS 330: Integrative and Functional Nutrition
Faculty Mentor: Professor Suk Oh, Health, Nutrition, and Dietetics

Although Alzheimer's is the most common neurodegenerative disease in the elderly, it is not purely genetic. Studies have shown that there is a link between a reduced risk of Alzheimer's disease and the consumption of long chain omega-3 fatty acids DHA and EPA. Cognitive decline, memory loss, and behavior changes accompany Alzheimer's disease and are side effects of the degeneration of the hippocampus, which can be attributed to inflammation. The hippocampus is responsible for memory formation, cognition and other higher brain functions. An unhealthy diet, lack of exercise, sleep and cognitive stimulation all contribute to cognitive decline. Fortunately, Omega 3 fatty acids may provide additional benefits in the prevention and delay of Alzheimer's Disease. The memory cells within the hippocampus are made up of 40% DHA. Consuming a diet rich in these Omega 3 fatty acids is of upmost importance and must be accompanied by EPA because these fatty acids are complimentary. Some sources of Omega 3 fatty acids include herring, salmon, oysters, sardines, anchovies, mackerels, and tuna. Further research is being conducted regarding Alzheimer's Disease and its prevention and management, with DHA and EPA playing important roles. There is hope for the future, and it begins at home.

Peer Advocate Position at SUNY Buffalo State

Heidi Olsen, INS 495: Project
Faculty Mentor: Professor Roswell Park, Individualized Studies

In the Fall of 2017, SUNY Buffalo State had 350 Veterans or military dependents enrolled in the college who utilize Veteran or military benefits. Two studies from the Student Veterans of America show that at least 1 out of 5 Veterans enrolled in a college or university are women. This presentation will highlight a possible program that SUNY Buffalo State can utilize to

promote retention and success for Student Veterans on campus. A Veteran Advocate would be able to assist the student Veteran in developing self-care plans, wellness recovery action plans, assist the Veteran in being able to access different resources on and off campus, and be able to assist the Veteran in advocacy efforts and other efforts as both a student and a Veteran.

Plant Polyphenols: A Supportive Role in Human Health and Prevention

Alexis Duxbury and Chelsea Wilczek, NFS 330:
Integrative and Functional Nutrition
Faculty Mentor: Professor Suk Oh, Health, Nutrition, and Dietetics

Polyphenols are naturally occurring compounds that can be found in a variety of plant based foods including fruits, vegetables and grains. There are over 8,000 types of polyphenolic compounds. Polyphenols are grouped into four distinct categories based on differences in their biochemical structure: phenolic acids, flavonoids, lignans, and stilbenes. Recently, there has been an abundance of research that has been focused on the health benefits of these compounds. These studies have found that polyphenols have the ability to reduce inflammation and has antioxidative properties which can be used in the treatment or prevention of degenerative diseases including cancer and cardiovascular disease. An inverse association between the risk of chronic diseases and the consumption of a diet rich in polyphenolic compounds has been determined by numerous epidemiological studies. The aim of this poster is to provide a summary of the recent research on plant polyphenols and their roles in human health and prevention.

Resveratrol: A Treatment for Mitochondrial Disease?

Sarah Martin, NFS 330: Integrative and Functional Nutrition
Faculty Mentor: Professor Suk Oh, Health, Nutrition, and Dietetics

Mitochondrial disease is a dysfunction of the organelle responsible for the body's energy production. The mitochondria produce approximately 90% of the body's energy. They are also involved in enzyme processes, gene expression, hormone synthesis, and metabolism. When mitochondrial function fails, dysfunction of the body's organ systems swiftly follows. There are many compounds being assessed for potential treatment of mitochondrial diseases, such as coenzyme Q10, creatine, and B vitamins, but no standard treatment has yet been identified. The purpose of this study is to assess the efficacy of the polyphenol resveratrol, a powerful antioxidant, in the treatment of mitochondrial dysfunction. Resveratrol has potent anti-aging, anti-cancer, and cardio-protective qualities. Previous studies have shown that resveratrol may offer mitochondrial-protective

qualities as well. It appears to enhance particular metabolic complexes, potentially improving aerobic function in mammals. Resveratrol impacts several enzyme pathways involved in energy production. As this antioxidant may also have the potential to induce cellular apoptosis, this study also seeks to assess any potential risks involved in resveratrol treatment.

Silver as an Antimicrobial

Anna Rand, NFS 330: Integrative and Functional Nutrition
Faculty Mentor: Professor Suk Oh, Health, Nutrition, and Dietetics

In the past, many health care systems used silver as an antimicrobial element in treatment of infection or as prevention. Even today many home treatments and homeopathy incorporate usage of silver in small amounts in treatments for; dietary supplements, wounds (topical), prostheses, implantable devices, and surgical instruments. However, despite its usage in the contemporary medical field, the use of silver as complementary, alternative, or functional medicine is not recognized or supported by the National Institute of Health. The FDA is in agreement and marks colloidal liquid silver for ingestion and topical silver- as not generally recognized as safe. In the past it was common to find doctors and nurses placing dimes on newborns eyelids to prevent conjunctivitis. The use of topical silver is still used in bandages and dressings for exposed skin. And has an essential part in prescription medications. Bioactive silver ions act as antimicrobe and can interact with the cell membranes of bacteria of fungi which makes it a very beneficial and wide range treatment. Since silver is a natural metal that is found in the air, earth, and water, the humane body is not generally affected by its intake and is not toxic to the body. However, the only symptom of the high chronic intake of silver (or colloidal silver specifically) can lead to silver deposits in the body resulting in a blueish tone that is not life threatening. However silver allergies can be found among people so it is always important to question patients. Despite its benefits, there is no supported evidence that over-the-counter silver remedies are beneficial, most are found to unknowing result in silver deposits and permanent skin discoloration.

Social Work In Trinidad: Social and Behavioral Skills for the Classroom

Keinia Mercury, SWK 499: International Social Work Research
Faculty Mentors: Professor Kimberley Zittel-Barr, Social Work, Professor M. Dian Chin Kit-Wells, University at Buffalo and Professor Catherine Mazzotta, Social Work

This project, inspired by Anna Freud and Maria Montessori's work on the significant and developmental effects of play behaviors on children, focused on the importance of incorporating play, social communication and behavioral

skills in the classroom and the effect on cognitive and social development. Psychosocial and behavioral games were introduced to the students and the teachers at a primary school in Point Fortin, Trinidad. Games included: Roll A Role: A Game of the Non-Verbal Communication made by Childsworld Childsplay and Hidden Rules in the Classroom: A Game That Teaches Everyday Social Skills created by Lawrence E. Shapiro, Ph.D. Pre- and post-observations were conducted using the Social Skills Checklist created by Karen L. Anderson, to assess the efficacy of the intervention and student understanding of behavioral and social communication skills. Scores were aggregated into main topic areas identified on the Social Skills Checklist. Data was entered into SPSS statistical program. Frequencies and paired t-tests were run on the data. Results revealed slight observational changes of Social Skill Checklist scores. Discussion for future study is presented.

Vitamin D Supplementation

Ashley Carpenter, NFS 330: Integrative and Functional Nutrition
Faculty Mentor: Professor Suk Oh, Health, Nutrition, and Dietetics

Vitamin D deficiency affects many people across the world. However, the benefits of Vitamin D are still debated. As a dietetics and nutrition major, I was interested in researching literature for who and for what supplementation is necessary for. My findings are presented in the poster. Vitamin D aids in regulating the amount of calcium and phosphate in the body. These nutrients are fundamental for keeping bone, muscle, and teeth healthy. The human body can make Vitamin D from sunlight. This is why Vitamin D is called the "sunshine" vitamin. In addition to intrinsic production, a large portion of the population obtain their Vitamin D doses through consumption of fortified milk and juice. Since Vitamin D is fat soluble, it can be stored in the liver from intake, supplementation and synthesis during warmer weather. But, for others who do not consume milk, milk products or live north of the latitude of 50 may need supplementation. Deficiency is concerning because Vitamin D plays a large role in maintaining the body's optimal functioning. Diseases can cause many health problems including bone diseases (osteomalacia and rickets), stunt growth, blood clots, low immune function, decrease muscular strength and nonspecific pain. These are some of the reasons leading to Vitamin D becoming the number one dietary supplement for physicians. I will discuss other roles of Vitamin D in cancer, including the regulation of proteins for cell division.



We Are Vibrant

Madalyn Wright, SWK 499: International Social Work Research

Faculty Mentors: Professor Kimberly Zittel-Barr, Social Work, Professor M. Dian Chin Kit-Wells, University at Buffalo and Professor Catherine Mazzotta, Social Work

This creative project was designed to encourage students ages 3-5 to explore and self-identify their strongest positive personality characteristics. Students were observed pre-and post-intervention for one hour using an empowering personality characteristics checklist created by the student researcher. Students were divided into three groups where they were exposed to a fifteen-minute education-based discussion about empowering personality characteristics. Each empowering personality characteristic was connected to a different color. During the discussion, identifying one's own personality strengths, as well as, supporting other peers' personality strengths was emphasized in efforts toward encouraging individual and group empowerment. Following the discussion, students were encouraged to paint with the color connected to the personality characteristic they felt best represented them on three separate large blank canvases. Observational results were entered into the SPSS statistical

program. Data was analyzed using frequencies and paired t-tests. Statistical significance was set at $p < 0.10$ due to small observation sample size. Analysis revealed a statistically significant increase in "creative", and slight increases in "smart" and "fearless". There was a statistically significant decrease in "energetic", and a slight decrease in "funny". There was no change in "caring". Reasons for these changes are postulated and discussed.



Humanities

The Boom of Cosmetic Sales Through Social Media

Tiffany Pecoraro, COM 450: Communication and Society
Faculty Mentor: Professor Ann Liao, Communication

The makeup world has become over a \$500 billion industry. What has helped this industry grow more now than ever? Every social media you open has some aspects to it that involves makeup. In fact, a majority of social media is filled with influencers that show up on a person's discover page that allows consumers to go into the depths of this industry. This study intends to find out what forms of social media people use in order to find out information about their makeup. Does social media affect certain ways one perceives makeup? Based on social cognitive theory, this research aims to examine how the makeup industry gained such popularity throughout the past ten years. Current literature will be reviewed to reveal methods in which the makeup industry helps promote their products; whether it be by sending promotional products to certain people that will help with sales or by sharing certain looks that people share on social media to get a great promotion of their product. A survey will be conducted to explore what influences cosmetic consumers, in order to gain an understanding of how influential social media can be on this industry.

Clicks vs Sticks

Noah Neacsu, COM 450: Communication and Society
Faculty Mentor: Professor Ann Liao, Communication

The purpose of this research project is to explore and examine how political knowledge is absorbed through social media and traditional media. Recent studies have shown that people learn little from political information on social media, resulting in the phenomenon of "many clicks, little sticks." However, there are arguments that support political information being distributed and gathered through various social media platforms. Essentially, the issue at hand is that with social media becoming more prominent and traditional media slowly taking some steps back, how people of different ages respond and whether or not this change positively or negatively impacts how politically informed and knowledgeable people are, or have the desire, or potential to be. This study will survey news audiences of different ages to see whether the platform people get their news from will affect their level of political knowledge.

The Coherence of Philosophy During the Islamic Golden Age

Andrew Appleby, Philosophy
Faculty Mentor: Professor Kimberly Blessing, Philosophy

The Islamic Golden Age is a period in time from the 8th to 14th centuries, during which there were many developments in science, mathematics, medicine, and philosophy. Many intellectual giants writing during this era contributed to philosophy. Al-Ghazali (1058-1111) and Averroes (1126-1198) are two important philosophers I shall consider. My research is focused on "The Incoherence of the Philosophers" written by Al-Ghazali, which defends traditional Islamic teachings against Neo-Platonic and Aristotelian ideas being discussed at the time. I will also be looking at Averroes' rebuttal titled "The Incoherence of the Incoherence." The goal of this research is to shed light on the important contributions of Islam in the history of Western philosophy and to gain a better understanding of the role of philosophy in the Islamic tradition.

College Romance and Self-Efficacy: The Social Media Effects

Deja Lloyd, COM 450: Communication and Society
Faculty Mentor: Professor Ann Liao, Communication

For as long as I can remember I've always been fascinated with love and the concept of it. Romantic relationships are a topic I enjoy discussing because of the many elements that goes into having one. In recent years, social media has taken over society and how we perceive each other. In this study, I will explore the roles that social media play in female college students' self-efficacy in romantic relationships. As a college student, I've observed many couples on campus together for a short amount of time while proclaiming their deep feelings for one another. Only to find out shortly after, they've broken up and moved on to other people. I've also observed that young women staying in toxic relationships because they've been exposed to it on social media sites. Previous studies have found that entertainment programs affected women's perception of romantic relationships. Now that social media has taken over a big portion of our lives, this study intends to examine the influence of social media on college women's self-efficacy in romantic relationships. A survey will be conducted on campus to investigate the different dynamics of college relationships and how social media affects students interacting with one another romantically.

Confronting the Dark Side of Consumer Culture

Alyssa Kolodziejski, COM 450: Communication and Society

Faculty Mentor: Professor Michael Niman, Communication

Advertisers play on our emotions, rather than rational thinking, in order to have a more significant impact on our actions. Capitalizing on concepts introduced in simple mind science, many advertisers are creating emotional ads designed to bypass rational thought, what Freud termed the “superego,” and go straight to the heart, which he termed as the “id” (Berger). While ads selling goods/services may be for the most part informative and useful, consumption also has a dark side. My work explores the disconnect between the complex manipulation of human emotion that feeds the joy of consumption, and the moral and ethical questions about the effects of conspicuous consumerism. An example of the darker side of persuasion via emotional advertising is the stimulation of consumerism resulting in a sweatshop economy and environmental degradation. In the joy of the moment, we think about the instant gratification in buying what we want. We do not think about the impact on our environment or other social consequences of where or how a product is made. With my work, I hope to bring awareness to the positive and negative impacts of advertising. My methodology includes a literature search of both popular and academic sources, a deconstruction of ads, and observation of a convenience sample of consumers. I explore why we consume as much as we do, and provide insights into troubling aspects of consumerism we may not think about. What are the factors that influence our decisions? What are the long-term impacts resulting from our decisions?

Dripping in Blood Diamonds: Hip Hop’s Effect on Black Consumerism and Self-Image

Kaitlyn Lowe, COM 450: Communication and Society

Faculty Mentor: Professor Michael Niman, Communication

Music has the ability to alter moods, provoke new ways of thinking, and shift the direction of cultures. As hip hop emerged from the gritty pavements of the South Bronx during the 1960s, it did all three. Young Black and Latino men became submerged in gang culture due to their communities being besieged with drugs, as well as a lack of jobs. In the 1970s, individuals like Afrika Bambaataa worked to transform New York City’s intricate yet violent gangs into social clubs that improved life in their communities, as well as relationships with other gangs. Hip hop as we know it is a conglomerate of Black culture, taking inspiration from the Black Arts Movement poets like Gil Scott-Heron, scat singing jazz musicians like Louis Armstrong, and local preachers. The genre is the most listened to in the world

(Nielsen 2017), and it has a significant impact on its originators—Black Americans. My research examines how hip hop affects Black consumerism and self-image. In its genesis, hip hop was a vessel that unified communities and spoke out against injustices in America, but due to its commercial appropriation, the genre has morphed into something dangerous. Its foul sexism, violence, and materialism that permeate earplugs and screens produce false images of Blackness that negatively impact all Black people, especially impressionable youth. My research also focuses on the materialistic aspect of hip hop as it affects self-image and values. My investigation reviews and contextualizes research and interviews from scholars and other professionals who study hip hop and Black America.

Effects of Social Media on the Agriculture Industry

Teresa Tokasz, COM 450: Communication and Society

Faculty Mentor: Professor Ann Liao, Communication

Social media is a way that people connect. They use it as a way to build relationships, receive information, and understand events that occur. Through social media people connect without ever having to speak face-to-face. It is a way to develop and build communities of people and share your story across the world. The use of social media by the agriculture industries is continually changing and developing. The industry needs continual visibility and transparency in the eye of the public so that they are aware of the industry’s practices and everything it has to offer. The purpose of this research is to examine how social media information about the agriculture industry has affected people’s perception of the industry as a whole. This will be examined through a survey, focus groups, and in person interviews. The study will focus on the positive frames used by the agriculture industry and the negative frames used by organizations who advocate against the agriculture industry. The demographic being examined will be college-aged students who are exposed to social media on a daily basis. The study will help gain a better understanding of the effectiveness of social media campaigns or ways of advocating for the agriculture industry.

Framing O.J. Simpson: A Comparison of Black Newspapers and General Audience Newspapers

Khalid Terrell, COM 450: Communication and Society

Faculty Mentor: Professor Ann Liao, Communication

The purpose of this study is to compare black news publications with general audience news publications during the O.J. Simpson trial in 1995 to determine if the portrayal of O.J. Simpson during the trial was more positive among black publications as opposed to the negative portrayal by the general audience publications. Past studies have shown that O.J. Simpson

was portrayed in a negative light among general audience news outlets. This study will content analyze articles from popular black publications such as the Los Angeles Sentinel, the Chicago Defender, and the Jackson Advocate and compare them with articles from general audience news publications such as the Los Angeles Times and the Washington Post. News media's framing effect will be used as the theoretical framework for this study.

Kafka, the Muse for Marquez's Voyage Into Magical Realism

Alec Eichelkraut, HON 400: All College Honors Colloquium
Faculty Mentor: Professor Lorna Perez, English

Magical realism deviates from genres such as fantasy and surrealism because it moves between disparate worlds of historical and imaginary. Furthermore, the supernatural isn't simplified, or exaggerated, but is simply an ordinary occurrence within these textual realms, neatly intertwined within the rationality of realist fiction. Gabriel Garcia Márquez argues that this movement prevails within postcolonial writing because "disproportion is part of our reality too. Our reality is in itself out of all proportion". Furthermore, Márquez claims that, Franz Kafka, whose body of texts are also translated from another language (German instead of Spanish), and who was also a minority on a global scale (Jewish instead of Latin American) influences the style of his writing. However, Kafka's works seem to hover, jump between, and blur the distinctions between magical realism and surrealist writing. This paper will clarify both of these luminaries' stylistic stance, as well as their cultural and historical context, in order to explore Kafka's influence on Márquez's role as a magical realist.

Kneeling for the Right to Stand: Whose Call Is It?

Neseemah Coleman, COM 450: Communication and Society
Faculty Mentor: Professor Ann Liao, Communication

The purpose of this study is to explore news frames through which the recent kneeling of athletes was depicted. The focus is on how much traditional news media coverage was devoted to athletes kneeling as a means of protesting against inequality or it was simply an unpatriotic act. The concept of media framing was used as a theoretical framework. Content analysis of news coverage on athletes kneeling will be conducted to determine which is more dominant, a protest against inequality frame or an unpatriotic frame. My hypothesis is that the majority of the news coverage on the kneeling of athletes was told from the unpatriotic frame. The significance of this study is to elucidate how the media deliver stories to audiences and how ultimately we are influenced to think or act thereafter.

Latin@ Poet on the Road

Julio Valentin, English, Writing
Faculty Mentor: Professor Barish Ali, English

The purpose of this research project is to rediscover what it means to be a Latin@ poet. Latin@ is a term that is gender neutral and reframes the continuing patriarchal impression left over from centuries of colonialism. Following from this, my research investigates the realm of traditional poetry readings and how it values the words of Latin@ poets, as well as to discover the existence and culture of Latin@ audiences. To answer this, I explored various anthologies of Latino poetry and interviewed veteran poets in order to understand their overall impression and analysis of their own poetry scenes. This was followed by a road trip where I read my own work and experienced firsthand the audiences that come out for poetry and documented my findings. Through this research and journey I discovered the answers to solve my own community's absence in most poetry scenes. By separating personal experiences that could have misguided my research, I approached this project with a more objective frame of mind, which led me to realize how much diversity actually exists out there and the many opportunities I have discovered to improve them.

Mass Shootings and the Contagion Effect

Taylor Sentz, COM 450: Communication and Society
Faculty Mentor: Professor Michael Niman, Communication

There are many different theories on how the United States developed a culture in which mass/school shootings have become a reoccurring tragedy. This paper focuses on the most influential force in American culture -- the media. American news outlets find it unethical to show graphic images of victims slain in these horrific events. They do, however, show pictures and share biographic descriptions of the killers who commit these atrocities, justifying their decision as part of the search for motives or cause. I provide examples from articles, interviews, and studies that discuss and demonstrate how coverage of shooters can result in a contagion effect. These articles and interviews illustrate how the media influences potential mass shooters. Eric Harris, Dylan Klebold, Omar Meteen, and Nikolas Cruz are a few names that easily come to mind when thinking of this issue, yet if you ask people to name one of their victims, they will probably be unable to give you a name. Why does our media frame their focus on killers more than victims? Is it possible that mainstream media unintentionally motivates these murderers? There are the questions my work examines.

Millennials and the Advancement of Technology

Andrea Khoury, COM 450: Communication and Society
Faculty Mentor: Professor Ann Liao, Communication

In this day in age the advancement in technology has changed the way the world works. It has taken over the way we communicate with one another, near or far. No matter where you are, we can talk to people around the world, from your house or from your car. But has this fast and convenient way of communication affected the way we communicate face-to-face? The younger generation has become more affected by the takeover of technologies. They are growing up with technology doing everything for them whereas those who are older may not know how to use technology at all. At the same time, there are young adults who have the best of both worlds. I want to find out whether communication through a cell phone or social media has affected the way the younger generation talk face-to-face. Can they speak in front of a crowd? Have they become inept with the world around them? Grounded in social cognitive theory, I will survey high school students, college students, and people who are in their thirties and beyond. My hypotheses are that, it is more difficult for teenagers to speak publicly, have empathy towards others, be trustworthy and trust others.

News Consumption in the Digital Age

I'Jaz Eberhardt, HON 400: All College Honors Colloquium
Faculty Mentors: Professor Joseph Kasko, Communication and Professor Michael Johnson, Modern and Classical Languages

As media consumption in the digital age continues to evolve, more publications are shifting from print to a digital format to meet consumer needs. One such publication is SUNY Buffalo State's student-run news outlet, The Record. I will use this media outlet as a case study to determine the relationship between web-based media and consumers in the digital age. I plan to gather information from The Record by conducting qualitative, semi-structured interviews with Record staff. The purpose of this project will be to understand audience consumption habits and preferences to find more effective ways for journalistic writers to tailor to their audiences' needs. Preliminary findings have shown that print media readership will continue to decline by approximately 5% each year. Research also shows that the digitization of media can be detrimental to the mental processing of information. My presentation contains findings from my scholarly research and it will serve as an aid to visually represent and simplify all collected data.

Pay Disparity Between the Sexes in Professional Soccer

Alyssa Ziobro, HON 400: All College Honors Colloquium
Faculty Mentors: Professor Jeffrey Ventura, Communication and Professor Michael Johnson, Modern and Classical Languages

The purpose of this research is to investigate the difference in pay between male and female professional athletes, using the United States Soccer Federation as a case study. Players on the women's national team filed a complaint with the Equal Employment Opportunity Commission in March of 2016, accusing U.S. Soccer of wage discrimination as related to the amount of money they were paying players on the men's national team. My research has shown that the women's team was projected to earn more in profit for the federation than the men's team for the 2017 fiscal year. I have also found that the women's team has a higher amount of work (games played) on a yearly basis than the men's team, and the former has also been more successful internationally than the latter. In spite of all of this, overall wages for athletes playing on the women's national team were not on par with those playing on the men's national team. While the wages of the top five "star" players of each sex were comparable (with the men having a relatively nominal advantage), the farther down in the rankings of the players, the larger the gap in pay that existed between the sexes. Since the EEOC complaint has been filed, U.S. Soccer and the women's national team have reached a new collective bargaining agreement as of April of 2017 that will run through 2021, which serves as a step in the right direction for equal pay.

Practical Applications of Stoic Views on Death

Bianca Gonzalez, HON 400: All College Honors Colloquium
Faculty Mentor: Professor Jason Grinnell, Philosophy

My research project will evaluate Stoic arguments that fearing death is irrational in order to apply Stoicism to our understanding of the impact of mortality in life. The goal of the Stoic life is to live in agreement with nature. It should come as no surprise then that many Stoic consolations on the inevitability of death involve acknowledging that death is a natural part of life and recognizing that it is irrational to fear what is a part of nature, since nature is consistent with a divine plan. Those who follow the Stoics may find a sense of understanding when dealing with difficult instances such as the sudden death of a loved one or the contemplation of suicide. Some Stoics argue the answer to whether someone should deliberately end his or her life is dependent on what is valuable for a natural life, since for the Stoics it is actually morally indifferent whether one lives or dies and morality consists in rationally deciding what to do. I will argue that the Stoic's claims regarding death are still applicable in today's world. I may chose to focus specifically on medical applications of the Stoic views on death.

Sartre and the Sciences

Nolan Wall, Philosophy and Psychology
Faculty Mentor: Professor Leigh Duffy, Philosophy

In this paper, I examine Jean-Paul Sartre's conclusions concerning human nature as well as absolute freedom. Sartre concludes that there is no such thing as human nature and that humans are condemned to absolute freedom. The aim of this examination is to determine whether or not Sartre's conclusions are tenable in light of modern science, in particular what psychology has discovered about free will and decision making. Being that Sartre's method as a phenomenologist is so distinct from the method of the empirical sciences, I will argue that Sartre's conclusions are not to be critiqued or analyzed from the perspective of the empirical sciences. Further, I will argue that Sartre's entire project is entirely distinct from the goal of the empirical sciences. Sartre was primarily concerned with describing what it's like to experience human life. The empirical sciences intend to explain life, how it works, and how humans function. Given the differences in intentions, both offer important insights into what it is to be human. But Sartre's conclusions answer questions about the meaningfulness of a human life in a way that the empirical sciences cannot.

The Search for Self: Temporal Identity and the Bundle Theory

E. Elise Cloutier, PHI 401: Problems in Philosophy Seminar
Faculty Mentor: Professor Leigh Duffy, Philosophy

There is ample debate in philosophy over what personal identity consists in and whether or not we possess identities at all. One view, attributable to Buddhist theory and to David Hume, denies the existence of a unified personal identity, asserting rather that identity consists in a bundle of distinct, but closely related, successive perceptions. In accordance with this view, Hume argues that even if a person is numerically the same throughout a period of time, she does not maintain a specific identity through that period as changes occur. Like in the case of an infant that becomes a woman, our intuition is to say that the infant and the woman are the same, while Hume and Buddhist scholars would argue that they are actually different but merely called the same. In this paper, I argue that even if a bundle theory has some legitimacy, a person's possession of an identifiable beginning and end in time is sufficient to argue that she does have a unified identity, distinguishable from her experience, which consists in the varied and discontinuous, successive and closely-related perceptions Hume and the Buddhists argue are all that comprise the self.

Spirituality in a Media Driven Culture

Lukas Iverson, COM 450: Communication and Society
Faculty Mentor: Professor Michael Niman, Communication

This project examines how mass media affects spirituality. The goal is to show that valuable spiritual practices have been transformed by narratives created in media, and to explore ways to resist the negative impacts on spirituality that the media torrent causes. This research looks at how a connection with the divine, the universe, or any other term you want to use to describe the ground of all being, is often replaced with competing values and experiences fostered or promoted by consumer-oriented media channels. My work questions what the overall effects and impacts of media-promoted consumerist values are both to individuals and society. I also explore the concept of hedonism as the aspect of consumer culture that is in opposition to spiritualism. In order to accomplish this study I look at research from scholarly journals on a variety of issues relating to this topic, as well as introspectively examine my own personal experiences as a media consumer and spiritual person. I also conduct convenience-based sample interviews with friends and family to look at the impact of media on their own spiritual lives. I feel that spiritual practices can be rich and healthy and it is important that we do not lose them to glowing screens. I hope my work alerts people to the threats that our media torrent pose to our spirituality.

Television Programming and Self-Perception

Shannon Feeley, HON 400: All College Honors Colloquium
Faculty Mentor: Professor Ann Liao, Communication

According to social cognitive theory, individuals submersed into different media are more likely to see the media's portrayal of reality as the true reality. As a result, those individuals begin comparing themselves to the media reality as a measurement for how they should behave. This research project will demonstrate what degree of correlation, if any, appears between the most frequent television show genre people watch and their levels of positive or negative self-image. This correlation will be determined by a survey aimed at individuals between the ages of late teens and late twenties, as self-image at this age is most easily influenced and most prone to fluctuation, providing the most accurate and abundant data. The survey will ask questions about television shows watched, frequency of shows watched, and self-image. My hypothesis is that there is in fact a correlation between television genres watched and the level of positive or negative self-image a person assigns to themselves. However, the strength of that correlation remains to be seen.

Tracing the Steps of Ksenija Atanasijević

Milica Petrovic, Philosophy and French
Faculty Mentor: Professor Kimberly Blessing, Philosophy

Ksenija Atanasijević (1894-1981) is a Serbian philosopher who is among the first women in Serbia to obtain a Ph.D. in philosophy. I started research on this woman last semester, and this project continues that research. There are limited available works of hers in the United States, including primary texts written by her that have been translated into English. Thus, the next phase of my research involves traveling to Serbia, where I will attempt to find some more work by and about Atanasijević. I am contacting philosophy professors from the University of Belgrade, where Atanasijević earned her Ph.D. After learning how to conduct archival research, I hope to conduct archival research on Atanasijević at the library of University of Belgrade. While I am in Belgrade, I plan on tracing in this woman's footsteps, coming up with a plan for visiting Atanasijević's birthplace and other physical locations relevant to her life and study.

What Really Is or Is Not...Vodou?

Jose Gonzalez, HON 400: All College Honors Colloquium
Faculty Mentors: Professor Deborah Hovland, Modern and Classical Languages and Josephine Adamo, Ph.D., Senior Academic Advisor

This project is not one that has a hypothesis, or some unanswered question to give a response to, but what it does have is the mission to untwist a view that has gripped society for so long; that is, the view on a religion that is so misunderstood, that even intellectuals cannot grasp the true meaning of it. Therefore, I will proceed with caution by reading material and watching videos to find the most key elements to share, so that at the very least, a part of the truth can be handed over to my fellow intellectuals. In a way this is a quest for truth, and any truth, is valuable information. This religion is vodou, a religion formed from ancient beliefs, carried over by Africans in ships and from

three kingdoms at war, which were forced to unite under the yoke of bondage in Haiti. It is a religion of saints and spirits, of a distant God, of helping spirits, and awareness of evil spirits; child of West African animism and European catholicism. So with that said, what really is or is not vodou?

Yoga: The Missing Link in Hume's Bundle Theory

Julia Hamilton, PHI 401: Problems in Philosophy Seminar
Faculty Mentor: Professor Leigh Duffy, Philosophy

One question that has long interested philosophers and has been the source of much philosophical debate is the persistence question of personal identity. There are two accounts of personal identity that I will discuss in this paper, the first being David Hume's Bundle Theory, which essentially is a rejection of any persistent "self". Then, I will discuss the idea of "Self" that is relevant to Yoga Philosophy. I will argue that Hume's theory that we are merely a bundle of perceptions and impressions, allows for a personal identity that is like the Self (Purusa) that is believed to exist in the Yoga Philosophy. The "self" in Yoga Philosophy is constructed of two parts, one part called Prakriti, which is the sensing, thinking self that is similar to what Hume argues for in his Bundle Theory. The second part of the self in the Yoga Philosophy is the self that is the foundation, or our true Self, called Purusa. This Self persists unchanged and is a non-doer. In the Yoga Philosophy, one of the goals of Yoga is to experience this true Self or pure consciousness without any interrupting thoughts or experiences, and experience the existence of a pure or content-less consciousness. At the end of his Treatise, Hume finds himself perplexed with his idea of personal identity and cannot find a way to resolve his issue. He cannot "catch a glimpse of a self" or a content-less subject. I would like to argue that the Yoga Philosophy aligns with Hume's Bundle Theory, and the Purusa part of the self could satisfy Hume and complete his theory.



Physical Geography, Sciences, and Mathematics

Analysis of Mutations in Connexin 31

Emily Parra, Biology

Faculty Mentor: Professor I. Martha Skerrett, Biology

Connexins are transmembrane proteins that assemble to form gap junctions. Gap junctions are highly specialized membrane structures that regulate the exchange of ions, second messengers and small metabolites between cells. Connexin31 (Cx31) is one of twenty-one connexins expressed in humans and is found in several tissue types including the skin where it plays a role in growth and maturation of cells in the epidermis. Mutations in Cx31 are associated with the rare skin disease Erythrokeratoderma Variabilis (EKV) which is characterized by inflammation and reddened patches on the skin. EKV may also be associated with hearing loss because Cx31 is expressed in the inner ear. My research focuses on testing different Cx31 mutations using *Xenopus* oocytes, a common exogenous expression system for membrane proteins. Testing mutants after expression in oocytes may help explain the mechanism of EKV and provide a better understanding of the link between certain mutations and some of the variable characteristics of the disease.

Analysis of Polymeric SUMO-2/3 Chain Signals in Mammalian Cells

Adam Lyle, Chemistry

Faculty Mentor: Professor Xiang-Dong Zhang, Biology

The posttranslational protein modification by small ubiquitin-related modifier proteins (SUMOs) represents an integral part of cellular signal transduction pathways and regulates a wide range of cellular processes ranging from transcription to cell-cycle progression. Among the three SUMO proteins (SUMO-1, SUMO-2 and SUMO-3) expressed in mammals, SUMO-2 and SUMO-3 (SUMO-2/3) are almost identical, but divergent from SUMO-1, in both sequence and function. In addition to modification of protein targets by monomeric SUMO-1 or SUMO-2/3, modification by polymeric SUMO-2/3 chain, rather than SUMO-1 chain, has been uniquely observed in vivo. To monitor the subcellular localization of polymeric SUMO-2/3 chain throughout the cell cycle, we transiently expressed a GFP-tagged fusion protein containing four SUMO-interacting motifs (SIMs) of RNF4, a polymeric SUMO-2/3 chain-specific E3 ubiquitin ligase. Using immunofluorescence microscopy, we found that GFP-SIMs fusion proteins are not only associated with PML nuclear bodies in interphase cells, but also localized to spindle midbodies in cells under cytokinesis. We are currently investigating the functional significance of overexpression of GFP-SIMs on the stability of PML nuclear

bodies and on the progression of cytokinesis in mammalian cells. Our studies have the potential to identify the novel function of polymeric SUMO-2/3 chain modification in cell-cycle regulation.

The Analysis of OxyContin Using FTIR: How Can Methadone Counteract its Addictive Effects?

Rhadeka James, Victoria Ellsworth and **Chadeen Vanriel**, CHE 406: Analytical Toxicology

Faculty Mentor: Professor Douglas Ridolfi, Chemistry

Analysis will be conducted using Fourier-transform infrared spectroscopy (FTIR) to identify the primary components found in oxyContin (oxycodone) and discuss how prescription drugs can be just as addictive as street drugs and why the law-enforcement campaign on drug use has not focused sufficiently on prescription medications containing opioids and opioid-like drugs. Analysis will also be done to determine the composition of the fillers found in OxyContin. Research will be done to try to determine why this medication is so addictive and compare and contrast the components of the OxyContin with that of methadone, which is used in the treatment of opiate addiction. Research will be conducted related to fillers in street drugs and how this may affect addictive qualities.

Basking Behavior of Northern Map Turtles and Other Local Species on Artificial Basking/Nesting Platforms in the Upper Niagara River

Jesse Karcher, Biology and Chelsea Moore, Biology

Faculty Mentors: Professor Ed Standora, Biology and Professor Peter Lindeman, Biology and Health Services, Edinboro University of Pennsylvania

The Northern Map turtle (*Graptemys geographica*) is an aquatic species located in the upper Niagara River of Western New York that continues to decline in numbers as a result of subsistence fishing and inadequate access points to terrestrial nesting sites. In other studies, translocations have been used to reestablish diminishing populations of freshwater turtles, and creation of artificial nesting sites has been successful at increasing recruitment in populations. We translocated ten turtles from Presque Isle State Park, PA into the upper Niagara, and created three floating, artificial basking/nesting platforms that provide structure for aerial basking and proper substrate for nesting. There is potential competition for basking sites with other local species due to restrictive terrestrial access in certain locations in the upper Niagara River. These platforms were all equipped with wireless surveillance cameras to record turtle basking events without disruption. These data were used to determine if basking behavior of Northern Map turtles changes in the presence of conspecifics or other local species. Artificial

turtles were also placed on platforms to determine the response of live turtles. HOBO data loggers were mounted on each of the platforms to record light intensity, air temperature, and water temperature. These data were used to determine the effect of abiotic variables on turtle basking behavior. There was no nesting activity last spring due to late deployment of the platforms. Platform sand temperatures were recorded using iButton data loggers at three depths to determine potential sex ratios, as this species exhibits temperature dependent sex determination.

The Building Blocks of Blockchain: Hash, Sign, Send

Michele Schultz, Applied Mathematics

Faculty Mentor: Professor Joaquin Carbonara, Mathematics

The ongoing information revolution is affecting the field of mathematical modeling in many ways, inspiring the replacement of traditional analytical modeling (using tools like differential equations) with algorithmic modeling (e.g. Neural Networks, Machine Learning). Data Science and Analytics as a field uses mathematical algorithmic modeling, where this project's topic, Blockchain, has emerged as a recent super star. Blockchain is defined as "an incorruptible digital ledger of economic transactions...programmed to record not just financial transactions but virtually everything of value" (Don and Alex Tapscott, 2016). Essentially, using clever mathematical algorithms, data from exchanges is compiled into blocks with other exchanges, which are sent to a distributed computer network for verification. Upon validation by majority, blocks are attached to a chain with other confirmed blocks. Online and textbook research brings to light the depth of the mathematics behind the process by which Blockchain occurs (e.g. RSA encryption and hash functions), while the data accumulated from applications of Blockchain, like Bitcoin, shows its usefulness and impact. RSA Encryption uses asymmetric encryption; one key is used to encrypt and the other to decrypt, confirming both data integrity and security. In addition, hash functions are utilized to take long chains of data and compress them to a fixed size. My presentation aims to show in theory and practice (and possibly improve) the security and usefulness of Blockchain, thus validating it as the preferred mean of exchange during this era of information.

Comparison of Daily Movements and Brumation Patterns of Resident and Translocated Northern Map Turtles in the Upper Niagara River

Chelsea Moore, Biology and **Jesse Karcher**, Biology
Faculty Mentors: Professor Ed Standora, Biology, Professor Wende Mix, Geography and Planning and Professor Peter Lindeman, Department of Biology and Health Services, Edinboro University of Pennsylvania

The Northern map turtle (*Graptemys geographica*) is an aquatic turtle species located in the upper Niagara River. During their active season Northern map turtles inhabit a marina and an unused boat-slip located adjacent to the Black Rock Lock. In this area, urban development and shoreline alterations have limited access to terrestrial nesting sites and there has been little recruitment into the population. In October 2016, we translocated ten Northern map turtles from Presque Isle State Park, PA into the river for a comparative study between resident and translocated individuals. All turtles were outfitted with radio and sonic transmitters, and tracked nearly every day to analyze daily distance moved, home range, and behavior. Distances moved per day were calculated and upriver and downriver movements were recorded. Water current was measured and entered into Geographic Information System (GIS) to generate hypothetical swimming paths for turtles. Preliminary analysis indicates that turtles may use areas in the river with the slowest water current during long distance movements. Dates that turtles became active in the spring and inactive in the fall were recorded and compared between resident and translocated individuals. We also investigated the dates that an individual became active and inactive in consecutive years. Preliminary analysis shows that resident turtles have very similar dates of becoming active and inactive between years. Water temperature, photoperiod, and body mass are potential factors affecting the length of the active season.

Contrasting Ecosystem Flashiness: Potential Consequences of Human Activity

Cheyenne Kirkman, BIO 495: Ecosystem Flashiness
Faculty Mentor: Professor Daniel Potts, Biology

To better understand the carbon cycling consequences of agriculture, we must account for both ecosystem CO₂ uptake by photosynthesis (gross primary productivity; GPP) and the efflux of CO₂ by respiration of plants and soil microbes (ecosystem respiration; Re). Our objective was to compare the sensitivity of agricultural and deciduous broadleaf forest ecosystems to inter- and intra- annual climate variability. To address our objective, we modified the Richard-Baker index, an index of hydrologic flashiness based on daily averaged streamflow, to

instead describe ecosystem metabolic flashiness using daily averaged measurements of GPP and Re collected from tower-based measurements of eddy covariance. Using eight years of daily-averaged GPP and Re measurements collected from three deciduous broadleaf forests and three agricultural ecosystems, we calculated GPP and Re flashiness (GPPf and Ref, respectively) for the growing and non-growing seasons of each year. We predict that agricultural ecosystems, with their shallow rooting depth, fertilized soils, and relatively low standing crop biomass will have greater growing season GPPf and Ref than forests. Furthermore, we predict that ecosystem contrasts in metabolic flashiness will be seasonally dynamic, and that GPPf differences will decline during the non-growing season when plant activity is at a minimum, while ecosystem differences in Ref would persist. Quantifying the sensitivity of ecosystem metabolism to inter- and intra-annual climate variability may provide new insight into the carbon cycling consequences of agricultural practices and anthropogenic climate change.

Deposition of Hexagonal HoFeO₃ Thin Films by Magnetron Sputtering

Sara Deer, HON 400: All College Honors Colloquium
Faculty Mentors: Professor Ram Rai, Physics and Professor Michael Johnson, Modern and Classical Languages

Hexagonal HoFeO₃ thin films were successfully deposited on (0001) sapphire and (111) yttrium-stabilized zirconia (YSZ) substrates by Magnetron Sputtering Deposition. To prepare the target pellets, powder samples of Ho₂O₃ and Fe₂O₃ were combined proportionally and ground with a mortar and pestle, and mixed in a ball mill. The mixture powder was then pressed into 1-inch diameter and 1/8-inch thick pellets using a 14-ton hydraulic. The pellets were sintered at temperatures up to 1250 oC. After sintering, the pellet was mounted as a target source into the Magnetron Sputtering Chamber. Argon gas was used with Sputtering to deposit hex-HoFeO₃ thin films. Characterization of the hex-HoFeO₃ thin films was done using various techniques. X-Ray Diffraction was used to study the phase of the hex-HoFeO₃, and it depicted that the high-quality films deposited were of the hexagonal form. An Atomic Force Microscope was used to analyze surface morphology and thickness of the hex-HoFeO₃. The roughness of the thin film surface averaged ~1 nm and the thickness ranged from 50 nm to 190 nm. Optical spectroscopy was used to measure reflectance and transmittance which were used to calculate the absorption coefficient. The energy band gap of the hex-HoFeO₃ was found to be ~3 eV from the absorption data.

Do Non-native Ants Eat Themselves to Carrying Capacity?

Kazz Archibald, Biology
Faculty Mentor: Professor Robert Warren, Biology

The Earth hosts a variety of ecological communities which hold their own distinct characteristics and species. Species native to their ecological communities generally do not surpass their carrying capacity, which is the amount of available resources that is provided by a particular habitat. Native species do not surpass their carrying capacity because of competition between members of their own species as well as with other species, which can be seen as a series of checks and balances. Species that are not native to the environment (invasive species) may have a higher carrying capacity because they do not compete with themselves. Non-native species are often detrimental to their environment because their exponential population growth results in an over saturation of the environment and elimination of natural competitors. My research was designed to determine if *Myrmica rubra*, a species not native to Buffalo, was able to reach its carrying capacity. I collected multiple samples of *M. rubra* in order to test for a decline in their health which would be a direct result of exceeding carrying capacity. At the end of my research, I was able to gain notable insight on the population trends of *M. rubra*. The invasive ant populations grow quickly in Spring and appear to exceed carrying capacity by mid-Summer, as indicated by decreased size and health.

Do Swollen Cells Talk? Cell-Cell Communication During Osmotic Challenges

Stephen Thompson, Biology
Faculty Mentor: Professor Derek Beahm, Biology

Cell volume is a critical determinant of normal and pathological physiology. Acute changes in cell volume can trigger many different processes, some of which alter normal cell function or determine the developmental fate of a cell. We are interested in how cell volume changes affect cell-cell communication mediated by gap junction (GJ) channels. Gap junctions connect the cytoplasmic compartments of adjoining cells, allowing for the free exchange of ions, metabolites, and other small molecules between cells. Conflicting data exists regarding the effects of cell swelling on GJ communication. This study addresses the question of what happens to GJ communication in a popular mammalian cell line during acute cell swelling. Studies were conducted on a HeLa cell line stably transformed to express Cx43 GJ channels (HeLa Cx43) and a parental HeLa cell line that lacks GJ as a negative control. The scrape-loading dye transfer assay was used to compare the extent of GJ communication in cell monolayers exposed to either isotonic or hypotonic solutions. I found that cell swelling did

not cause an appreciable change in the extent of GJ coupling between HeLa Cx43 cells. However, I also discovered that communication was limited and not uniform under normal conditions, suggesting that the cells were inefficient in GJ assembly. In summary, while it appears that swollen cells still talk to each other through gap junctions, these experiments should be repeated in a cell line that demonstrates more robust gap junction communication.

The Effect of High School Math Classes on College Performance

Sarah Johnson, HON 400: All College Honors Colloquium
Faculty Mentors: Professor Tom Giambone, Mathematics and Professor Michael Johnson, Modern and Classical Languages

Most high schools in New York State require that students complete three years of mathematics, but only one year of regents mathematics in order to graduate. Less than one half of graduating high school seniors go past Algebra II/Trigonometry (see Adelman, C., 1999, Short Web-Based Version of Answers in the Tool Box: Academic Intensity, Attendance Patterns, and Bachelor's Degree Attainment, Retrieved from <https://www2.ed.gov/pubs/Toolbox/toolbox.html>). Are students who take more than one year of regents mathematics more successful than those who do not? This study examines this and other characteristics between the level of high school math completed by a student and their performance in a college math course. Data has been collected through a survey from students enrolled in one of two sections of the course Functions and Modeling, MAT 114, at Buffalo State College in the Spring 2018 semester. Comparing this study with other previous research, this study will look at the characteristics of students who perform better in MAT 114 at Buffalo State College.

Electrochemistry of Potential Ocean Stimulants

Justine Silva, Forensic Chemistry and Biotechnology
Faculty Mentors: Professor Amy McMillan, Biology, Aaron Noell, Ph.D., NASA JPL and Tuan Vu, Ph.D., NASA JPL

Regarding the habitability of Ocean Worlds such as Europa and Enceladus, our techniques for detecting life must be refined. However, our understanding of Europa's ocean is limited to the frozen surface rather than the sub-surface ocean. Therefore, our goal was to create the most efficient method of extracting and making soluble inorganic measurements for potential in situ missions. Current ion selective electrodes are unable to function at cryogenic temperatures and would require maintenance that could not be performed. Utilizing the Cole-Parmer Ion Selective Electrode as a baseline, we created solid-contact ion selective electrodes that were better suited for the environments of Ocean Worlds and tested their ability to perform as required. We tested

both types of ion selective electrodes from room temperature to freezing to best compare their performance. Our results indicate that these will be more effective than the commercial probes, with further refinement, at a lower cost.

Emery Park Ravine Mapping Through Spatial Analysis Using Geographic Interpolations

Christopher Kalinowski, GEG 428/528: Environmental Assessment and Planning

Faculty Mentors: Professor Tao Tang, Geography and Planning and Ms. Lisa Matthies-Wiza, GIS Office, Erie County

The Erie County Parks Department is experiencing problems with visitors attempting to climb steep sloped areas in their parks that are not designated for such activities. For safety purposes, the parks department would like to identify areas within the parks that visitors would potentially be allowed to use for climbing. Once these areas are identified, the department would like to mark these areas as designated climbing ravines to encourage visitors to climb. In case of an accident, known and designated climbing areas could help rescuers or emergency crews locate missing or injured climbers. Steep sloped areas of the park will be identified to determine which will be deemed as ravines. This will let park rangers know which areas of the park to post warning signs for visitors to avoid accidents. My proposed methods and techniques are: 1) Topographic feature extraction and visualizations; 2) Run spatial analyst tool functions and calculate slopes; 3) Build a simple model in ArcGIS to calculate aspect of slopes; 4) Conduct surface analysis; 5) Create contour lines; 6) Classify slopes. Upon completion of this project, I intend to have created a topography map detailing slope steepness of Emery Park. Also, as requested, I would like to create a model that can be used by other analysts. If this data works as intended and can classify ravine areas in parks, then it will be used to classify ravine areas in other, if not all parks within Erie County.

Enhancing Gap Junction Formation in Communication-Competent Cell Lines

Aristotele Concepcion, Biology and **Stephen Thompson**, Biology

Faculty Mentor: Professor Derek Beahm, Biology

Living cells can communicate with each other directly through large channels that connect the cytoplasmic compartments of the cells. These channels are called gap junction channels, and they allow for cells to share ions, metabolites, 2nd messenger signals, and other small molecules less than 1 kDa in size. Gap junction communication synchronizes the metabolic and electrical activities of individual cells in a tissue which is important for many different organs to function normally. A gap junction channel forms when hemichannels from two cells bind end-to-end, and this requires

the cell membranes to be very close to each other. Some cultured cells readily form gap junctions, whereas other cell types, like Chinese hamster ovary (CHO) cells, find it hard to form gap junctions despite expressing gap junction proteins. I explored different strategies to increase the efficiency of gap junction formation in CHO cells. Cells were treated with forskolin to increase the amount of functional protein on the membrane surface or with a lectin to decrease the abundance of large membrane glycoproteins that may sterically interfere with hemichannel binding. The presence of gap junction channels is assayed by observing the spread of small fluorescent dyes between cells. I will discuss the process of gap junction formation and show how forskolin and lectin affect the extent of dye spread in CHO cell populations compared to untreated controls.

Environmental Impacts on Mudpuppy Populations in Western New York

Emily Burch, GEG 430: Senior Thesis

Faculty Mentor: Professor Kelly Frothingham, Geography and Planning

Mudpuppies are a fully aquatic salamander that are found throughout Southeastern Canada and Northeastern United States. They are found in both lentic and lotic environments including rivers, streams, lakes and ponds. Mudpuppy populations are declining in much of the Great Lakes region; however, New York State does not have them listed as threatened or endangered. Since little is known about these animals, it is important that we collect data to determine why Mudpuppy populations seem to be surviving better in certain areas. The objective of this study was to quantify physical and water quality habitat conditions at sites throughout western New York and determine if Mudpuppies were present or absent at these sites. Water quality parameters were tested using a YSI 6920 water quality sonde and a Hach pH meter. The measurements taken were then compared to the New York State water quality standards and other healthy stream guidelines. The Stream Visual Assessment Protocol (SVAP) was used to assess the physical conditions of the streams where data was collected. Focus was placed on the condition of the riparian zone, instream fish habitat, and streambank condition of each stream. Mudpuppies were found at seven of the 17 sites sampled. The presence or absence of Mudpuppies will be discussed related to the water quality and SVAP results.

An Estimate of Canopy Cover and Habitat Preferences in Captive-Released Eastern Hellbenders

Shelby Priester, Biology

Faculty Mentor: Professor Amy McMillan, Biology

The eastern hellbender (*Cryptobranchus alleganiensis*) is a large salamander found in the Allegheny and Susquehanna

watersheds in New York State. Due to recent declines in hellbender populations, head-start programs have been implemented in zoological facilities as a conservation initiative to restore hellbenders in their habitat. Hellbenders are highly adapted for living under large flat rocks, but less is known about the other areas of the stream hellbenders utilize for protection. Hellbenders may prefer areas in the stream with a higher percentage of overhead canopy cover because it provides them with cooler temperatures and protection. We released twenty head-started hellbenders into a creek in the Allegheny drainage and tracked their movements using radio-telemetry. Prior to release, ten hellbenders were vaccinated for chytrid fungus (*Batrachochytrium dendrobatidis*) (Bd). Cages were installed in the stream and ten hellbenders were released into cages (five vaccinated/five unvaccinated). The remaining ten were released directly into the stream. A spherical densiometer was used to take canopy cover measurements when a hellbender moved to a new location in the stream and habitat chosen was recorded to determine types of habitat utilized by hellbenders. All released hellbenders were swabbed weekly for Bd. The uncaged hellbenders chose naturally occurring rock only 51.2% of their movements. The other 48.8% of the time they were found under different habitat such as logs, debris piles or the stream bank. The animals chose to hide in stream bank crevices 14.0% of the total movements. The average overhead canopy cover for uncaged animals was 63.81%.

Evaluating and Identifying Value and Novel Roles in Blockchain Technology

Daniel Grewe and **Michele Schultz**, AMT 495: Applied Mathematics Project

Faculty Mentor: Professor Joaquin Carbonara, Mathematics

The ongoing information revolution is affecting the field of mathematical modeling in many ways. Traditional analytical modeling is being replaced in many areas by algorithmic modeling, in particular because of Machine Learning and Deep Learning. As part of the larger scope of the research in Data Science and Analytics carried out by the faculty mentor, the student team in this project will explore, analyze and apply Blockchain, a trusted exchange system based on clever mathematical algorithms, without a centralized governance. What is Blockchain? “The Blockchain is an incorruptible digital ledger of economic transactions. . . programmed to record not just financial transactions but virtually everything of value” (Don & Alex Tapscott, 2016). The most popular example of Blockchain technology is the cryptocurrency Bitcoin, defined as “a chain of digital signatures (a blockchain).” Extensive online research, checking multiple sources against each other, has verified the following preliminary results: Blockchain has led to very interesting and substantial economic experiments, like

Bitcoin, government function (e.g., Estonia, where Blockchain is widely used for data integrity), health related record-keeping, and the Internet of Things. The mathematics of Blockchain, which includes the RSA encryption algorithm and the use of hash functions, will ultimately determine the validity and future role of Blockchain in society. This project intends to make Blockchain more transparent to a wider audience by explaining the mathematics and how it supports data integrity, while also creating novel and interesting examples of its applications.

Expression and Characterization of Connexin31 Mutations Associated with Erythrokeratoderma Variabilis

Abdullah Alfarhan, BIO 498: Honors Research
Faculty Mentor: Professor I. Martha Skerrett, Biology

The goal of this study is to better understand mutations in connexin31 that cause Erythrokeratoderma Variabilis (EKV). EKV is a rare hereditary skin disease that leads to severe thickening of the skin. Connexin31 is a gap junction protein expressed in skin and over 15 mutations in connexin31 have been linked to EKV. Most of these are missense mutations that alter one codon and hence change one amino acid in the protein sequence. Some potentially act by way of a dominant negative mechanism altering expression of wildtype connexin31 and/or other connexins expressed in the same cell. This study will focus on two mutations C86S and L34P. The L34P mutations involves replacement of leucine at position 34 with proline. The C86S mutation involves replacement of cysteine at position 86 with serine. By expressing these mutants in *Xenopus* oocytes it is possible to study their properties alone and in combination with wildtype Cx31 or other expressed connexins. Plasmid DNA including either wildtype or mutant versions of the Cx31 gene was first amplified and purified. It was then linearized and RNA was transcribed in vitro. The final steps will involve RNA quantification, dilution to an appropriate concentration and micro-injection into *Xenopus* oocytes. The oocytes will be paired together in shallow agar wells and two-electrode voltage clamp will be used to assess junctional currents.

The Extraction and Quantification of Ibuprofen from 400mg Tablets

Sarah Abdulrahman and **Esra Abdulrahman**, CHE 406:
Analytical Toxicology
Faculty Mentor: Professor Douglas Ridolfi, Chemistry

Ibuprofen is used to treat mild to severe pain for adults and children 12 years and older and is a non-steroidal anti-inflammatory drug (NSAID). It can be taken every 4 hours in doses of 400 mg or up to six times a day to treat rheumatoid arthritis and osteoarthritis reaching 2,400 mg dosage. It is excreted from the body as 2-carboxyibuprofen and

2-hydroxyibuprofen with up to 9% being in the unchanged form within the 24 hour period of ingestion. Taking a 400 mg tablet of ibuprofen will give a peak plasma concentration of 17-30 mg/L after 1 to 1.5 hours. Quantification and confirmation of ibuprofen in tablet forms is necessary in pharmaceutical preparations. Can organic solvent extraction by acetone be used to quantitatively extract ibuprofen from 400 mg tablets? The methods that will be applied for this purpose involve organic solvent, acetone extraction and later sodium hydroxide pH adjustment to further isolate ibuprofen from the remaining compounds that make up the outer coating of the tablet (fillers and binders). Infrared spectroscopy will then be used to confirm the presence of ibuprofen and the purity of the sample as a reflection of acetone extraction. The percent recoveries and yield of ibuprofen will be calculated in order to see how effective acetone extraction is at isolating ibuprofen from tablets.

Forensic Identification Using Very Small Particle (VSP) Population Analysis

Cassandra O'Hern, HON 400: All College Honors Colloquium
Faculty Mentors: Professor Douglas Ridolfi, Chemistry and Josephine Adamo, Ph.D., Senior Academic Advisor

This scholarly research focuses on the investigation and inquiry of the potential application, establishment, and value of the nontraditional practice of using very small particle (VSP) population analysis for forensic purposes. Scientific laboratory techniques are used to examine physical evidence or relevant materials of interest left at a crime scene to identify and connect them to people or places, narrow down possible events that may have taken place, and help develop information about the case to be presented to the court. The use of very small particles and the chemical signatures that can be drawn from them is an unusual, yet progressive, way to discover connections in criminal investigations. Through the use of methods such as Particle Combination Analysis (PCA) and scanning electron microscopy/energy dispersive X-ray spectrometry the boundaries that were once held when examining physical evidence are pushed for a new type of forensic practice using very small particles. My findings are based on the evidence already made available to the public as well as compiled information from various resources such as scholarly articles, reliable peer reviewed sources, and published research by reputable scientists that work to promote the incorporation of this analysis method as a new standard in forensic investigations. This qualitative study and presentation will explain, evaluate, and determine the overall significance of this method and the possibility of very small particles becoming the next step in practical forensic science technique based on the revealed limitations and advantages found from research.

GC-MS Based Analyses of Fatty Acids Composition in Different Over-the-Counter Fish-Oil Supplements

Gregory O'Brien, Chemistry, **Djonnie Devone**, Forensic Science, **Muhibatu Osumanu**, Chemistry and **Matthew Pothier**, Forensic Science
Faculty Mentor: Professor Sujit Suwal, Chemistry

Polyunsaturated fatty acids (PUFA) – Eicosapentaenoic acid (EPA) and Docosahexaenoic acid (DHA)-containing fish oil supplements, are widely sold as over-the-counter (OTC) pills. Often OTC fish products comprise different proportions of fatty acids depending upon the origin and fish species used during oil extraction. Fatty acids, such as EPA and DHA, composition play a critical role in our health. Different proportions of EPA and DHA have successfully studied in treating hypertriglyceridemia, breast cancer, muscular function in Type II diabetes and Sick cell anemia. Besides EPA and DHA, fatty acids, such as Docosapentaenoic Acid (DPA), is another active subject of research in lipidomics. Importantly, the human milk comprises higher proportion of DPA than other fatty acids, thus implicating significance of DPA in healthy human life. In this work, we are, therefore, highlighting a method to quantify EPA, DHA, DPA and any other fatty acids in commercial fish oil products. We anticipate that our GC-MS method will help quantifying different OTC fish oil products without ambiguity. If successful, DPA will be further isolated and its therapeutic importance will be evaluated.

GIS Based Recreational Park Land “Desert” Analysis

Sara Witt, GEG 428/528: Environmental Assessment and Planning Applications in GIS
Faculty Mentors: Professor Tao Tang, Geography and Planning and Ms. Lisa Matthies-Wiza, GIS Office, Erie County

This project studies recreational park land “deserts” within Erie County. The concept of “desert” is related to spatial distribution of a utility to human society. Previously, published GIS researches studied the food “deserts” in relation to spatial distribution and density of grocery stores. Geographic communities lacking in or missing grocery stores are considered as food “deserts”. In this study, we analyze the distribution of national parks, state parks, county parks, and municipal parks in relation to population distribution to identify the park “deserts”. First, areas of where the most and the least dense of parks are identified. Then, these areas are compared to the population distributions in order to locate where people have very little or no access to recreational parks. GIS spatial analysis techniques are used to find the densities of the parks. This research presents a methodology that can possibly be followed by others to find other types of utility “deserts” as well. The methodology could be applied to find areas with the least accessibility to other services such as hospitals and schools in the future. Density analysis,

visualization, and presentation of spatial patterns will show the areas with the least accessibility to recreational parks within Erie County.

The Granite Boudinage Strain Record in Deformed Migmatites, Southwestern Maine

Victor Morales II, Geology
Faculty Mentor: Professor Gary Solar, Earth Sciences and Science Education

Recently, road cuts along a highway ramp in Yarmouth, Maine have provided the opportunity for a 3-D analysis of the structures present in a single large exposure within the Norumbega Shear Zone System, on its western margin. This study is part of a larger effort to record the complete tectonic history in this region (Tomascak and Solar, NEGSA 2016). The rocks present are metatexite migmatites (partially melted rocks, recrystallized partially into igneous bodies) and are medium- to fine- grained metapsammatic schist (metamorphic rock recrystallized from sandstone). The outcrop is located at the southeastern contact of the Migmatite-Granite Complex of southern Maine where about 10% of the outcrops are lens-shaped granite bodies up to 10-15 cm thick. The outside road cut (east and south, the focus of this study) curves around the ramp for about 90 degrees, approximately 250m along its arc from due east to due south. This arcs across the SE-dipping structure providing 3D views of the structures and an opportunity for 3D minimum strain quantification. Field data collected is confirmed at a microscopic-scale in thin sections created from the migmatite and the boudins; the deformation is recorded in all scales with similar structural aspects. The granite boudins range from cm- to m-scale and are generally E-W trending. In the field we systematically measured the lengths, width and axial attitudes of the granite boudins, and ‘pinched and swelled’ granite bodies. The outcrop surface attitude was recorded at each station in order to project field-measured dimensions along multiple orientations in order to find principal strain axis, and to produce a 3D map of structures. A further analysis of the boudinage can lead to a quantifiable amount of strain recorded during the deformation. Results indicate apparent flattening strain with a maximum principal stretch axis shallowly E- to NE- plunging, and the apparent plane of flattening subconcordant to the migmatite structure.

Green is the New Orange: Reasons to Compost on Campus

Julianna Kraft, Hospitality and Tourism
Faculty Mentor: Professor Jason Grinnell, Philosophy

This project investigates composting and its role in sustainability, particularly how it could pertain to the Buffalo

State campus. Research was done on the nature of composting, the most relevant methods available, where composting was being successfully utilized, how much it actually contributed to sustainability, whether any of their practices pertain to or are compatible with Buffalo State's campus, and what Buffalo State was already doing on the issue. Information was collected via interviews with field experts and staff on campus, as well as extensive reading through scientific journals, government legislature and reports, case studies, articles, and published environmental reports. What was discovered was that the majority of trash produced by Americans is sent directly to landfills. However most of this waste, such as food matter, yard clippings, paper, and cardboard, could be easily reused in the form of compost. Additionally, within the past 5 years there has been increasing availability of biodegradable alternatives to plastics and Styrofoam products that are completely compostable. Restaurants, hotels, college campuses, cities, states, and countries, have already moved to eliminate waste within the next 5-15 years. Most methods are cost-effective and much of what is being done is either already actively practiced at Buffalo State or could otherwise be easily implemented. My presentation summarizes the claim, details on successful models, innovations in the topic area, and the compatibility of these methods with Buffalo State's campus.

Green Tea Extract Pills: An Analytical and Toxicological Investigation

Megan Bennett, CHE 406: Analytical Toxicology and HON 400: All College Honors Colloquium
Faculty Mentors: Professor Douglas Ridolfi, Chemistry and Josephine Adamo, Ph.D., Senior Academic Adviser

Green tea originates from China, and it's been used for health benefits all over Asia since the 1200s. Recently, with the obesity issue in America, green tea capsules gained popularity. They have become one of the most commonly used dietary supplements. These pills claim to burn body fat and increase the number of calories burnt while dieting. Since the pills are still new, there is not as much research on them as other medicinal approaches to weight loss. The lack of study on these capsules leave me with questions – what is in these pills? How much green tea extract do they contain? Compared with standard green tea, should they assist in weight loss? And do the ingredients agree with what is on the bottle? For my poster, I will present data to answer these questions, as well as analyze the contents of the capsules, using several analytical chemistry methods, many of which are typically used to approach toxicology.

Growth and Properties of Hexagonal-Holmium Iron Oxide Thin Films

Caitlin Horvatits, Physics
Faculty Mentor: Professor Ram Rai, Physics

The purpose of this research was to investigate the growth and physical properties of the hexagonal holmium iron oxide (HoFeO₃) thin film. HoFeO₃ was prepared by a solid-state reaction and pressed into 1-inch diameter pellets followed by sintering at 1250°C for 12 hours. The HoFeO₃ pellet was mounted as a target into the magnetron sputtering system for deposition of the thin film onto clean substrates of (111) yttrium stabilized zirconia and (0001) sapphire. These thin films were then annealed at temperatures between 600°C and 900°C in a vacuum tube furnace. The structure of HoFeO₃ thin films, as well as the phase identification of the crystalline powders before and after sintering were examined using an X-ray Diffractometer. Additionally, an Atomic Force Microscope was used to image the surface morphology of the thin films, before and after annealing, at high resolutions. We measured the magnetic properties and optical electronic excitations of the HoFeO₃ thin films using a Vibrating Sample Magnetometer and a Spectrophotometer. Our results will be presented in this poster.

How Environmental Dredging Changed the Shape of the Buffalo River Channel

Skyler Paternostro, Earth Science
Faculty Mentor: Professor Jill Singer, Earth Sciences and Science Education

The Buffalo River is classified as one of the Great Lakes Area of Concern due to environmental impairments including contaminated sediment and loss of habitat. Between 2011 and 2015, a multi-year environmental dredging project removed some of the most contaminated sediment in the river. To determine the volume of sediment removed from the river, the U.S. Army Corps of Engineers conducted pre- and post-dredging bathymetric surveys and produced maps showing the areas of the river dredged in each year of the project. Using these maps showing dredging locations, I used GIS to make a map of the river and used polygon cells to identify the location and year a particular area was dredged. I produced a corresponding attribute table with dredge location and year it was dredged. This table allows me to query the dredge data to identify areas that were dredged at a particular time. The next steps in my multi-year project includes adding bathymetric data that will allow me to generate bank to bank profiles and document how the channel's shape became deeper and wider following dredging, as well as how a particular area of the river recovers in subsequent years. Future work might also include adding layers showing side-scan sonar maps to further understand the river's response and recovery to dredging.

The Investigation of Exchange Rates Using ARCH and GARCH Models

Lu Xu, AMT 495: Applied Mathematics Project
Faculty Mentor: Professor Bruce Sun, Mathematics

In this project, the time series models of generalized autoregressive conditional heteroskedasticity (GARCH) and autoregressive conditional heteroskedasticity (ARCH), are applied to analyze the exchange rates of British Pound and the Japanese Yen to the US dollar. The Japanese yen (JPY) and the British pound (PBD) are the two most traded currencies. The fundamental factors that influence the JPY and PBD are as complex and varied as their economies. I will focus on the volatility of the market activities of these currencies, but not their economies. GARCH and ARCH models can give the full descriptions of the variance of the current error terms or innovations as functions of the actual size of the previous time periods' error terms. I utilize the software (SAS) to carry out ARCH and GARCH analyses. The parameters of the models will be selected and compared, then the model with the best fits will be found and the corresponding predictions will be made.

Investigation of Adsorbed Gasoline Residues on Household Materials via Inverse Gas Chromatography

Eric Fraunhofer, Forensic Chemistry
Faculty Mentor: Professor Jamie Kim, Chemistry

Investigation of volatile/semi-volatile organic compounds such as gasoline residues absorbed on solid substrates is an important subject in many areas of science including forensics and environmental science. For example, detection and identification of gasoline residues present in solid substrates is one of the key issues in fire investigation. Headspace concentration method coupled with solid phase microextraction (HS-SPME) is a popular method for detecting volatile organic compounds from solid samples. However, the compositions of volatile compounds analyzed via HS-SPME are generally different from the true compositions because the partition coefficients of volatile compounds at the gas/solid interface are not equal. Our current research focuses on the investigation of absorption properties of volatile hydrocarbons existing in gasoline residues to household materials via inverse gas chromatography. Thermodynamic data and partition coefficients obtained from this project will be used for the quantitative chemical analysis of these compounds absorbed on solid substrates via HS-SPME. For this project, inverse gas chromatographic measurements of selected hydrocarbons (n-heptane, n-octane, n-nonane, n-decane, toluene, p-xylene, and 1,2,4-trimethylbenzene) using columns packed with cardboard, cotton fabric, and carpet were conducted in the temperature range of 40 - 90 C. Free energies and enthalpies of absorption, sorption isotherm, and partition

coefficients of these hydrocarbons were estimated at the gas/solid interface.

Making a Small Gamma Ray Spectrometer Out of an Arduino

Kaitlynn Rowland, Physics
Faculty Mentor: Professor Michael DeMarco, Physics

In this project, we are using the Arduino Uno which is a versatile microcontroller device which can be made to control and collect data from many devices into one table with the use of another external computer. The Arduino is programmed to control separate electronic devices that capture data (which is the energy changed into voltage pulses from gamma rays) from a CsI(Tl) detector that is exposed to what we call "background radiation" which is small amounts of radioactive elements that exist in nature and common structures. The Arduino then creates a table that can then be used to display from the data collected and routed into many channels. The device that collects the data and routes it into different channels is called a Multi-Channel Analyzer(MCA) where each channel (along the x axis) has a certain voltage or energy value, and the number of times that the gamma ray energy is counted (along the y axis). These energy values coincide with the peaks of the decay scheme of the exposed radioactive background elements. In this project, the electronic parts/devices and the CsI (Tl) detector have been ordered and the understanding of the Arduino language (similar to C++) as well as the process and understanding of gamma ray spectroscopy have been undertaken. Our poster is divided into three parts; Spectroscopy, Arduino Software, and Electronic Hardware.

Memory Boost or Bust: Pharmacokinetics of Standard Nootropic Drug

Nicholas Alexander, CHE 406: Analytical Toxicology
Faculty Mentor: Professor Douglas Ridolfi, Chemistry

Herbal medicine is becoming increasingly popular among North America as well as the rest of the world. Specifically nootropic drugs that claim to enhance memory and promote cognitive thought. An all-natural neural tonic that is available over the counter that promises no adverse effects, sounds too good to be true. It's easy to see why drugs like these have become so popular among students, athletes, and the working class. How exactly do these nootropic herbs effect the human brain in a way that would lead to such perks? Do they effect the body in any other way? That is what I am looking to discover through my research. OptiMind is a popular nootropic drug in the United States right now, and are so eager to continue growing in popularity that they will send a trial of their product to your home for free. Using their product as a representative of over the counter nootropic drugs, I plan on separating and quantitating each ingredient through the use of standard and accepted

laboratory methods. This will allow me to know exactly what each dose is composed of, and make accurate assumptions to the pharmacokinetics of the twelve ingredients. My final data will contain detailed explanations of each compound, concentration, and expected effects in the average person.

Moving Beyond SQL: Applying Category Theory to Databases

Jared Renzi, MAT 499: Category Theory and HON 400: All College Honors Colloquium

Faculty Mentors: Professor Jeffrey Morton, Mathematics and Professor Michael Johnson, Modern and Classical Languages

Relational databases are the primary tool for long term persistent data storage and retrieval in many organizations. Their designs are largely based off of E. F. Codd's work on the theory of the "relational model." The relational model is built off of set theory, but recent work has taken to applying another branch of mathematics, category theory, to the problem of "data." The continuing information revolution of today depends on understanding and analyzing data, so our research seeks to explore these current developments. Existing research proposes an alternative language to SQL based on category theory for manipulating new kinds of databases. Category theory may be a better framework for describing and manipulating data than set theory because it allows the user to think more abstractly and at a higher level, more akin to the way we think naturally about "objects" and "entities," and we would like to examine the efficacy of this approach. We would also like to analyze the feasibility of developing a new cross-language application programming interface for working with these new technologies, using the Rust programming language and potentially WebAssembly. We hope that our research will result in a working prototype that uses category-theoretic data models to interface with today's SQL databases and the existing prototype implementations of categorical databases. Our approach will seek to design tools that are approachable even to people who may not have had previous exposure to category theory.

N-Acyl Hydrazine Containing Aryl-Ureido Oligomer

Muhibatu Osumanu, Chemistry, **Djonnie Devone**, Forensic Science and **Gregory O'Brien**, Chemistry
Faculty Mentor: Professor Sujit Suwal, Chemistry

Despite a wave of success of second generation peptoid chemistry, the post-screening hit-molecules sequencing from a combinatorial pool using mass spectrometry (MS) remained still daunting. To overcome this obstacle, recently Suwal et.al. introduced an innovative approach introducing aryl ureido-backbone onto growing peptoid oligomer by coupling isocyanates with a resin bound primary and secondary

amine. Ureido-backbones are easy to install and compatible to MS-based sequencing. Importantly, isobaric aryl ureido-backbone containing oligomers were found to undergo unique molecular fragmentation yielding peculiar signature ion peaks, thus avoiding internal labeling of the subunits present at different positions within an oligomer. To this end, we decided to synthesize ureido-backbone oligomers using diversified N-acyl hydrazine side-chains, instead of primary amines. N-acyl hydrazine peptoid oligomers are often harder to sequence than their synthesis. We hypothesize, in conjunction with ureido-backbone, MS-compatible N-acyl hydrazine oligomers can be generated. We anticipate this approach would foster generating a pool of unique foldamers that are diversified both at side-chain and backbone.

Plasmid Sequencing with Oxford Nanopore Minion Device

Sam Sunners, Chemistry

Faculty Mentor: Professor I. Martha Skerrett, Biology

The Oxford Nanopore Minion is a low cost, next-generation DNA sequencing device. The device is small enough to fit in the palm of your hand and costs around one thousand dollars. The sequencing method has recently been applied to microbiology, environmental research, studies of the microbiome, basic genome research and human genetics. As far as we know it has not yet been applied to studies involving site-directed mutagenesis or plasmid verification after cloning and subcloning. A strand of DNA is passed through a tiny "nanopore" embedded in a polymer membrane within the sequencing device. A voltage is applied across the polymer membrane which pulls the DNA strand through. As the DNA strand moves through the pore it alters the flow of ions creating an electrical signal that is converted to a DNA sequence. Using this device, we will sequence bacterial plasmids in house, in order to verify their content. This approach will reduce the time required to sequence the plasmids, and should also reduce cost.

The Range and Extent of Endobionts in the Devonian Coral *Pleurodictyum*

Nathaniel Peters, GES 488: Museum Internship

Faculty Mentor: Professor Joseph Butch, Earth Sciences and Science Education

The Paleontology literature includes descriptions of coral-endobiont symbiosis (animals dwelling inside another). I selected a representative Devonian tabulate coral, *Pleurodictyum* to determine if I can use the tools and techniques available to discover evidence of symbiotic relationships. I reviewed pertinent literature, examined the collections of the Buffalo Museum of Science (MoS), and collected additional specimens in the field. The material was prepared, identified, studied and cataloged in

the geology lab at the Buffalo MoS. Methods included cleaning, surface preparation and examination, photography, thin-sectioning, cataloging, establishing data recording conventions, and digital microphotography. Fossiliferous rock was collected from an outcrop of the Wanakah shale in the Town of Hamburg, New York. Specimens in the collection of the Buffalo MoS were prepped using non-destructive cleaning techniques to remove shale matrix from calcite corals. Specimens collected in the field were thin sectioned. Study findings demonstrate that it is possible to document evidence of Pleurodictym – Hycites endobiont relationships. I was also able to document a coral-gastropod epibionts relationship. Using the general conclusions of this study, I formalized additional research questions that I plan to pursue in my forthcoming graduate study.

A Stochastic SIRI Model of Opioid Abuse

Allison Torsey, Applied Mathematics and Physics
Faculty Mentor: Professor Saziye Bayram, Mathematics

A opioid epidemic has overtaken the United States in recent years. In 2015, there were 238 opioid overdoses in Erie County, NY alone. Previously, infectious disease models, specifically deterministic SIR models, have been modified to apply to drug use. SIR models are compartmental models with three sub-populations: susceptible, infected and removed. The way in which individuals moved between each group is then modeled by a system of differential equations. I've developed a stochastic SIRI model to study the behavior of opioid abuse in Erie County, New York. A stochastic model differs from a deterministic model by varying the parameters resulting in a different outcome for each simulation. This would be the first SIRI model studying opioids to be applied to a region. I analyzed simulation results, obtained from MATLAB, to predict how the system would progress over the course of a year. Specifically, if the number of individuals addicted would increase or decrease. I proved that decreasing the probability of becoming a drug user is more effective at preventing an epidemic than decreasing the relapse rate. This result was also supported by a sensitivity analysis I performed on the previous deterministic model, which analyzed the robustness of each parameter in the system. The results also showed that increasing the amount of individuals entering treatment and decreasing the relapse rate could potentially exceed the threshold for the treatment facilities in the region. This estimation of a stochastic SIRI model might be used to predict the usage and spread of multiple illicit drugs. As well as it might influence legislative decisions on the most effective actions to stop the outbreak in not only Erie County but around the United States.

Stream Restoration Effects on Macroinvertebrate Communities in Elton Creek

Kyle Glenn, Biology
Faculty Mentor: Professor Christopher Pennuto, Biology

Stream restoration projects are typically designed to reduce degraded shorelines and enhance instream habitat to improve a recreational fishery, often trout. Few studies have assessed restoration effects on resident macroinvertebrate communities. We collected 20 macroinvertebrate samples from Elton Creek, NY prior to and on two subsequent post-restoration dates to assess community changes. Samples were collected using a Surber sampler and each macroinvertebrate sample will be identified to the lowest taxonomic level possible (typically Genus). Pre-project abundance, community composition, and functional feeding guild proportions will be compared to post-project metrics. We hypothesize that the restoration project will increase the number of fish predators, leading to a reduction in the abundance of macroinvertebrates compared to the upstream site. Additionally, we expect a change in invertebrate community composition as fish predators select preferred prey in the restoration location. Findings from this assessment may prove useful in informing further restoration projects to understand whole community responses to habitat alteration, in addition to the response of target fish.

Syntheses of Privileged Scaffold-Containing Amino Acid Surrogates

Djonique Devone, Forensic Science, **Muhibatu Osumanu**, Chemistry and **Gregory O'Brien**, Chemistry
Faculty Mentor: Professor Sujit Suwal, Chemistry

Peptides are widely used in drug design and vaccine development due to high target specificity and lesser cytotoxicity. Peptides are, however, proteolytically unstable and are not cell permeable. To overcome this, several synthetic methods have developed, that can offer diverse foldamers with 3D-architecture analogous to peptides. Yet, more researches are in high demand due to ever-increasing number of drug targets. In this work, we envisioned to create the privileged scaffold-containing amino acid surrogates that can be used as building blocks in hybrid peptide-small molecule library creation. We used Buchwald-Hartwig reaction to create such amino acid surrogates by cross-coupling aryl halides and secondary amines. With these molecules in hand, we are now optimizing reaction condition between the synthesized molecules with resin bound amines, as well as testing the compatibility of the resultant oligomers under mass spectrometric condition.

Synthesis of Monodisperse Gold Nanoparticles with an Average Diameter of 70 nm

Anthony Marino, Forensic Chemistry
Faculty Mentor: Professor Jinseok Heo, Chemistry

My research explores the use of a modified gold nanoparticle (AuNP) seeding method to synthesize monodisperse nanoparticles with an average diameter of 70 nm. The AuNPs with this size can be used as a substrate for Surface-enhanced Raman scattering (SERS) in the near-IR region if they are aggregated by a quick freezing method. Near-IR SERS is particularly useful for detecting weak Raman signal of a low concentration of analyte in a biological matrix that exhibits strong background fluorescence. Synthesis of monodisperse AuNPs larger than 40 nm has known to be challenging. In this study, 70 nm diameter AuNPs were synthesized using a two-step, seeded growth method and the size of the AuNPs was characterized using their plasmon band spectrum acquired with a UV-VIS absorption spectrophotometer. In addition, several experimental factors, such as reagent concentrations, reaction temperature, and types of reducing agents, which could affect the size and monodispersity of the AuNPs, were examined. Seeded particles synthesized with a conventional Turkevich method, which uses citrate to reduce gold chloride and stabilize AuNPs, showed an average diameter of 22 nm with good monodispersity. These seeded particles could be grown further by adding them to a solution consisting of gold chloride and citrate at a boiling temperature. The synthesized AuNPs showed an average of 70 nm diameter but poor monodispersity. In this presentation key experimental factors that affected the monodispersity of AuNP products will be discussed.

Synthesis of Releasable Transporter RNA Binder

Muhibatu Osumanu, Chemistry
Faculty Mentors: Professor Jinseok Heo, Chemistry and Professor Benjamin Miller, Biochemistry and Biophysics, University of Rochester

Human Immunodeficiency Virus type 1 (HIV-1), has remained a significant global health concern. It's a retrovirus, which causes the Acquired Immune Deficiency Syndrome (AIDS). In 2015, fewer people became newly infected with HIV than any year since 1991, but there were still about 1.1 million deaths from AIDS related causes. Currently there is no cure for HIV-1 infection; however, progression of the diseases can be controlled by combination antiretroviral therapy (cART). Unfortunately, the virus acquires resistance and there are cardiovascular complications among patients taking cART. This suggests that drugs against HIV-1 and novel target in the virus are needed. One potential target is an RNA responsible for regulating a -1 ribosomal frameshift, a change in the reading frame that occurs

during translation of one of the mRNAs produced by the virus. Decreasing or increasing frameshifting frequency interferes with the HIV-1 viral life cycle. It has been shown in the Miller lab that small molecules targeting this frameshift stimulating (FSS) RNA can increase frameshifting, leading to an imbalance in the ratio of Gag to Gag-Pol and inhibiting HIV-1 replication. However, even though the affinity of binding lies in the nM range, concentrations required to inhibit viral infectivity lie in the μ M range. One possible explanation for this observation is that compounds are insufficiently cell permeable. Here, we synthesized new analogs incorporating a releasable "molecular transporter" (octa-arginine) to test this hypothesis. To resolve the poor cell permeability of those small molecules, here we report that we successfully synthesized new analogs that incorporates a releasable "molecular transporter" (octa-arginine) using solid phase synthesis and conjugating RNA binder derivatives.

That Was Then, This is Now: How the Buffalo River's Shoreline Has Changed in the Past Quarter Century

Tony Kruzel, Geology
Faculty Mentors: Professor Jill Singer, Earth Sciences and Science Education and Professor Jorge Bajo, Earth Sciences and Science Education

The lower ~9 km of the Buffalo River is designated as a Great Lakes Area of Concern due to its contaminated bottom sediments, degraded and lost habitat, and poor water quality. My multi-year project has involved documenting shoreline changes over the past quarter century. To do this, I first used satellite imagery in ArcGIS to generate the basemap of the Buffalo River and its shoreline. To this basemap I used ArcGIS to assign X-Y coordinates to digitize the Buffalo River's shoreline. This involved working with large paper maps and required 6 sheets to cover the river from the junction of the Buffalo and Cazenovia tributaries to the mouth of the river. I next added additional layers representing the river bank characteristics mapped by Jim Broska in the early 1990's. I added yet another layer showing some of the mapping I did in summer 2017 and currently am adding locations of active habitat improvement projects being undertaken by various groups and agencies including the Buffalo Niagara Waterkeeper, U.S. Environmental Protection Agency, U.S. Army Corps of Engineers, and Erie County. My project continues this summer when I plan to re-map the river's shoreline using the same criteria used by Broska. When this layer is added to the layers I already created, it should make it possible for users, including the general public, to interact with the map and explore how the river looked a quarter century ago and how it looks today. In future years, it should also allow the community to document other changes to the river's shoreline and document how the Buffalo River continues to change as a result of further habitat restoration and other projects.

Trace Evidence Analysis For a Cold Case Homicide

Jessica McCarey, HON 400: All College Honors Colloquium
Faculty Mentors: Professor Douglas Ridolfi, Chemistry and
Professor Michael Johnson, Modern and Classical Languages

This project focuses on forensic investigation of trace evidence. Fibers, hairs, and paint substances are all being analyzed to bring a cold case homicide to trial. This homicide case is from 1993. As a result, it has been worked on at various times over the last twenty-five years. This semester I am an intern at the Niagara County Sheriff's Office Forensic Laboratory (NCSOFL). I'm working with the senior trace evidence analyst, Mark Henderson. Original vacuuming's from M-Vac System filters and original tape lifts are being inspected for additional trace evidence that may be significant. The evidence collected is examined visually with a Leica G24 microscope and then tested with a Nicolet Continuum Infrared Microscope. Samples collected from the vacuuming and tape lifts are compared to known samples from the victim's clothing. The goal is to connect the victim to the vehicle involved in the sexual assault homicide through trace evidence. Therefore, we are looking at fibers from the victim's clothing and paint substances to link the victim to the cab of the vehicle or the trunk. Key findings would include fibers from the victim's underwear from seat vacuuming's and any paint substances from the victim's nail polish or from tools found in the car.

Truncation of *Drosophila melanogaster* Innexin Shaking-B Lethal

Marc Dudley, Biology
Faculty Mentor: Professor I. Martha Skerrett, Biology

Gap junction channels mediate direct communication between cells in almost all animals. In invertebrates gap junctions are composed of proteins from the innexin family. Innexins have three cytoplasmic domains hypothesized to be associated with gating, including amino and carboxyl termini. The amino terminus (NT) has been shown to regulate voltage gating. Although the function of the carboxyl terminus (CT) has been extensively studied in vertebrate gap junctions, nothing is known about its function in invertebrates. As a first step in understanding the role of the CT in invertebrates, a mutant version of the *Drosophila* innexin ShakingB (lethal) will be created using site-directed mutagenesis. The mutant will lack most of the CT. After confirming that the mutant is capable of forming gap junctions, its behavior will be compared to that of wildtype ShakingB (lethal), a protein that has been extensively studied in our lab. The long-term goal is to assess gap junction pH sensitivity in the absence and presence of the hypothesized pH-sensitive CT.

Underlying Mechanism of Freezing-induced Aggregation of Gold Nanoparticles

Kris Hoyt, Chemistry and Anthony Marino, Chemistry
Faculty Mentor: Professor Jinseok Heo, Chemistry

Here we present that the extent of the aggregation of citrate-capped gold nanoparticles (AuNPs) could be controlled by the freezing rate of the AuNP solution. A citrate solution containing AuNPs with an average diameter of 70 nm was frozen and thawed. The freezing-induced AuNP aggregation was examined using UV-VIS absorption spectroscopy and Raman spectroscopy. We paid attention to the change of the plasmon band of AuNPs and the characteristic Raman peaks of citrate on AuNP surfaces after the cycle of freezing and thawing process was completed. Overall, the extinction intensity of the representative plasmon band of 70 nm AuNPs was significantly reduced and a broad plasmon band in the near-IR region newly appeared, which suggested the aggregation of AuNPs. The aggregation of AuNPs was also confirmed by the appearance of citrate peaks in the Raman spectrum. In addition, Rhodamine 6G (R6G) was tested to see the effect of surface-enhanced Raman scattering (SERS) in the near-IR region as a result of the aggregation of the AuNPs. The near-IR Raman signals of R6G were more enhanced in the solution of AuNP aggregates than in the solution of free AuNPs. This was due to the resonance of plasmon band of AuNP aggregates with the near IR laser. Our results also showed that a quick freezing rate produced less extensive AuNP aggregates than a slow freezing rate. This was ascribed to the formation of small crystal grain boundaries for the quick-frozen AuNP solution, where the AuNPs were forced to aggregate.

Vanillin Extraction from Vanilla Extract

Sherifat Alaka, CHE 406: Analytical Toxicology
Faculty Mentor: Professor Douglas Ridolfi, Chemistry

Vanilla is one of the world's most popular flavoring materials and is widely applied by the food, beverage, perfume and pharmaceutical industries. Over 200 compounds have been found to be responsible for the flavor profile of vanilla. This research will look at extraction and isolation methods commonly employed in the analysis of botanicals and other natural materials. Once isolated, the relative amounts of vanilla in common flavoring agents will be quantitated and profiled by instrumental methods commonly utilized in the field of analytical toxicology. Other products such as coloring agents and additives will be analyzed and characterized and research in regards to the properties they bring to concentrated flavoring agents.

Where Were They From? Forensic Investigation Into the Possible Origins of Three Human Skeletons

Jefferson Sinnott, Forensic Science

Faculty Mentors: Professor M. Scott Goodman, Chemistry and Professor Melanie Mayberry, Anthropology

The Anthropology Department at Buffalo State has 3 human skeletons that have been part of the department's collection for several years. The origin of the skeletons is currently unknown. Modern DNA techniques coupled with forensic anthropological techniques may now allow us to determine with some certainty the geographic origin of the skeletons. Age, sex, stature, and 'race' were assessed using popular anthropology techniques. Afterwards, one tooth from each of the three skeletons was extracted and pulverized to yield samples of DNA. Y-STR fragment size analysis of the DNA samples can provide information about the paternal lineage of male individuals. Mitochondrial DNA sequencing analysis using the FBI primer sets can provide information about the maternal lineage of the individuals. Although the extraction process for DNA from teeth was proven to be effective, issues in the DNA extraction from the samples became apparent, and a literature review provided reasonable explanations for the failures.

The Uneven Acceptance of Homosexuality: Explaining Divergence in Cultural Transition

Ismael Williams, PSC 470: Senior Seminar

Faculty Mentor: Professor Peter Yacobucci, Political Science

Daily, gay teens are kicked out of their homes by their families. Most gay teens hide their homosexuality in fear of facing judgment from loved ones. As a result, they may run away from home due to the lack of love and respect. LBG and gender-nonconforming youths were twice as likely as their heterosexual and gender-normative peers to report they had been removed from their home by a social worker, had lived in a group or foster home, or had ever been homeless after being kicked out of their home or running away (Irvine, 2010). But in today's society homosexuality is becoming more accepted. However, this acceptance isn't uniform across the United States. While societal acceptance is clearly ongoing, anti-homosexual persecution is also increasing. States with a significant numbers of hate groups had a higher chance of an attack on a homosexuals and the growth in hate groups in the past two years has been dramatic. The focus of my research is to trace the overall growing acceptance of homosexuality while witnessing a corresponding backlash of anti-homosexual violence in sub-segments of society.



Psychology and Social Sciences

ADHD, Anxiety and Self Efficacy

Ty-Tiyanna Purvis, PSY 499: Independent Study
Faculty Mentor: Professor Jill Norvilitis, Psychology

ADHD and anxiety have been studied separately in the past, however little research has been done on comorbid ADHD and anxiety. Among the studies that have been done, it has been found that the comorbidity of ADHD and anxiety leads to more severe impairment than either diagnosis alone and there has been an increase in those dealing with comorbid ADHD and anxiety (Biederman, Newcorn & Sprich, 1991; Jarret, 2016). The present study will examine whether levels of ADHD and anxiety alone and in combination correlate with levels of self efficacy present in college students. A questionnaire evaluating, anxiety, ADHD, obsessive thought, and impulsivity will be used in this study. The current study hypothesizes that college students with high levels of ADHD and anxiety symptoms will be low in self efficacy, high in obsessive thoughts and low in impulsivity. It is also expected that those presenting with high levels of obsessive thought will also present with high levels of impulsivity.

Archaeological Investigation of Ceramic Artifacts at Old Fort Niagara

Kaylee Cassidy, ANT 495: Lab Methods and HON 400: All College Honors Colloquium
Faculty Mentors: Professor Susan Maguire, Anthropology and Josephine Adamo, Ph.D., Senior Academic Adviser

In the Summer of 2017, the Buffalo State Archaeological Field School conducted an excavation of a Revolutionary War barracks at Old Fort Niagara, Youngstown, New York. Three test pits were excavated where various types of ceramic were recovered including porcelain, earthenware, and stoneware were recovered as well as other artifacts. My project focuses on these artifacts that can reveal much about the area, as well as the people who once occupied the area. After being carefully washed, ceramic sherds were thoroughly examined and classified based on paste, surface treatment, and decoration. Comparative visual identification charts, detailed process flowcharts, and online databases were used in the identification process. Sherds were then cataloged appropriately. Old Fort Niagara has a unique occupation history, having been controlled by French, British, and American forces as well as Native Americans. Ceramic remains are of incredible interest and importance to archaeologists for numerous reasons. First, they help archaeologists date soil layers based on the type of pottery found within these layers. Second, variation in the types and the frequencies of ceramics found within the stratigraphic layers often relate to and reflect changes in the occupants, trade patterns, and technologies.

Archaeological Study of Military Objects at Old Fort Niagara

Connor Schill, ANT 495: Lab Methods
Faculty Mentor: Professor Susan Maguire, Anthropology

The Buffalo State Archaeological Field School conducted an excavation of a British soldier's barracks from the Revolutionary War period at Old Fort Niagara, in Youngstown New York. Three 2m x 2m test pits were excavated to locate this barracks within the fort. The test pit locations were chosen based on period maps from the fort's archives. These test pits were placed using GPS locations and were positioned at three of the four corners of the ten foot by twenty foot structure. Many military items were found that belonged to the three different occupying militaries. Old Fort Niagara has a unique history where the French, British, and United States militaries all occupied this fort and the changes in ownership happened in the span of 137 years. My project will focus on the military items and their functions within the fort. Military items from the excavation include musket balls, mortar shell fragments, uniform buttons, and gun flints. The uniform buttons, musket balls, and gun flints are particularly useful in identifying the changes in ownership of the fort. The military items along with other items found in the test pits allow the archaeologists to date the different stratigraphic layers. Variation in manufacturing techniques and material composition of these artifacts provide clues their date and ownership in the past.

Assessing the Severity of Criminal Punishment Including the Death Penalty on Violent Crime Rates

Samantha Senger, PSC 470: Senior Seminar
Faculty Mentor: Professor Peter Yacobucci, Political Science

This research assesses the severity of criminal punishment including the death penalty on rates of violent crime. The United States is one of the few countries that still utilize the death penalty. In addition, criminal punishments in the United States beyond the death penalty involve some of the most lengthy sentences in the world. However, criminal punishments are not uniform across the country but vary significantly by state. Using an original data set this research investigates whether severe criminal punishment has an impact on the rate of violent crime in the differing states. Utilizing a linear regression applied over a data collected since 2005 and controlling for a number of other independent factors, I hope to determine whether the cost and burden of severe criminal punishments is rewarded with future lower crime rates.

The Association Between Stress, Personality, and Sex Drive/Satisfaction

Jill Meyer, HON 400: All College Honors Colloquium
Faculty Mentor: Professor Naomi McKay, Psychology

Stress has been shown to be detrimental to sexual behaviors. Previous research has indicated that timed intercourse can cause stress in males and such stress may lead to erectile dysfunction and ejaculatory dysfunction. Also, daily internal stressors have a greater negative impact on one's sex life than external daily stressors do. The current study adds to this literature by researching the interaction of stress, personality traits, and one's sex drive and sex satisfaction. A questionnaire was completed online by Buffalo State College students last spring to find possible correlations between participants' personality traits and their sex drive and sex satisfaction. Reexamining the data from the previous study, the present study included additional analyses upon the data set to identify a potential relationship between students' stress level and their personality traits, sex drive, and sex satisfaction. In participants with high stress levels, there was a higher level of relationship insecurity, emotional detachment, capacity for love, trust, and self-control. Although, it is uncertain whether or not there is a causal relationship between participants' personality traits and their stress level, these results add to our understanding of the relationship between stress and sexual behaviors.

The Association Between Prenatal Cigarette and Marijuana Exposure and the Regulatory Processes of Kindergarteners

Samantha Stanford, PSY 498: Honors Thesis
Faculty Mentor: Professor Pamela Schuetze, Psychology

I have been researching the association between prenatal tobacco exposure (PTE) and prenatal tobacco and marijuana exposure (PTME) on the regulatory processes among kindergarteners at the Research Institute on Addictions (RIA). Along with researching the direct association between PTE/PTME and child regulation, I decided to include various moderators that may influence this association based off prior research. These moderators include: prenatal cumulative risk, demographic risk, maternal parenting behaviors, and cumulative postnatal environmental risk. Creating these cumulative variables involved selecting the most relevant individual variables to include and making decisions about how to calculate the cumulative variable. During the first three weeks of the fellowship I was trained by a coding supervisor on how to code behavioral data of reactivity from existing video recordings of a frustration task taken from the Laboratory Temperament Assessment Battery, called "Impossibly Perfect Stars." After obtaining reliability with other coders, I continued to code the 308 videos that were

recorded of this paradigm. Near the end of the summer I was asked by another supervisor to begin coding another paradigm at the RIA. Along with coding videos, I have been trained by Dr. Schuetze and colleagues to operate advanced statistical equations and am learning to use syntax to run analyses in SPSS. Recently, I've been asked to work on another study at the RIA throughout the next academic year which researches the effects of prenatal exposure to cocaine on child outcomes. I plan on continuing such tasks throughout my senior year at Buffalo State College along with completing an honors thesis in psychology with the data I have and continue to collect.

The Association Between College Student Emotional Intelligence and Academic Performance

Samantha Stanford, Psychology, **Jeffery Caliano**, Psychology, **Carissa Braun**, Psychology, **Summer Oliver**, Psychology and **Mariah Brown**, Psychology
Faculty Mentor: Professor Stephani Foraker, Psychology

The primary purpose of this study is to examine the relationship between emotional intelligence and academic performance among undergraduate college students. Many studies relating to emotional intelligence have been conducted in the United States, as well as in cultures that have different social constructs than those which are experienced in the United States; we wish to determine how well such findings generalize to collectivist and individualistic cultures. We hypothesize that there will be a positive correlation between emotional intelligence and academic achievement. We also hypothesize that the number of interactions and friendships one has with others, the number of more distant vs. shallow relationships one has with others, whether a person was raised in an individualistic or collectivist society, and one's academic major will moderate the association between emotional intelligence and academic performance. The relationship between academic major and performance as well as number of distant/shallow relationships and performance will also be analyzed. After data collection is complete, we will use correlation and multiple linear regression analyses to assess our hypotheses. We will discuss the results in our presentation.

The Balance Between Happiness and Anger for the Most Cognitive Advantages

Grissel Henriquez, PSY 498: Honors Thesis
Faculty Mentor: Professor Stephani Foraker, Psychology

Much research that investigates mood has grouped different mood types into either a positive or negative category. When removing them from these categories, it has been observed that when in a sad mood, a person may experience certain benefits such as better memory performance, which was not observed in other moods. Based on background reading, I propose a new

theory, one that involves sadness falling on a continuum between happiness and anger. To test this theory, the present experiment focuses on examining false memory by use of the Deese-Roediger-McDermott (DRM) list between four moods (happiness, sadness, anger, and neutral) and three different processing styles (relational, item-specific, and no instruction) as a covariate, since previous research indicates that negative and positive moods have different processing styles which impact performance on a cognitive task. It is hypothesized that 1) individuals in the happy group will have more false memories than any other group. 2) There will be no differences between the happy and neutral group. 3) The sad group will have less false memories than any other group. 4) The anger group will have more false memories than the sad group but less than the happy and neutral group. Results will be presented and discussed to evaluate my theory.

Betwixt You and Me, Twix Are Good For Your Stress

John Przybysz, Psychology and **Amy Cavanaugh**, Psychology
Faculty Mentor: Professor Naomi McKay, Psychology

People tend to eat more when stressed. Furthermore, people were more likely to eat unhealthy food when stressed. This relationship tends to happen more with people who have higher dietary restraint. It is unknown if person's anxiety decreases when eating a healthy or unhealthy food. A series of two experiments have been done to find this relationship between unhealthy food and decreased anxiety. The purpose of the initial experiment is to see if eating an unhealthy food item decreases self-rated anxiety. In the initial experiment, participants came into the lab to self-rate their anxiety, be put into a condition (Twix®, carrots, or nothing) and self-rated their anxiety again. Change of anxiety was measured between the conditions and it was found that anxiety decreased significantly in the Twix® condition compared to the carrots condition. Opposed to the first experiment, an acute stressor was implemented in the second experiment. In the second experiment, participants came into the lab, provided baseline anxiety measurements (anxiety measures included: self-rated anxiety, cortisol from saliva samples, and blood pressure measurements) and underwent a stressor. After the stressor, participants received either a Twix®, an equal amount of carrots, or nothing. In the second experiment, participants had their blood pressure and cortisol measured four times in 10-minute increments. Unlike the initial experiment, there was no significant difference in anxiety between the conditions. It was found, however, that there was a negative correlation between baseline cortisol and dietary restraint.

Cannibalism in the American Southwest

Emily Hurley, ANT 498: Honors Research
Faculty Mentor: Professor Lisa Marie Anselmi, Anthropology

Anthropophagy, or cannibalism, is defined as the consumption of human flesh by human beings. This is a practice that has taken place all over the world from a variety of motivations including alleviating starvation, before, during or after warfare or periods of violence, and in ritual, funerary, and/or medicinal contexts. This study presents how widespread anthropophagy has been worldwide and examines the evidence for cannibalism among Indigenous groups in the American Southwest. A study of the archaeological and ethnographic evidence from the Southwest culture area yields strong evidence that cannibalism did occur there, however there is intense controversy over this interpretation and what it means for Ancestral and Contemporary Puebloan communities.

Comparing and Contrasting US Dietary Guidelines to Traditional Chinese Diet Practices

Brandon Shaffer, NFS 330: Integrative and Functional Nutrition
Faculty Mentor: Professor Suk Oh, Health, Nutrition, and Dietetics

The Department of Health and Human Services (DHHS), a federal government branch recommends the 2015-20 Dietary Guidelines for Americans and MyPlate to implement the guidelines for health eating and prevention of chronic diseases. Americans are most familiar with the dietary guidelines, but are widely unfamiliar with the eating habits and dietary recommendations in other countries. Many countries have their own dietary practices for the best health of their citizens. Through review of literature, the US Dietary Guidelines, MyPlate/MyPyramid and the Food Guide that outlines five food groups and how properly to eat the food groups will be compared and contrasted to the traditional Chinese diet practices. In Traditional Chinese Medicine, everything in the universe including human body and foods are made of two forces, yin and yang, and the life is sustained by Qi, an invisible and unquantifiable energy that flows throughout the body following the energy channels (meridians). All foods, body organs and systems are classified into yin and yang. The consumption of foods in the proper ratio of yin and yang, fan (grains) and ts'ai (meats and vegetables) foods are considered crucial to maintain health, prevent and treat chronic disease. I will discuss the two dietary practices.

Comparison of Approaches to Data Analysis

Emily Wetzler, Psychology and **Meegan Petrucci**, Criminal Justice
Faculty Mentor: Professor Robert Delprino, Psychology

This study compared two different approaches to analyzing archival data of police officers' perceptions related to their job and organizational support services. A quasi matched groups design was used to analyze data from survey questionnaires completed by officers from two different agencies. The survey inquired about awareness and utilization of support services, perceived job stress and work-family conflict. In a matched group design, participants are matched on variables of interest. In this case, participants were matched based on similar demographics. The demographics included gender, ethnicity, age, education level, marital status, number of children, and years on the job. As part of SPSS, Case Control Matching was utilized resulting in a total sample of 22 subjects (11 from each agency). The original data set included responses from 77 officers from the two agencies (62 and 15 respectively). Comparisons of the analysis of the matched data set to the original data set were exact in terms of significant differences for each dependent variable except for awareness of services. The value of a matched group design is the potential to control for external variables that may mask true differences that exist between the groups. Also, given the similarity in the results of the matched group to the larger sample, a matched groups design may offer a more economical way to collect data and identify relationships between variables for populations where access and subject participation may be a challenge. This may often be the case in applied research settings such law enforcement.

Crisis Communication in the Airline Industry

Elaina Bolles, Public Communication
Faculty Mentor: Professor Seth Oyer, Communication

Crisis communications is a vital part of public relations. When the United Airlines' flight 3411 incident occurred, I was curious as to why and how is the event considered a "PR nightmare". I based my research on these provocative questions. First, I created a timeline of events and responses because there was no one source of information on the incident for people to look back on. Considering the heavy news coverage of this event, information was abundant. If the situation had occurred with no international news coverage and a lack of the many opinions that followed, it would not have had the worldwide impact that it did. I started with the United Airlines' website which contains every press release the company published. When there was missing or vague information, I used trusted news sources such as, CNN, NBC, Washington Post, and The

New York Times. I determined that one of the most effective ways to remain unbiased while researching was to compare the crisis communications plan to the International Air Transport Association's (IATA) Crisis Communications in The Digital Age: A Guide to "Best Practice" For The Aviation Industry to see where United Airlines made its mistakes. I conducted a review of a case that depicts an effective crisis communication plan, AirAsia Flight QZ8501. I concluded remaining in line with the IATA guidelines, taking responsibility, and having one key message, despite the situation, will lead to a successful crisis communications plan.

Do You Have What it Takes to be a Medicine Woman?

Loraine Burek, ANT 499: Independent Study
Faculty Mentor: Professor Lisa Marie Anselmi, Anthropology

Indigenous people in North America have had centuries of misunderstanding and ignorance to deal with since Euro-Americans came to this continent. A majority of their blight today rests on the shoulders of invaders who treated them as "savages". In North America now, the Indigenous population has risen in the consciousness across the land. Looking at these cultures, a seldom seen vital part of life has centered around women. Most of the Indigenous nations, especially in the Eastern Woodlands, were led by a matrilineal line, or the female members of the family. These female-led societies flourished, making them some of the most successful cultures ever known. My research delves into the spiritual aspect of the Indigenous culture focusing on Medicine women. My exploration into scholarly papers and journals, with information obtained via the websites of Indigenous nations will offer insight on the importance of women who dedicate themselves to the spiritual aspect and healing in their culture. My project presents my investigation into how females become Medicine women and their specific paths taken to achieve this vital position.

The Effects of Gender Stereotypes and Evidence Strength on Jurors' Judgments in Criminal Trials

Michelle Corieri, Psychology
Faculty Mentor: Professor Jennifer Hunt, Psychology

Stereotypes about gender may affect the way that jurors interpret evidence in criminal trials and make judgments about the defendant (McKimmie, Masters & Schuller, 2012; Strub & McKimmie, 2016). Non-traditional women may be judged more negatively than stereotype-conforming women. In addition, evidence strength is an important predictor of verdicts. The strength of defense evidence may play an especially critical role in cases in which women have killed their abusers (Hodell, Dunlap, Warsarhaley, & Golding, 2012). However, there is little research investigating how evidence strength and stereotypicality

interact to affect juror decision making. We hypothesize that jurors will make more negative judgments of a female defendant accused of killing her abusive husband when she is presented with counter-stereotypical traits than with stereotypical traits. However, we expect that the bias caused from counter-stereotypic traits will be enhanced when the defense evidence is weak and diminished when the defense evidence is strong. In the study, participants read about a felony murder trial in which a wife shot and killed her abusive husband that includes manipulations for gender stereotypicality and evidence strength. They then complete trial judgments, including their verdict of guilty or not guilty, confidence in their verdict, and character judgments of the defendant. Finally, participants complete measures of their emotional reactions to the trial and demographic questions. Data collection is underway, and results will be presented.

The Effects of Bullying and Sexting on College Adjustment

Gabrielle Burke, PSY 499: Independent Study
Faculty Mentor: Professor Jill Norvilitis, Psychology

The present study explored how cyberbullying through sexting is related to college adjustment academically and socially. In 2008, an 18-year-old girl named Jessica Logan committed suicide after her ex-boyfriend sent a sexually explicit photo of her around their high school, and she was bullied because of it. With the emergence of smart technology, cyberbullying and sexting are newer phenomena, so it is important to look at the potential impact these may have on students. In the present study, about 50% of students admitted to sexting, in one form or another, at some point in the past 12 months, including those who have bullied or voluntarily sexted. Sexting was unrelated to social and academic adjustment to college, but was moderately correlated to bullying with a small relationship to depression and self-esteem. Overall, it appears that students are not affected by involuntary sexting in the same way as traditional bullying. Perhaps sexting is not viewed as bullying because it is a common occurrence on social media with celebrities, such as Kim Kardashian, Scarlett Johansson, and Sia, posting explicit photos of themselves online. However, there was a correlation between well-being and sexting, which suggests students may be struggling in other areas besides college adjustment.

Factors Affecting Students' Success in Statistics

Brennen Baker, Ryan Thie and Oshina Webb, PSY 488:
Internship
Faculty Mentor: Professor Howard Reid, Psychology

This study is examining a number of variables that may affect how well students do in a psychological statistics course. Many students find this course to be difficult due to the

mathematics involved as well as the challenge of understanding the material. We are focusing on what effect sleep deprivation, drug use, and personality characteristics may have in predicting success in the course. More specifically, we are analyzing two measures of sleep deprivation, (average hours of sleep and average hours of sleep before an exam), two examples of drug use (marijuana & caffeine), and four personality measures (efficiency, optimism, prudence, & locus of control). The questionnaire will be submitted to the IRB shortly and it is, therefore, anticipated that data collection will start soon. Thus, we expect to have results ready to present at the creativity celebration.

Female Reproductive Hormones and Memory

Saskya A. Molina, PSY 499: Independent Study
Faculty Mentor: Professor Jean DiPirro, Psychology

The female reproductive hormones estrogen and progesterone notably influence learning and memory. Estrogen and progesterone receptors are found in brain areas involved in learning (e.g., amygdala, hippocampus, and hypothalamus) and estrogen and progesterone induce structural and biochemical changes in the brain that support learning and memory. Previous research indicates that these hormones may enhance emotional, auditory, and visuospatial short-term memory. However, this research is limited by a failure to consider variables such as type and dose of CHC, which affect reproductive hormone levels. Because naturally cycling women experience fluctuations in estrogen and progesterone during the menstrual cycle, and because CHCs of the monophasic type produce constant levels of estrogen and progesterone during most of the menstrual cycle but extremely low levels at the end, women who take monophasic CHCs experience higher levels of female reproductive hormones at certain points of the menstrual cycle and lower levels at other points compared to naturally cycling women. The present study is designed to examine the effect of monophasic CHC-induced changes in estrogen and progesterone on visual short-term memory. We hypothesize that estrogen and progesterone will have an ameliorative effect. The design is a 2 (CHC or no CHC) x 3 (Day 1, 16, or 23 of the menstrual cycle) between-subjects factorial design. Participants will be 120 female BSC students, aged 18-25 years. Data are currently being collected. The results will provide important information about the hormonal basis of memory and augment our understanding of how CHCs alter cognitive processes such as short-term memory.

The Female Badge: Womanhood and 21st Century Crime Dramas

Michele Pawlak, WGS 499: Feminism and Crime
Procedurals

Faculty Mentor: Professor Meg Knowles, Communication

This project asks how the fictional women characters in 21st century crime dramas represent modern womanhood in relation to postfeminism. Through close reading and comparison, it examines how two main characters: Olivia Benson of *Law & Order: Special Victims Unit* and Jane Rizzoli of *Rizzoli & Isles*, and a secondary character: Joss Carter of *Person of Interest*, interact with current definitions of postfeminism. The comparison focuses on gendered space, motherhood, and the intersection of gender, violence, and romance to ascertain how these women align with postfeminist discourse. The conclusion of this comparison finds that while all three women engage in some postfeminist behaviors, they also reject postfeminism. A study of postfeminist theory is included in the project, including contradictions in its definition. Each of the three characters is considered in relationship to major writings by authors in that field. My presentation shows its most salient finding: how women characters in crime dramas are in flux. While they paradoxically accept and reject postfeminism, they also exist at a time that does not have a cohesive definition for postfeminism. Because of this, these three women exemplify the way representation of womanhood is changing in crime dramas—moving toward post feminism and away from preconceived gender stereotypes.

The Future of DNA: A Science and Law Approach to Acceptable Methods of Analysis

E. Elise Cloutier, PSC 499: Independent Study
Faculty Mentor: Professor Florina Altshuler, Political Science

As technology used to interpret DNA evolves and becomes more sensitive, new methods of analysis are periodically introduced. STRmix is a method of analysis developed primarily for the interpretation of mixed DNA samples up to five persons. The use of STRmix in interpreting complex samples is endorsed by the FBI and utilized in select laboratories in New York State, including the Erie County Forensic Lab. In this paper, I will provide a brief introduction to the history of DNA analysis before addressing the STRmix method and its common uses. Critics argue that methods of DNA analysis developed to interpret mixed or complex samples are, to some degree unreliable, posing a potential threat to innocent people accused of crimes. Citing both scientific research and case law, I will argue that methods of analysis such as STRmix are not dubious, but are rather powerful tools allowing law enforcement to test and interpret DNA more efficiently. Finally, I will propose that Erie County's success with the use of STRmix should serve as a model to guide the

unification of New York State on the issue of legally acceptable DNA technology.

Germ Theory and Infectious Disease: Death in Buffalo, New York

Emily Hurley, ANT 418: Seminar in Physical Anthropology
Faculty Mentor: Professor Julie Wieczkowski, Anthropology

Before the 1880's, doctors in Buffalo, New York did not practice regular hand washing or know that bacteria causes infectious diseases. Two doctors—Oliver Holmes and Ignaz Semmelweis—laid the groundwork for more caution to be taken regarding germs in the medical field. I chose to study the number of infant deaths due to infectious disease in Buffalo, New York during two different time periods: 1870 to 1875 and 1890 to 1895. These two time periods represent about ten years before and ten years after the introduction of handwashing and germ theory to the Buffalo area. I hypothesized that more infants died of infectious disease in the earlier time period. I conducted my research at the Margaret L. Wendt Archive and Resource Center at Forest Lawn Cemetery in Buffalo, New York which houses the death registers of the cemetery dating back to 1853. I recorded names, age, cause of death, and date of death for 50 individuals from each time period. My results showed a larger number of infants who died of infectious diseases from 1870-75. These results concluded that there were more infant deaths from infectious diseases before the introduction of handwashing and germ theory to Western New York.

HAMAS and ISIS: Leaders in the Innovation of Child Warfare

Michelle Viera, HON 400: All College Honors Colloquium
Faculty Mentors: Professor Clarissa Breen, Criminal Justice and
Professor Michael Johnson, Modern and Classical Languages

HAMAS and ISIS, have grown due to the recruitment and radicalization of youth. ISIS used child soldiers for combat and propaganda. These children were primarily those of foreign fighters that were either born or brought into the organization. On the other hand, HAMAS does not recruit or use children of foreign fighters. The children soldiers of HAMAS have been born and raised inside the organization, which controls their homeland. The youth have been exploited, trained to use weaponry, and radicalized like the children of ISIS. Although recruiting and using children in war under the age of 15 is prohibited under international humanitarian law, ISIS and HAMAS still use the youth as soldiers and show no signs of stopping. This research analyzes the work of Mosab Hassan Yousef and David Bedein to determine the inner workings of HAMAS. It will also analyze research conducted by the National Coordinator for Security and Counterterrorism (NCTV) and the General Intelligence and Security Service (AIVD) to study ISIS and its

recruitment and radicalization of the youth.

Have You Heard of Leadership Buffalo?

Madeline Hardy, HON 400: All College Honors Colloquium
Faculty Mentor: Professor Deborah Silverman, Communication

Leadership Buffalo is a non-profit organization here in Buffalo, N.Y. Its mission is to unite leaders from diverse backgrounds to take action through collaborations, community awareness, and civic engagement. Through its five programs, Leadership Buffalo increases leaders' knowledge of their community issues, broaden their vision, and enhance their ability to lead. More than 3,000 individuals have graduated from these programs and Leadership Buffalo has been able to expand Western New York's social capital. Although Leadership Buffalo has been serving the Buffalo community for 31 years, it is always looking for ways to become more well known. Leadership Buffalo is always looking to recruit all types of business leaders and professionals in Western New York. Its leaders are interested in a public relations awareness campaign targeting young adults and adults ages 18-65. Secondary research, such as interviews of the organization's files, and primary research, including a survey, focus group, and content analysis will be conducted to learn more about the organization and its key publics. The research will be followed by the development of communication goals and objectives, communication strategies, message strategy, tactics that include a timeline, budget, and finally an evaluation.

The History of Jeppson's Malört: From Prohibition to Chicago Staple

Andrew Pothier, HIS 400: Senior Seminar in History
Faculty Mentor: Professor Bridget Chesterton, History and Social Studies Education

This research project explores the curious ascension of Jeppson Malört, a brand of brännvin - Swedish style wormwood liquor - produced by the Carl Jeppson Company of Chicago, Illinois. This research considers Jeppson's From its earliest production and marketing, by Carl Jeppson, a Swedish immigrant to the United States in the early 1900s, to a legal medicinal beverage during prohibition, and later to its present-day cult-beverage status in Chicago. It is, however, Malörts relative regional-centric acclaim that raises the essential question of this research. First, how is it that Malört became a cultural staple - a Chicagoans right-of-passage beverage, so to speak - yet remain relatively unheard of outside of Illinois? Second, considering its bizarre taste profile that seemingly lasts on the palate for an eternity after initial consumption, how did it survive the competitive landscape of more marketable alcoholic beverages? Through consulting a diverse collection of sources, with an emphasis on visual marketing campaigns from the mid-1930s to the present, this research will present that the

curious and endured success of Malörts was the bi-product of Chicago's diverse demographics and a unique marketing campaign, which embraced its one-of-a-kind character. The final presentation of this research will include both a visually informative poster as well as an accompanying oral description that will emphasize some of the overarching themes. Ultimately, the visual and rhetorical description of the topic will present that the significance of this research rests in its eager approach to the unasked question regarding Malörts historical trajectory.

The Impact of State Mood, Personality, and Driving Habits on Perception of Spacing in the Traffic Environment

Summer Oliver, Psychology
Faculty Mentor: Professor Dwight Hennessy, Psychology

The purpose of this research is to understand the impact of state mood, personality, and typical driving habits on people's perception of spacing in the traffic environment – to determine if negative mood states created by frustrating tasks, can alter front and rear driver space preference in a simulated driving event. Participants initially complete questionnaires to measure personality and driving tendencies. Then they are given a puzzle task (randomly assigned as either easy or unsolvable in order to vary task frustration) to complete within a two minute time limit, followed by a measure of state mood. Previous research has shown that the unsolvable puzzle task tends to create short term frustration and negative mood. Finally, participants view two videos filmed in real traffic conditions as one vehicle approached a second vehicle from behind on a four lane divided highway. One was filmed from the viewpoint of the trailing car and the other from the perspective of the lead car. They are asked to stop each video at the shortest distance where they would no longer feel comfortable if they were the driver of the vehicle in each video. These distances identify front and rear space preferences. Data collection for this study is currently ongoing.

The Influence of LSD on Album Art During the 1960s

Felix Jaramillo, HIS 400: Senior Seminar in History
Faculty Mentor: Professor Bridgete Chesterton, History and Social Studies Education

Changing the sound, message, and aesthetics of rock 'n' roll lysergic acid diethylamide – commonly known as LSD – became popular in the music scene during the 1960s. Because the drug altered perceptions of sound, sight, time, and space, it inspired the work of numerous influential artists during this time. Working under the influence of and inspired by the drug, artists and bands changed the form and feel of the music played, album art, concert experiences, and posters as they paid homage to the life altering experiences they had while “tripping” on LSD.

This project studies album covers of a number of various bands and their associated show flyers from the 1960s, as well as using supporting biographies, interviews, and songs to explore how LSD influenced the development of rock 'n' roll. Key elements of the psychedelic album artwork and flyers during the time include swirling images with figures that melt into one another, bright vivid colors, repetitive halos, and geometric patterns. The new and innovative music that was being produced by musicians who regularly took LSD also inspired artists such as Wes Wilson, who ultimately designed a number of iconographic show posters for The Fillmore in San Francisco during the 1960s. These innovative arts that stemmed from use of LSD also drew inspiration from both artistic movements of the past such as Dadaism, Surrealism, Futurism, and Cubism, and from spiritual artistic traditions from the Eastern Hemisphere.

Interspecies Relationships in a Mixed-Species Rainforest Exhibit

Noah Rothberg, ANT 322: Research Methods in Primatology
Faculty Mentor: Professor Julie Wieczkowski, Anthropology

I observed behavioral habits and interactions of three species within a mixed-species rainforest exhibit at the Buffalo Zoo. The exhibit housed three common squirrel monkeys (*Saimiri sciureus*), two black capped squirrel monkeys (*S. boliviensis*), and two black howler monkeys (*Alouatta caraya*). In an exhibit with three species of monkeys, how much time spent on exhibit do the various species interact with each other, compared to within their own species? Over a course of three weeks, interspecific and intraspecific behaviors were observed and recorded. I recorded proximity and time spent doing certain behaviors with a five-minute group scan sample. From the group scan data I calculated time budget, percent of behavior with a neighbor, which was considered to be within arm-to-arm length, and percent time with neighbor and with whom. I recorded and calculated rates per hour of social interactions and percent of time spent in behavioral states via all occurrences observations. Interactions between the squirrel monkeys and the black howler monkeys were never observed. Whenever the black howlers had a neighbor, it was another black howler. However, this intraspecific observation was not true for both species of squirrel monkeys. Multiple interactions between the common squirrel monkeys and the black capped squirrel monkeys were observed. The majority of interactions between the two squirrel monkey species were affiliative with a few aggressive interactions. Resting, inactive, and to a point feeding behaviors were observed the most while the squirrel monkeys had a neighbor. Most interactions for the howler monkeys came when the individuals were inactive or social. During the observation period there were more conspecific interactions than congeneric interactions recorded.

Iwen: Color as the Essence of Being in Ancient Egypt

Rachael Donohue, HON 400: All College Honors Colloquium

Faculty Mentors: Professor Lisa Marie Anselmi, Anthropology and Josephine Adamo, Ph.D., Senior Academic Adviser

Today, in a world where thousands of commercial dyes are available, it is hard to imagine a time where colors were limited and expensive. Ancient Egyptians, during the Old Kingdom, were advanced for their time when it came to dying materials. Most of their pigments were made from minerals acquired through trade. Once in Egypt, these minerals were ground into a fine powder and then mixed with a medium to create a paint or cosmetic product. My research explores the methodology of Egyptian pigmentation and the experimental recreation of the process itself. This poster will discuss the difficulties presented during this research as well as my thoughts on what it was like to be a pigment maker in antiquity.

John Winthrop: The Start of American Exceptionalism

Olivia Harbol, HON 400: All College Honors Colloquium
Faculty Mentors: Professor David Carson, History and Social Studies Education and Josephine Adamo, Ph.D., Senior Academic Advisor

John Winthrop came to the New World with a few valuable things: himself, his religion, and his infamous sermon "City Upon A Hill". All three of these were interconnected and helped shape his community. As the first governor of the Massachusetts Bay Colony, John Winthrop knew he needed to set an example. This aided the idea to permeate into American culture for the entire history of our nation. Winthrop's, "City Upon A Hill" is all about being a well behaved, hardworking citizen. The idea has become molded into American exceptionalism. The West was settled with this mentality. What started as a way to motivate citizens to be the best has erupted into a messed up mindset that isn't even true anymore. This is a study of how America has kept the same mentality but not the same actions. There will be a focus on the Massachusetts Bay Colony and the settlement of the West in the United States.

Law Enforcement Support Services

Meegan Petrucci, Criminal Justice
Faculty Mentor: Professor Robert Delprino, Psychology

Law enforcement is an integral part of the society in which we live. On a daily basis law enforcement officers encounter numerous high stress situations. The inherently stressful nature of this job can lead to adverse physical and psychological effects. Agencies do provide support services for their officers. However many officers do not use these services. By utilizing

support services, officers may feel that they will be perceived as unfit or unable to handle the demands of the job. A survey was conducted of two local police agencies to investigate awareness of departmental support services as well as officers' willingness to use services. The two agencies differed in the number of officers employed and in the type of population served. Comparisons are presented of awareness and utilization of services as well as officers' perceived occupational stress levels and work family conflict. Officers from the larger agency which served the general public, reported a significantly lower awareness of services as well as a lower desire to use available services. Officers from this agency also reported greater concerns with the use of services such as confidentiality and coworkers perceptions. In addition these officers reported greater conflict between their work lives and family lives. Officers from the two agencies did not differ in the amount of job related stress they reported. However for officers from the larger agency, greater work and family conflict was significantly correlated with higher job stress, less of a desire to use services and greater concerns related to the use of services.

Let's Weigh the Risk: The Economics of Gun Control

Ngozi Ukonu, HON 400: All College Honors Colloquium
Faculty Mentors: Professor Fred Floss, Economics and Finance and Professor Michael Johnson, Modern and Classical Languages

Today the availability of firearms has become an epidemic in America. Countless lives have been lost over the years, due to the lack of gun control. This poster will look at the questions: does gun control work, and if so, what is the difference between states with and without gun control? The research completed in this project will also examine the value of a national gun control system, using data from the Unified Crime Reports and the American Community Survey a linear regression analysis will compare states with and without gun control statutes. Finally, this research will look at violence in America in comparison to other countries and whether gun control is a determinant of violence in a society. The information provided will help in the understanding of whether current gun control statutes are effective in the United States.

Love and Lust: Relationship Perception Based on Eye Fixations

Emily Waldron, Psychology
Faculty Mentor: Professor Stephani Foraker, Psychology

Recent research in psychology establishes eye gaze measures as a means of observing differences in perception of romantic love compared to sexual desire (Bolmont, Cacioppo, & Cacioppo, 2014). One explanation for the love-desire difference comes from embodiment theory, in which mentally simulated experiences

assist our perception of other people. My experiment expanded on this explanation by investigating what role empathy plays in embodiment. I also examined whether gaze patterns would change due to one's own sexual orientation or the sexual orientation of the couple pictured. Using an eye-tracker, participants viewed 64 images for 4 seconds each and then completed an empathy scale. For romantic love pictures, I found that participants who scored higher on empathy spent less time fixating on the faces, and this empathy effect was stronger for heterosexual participants than non-heterosexuals. For sexual desire images, I found fewer fixations to faces when viewing a couple of your own sexual orientation (e.g., non-heterosexual participant viewing non-heterosexual couple). My findings are consistent with embodiment theory because empathy and sexual orientation both made it easier to perceive and evaluate relationships.

Major League Baseball's Chewing Tobacco Renaissance of the Late Twentieth Century

Collin Kitcho, HIS 400: Senior Seminar in History
Faculty Mentor: Professor Bridget Chesterton, History and Social Studies Education

This project considers why smoking tobacco fell out of favor in Major League Baseball in the 1970s and why players replaced it with smokeless tobacco. Tobacco has had a place in baseball since organized baseball began in the 1870s. Smokeless tobacco rates were steadily declining in favor of cigarettes before the 1970s. This changed after further studies showed the dangers of cigarettes and baseball players reacted to those findings with using smokeless tobacco as a substitute. Sources and information that have been obtained include newspaper/magazines that contain articles and advertisements of baseball players and smokeless tobacco. Other sources include radio and television advertisements of baseball players with smokeless tobacco. The sources outline tobacco and its surrounding culture among baseball players in the 1970s and early 80s. Because in 1970 President Richard Nixon signed into law a ban on cigarette advertisements on the radio and television, the dangers of smoking became publicly known and led to a decrease of smoking. This however, gave way to more use of smokeless tobacco with advertisements still played on television and radio. The added attention to smokeless tobacco due to the negative publicity surrounded by cigarettes impacted baseball by which the players used it as a substitution over cigarettes. This is demonstrated with advertisements of smokeless tobacco in the 1970s and 80s that included numerous baseball players. My poster will include pictures of smokeless tobacco advertisements in addition with Major League Baseball players who used smokeless tobacco in the 1970s/80s. My presentation includes

evidence of a correlation between the effects of a hard push on smoking prevention and the increase of smokeless tobacco among baseball players.

Manufacturing and Economic Development in the Buffalo-Niagara Falls Metropolitan Area

Shenese Patterson, Sociology

Faculty Mentor: Professor Vida Vanchan, Geography and Planning

The purpose of this research is to provide an in-depth analysis of the manufacturing sector as a key contributing factor to economic growth and decline of the Buffalo-Niagara Falls Metropolitan Area from the 1950s to present. The data for this study come from the U.S. Census Bureau, Bureau of Economic Analysis, and US Department of Labor. Evidence indicates that the manufacturing sector in Buffalo was the biggest employer and is responsible for both the city's economic prosperity in the early 1950s as well as its decline since the 1960s. It also underscores the significant contribution of this sector and discerns the types of manufacturing activities that have contributed to the area's economic growth and decline. Furthermore, the evidence illustrates a sectoral transformation that has taken place in this rust belt city.

Modern Terrorism: Moving on from 'Religious' Terrorism

Stephanie Hadley, PSC 470: Senior Seminar

Faculty Mentors: Professor Peter Yacobucci, Political Science and Professor Mehwish Sarwari, Political Science

Religious terrorism has dominated the discussion on modern terrorism, placing an overemphasis on religion and often disregarding the other factors at play. This article moves away from the discussion on religious terrorism and aims at analyzing the environments and causal factors that increase the risk of terrorism within a state. This article presents the argument that terrorism is more likely to occur within Islamic majority states that have a history with Western colonization, influence, and military presence. This argument will be tested using an independent data set compiled with data from the Global Terrorism Database (GTD) and the World Bank. An OLS regression model will be employed to test the presented hypotheses.

The New Rwanda

Wilfried Folaranmi, Business

Faculty Mentor: Professor Jo Yudess, Creative Studies

Approximately 800,000 Tutsis and Hutus were slaughtered in organized programs of genocide over 100 days in 1994, the worst of many years of violence between Tutsis and Hutus. My research

explores the changes Rwanda has made since the genocide and if those changes were efficient and effective. My research will scout the methods Rwanda is using to rebuild their country in terms of the previous violence, economy, youth, and women leadership. I also want to understand the changes to the justice system and government post-genocide and how those changes helped Rwanda rebuild. Before traveling to Rwanda, I will conduct interviews with individuals who have traveled to Rwanda and how they feel about the direction in which the country is heading. I will be using previous research from Google Scholar and other information through the library that pertains to my research before my trip to Rwanda. I would also like to conduct a survey to get an idea of what students know about Rwanda, their progress and the direction the country is heading. Six months ago, I only felt fear when Rwanda was mentioned because of its history and the lack of news coverage of poor African countries. I was shocked to learn that Rwanda is becoming a developed country and was recently labeled as one of the safest places in the world. My research will document reasons Rwandans are using certain methods to rebuild. This research can be utilized as an example to other countries in times of crises and what steps they may take to rebuild trust and lift up their country. I also hope my methods will encourage other students to do research.

Parental Perceptions of Children With and Without Learning Disabilities

Leah Janikowski, PSY 499: Independent Study

Faculty Mentor: Professor Jill Norvilitis, Psychology

The current study examined parental perceptions of children with and without learning disabilities. Participants were recruited through two separate Amazon MTurk jobs, one seeking parents of children aged 8 to 13 with learning disabilities and one simply seeking parents of children ages 8 to 13. The participants completed the survey through Qualtrics. Of the 235 participants, 124 had a child with a diagnosis. Parents of children with diagnoses reported that their children were less motivated and responsible, and they reported lower parental satisfaction. Among parents of children with diagnoses, those who perceived more stigma reported less parental satisfaction and happiness. They also described their children as less responsible and motivated. Overall, parents of children with learning disabilities report more negative views of their children and their own parenting. Further, the results indicate that experiencing stigma is related to negative perceptions in parents of children with learning disabilities. Although these data are cross-sectional and not causal, this may indicate that the experience of stigma is an additional stressor for parents, leading to more negative views of their children. This may suggest that preventing stigma can increase the quality of life for parents of children who have a diagnosis.

Perceived Stress and Spending

Haylee Clark, PSY 499: Independent Study
Faculty Mentor: Professor Jill Norvilitis, Psychology

Research shows that perceived stress potentially has an influence on behavior. Studies have suggested that students in particular make maladaptive decisions when dealing with financial hardships. The purpose of this research study is to examine how perceived stress affects financial decisions in college students. The hypothesis of this research study is that when a financial hardship is perceived to be more upsetting, participants will make more extreme financial decisions. This research study is a true experiment that manipulated how extreme the financial hardship would be perceived to be. Creating two versions of scenarios, one manipulated and one not, data can be easily compared to control for perceived stress. Versions of scenarios will be randomly assigned. Data collection is ongoing and results will be presented. It is expected that results will show a significant correlation between perceived stress and decision making, and support our hypothesis.

Post-Soviet Trials: Polarization and its Effect on Economic Growth

Jonah Garland, PSC 470: Senior Seminar
Faculty Mentor: Professor Peter Yacobucci, Political Science

Since the collapse of the Soviet Union, many post-communist states have undergone significant socio-political change. In the absence of the USSR's totalitarian and communistic regime, the rise of opposing parties in said nations' governments has created an environment ripe for factional polarization; that is, the unyielding divisiveness between two or more ideological political parties. This research project will explore the nature of said polarization in post-communist politics, and will seek to answer one very direct question: To what extent does polarization in former communist states hinder their economies' growth? To answer this question, this project closely examines the entirety of the former Soviet bloc, comprising twenty-eight present day states. In each individual case, the state's regime will have its polarization levels evaluated and compared to economic development (or lack thereof). In addition, other intervening factors will be included in the analysis to isolate the direct impact of polarization on economic development. It is expected that as polarization increases within a country, holding all other factors constant, its economic development will be retarded. The implication of my findings will be assessed on democratic advancement and theory.

Predictors of Jurors' Verdicts in Criminal Trials with Police Officers as Defendants

Talea McCalman, PSY 499: Independent Study
Faculty Mentor: Professor Jennifer Hunt, Psychology

When police officers kill Black men or other racial minorities, they often do not go to trial, and even when they do, it often does not lead to a conviction. When jurors determine verdicts for these cases, their personal beliefs may influence their decisions. In this study, we are examining how individual differences relate to trial judgments for police defendants. We hypothesize that African-Americans will be more likely than Whites to convict police defendants. People who have positive personal experiences with the police will be more likely to acquit the defendant. We also hypothesize that convictions of police officers will be negatively correlated with social dominance orientation, authoritarianism, and dangerous and threatening worldviews. Convictions of police officers for killing minority civilians are also expected to be negatively correlated with symbolic racism (anti-Black bias) and tolerance of racism. This study consists of two parts and is being conducted online. In the first part, the participants fill out individual difference measures and demographics. A week later, the participants read summaries of 4 trials in which police officers have killed minority civilians in different contexts. For each trial, they render verdicts and make other trial judgments. Data collection is underway, and results will be reported.

The Predictive Effect of Eating-Induced Anxiety Reduction on Weight Gain

Michelle Corieri, PSY 295: Stress Eating and Weight Gain
Faculty Mentor: Professor Naomi McKay, Psychology

Previous findings have shown that increased stress levels will increase energy intake (Epel et al. 2001; Tryon et al. 2013). Those experiencing stresses tend to increase their consumption of foods that are high in fat and carbohydrates (Epel et al., 2001; Tryon et al., 2013). The change in macronutrient intake is a likely cause of obesity because people who experience chronic stress have an elevated body mass index (Roberts et al., 2014; Tomiyama et al., 2011). There are clear findings that stress affects food intake, but the reason behind the increased food intake has not been established. The current research is a follow-up to an experiment that measured the change in anxiety after eating an unhealthy or healthy food item. This is the first year of a three-year follow-up study. Long term results of this study will give further understanding of weight gain due to stress. The hypothesis is that suppression of anxiety in response to eating will be predictive of weight gain over time. During their visit participants had their height and weight taken. Then, participants completed a Cohen's 10-Factor Perceived Stress Scale to measure their stress levels. They also completed a Demographic questionnaire. The participants blood pressure and heart rate will be measured.

The expected results of this study will show that the individuals that have reduced anxiety in response to eating will have higher weight gains compared to those who did not experience lessened anxiety from eating. The main conclusion of this study is that stress eating results in increased weight gain over time.

The Prevention and Treatment of Alzheimer's Disease

Holly Seager, NFS 330: Integrative and Functional Nutrition
Faculty Mentor: Professor Suk Oh, Health, Nutrition, and Dietetics

Alzheimer's disease is a permanent, progressive brain disorder that gradually destroys memory retention and thinking ability, which eventually leads to the inability to carry out every day activities. Alzheimer's is currently the sixth leading cause of death in the United States and most people who have the disease start to show symptoms in their mid-60. With statistics like this one may ask is there anything that can prevent this disorder from happening or is there something out there that can treat it? I conducted a literature review on AD to explore if we can delay, prevent or treat the disease. There is currently no cure for AD, and unfortunately previous trials to prevent the disease have not been successful. However, there are several leads to prevent or delay the progress of AD if the disease is diagnosed early. This is the focus of my research as a dietetics and nutrition student. The Alzheimer's Association is exploring the influence of exercise, diet, and social and mental intervention to stimulate brain activities. I theorize that the use of docosahexaenoic acid (DHA) along with antioxidants rich foods such as fresh vegetable and fruits that are rich in polyphenols may delay progress of AD and/or prevent the disease. I discuss these findings and other factors like nutritional effects on Apo E polymorphism (apoE2, apoE3 and apoE4).

Procrastination in Statistics Students

Leah Janikowski, Nicolas Giorgianni and Paul Jones,
PSY 488: Internship
Faculty Mentor: Professor Howard Reid, Psychology

Psychology students often report that they are not enthusiastic about taking the required statistics course in their major, and they find it to be anxiety-inducing. One behavior that is related to anxiety is procrastination. The purpose of the current study was, therefore, to explore procrastination tendencies in psychology students currently enrolled in statistics. We found that seniors scored lower on a procrastination scale than other students, and they reported that they began studying for statistic tests earlier. Further, those participants, regardless of class, who reported low levels of procrastination also reported that they began studying for exams earlier. In addition, we found that the female participants believed they would be less likely to use statistics in their future careers. Finally, as expected, exam scores on the first

exam were positively correlated with scores on the second exam, and scores on the second exam were positively correlated to scores on the third exam.

Psychological Factors Associated with Self-Handicapping as a Drinking Motive

Leah Waldman, Psychology
Faculty Mentor: Professor Michael MacLean, Psychology

College students can face an enormous amount of pressure to succeed academically, both from external sources as well as from themselves. This pressure can be overwhelming, particularly if they have low academic self-efficacy and experience high levels of academic stress. Furthermore, a fixed mindset regarding whether their intelligence and ability to succeed academically is a stable trait rather than one which they can improve on, as well as high levels of vulnerable narcissism, may cause them to be reluctant to fully test their capabilities. In order to diminish this pressure, they may engage in self-handicapping by drinking alcohol. However, evidence shows that self-handicapping (creating impediments to your own performance to protect self-esteem by discounting responsibility for failure and enhancing the impact of success) is a valid drinking motive predictive of alcohol-related problems in college students. This study evaluates the measure of self-handicapping as a drinking motive, as well as which traits may be associated with an individual's tendency to endorse it. Participants, which will include at least 200 college students recruited from Buffalo State, Reddit Sample Size, and Amazon MTurk, will voluntarily complete an online questionnaire. We predict that participants who engage in self-handicapping as a drinking motive will demonstrate significantly lower academic self-efficacy and higher perceived academic stress and academic pressure (both from external and internal sources such as parental pressure and fear of failure), as well as a fixed mindset, and vulnerable narcissism. The results may provide important implications for prevention efforts.

Racial Dating Preferences Among Heterosexuals and Homosexuals

Grissel Henriquez, Psychology, **Natasha Hausle**, Psychology, **Ty-Tiyanna Purvis**, Psychology, **Jill Meyer**, Psychology, **Aishwarya Patwardhan**, Psychology and **Faith Balento**, Psychology
Faculty Mentor: Professor Naomi McKay, Psychology

Differences in the racial preferences of homosexuals and heterosexuals have been observed in previous studies, as well as those between racial backgrounds. The differences that have been observed have been focused on one racial background with both homosexuals and heterosexuals, while others have focused on comparing two racial backgrounds with one sexual orientation. The current study will be looking at racial dating and friendship

preferences between both sexual orientations across four racial groups (Caucasian, Hispanic/Latinx, African American, and Asian). This questionnaire study will include questions on interracial contact, types of experiences with other racial groups and personality. It is predicted that 1) the race that is least preferred for dating or friendship will be due to a bad experience that the individual has encountered with that particular race and 2) individuals with high interracial contact will be positively correlated with having dating or friendship preferences for other races. This study can show that preferences are based on multiple factors and can help eliminate the conclusion that when someone does not prefer a particular racial background it is not due to what many may think.

The Relationship Between Food Intake and Mood States

Heather Mackert, Psychology

Faculty Mentor: Professor Naomi McKay, Psychology

Recent research indicates that food preference can be affected by mood states. For example, positive affect is correlated to preference for healthier foods, while negative mood states contribute to cravings for indulgent foods (Garg, Wansink, and Inman 2007). Evidence remains uncertain as to whether the consumption of healthy or unhealthy food items significantly affect ratings of specific mood states. The current hypothesis was that food intake (carrots or a Twix candy bar) would affect ratings of the mood states, tension, fatigue, anger, and vigor. Upon entering the laboratory, participants (n=77) were instructed to fill out a consent form. Participants had their height and weight recorded, followed by rating their moods tension, anger, vigor, and fatigue. Participants were then put into one of four conditions: eating an entire Twix candy bar, eating an entire portion of carrots, reading a magazine, or sitting quietly. Each condition had a duration of five minutes. After the condition was finished, participants rated mood states a second time. The results showed that participants who consumed carrots (as opposed to a Twix candy bar) reported less fatigue ($p=.048$). Sitting quietly significantly decreased vigor ($p=.001$). Aggregating this data allows for an expansion in what is known about the effects of food intake.

School Psychology: Dealing with Dyslexia

Julia Echtenkamp, Sarah McGinnis and Steffon

Townsend-Baldwin, PSY 421: Physiological Psychology and HON 400: All College Honors Colloquium

Faculty Mentors: Professor Naomi McKay, Psychology and Professor Michael Johnson, Modern and Classical Languages

This project is an in depth overview of the current scholarly literature surrounding the physio-psychological nature of dyslexia. Dyslexia is a learning disability characterized mainly

by difficulties reading and spelling. Those with dyslexia are also often creative thinkers with increased reasoning abilities. The etiology of dyslexia is mainly associated with genetic neurological factors, although studies have shown that environmental factors such as drug use during pregnancy may increase risk in the child. Dyslexia has an effect on several structures and chemicals in the brain. Specifically, differences in the volume of various brain structures, such as the cerebellum and the pars triangularis, is explored. Abnormalities in functional connectivity in the brain is also explored. Research has shown that those diagnosed with dyslexia demonstrate impaired connectivity between the Visual Word Form Area and portions of the left hemisphere traditionally related to language, suggesting that this connection is essential for processing written language. Remarkably little research has been done focusing on chemicals in the brain related to dyslexia. Some research has shown that dyslexic individuals possess higher levels of glutamate and choline. More research is clearly required in this area.

The Self-Medicating Military: Marijuana Use by American Soldiers During the Vietnam Conflict

Jeremy Yavener, HIS 400: Senior Seminar in History

Faculty Mentor: Professor Bridget Chesterton, History and Social Studies Education

My research will focus on Marijuana use by United States troops during the Vietnam Conflict. During the conflict, American troops had cheap, easy access to all types of drugs - with marijuana arguably the most popular. However, it is a wide misconception that all soldiers smoked marijuana during the conflict. It is equally as wrong to assume that any soldiers who smoked marijuana only did so because they were hippies, political activists or pacifists. Though some undoubtedly did smoke for those reasons, much of my research has demonstrated that the majority of soldiers smoked in an effort to relax after experiencing combat. It mitigated the intense mental stress and fatigue caused by being in a combat zone. Studying memoirs of soldiers that consumed or observed others consuming marijuana I am able to draw conclusions about why troops consumed the drug during the conflict. My presentation will explain and depict the various motivations behind why some soldiers indulged in smoking marijuana, further debunking the myth that every American soldier in Vietnam was addicted to drugs and only got high to make a political statement.

Shea's Buffalo: Michael Shea's Legacy in Early Buffalo

Carly Kritz, HIS 300: Research and Writing Seminar
Faculty Mentor: Professor Bridget Chesterton, History and Social Studies Education

Scholars have long recognized the influence of Michael Shea in Buffalo's early theater history. No theater has surpassed Shea's in terms of production and revenue in a prodigious 85 years. Shea's Buffalo first opened its doors as a moviehouse and vaudeville stage to the public on January 16, 1926. This was the beginning of a new era of popular entertainment for the people of Buffalo and Western New York. If they had not already, people started labeling Michael Shea as the "premier showman" the area. When reviewing theaters in early Buffalo it is easy to identify the key moments in entertainment history. Shea's Buffalo led the way for the City of Buffalo to become a center for theater. Without the presence of this theater, Western New York would never have developed the rich cultural it currently has. Even so, Buffalonians today do not recognize the importance of theater in the city's past; this may be because they are more familiar with other forms of entertainment, or maybe because they never knew of Michael Shea. Michael Shea's passing, however, created a mythical national icon that added to his legacy and can be shown in his obituaries across the nation. Michael Shea gave Western New York more than just a theater. He was responsible for connecting Buffalo to the national entertainment industry. This study highlights Shea's legacy immediately after his death, studying national obituaries that recognized Shea as a visionary. With a pioneer like Shea's it is no wonder Shea's Performing Arts is alive and thriving today. Michael Shea's opening of Shea's Buffalo undoubtedly marked the beginning of a legacy that would impact the lives of the people of Buffalo forever; he was also remembered nationally as the man who changed the industry.

Social Media and Self-Esteem: I Will Follow

Myranda Reinard, HON 400: All College Honors Colloquium
Faculty Mentors: Professor Jean DiPirro, Psychology and Professor Michael Johnson, Modern and Classical Languages

Social media plays a fundamental role in many contemporary interactions, especially among the younger generations. Social media has grown to be a tremendously popular way to get in touch with new friends and keep in touch with old ones. Interesting data have revealed that using social media can alter an individual's self-esteem. For example, one study indicated that participants who regularly used the social media platform Facebook had lower self-esteem than those who did not use Facebook. This finding and others like it can be explained using the social comparison theory (Festinger, 1954).

The social comparison theory states that people determine their own worth, both social and personal, by comparing their lives to the lives of those around them. This theory can be used to explain how social media, which gives people access to countless others to whom they can compare themselves, can so profoundly influence self-esteem. The present analysis is designed to apply the social comparison theory to existing self-esteem research, in particular recent studies, in order to examine the ways and the circumstances in which social media affects an individual's self-esteem.

Starving Themselves: Comparing Treatments for Anorexia Nervosa

Noah Groves, HON 400: All College Honors Colloquium
Faculty Mentors: Professor Michael Zborowski, Psychology and Josephine Adamo, Ph.D., Senior Academic Advisor

Anorexia Nervosa is an eating disorder that is destructive to the lives of at least 0.4% of the population. The majority of those afflicted are female at a rate of 10:1. The disorder is categorized by debilitating eating pathology. Included in this are rigid restrictions on food consumption, morbid weight loss, distorted body image and intense fears of gaining weight or being considered fat. In the field of clinical psychology, there are a number of treatments that have been shown to be effective in helping those afflicted. The focus of this literature review is to determine the effectiveness of clinical therapies in the treatment of Anorexia. The empirical literature on treatments include Psychotherapy, Cognitive Analytical Therapy (CAT), Cognitive Behavioral Therapy (CBT), Educational Behavioral Therapy (EBT), Cognitive Remediation Therapy (CRT), Family Behavioral Therapy and pharmacotherapy. Although these treatments have been shown to be effective, Anorexia Nervosa is a relatively insufficiently studied disorder and few treatments have shown relative superiority and/or enduring results. The typical measurement of effectiveness for Anorexia treatment is often isolated to weight gain, without sufficient attention to other variables that may be causally relevant. Moreover, the results are further complicated by the presence of additional variables ranging from co-morbid conditions and other barriers to treatment and treatment-seeking (e.g., resistance to treatment and/or weight gain). Results show treatment to be significantly but variously effective in treating Anorexia, and will be reviewed herein.

Student Engagement Moderates Effects on Anxiety and Depression

Kimberley Philander, PSY 499: Independent Study
Faculty Mentor: Professor Naomi McKay, Psychology

Many studies have shown the effects of academic involvement in response to depression and anxiety. Previous findings suggest

that academic involvement in school have a positive effect on test anxiety. Other studies have found that school involvement has a negative relationship with depressive symptoms. No study has looked at both academic and external engagement of students in regards to depressive states, chronic stress, and anxiety. The goal of this study was to determine the effects of academic and extracurricular activities on anxiety, stress and depression. The hypothesis was that students who are either more engaged in school or extracurricular activities are more likely to have higher anxiety levels and show more depressive symptoms than those who are not as involved. The sample was made up of students who were registered for psychology classes and attended SUNY Buffalo State College (N=30). A Profile of Mood States Questionnaire was used to assess anxiety, The Becks Depression Inventory assessed depression scores, and a modified version of The Student Engagement questionnaire was used to assess student engagement. It was found that participants with high extracurricular engagement were less depressed, $T(29) = 0.067, p < .05$. There were no statistically significant effects between extracurricular activities and level of anxiety or chronic stress. There was no effect of academic engagement on either depression, chronic stress, or anxiety. This study is the only study to look at the effects of both academic and extra-curricular engagement on anxiety and depression in a college setting.

Summer of Love Nostalgia: American Music Festival and Drug Culture of the 1960s

Hayleigh Goerss, HIS 400: Senior Seminar in History
Faculty Mentor: Professor Bridget Chesterton, History and Social Studies Education

This project considers the American music festival culture of the 1960s and the growth of the counterculture that encouraged the growth of widespread recreational drug use (mainly psychedelics like LSD). In order to understand this topic, I outline social, political, and economic realities that lend context and insight to why drug culture related to music and music festivals became so commonplace. The tumultuous mid and late 1960s, provided the setting for a counterculture to take hold. I will also be looking at the influences of music on drug culture and the people writing the music in depth. In order to complete this project, I will be conducting research at the Rock and Roll Hall of Fame Library and Archives in Cleveland, Ohio. I have requested librarians aid in finding material from multiple collections including - but not limited to - the Monterey Pop Festival in 1967 and Woodstock in 1969. These collections include a multitude of pictures, audio interviews, and video that will provide insight to the culture that developed concomitantly with widespread drug use. Ultimately, all of these factors brought forth a culture in the 1960s that inherently intertwined music, social reform, and

liberal politics with widespread recreational drug use, anti-war protests, and an ultimate 180-degree shift in the cultural norm.

The Super Bowl as Propaganda: Super Bowl XXV and the Gulf War

Andrew Pothier, HIS 330: U.S. Environmental History
Faculty Mentor: Professor Martin Ederer, History and Social Studies Education

Propaganda has always been a fixture in American history. It has adapted to the advent of transformative technologies, communication media, and each conflict the U.S. has entered. Propaganda can be simply defined as the strategic crafting of a narrative as means to control thought, manufacture consent, and in the case of war, garner favorable public opinion towards a particular political agenda. In theory, propaganda has the potential to be used as means to divert public attention from significant social issues, and instead, project altered information and rhetoric into the American consciousness. The Super Bowl provides a unique medium for the implementation of propaganda, the best example of which being Super Bowl XXV, played on January 27, 1991, between the New York Giants and the Buffalo Bills. This research posits the questions - I: was Super Bowl XXV used as propaganda for the Gulf War? If so, how, and why? Taking into consideration that early Super Bowls (I-VII) were played at the height of the Vietnam conflict, this research - II: analyzes how the propagandizing elements of Super Bowl XXV differed from the early examples in both tone and atmosphere. Ultimately, this research argues that Super Bowl XXVs propaganda element was meant to alleviate American fears of 'another Vietnam,' to manufacture nationalistic fervor, and most significantly, to justify the Bush Administrations endeavors in the Persian Gulf. The Study of Super Bowl XXV as an agent of Gulf War propaganda aims to show that the skillful use of propaganda can extend far beyond the reaches of wartime attentiveness and can be implemented through any medium within American society.

Taking Care: Presidential Administrations and Delays in Statutory/Regulatory Implementation

Laurie Walsh, PSC 470: Senior Seminar
Faculty Mentor: Professor Peter Yacobucci, Political Science

This study examines the phenomenon of delayed implementation of federal statutes and regulations over the last six presidential administrations. This phenomenon is examined using examples of such delays in the context of Kagan and others theories of "presidential administration" – the direct involvement of presidents in the regulatory process. A total of 190 delayed statutes/regulations were uncovered across the Reagan, GHW Bush, Clinton, GW Bush, Obama and Trump administrations. A

database was created that listed each presidential administration, the political party of that president, the total number of delays found by topic (Health, Environment, Security and Other), whether the delayed policy was enacted by the current or prior administration, the reason for the delay (as expressed by the administration) and the extent of party polarization that existed in Congress at the time the delay was implemented. Statistical analysis demonstrated significant findings including the following: Republican administrations are more likely to delay implementation; topics of delayed regulations will vary by administration, Republican administrations are far more likely than Democratic ones to delay regulations from prior administrations, rather than their own; and as political polarization in the Senate increases, so do the number of delays by administration (with the exception of the Obama administration). Results have to be interpreted cautiously due to missing data. In conclusion, the approval or delay of government regulations has become a political weapon used by Republican administrations against the imposition of a wide variety of regulations. In his first year in office, President Trump has utilized this political tool to an extent never before seen in our country's history.

TMI: Does Sharing on Social Media Sites Contribute to Relationship Issues?

Samiyah Jones, PSY 498: Honors Thesis

Faculty Mentor: Professor Stephani Foraker, Psychology

The purpose of this study is to investigate the relationship between social network sharing and romantic relationship quality and length. Clayton, Nagurney, and Smith (2013) found a positive relationship between Facebook-related conflict and negative relationship outcomes such as breakups, divorce, and cheating. Another goal of the research is to look at some of the complex interactions or mediation that self-esteem and intimacy might have with social network sharing and romantic relationships. Robinson and Cameron (2011) found that participants with higher self-esteem reported greater relationship satisfaction. Researchers have found that people with low self-esteem gossip more (Radlow & Berger, 1979) and engage in more relationship destructive behaviors (Murray, Bellavia, Rose, & Griffin, 2003). I propose that social network sharing could be one of those relationship destructive behaviors that those with low self-esteem can engage in depending on whether it is positive or negative. Overbeek et al. (2007) found positive correlations between intimacy and relationship satisfaction and duration. I will recruit 300 participants who will complete online surveys on Qualtrics. I expect to find that those who report lower relationship quality and shorter length will also report posting more on social media and the content will be negative. I also expect for those with higher self-esteem to report higher relationship quality and

length and to post less on social media. I expect those who report higher intimacy in their relationship to have higher relationship quality and length. Final results will be presented and discussed.

Toxic Fish Consumption Assessment and Remediation

Jethro Soudant, Geography

Faculty Mentor: Professor Vida Vanchan, Geography and Planning

The purpose of this project is to locate and map popular fishing locations along the Niagara River and Inform the growing and fragile refugee and immigrant population of Buffalo, NY about the dangers of toxic fish consumption. The project also seeks to create multilingual infographic signs to be installed in proximity to where these people are most likely to fish. The primary data for this study come from a field survey of people fishing along the Niagara River and interviews with individuals and officials of local organizations such as, Buffalo Niagara Waterkeeper, International Institute of Buffalo, the City of Buffalo, the New York State Department of Environmental Conservation (NYSDEC) and the New York State Department of Health. The data also come from the already published studies on this topic, including published documents from the city, state and related organizations. Results from the survey will be analyzed and linked with spatial data gathered during the survey process. A final map highlighting the vulnerable fishing locations and demographic characteristics of affected populace will be generated. With permission granted, permanent, multilingual signage will be installed in the most relevant locations.

The Underrepresentation of African American Men in Professional Psychology

Daphnee Napoleon, PSY 498: Honors Thesis

Faculty Mentor: Professor Dwight Hennessy, Psychology

African American men account for a small percentage of members in the American Psychological Association. African American men account for 3% of Bachelor's degrees in psychology and 1% of Doctoral degrees in psychology (Department of Education, 2013). The scant representation of African American men is evident in research, around psychology departments across the country, and in mental health facilities. This study aims to address the issue of diversity in the field of professional psychology, primarily the lack of African American male representation. This study will pose the question why are African American men underrepresented in the field of psychology. An examination will be done on the following mediating factors: (a) race, (b) interactions with individuals in psychology, (c) masculinity, (d) cultural mistrust, and (e) socioeconomic status (SES) role in preventing African American men from entering the field of psychology. A quasi experiment will be conducted on a group of African American,

Hispanic American and Caucasian American college aged men to determine the role of these mitigating factors in the lack of representation of men of color in psychology. The completion of the Male Role Norm Scale (MRNS) (Thompson & Pleck, 1986), Multi-group Ethnic Identity Measure (MEIM) (Phinney, 1992), the Cultural Mistrust Inventory (CMI) (Terrell & Terrell, 1981), and the Perception of Psychology, Social Work and Business Questionnaire will help gain an understanding of the reasons why African American males do enter the field of psychology as a major and profession.

Underrepresentation of Women On-screen: A Content Analysis of 'One Tree Hill'

Hayley Loretto, COM 401: Applied Communication Research
Faculty Mentors: Professor Katharine Hubbard, Communication and Professor Michael Niman, Communication

The framework of this paper is based on the results of research done by Martha M. Lauzen and David M. Dozier (1999) on the underrepresentation of women in prime-time television. Their research demonstrates that women account for only 37 percent of all characters in prime-time television, and only 43 percent of major characters. My research consists of a content analysis of the television show One Tree Hill, utilizing the Lauzen and Dozier quantitative framework, contextualized with other research including journal articles exploring the topic of the portrayal of women in television shows. Together my content analysis and the supporting body of research documents the underrepresentation of women in the media. The objective is to provide primary data validating the underrepresentation of the female characters compared to their male counterparts. This research calls for a specific coding system that will focus on eight characteristics that I selected from the cast. Other categories I examine are screen time, how often women start or end a conversation, how often they are interrupted while speaking and how often women do the interrupting. My purpose is to document disparity between male and female characters in any or all of these categories.

Unhealthy Food Reduces Perceived Anxiety

Emmitt Horvatits, Psychology
Faculty Mentor: Professor Naomi McKay, Psychology

It is known that people tend to eat more when stressed. In addition, when under stress people make a shift towards more fatty and sugary foods. It remains unclear as to why this shift happens. This project looked into why people eat unhealthy food when stressed. The hypothesis was that eating foods high

in sugar and fat reduces perceived stress. Participants rated their anxiety completing the Profile of Mood States Questionnaire and then rated their present hunger and thirst level. Afterwards, participants were randomly assigned to one of four conditions: eating a 50.7g Twix candy bar (250 kcal), a 50.7g portion of carrots (20.9 kcal), reading a magazine, or sitting quietly. Participants then gave their preference for the condition and rated their anxiety a second time. There was no significant difference between the sitting and reading conditions. Eating a Twix did show suppression of anxiety compared to eating carrots. Overall, these results show that increased intake of unhealthy foods during stress may be to decrease perceived anxiety.

The United States' War on Psychedelic Research in the 1960s

Jessica Bracco, HIS 400: Senior Seminar in History
Faculty Mentor: Professor Bridget Chesterton, History and Social Studies Education

The social climate of the 1960s denied the possibility of the usefulness of psychedelics as drugs that could be considered therapeutic. The government attacked the research of psychedelics by demanding a stricter proof of efficacy with the 1962 Kefauver Harris Amendments to FDA regulations in order to conduct research on these drugs. Also, the government moved to classify these drugs as "Dangerous Drugs" making it a felony to manufacture, sell, possess, or consume these class of drugs. Furthermore, propaganda was spread to the American people claiming the proclivity of the drug for recreational use and the dangers this posed. Other historians have cited the FDA's role in virtually shutting down research related to psychedelics for psychotherapy. This aim, according to other researchers, was furthered by the CIA wanting sole access to psychedelic research. As a result, many researchers were discredited by the government. Significantly, there was the social angle into psychedelics that believed that any research was merely a form of counterculture and an excuse to take the drug and spread its use. I will demonstrate how society perceived psychedelics, as related to the counterculture movement, making it possible for the government to introduce laws and regulations thereby shutting down any attempts to use psychedelics in psychotherapy treatments. I will do this by examining legal questions, letters, books, newspaper articles, and research performed in the 1960s. My presentation will include findings related to this topic. I plan to explain to demonstrate that this project is significant because to the mental illness crisis currently plaguing our society. Perhaps, had these drugs been properly researched in the 1960s a link may have been found to aid in the treatment of depression or addiction, two particularly crucial issues society deals with today. Instead, the stigma surrounding these drugs caused them to be pushed to the side and fail to be properly explored.

Using the Eyetracker for Psychology Research

Jakeem Muhammad, Psychology

Faculty Mentor: Professor Stephani Foraker, Psychology

Since the beginning of my semester I have been assisting Dr. Foraker in setting up the eye tracker program for experimentation. I have been given the opportunity to become familiar with the appropriate equipment, procedures and guidelines for the upcoming experiments. I will be recruiting and scheduling participants, collecting and analyzing data, and attending weekly meetings as my semester goes on. I have engaged in one-on-one training with operation of the eyetracker, troubleshooting common problems, managing data and working with participants in an ethical manner. Overall this has been a golden opportunity for me to gain valuable knowledge and experience. I am interested in how the practice of thinking in positive or negative ways contribute to future psychological states. One potential method to test my hypothesis is to develop an experiment that can compare an individual's positive and negative thought frequencies and test to see if that is correlated with problem-solving or decision task outcomes related to emotional thought processes. I will be taking the lead on identifying and reading scholarly background sources, as well as in preparing appropriate stimuli. I will also develop a comprehensive data collection and analysis plan with Dr. Foraker's guidance as I am currently taking the necessary statistics course. I am hoping that all goes well and that I gain human ethics approval to execute my desired study. If so, it will greatly aid my progress toward career goals and related knowledge.

A War on Minorities During the Crack Epidemic in Miami from 1980-1989

Samantha Williams, HIS 400: Senior Seminar in History

Faculty Mentor: Professor Bridget Chesterton, History and Social Studies Education

Imported from the Crystal Triangle of Columbia, Bolivia, and Peru, crack cocaine destroyed racial and ethnic minority communities in the United States during the 1980s. Miami became the location where drug smugglers imported crack cocaine, and penetrated American society with the narcotic. In response to the increase in violence and addiction, President Ronald Raegan launched a war on drugs, which targeted all individuals who possessed, consumed, or distributed drugs. This study will analyze the war on drugs during the crack epidemic. This paper will argue that Raegan's so-call "war on drugs" was more than a campaign to eliminate drug distribution and consumption, but rather the program was meant to target minority communities who were plagued by a foreign narcotic, crack cocaine. To support this argument, speeches from Richard

Nixon, Ronald Raegan, and George Bush will be used to explain the initiatives and campaigns set by the American presidents. This presentation will offer a more in depth historic relationship that minorities have had with crack cocaine and the American government.

Why is Being Bi a Deal Breaker?

Melissa Kagan, Psychology

Faculty Mentor: Professor Jill Norvilitis, Psychology

Sexuality is a core element within all humans. Attraction, lust, and love are all emotions most people experience. It is also human nature to want to categorize and divide ourselves with labels. Humans like to split others in dichotomous groups, this or that, black or white. Sexuality is no different: we like to see one another as being either hetero or homosexual. There is validity in both those orientations, but what about individuals that do not fit in those boxes? When it comes to bisexuality, this sexual minority has attraction to the same and other sex. Bisexuals face stigma from not only the hetero community but often from the LGBTQ+ community as well. My study hopes to give a more in depth look at why this stigma occurs and the impact it can have on the bisexual's quality of life, specifically in the area of love. I will be recruiting participants via Amazon's MTurk platform in order to identify participants with a range of sexual orientations, including those who are heterosexual, homosexual, and bisexual.

World War One Soldiers' Postcards

Florent Delmas, HIS 389: Historical Perspectives

Faculty Mentor: Professor Andrew Nicholls, History and Social Studies Education

My project is to study postcards from French soldiers during World War One. These postcards are messages from soldiers throughout the war. I paid attention to what kind of messages soldiers sent and what they said to their families. My objective is to analyze these postcards to have a better understanding of the soldiers' mindsets, of their daily lives, through these postcards which provide precious information. I focused not merely on the content but also on the cards themselves, their cover, and their meaning. This project will also focus on the background, the war, the most renowned figures of the conflict, and the area where all of those cards come from. Moreover, I provided a translation of the most relevant postcards so they could be understood by English speakers.



